Warren Avenue Complete Streets Study

DRAFT

Existing Conditions Report

March 2021

WEST WARREN AVENUE
Complete Streets Study

Table of Contents

List of Figures

List of Tables

Introduction

The City of Longwood is conducting a complete streets study on West Warren Avenue between State Road (SR) 434 and Milwee Street. This project was approved by the City of Longwood as a part of their Complete Streets policy; a commitment to ensure that all roads are designed to comfortably accommodate all users as much as possible. The City of Longwood received Federal Highway Administration (FHWA) funds through the Florida Department of Transportation (FDOT) for this project.

West Warren Avenue in the study area is a critical connection in the City of Longwood. It provides an entrance to the City's Historic District, and is located in Longwood's Heritage Village, which is anchored by the City's SunRail station, located approximately one quarter mile from the eastern boundary of the project. West Warren Avenue is also surrounded by residential, commercial, and recreational land uses which have been growing in the past years and are projected to continue to grow. As such, the provision of multi-modal access for residents, visitors, and workers along the West Warren Avenue is key to the continued healthy growth of this corridor.

Project Purpose

The purpose of this complete streets project is to:

- Enhance connectivity and accessibility between all modes of transportation, activity centers, and neighborhoods surrounding West Warren Avenue
- Create a safe and supportive environment for walking and biking
- Create a Multi-modal Vision and Plan that supports the City's Economic Development initiatives
- Develop a set of implementable improvements (alternatives) in the study area that can be designed and constructed

This Existing Conditions report documents existing plans and project, existing corridor conditions, and environmental characteristics to provide the most appropriate strategies and effective implementation program for the corridor.

Study Area Overview

West Warren Avenue is a collector that connects SR 434 with County Road (CR) 427 (Ronald Reagan Boulevard). This corridor is part of the City's Bicycle and Pedestrian Master Plan: Corridor 2, Segment 3. It is a parallel alternative to SR 434 that ultimately connects SR 434, Winn Dixie, Alta Apartments, South Seminole Hospital, Reiter Park, and Fire Station 15, through the Heritage Village Planning District. The study corridor is a 0.635-mile section of West Warren Avenue from SR 434 to Milwee Street, inclusive of a small segment of St. Laurent Street at the western end of Warren Avenue. Figure 1 illustrates the project limits for this study.

Beyond the limits of this project, West Warren Avenue connects to the City of Longwood Historic District, City Hall, Police Station, CR 427, and eventually to the City's SunRail Station. Ultimately, connections can be provided to the Cross Seminole Trail with the City's Grant Street improvement and connector projects.

The subject area is part of Longwood's Heritage Village and provides an entrance to the City's Historic District. The Longwood Heritage Village includes the downtown historic district and adjacent SunRail station.

N.T.S.

Study Area

WEST WARREN AVENUE
Complete Streets Study

Figure 1

Project Location Map
W Warren Ave Complete Street

Civic/Cultural/Recreational Activity Centers

Reiter Park is located on the north side of West Warren Avenue at the eastern end of the project corridor; completed in 2019, it is the City's signature park. Reiter Park contains an amphitheater, playground, walking paths, basketball, and tennis courts, and is home to numerous events and concerts that are a regional draw.

Business/Commercial Activity Centers

The Orlando Health South Seminole Hospital complex, the City of Longwood's largest employer, is located on the south side of West Warren Avenue at the eastern end of the project corridor. It is currently undergoing a more than $28 million expansion project. Just west of Orlando Health is an office park containing multiple small businesses and shops.

Other notable businesses along the corridor include Bentley Architects, J. Raymond Construction, and Regions Bank, as well as fast food establishments Wendy's and Dunkin'. At the western end of the study corridor, a large Winn Dixie supermarket anchors a small strip mall with multiple restaurants and retail stores.

Residential

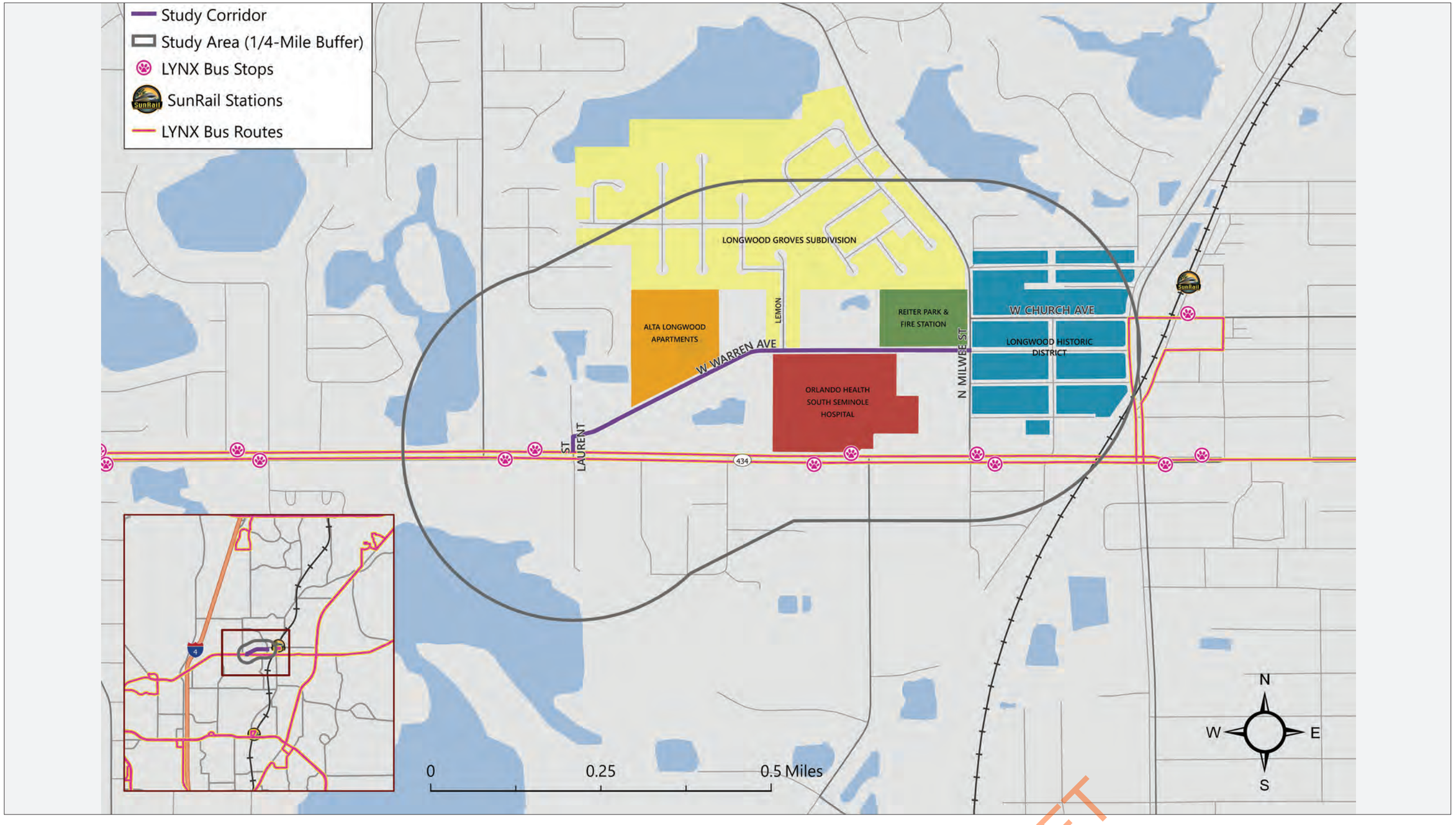
The largest residential complex along West Warren Avenue is Alta Apartments, a 263-unit apartment complex which is currently under construction and anticipated to be completed in early 2021. Alta Apartments has its only access point on West Warren Avenue, approximately halfway between Lemon Lane and St. Laurent Street.

The study corridor also serves as the southern access point for the Longwood Groves subdivision at the intersection with Lemon Lane.

Transportation

Running parallel to West Warren Avenue, SR 434 is the only east-west major arterial through Longwood, and as such carries high volumes both commuter and freight traffic. LYNX does not operate any bus routes along Warren Avenue, nor are there any plans to expand bus service to Warren Avenue. However, LYNX Route 434 runs along SR 434 and has two stops within 500 feet of the west end of Warren Avenue and two stops within 200 feet of Milwee Street. The route map for LYNX Route 434 is included in Appendix A.

The Longwood SunRail Station is located within a half mile of the west end of the project corridor, in the northeast corner of the intersection between CR 427 and Church Street. SunRail provides regular commuter train service on weekdays between DeBary and Poinciana from 5am to midnight. The first train arrives at the Longwood station at approximately 5:20am, and the last train leaves the Longwood station at approximately 11:00pm. The available transit services near the study corridor are illustrated in Figure 2.



WEST WARREN AVENUE
Complete Streets Study

Figure 2

Existing Transit Services
W Warren Ave Complete Street

Previous Plans & Studies

MetroPlan Orlando 2045 Metropolitan Transportation Plan

The MetroPlan Orlando 2045 Metropolitan Transportation Plan (MTP) is the MPO's Long Range Transportation Plan (LRTP). The West Warren Avenue Complete Streets Study (MTP ID#4009) is included in the MTP Cost Feasible Plan for Plan Period III (2036-2045) with Project Development & Environment (PD&E), Preliminary Engineering, Right-of-Way (ROW), Environmental, Construction, and Construction Engineering and Inspection all being funded. The total project cost is expected to be $11 million (in 2045 dollars), with $6.8 million coming from state funds and $4.2 million coming from local funds.

A complete streets project for SR 434 (MTP ID#2150) in the vicinity of this section of Warren Avenue is also included in the Cost Feasible Plan. The project has its limits between Rangeline Road and US 17/92 and is scheduled for Planning Period I (2026-2030) with an estimated total project cost $19.72 million (includes PD&E, design, right of way, environmental, construction, and CEI costs in 2030 dollars).

Relevant pages from the MetroPlan MTP are included in Appendix B.

MetroPlan Orlando Transportation Improvement Program

The purpose of MetroPlan Orlando's Transportation Improvement Program (TIP) is to identify all federal and state funded transportation projects that have been scheduled for implementation in the Orlando Urban Area (Orange, Seminole and Osceola Counties) during the FY 2020/21 - 2024/25 time period.

The Warren Avenue Complete Streets project (FM #446488-1) is included in the TIP as a Multimodal System project under the jurisdiction of the City of Longwood. The planning phase is funded in the TIP for FY 2020; the preliminary engineering and construction phases are unfunded. The estimated total cost of the project is $6.67 million. The planning phase of the Warren Avenue project is also included as a State Highway Project with the description "Urban Corridor Improvements" under the City of Longwood's jurisdiction. The planning phase is funded with $301,000 for FY 2020.

The SR 434 Complete Streets project (no FM#) is included in the TIP with limits from Rangeline Road to Myrtle Street. The TIP indicates that the study was completed in FY 2016, however the preliminary engineering and construction phases are not yet funded. The total estimated project cost is $14 million. FDOT is identified as the responsible agency.

The relevant pages from the MetroPlan TIP are included in Appendix B.

FDOT Five Year Work Program

Each year, FDOT develops the Five-Year Work Program in accordance with Section 339.135, Florida Statutes. The Five-Year Work Program is an ongoing process that is used to forecast the funds needed for upcoming transportation system improvements scheduled for the next five years. The development of this Work Program involves extensive coordination with local governments, including MPOs and other city and county officials.

The Warren Avenue Complete Streets project (FM #446488-1) from SR 434 to Milwee Street is included as "Urban Corridor Improvements", funded in year 2021 for planning ($300,000).

The relevant pages from the Five-Year Work Program are included in Appendix B.

City of Longwood Comprehensive Plan Policies

The City of Longwood's Comprehensive Plan serves as a means to guide and direct development within Longwood. The latest amendment to the Comprehensive Plan was made in 2014, prior to the adoption of the Complete Streets Policy. Nonetheless, provisions are made for all roadway users as part of the Multi-Modal Transportation Element of the plan. The following policies are related to this Complete Streets study:

- Objective 1, Policy K: The City shall require that all road and highway improvements within the City must consider provisions for transit and pedestrian/bicycle mobility including bike lanes, minimum sidewalk widths, safe crosswalks, pedestrian scale lighting and other bike and pedestrian friendly features.
- Objective 1, Policy L: Detention/retention facilities located within the City or County ROW shall not be located at intersections or along transportation corridors unless the City waives this requirement based on a finding that the detention/retention facility does not negatively impact bicycle and pedestrian access to adjoining development or the negative impacts have been adequately mitigated.
- Objective 1, Policy N: The City shall seek to establish working relationships with major local employment centers, specifically South Seminole Hospital and the Florida Central Commerce Park, to explore opportunities for alternative local transit connections to the SunRail Commuter Rail station including enhanced pedestrian and bicycle facilities, small- scale public/private vehicular transportation modes, and the like. The City shall take the lead in coordinating the provision of these services with applicable governmental agencies where appropriate.
- Objective 2, Policy B: As part of the annual budgeting process, the City shall consider funding sidewalk, pedestrian ways and/or bike paths as funding becomes available. The City shall also require and support provisions for such facilities as part of State and County road improvements.
- Objective 2, Policy D: The City shall coordinate bicycle and pedestrian plans with adjacent cities, Seminole County and MetroPlan Orlando through its continued participation on the Bicycle and Pedestrian Advisory Committee of MetroPlan Orlando.

The relevant pages from the Comprehensive Plan are included in Appendix B.

City of Longwood Complete Streets Policy

The City of Longwood adopted a Complete Streets policy by resolution in July, 2015 in an effort to integrate people and place in the planning, design, construction, operation, and maintenance of transportation networks. The policy calls for the City to integrate Complete Streets design principles from the inception of any city construction project, review and improve development design guidelines, and report annually to the City Commission on progress made under the policy.

A "Complete Street" is one whose design and maintenance account not only for vehicular traffic, but also pedestrians, bicyclists, and transit users. The design of each Complete Street is tailored to its surroundings and local context, providing a safe and comfortable experience for all corridor users.

City of Longwood Bicycle and Pedestrian Master Plan

The City of Longwood adopted their Bicycle and Pedestrian Master Plan in September 2012. The purpose of the Master Plan is to accelerate the implementation of projects and policies that support walking and cycling in Longwood. The three goals of the Master Plan are:

1. Connect to the regional trail system

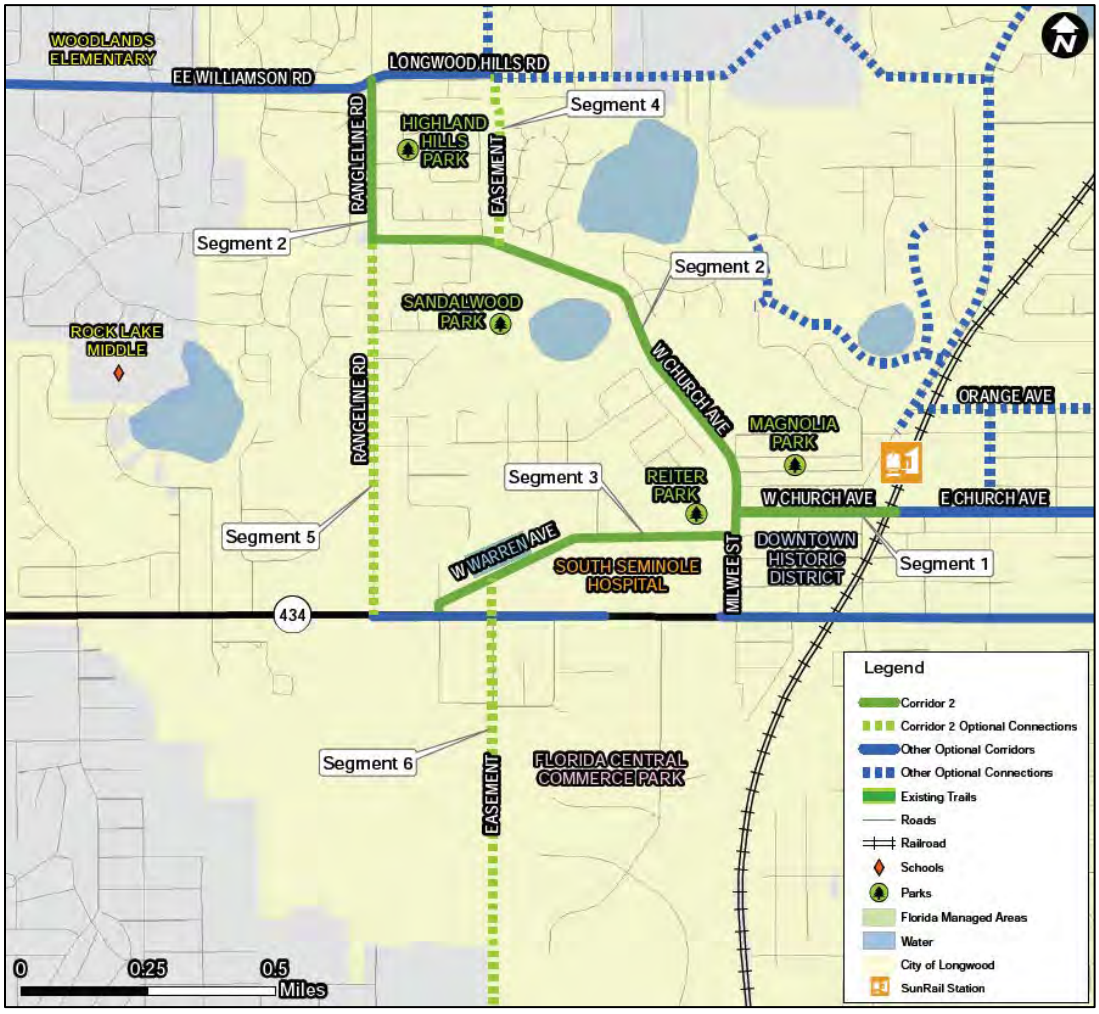
2. Provide multimodal connectivity by linking bicycle and pedestrian facilities to the SunRail Station
3. Provide safe walking routes and pedestrian connectivity throughout Longwood.

Within the Master Plan, the Bicycle Segment identifies multiple corridors within Longwood for potential multiuse trails or bike lanes. Five corridors (and two optional corridors) are proposed, and West Warren Avenue from SR 434 to Milwee Street is identified in Corridor 2: Reiter Park/SunRail Connection as Segment 3. Although Warren Avenue is considered a good candidate for the addition of bike facilities, concerns are raised about the connection with SR 434 at the west end of Warren Avenue due to the nontraditional intersection layout, limited sightlines, and close spacing of the Warren Avenue/St. Laurent Street and SR 434/St. Laurent Street intersections. Consideration of an alternative connection at the access road between Regions Bank and Dunkin' is recommended. Figure 3 shows the proposed Corridor 2 and connected optional corridors.

West Warren Avenue between SR 434 and Milwee Street is also identified in the Master Plan as a "Primary Pedestrian Network Street" as part of the Longwood Transit Oriented Development (TOD) Plan.

The relevant pages from the Master Plan are included in Appendix B.

Figure 3: Proposed Corridor 2

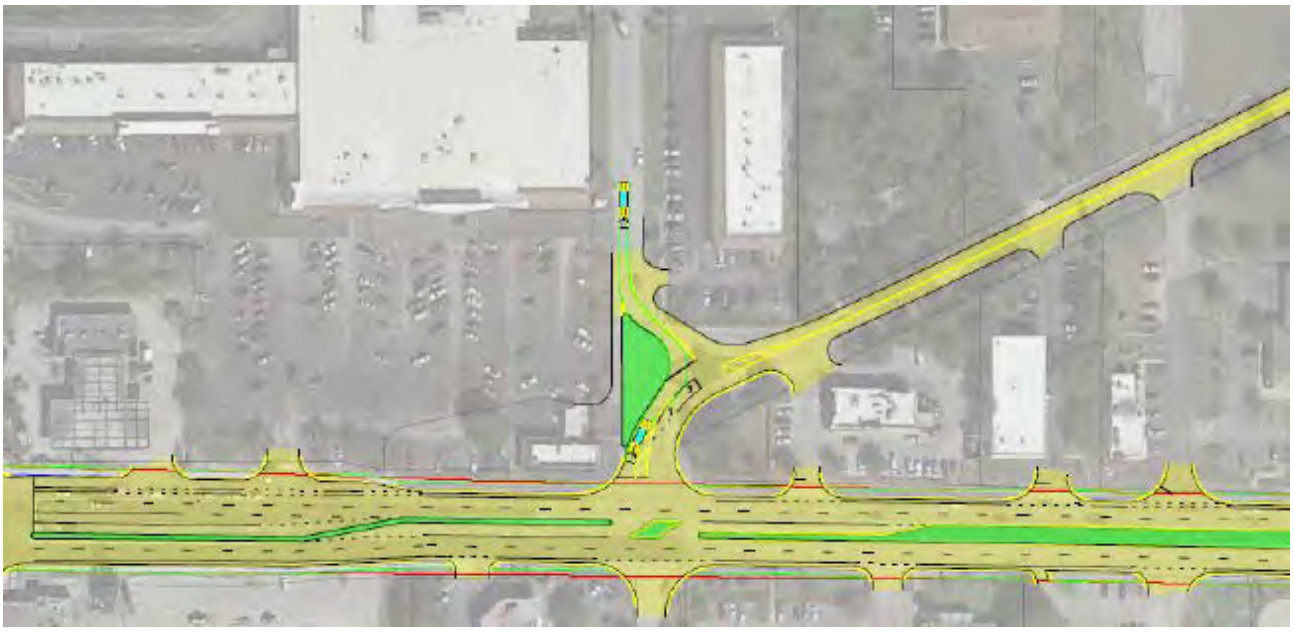


FDOT SR 434 Corridor Study

SR 434 at Central Florida Parkway Project - In May 2015, FDOT in cooperation with Seminole County prepared a project to improve the intersection of Florida Central Parkway and SR 434 near the entrance to the South Seminole Hospital. The project included reducing lane widths to 11 feet and adding 4-foot bike lanes which allows for better access to transit. This project also included a proposed FlexBus stop, LYNX stops, and connections to the SunRail.

The study recommended a realignment of Warren Avenue at the western end of the study corridor near SR 434. The recommended realignment would realign Laurent Street to where it makes a T-intersection with Warren Avenue and Warren Avenue intersections with SR 434 directly and would provide direct access from Warren Avenue to SR 434, shown in Figure 4. The Warren Avenue Realignment would provide a better connection for the potential bicycle and multiuse facility parallel network also proposed in the study.

Figure 4: Warren Avenue at SR 434 Intersection Concept



The study corridor was recommended as a bicycle and multiuse facility network ("Corridor 2"). It was identified as a potential parallel network, on which cyclists and pedestrians could connect to downtown Longwood and the SunRail station via Warren and Church Avenues, bypassing the higher-traffic SR 434.

It proposed adding a new stop on the south side of SR 434 and relocating two stops on the north side.

LYNX Transit Development Plan

The LYNX Transit Development Plan (TDP) documents future transit improvements throughout the LYNX service area on a ten-year planning horizon. Transit improvements may include new routes, expanded hours of operation, or increased frequencies. Currently there are no plans to expand service in Longwood to provide transit service or stops along Warren Avenue.

Population & Demographics

Population and demographics data for the City of Longwood were compiled from the US Census Bureau, ESRI's Tapestry, and the Florida Department of Health.

ESRI's Tapestry classifies neighborhoods and zip codes into 67 different types of segment based on socioeconomic characteristics as well as standard demographics data. According to the ESRI Tapestry profile for Longwood, the top three "Tapestry Segments" found in Longwood and their descriptions are:

1. Home Improvement (28.0%) – "We tend to be married couples that live in the suburbs. 80% of us own our homes, and our education and diversity levels match the overall US average. We eat out regularly, but spend lots of time on home improvement and remodeling projects."
2. Parks and Rec (19.99%) – "We've achieved our dream of home ownership, with modest homes that match our means. We're getting ready for retirement and we're comfortable with our place in life. We spend wisely and live in neighborhoods that are attractive to the next generation of couples."
3. American Dreamers (14.2%) – "Many of us are foreign-born, diverse, young married couples with kids and grandparents living in single-family houses on the edge of large Southern and Western metros. Hard work and sacrifice have enabled us to give our families a better life. Rented movies, TV, and video games provide entertainment at home."

Table 1 provides an overview of the demographics in Longwood and specific categories are discussed in greater detail below.

Table 1: Longwood Demographics Overview

Category	Measure
Population	
Total Population	15,561
Population Density (Persons per Acre)	4.59
Households	
Total Households	5,623
Average Household Size	2.60,
Household Density (Households per Acre)	1.67
Age	
Median Age	44.4
Population Over 65	19.4%
Sex	
Male	46.7% (±2%)
Female	53.3% (±2%)
Race/Ethnicity	
White	82.6%
Hispanic or Latino	13.2%
Not Hispanic or Latino	69.4%
Black or African American	8.4%
Hispanic or Latino	0.6%
Not Hispanic or Latino	7.8%
Asian	3.6%
Other	5.4%
Income	
Median Household Income	$65,805
Persons Below Poverty	10.4%
Housing	
Total Housing Units	6,117
Owner-Occupied	3,567
Renter-Occupied	2,056
Vacant	494
Vehicle Ownership	
Households with No Vehicles	83

Source: US Census Bureau

Age

The median age in Longwood is 44.4 years, 56.6% of the population falling between the ages of 18 and 65. 19.4% of the people in Longwood are over 65 years old, and 24.0% are under 18.

Race/Ethnicity

The majority race in Longwood is White (82.6%), followed by Black or African American (8.4%), and Asian (3.6%). 1.9% of the population identify as Two or More Races, and 3.4% are some other race. In total, 16.3% of the population are Hispanic, with 13.2% identifying as White Hispanic and 0.6% identifying as Black Hispanic. The distribution of people of different races (shown as percent non-minority) along the study corridor is shown in Figure 5.

WEST WARREN AVENUE
Complete Streets Study

Figure 5

Percent Non-Minority Distribution
W Warren Ave Complete Street

Income

The median household income for Longwood is $65,805 and the per capita income is $30,674. 10.4% of the population fall under the federal poverty line; approximately 6% of households have an income less than $10,000, and approximately 3% of households have an income between $10,000 and $20,000.

The median income levels along Warren Avenue are shown in Figure 6.

Education

For the population between the ages of 18 and 24, 94.6% have at least a high school diploma (or equivalent) and 11.4% have a bachelor's degree or higher. For the population aged 25 and older, 91.6% have at least a high school diploma (or equivalent), and 26.8% have a bachelor's degree or higher. The race/ethnicity with the highest percentage of high school graduates is White (92.3%), and the lowest is Hispanic or Latino Origin (81.4%). The race/ethnicity with the highest percentage of bachelor's degree attainment is Asian (46.8%) and the lowest is Black or African American (17.0%).

The distribution of educational attainment along Warren Avenue is shown in Figure 7.

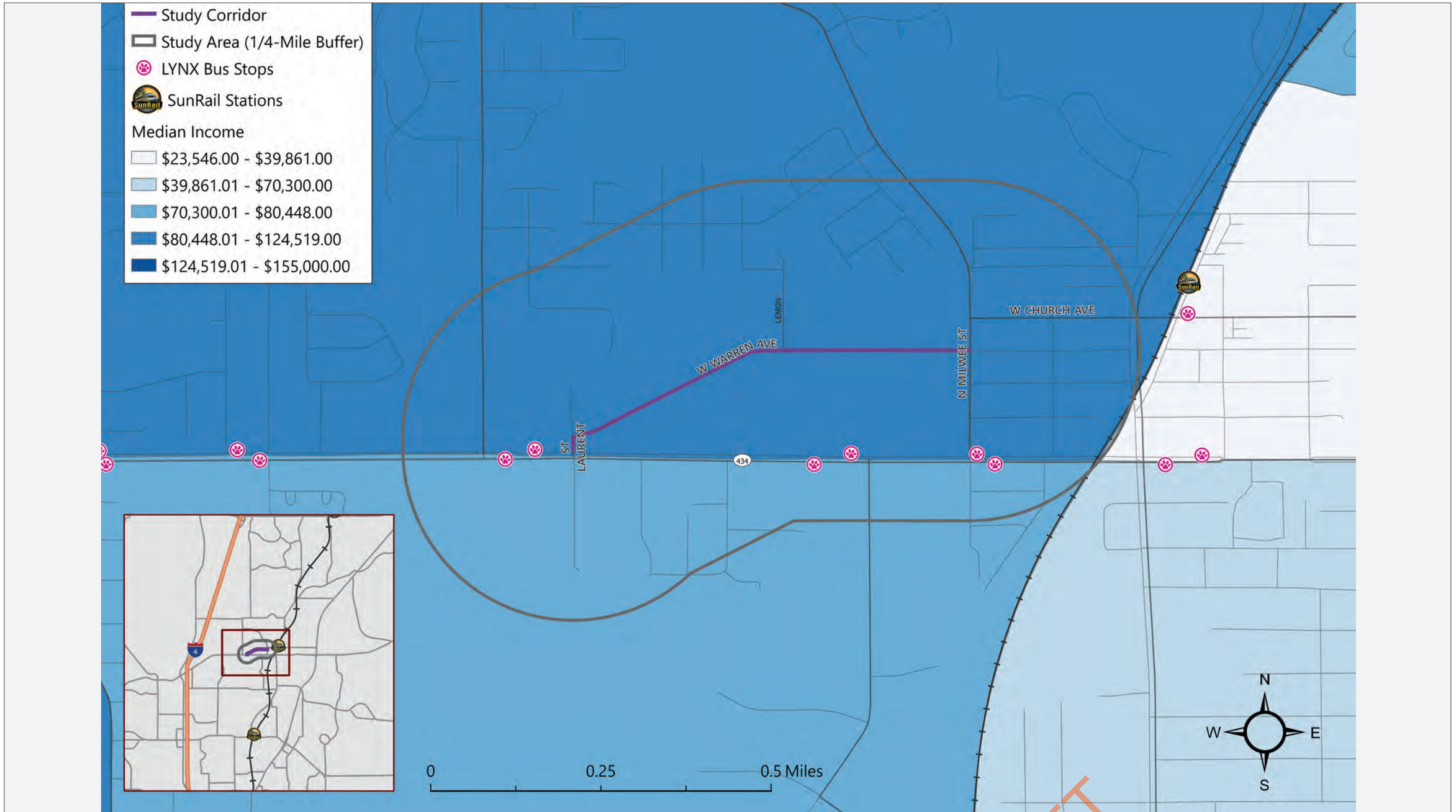
Health

The average life expectancy for the census tract surrounding the project corridor is 79.0 years, for Longwood overall it is 78.4 years. This is slightly lower than the statewide life expectancy of 79.7 years. In Seminole county, 15.2% of adults are active smokers (slightly lower than the national rate of 17.1%), and 27.9% of adults are clinically obese (lower than the national rate of 31.9%). Death rates for the most common illness-related causes of death are higher in Longwood than nationally, as shown in Table 2.

Table 2: Longwood Death Rates

Cause of Death	Death Rate per 100,000	
	Longwood	National
Cardiovascular	405	200
Cancer	239	185
Respiratory Disease	73	53
Diabetes	35	25

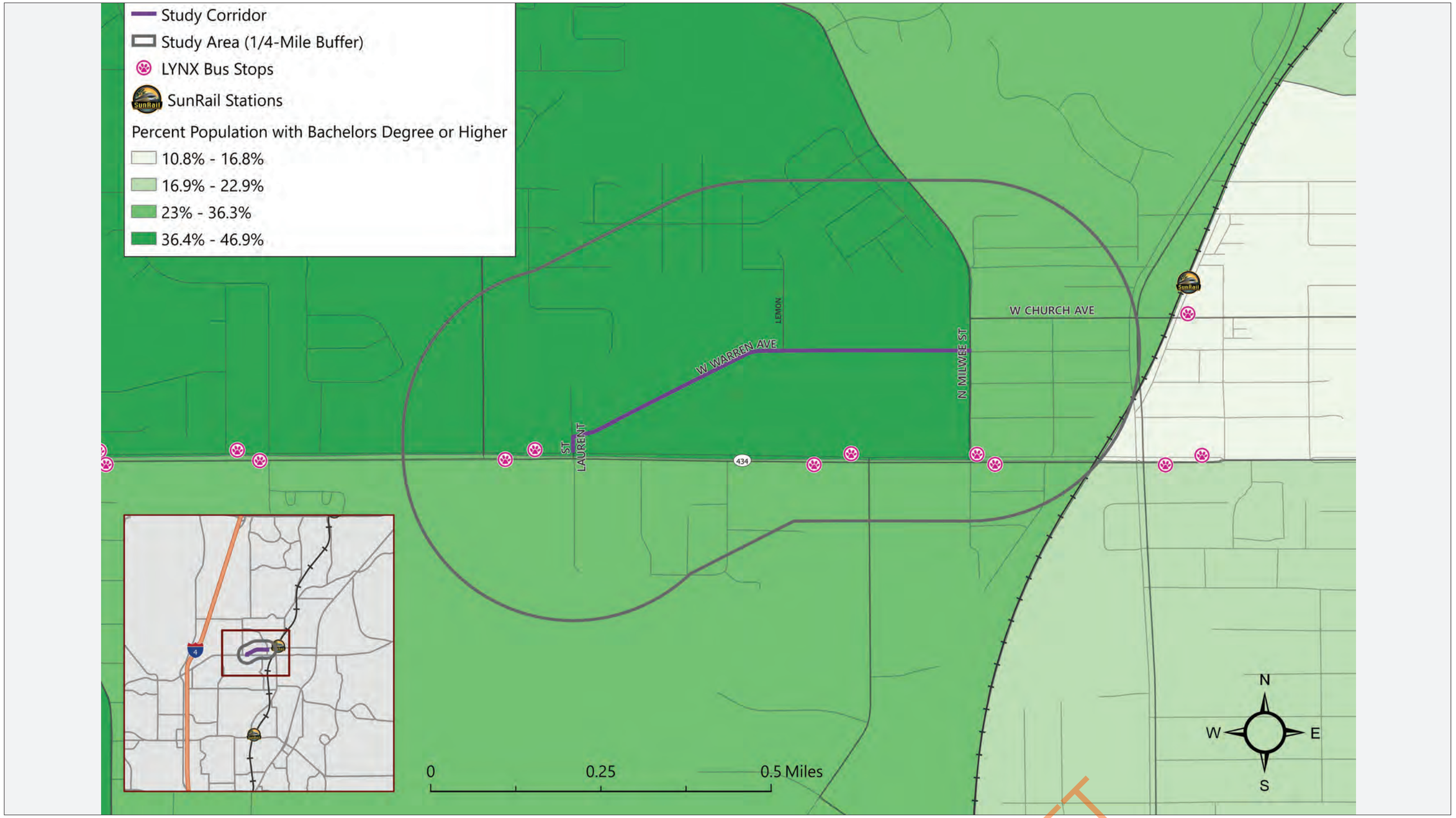
Source: Florida Department of Health (http://www.flhealthcharts.com)



WEST WARREN AVENUE
Complete Streets Study

Figure 6

Median Incomes
W Warren Ave Complete Street



WEST WARREN AVENUE
Complete Streets Study

Figure 7

Educational Attainment Distribution
W Warren Ave Complete Street

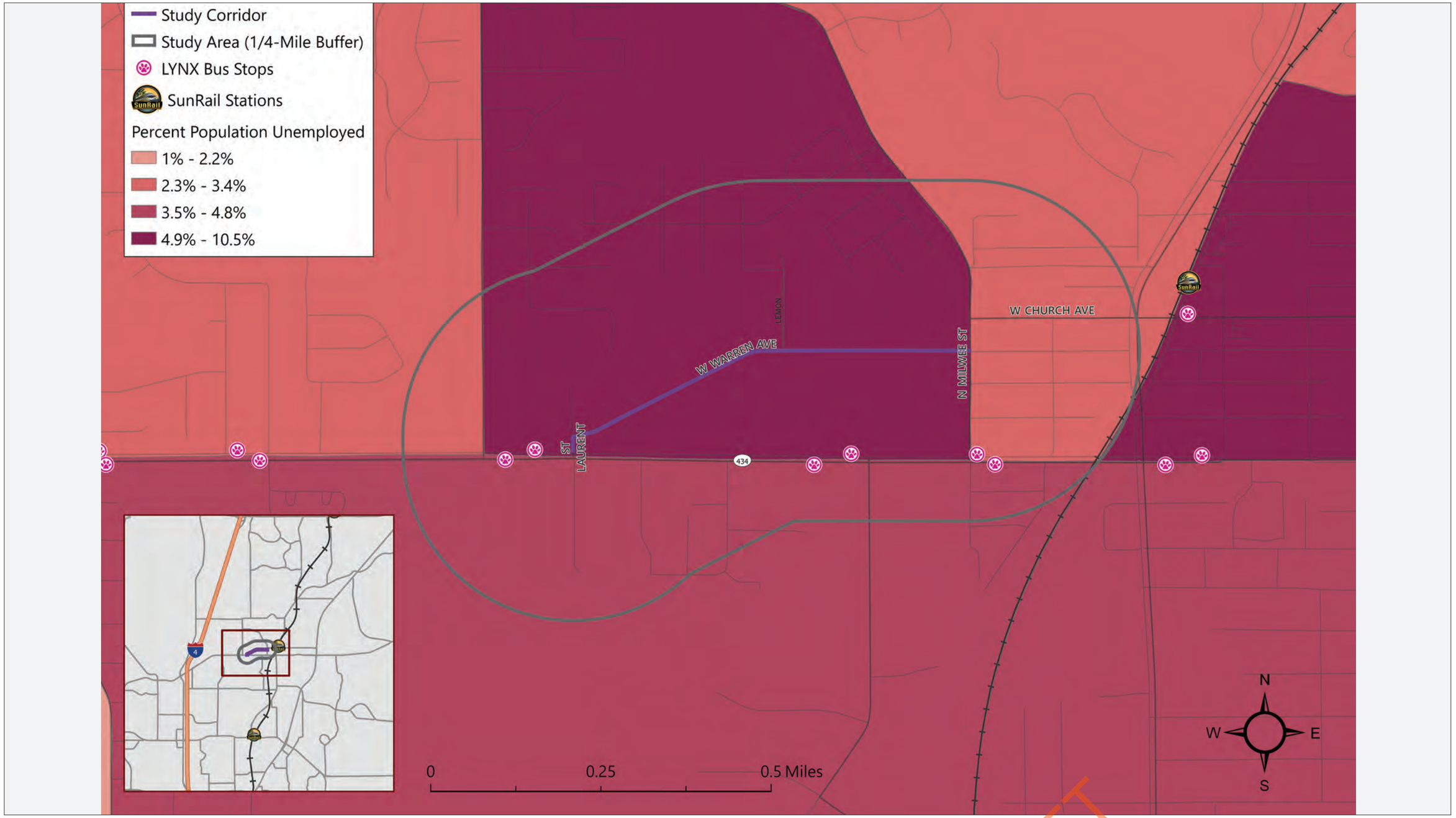
Employment

Overall, 66.4% of the population over 16 years old in Longwood is in the civilian labor force. According to the Orlando Economic Partnership (formerly the Orlando Economic Development Commission), the City of Longwood has an estimated workplace population of 16,499 with approximately 1,681 business establishments as of 2019. The top ten employers in Longwood account for a fifth of the workforce and are summarized in Table 3. The employment status of the residents along the study corridor is shown in Figure 8.

Table 3: Longwood Principal Employers (2019 & 2010)

Employer	2019			2010		
	# of Employees[1]	Rank	% of Total City Employment[2]	# of Employees[1]	Rank	% of Total City Employment[2]
Orlando Health South Seminole Hospital	1,032	1	6.25	1,000	1	9.20
UPS	703	2	4.26	507	3	4.67
D&A Building Services	338	3	2.05	*	*	*
Comprehensive Energy Services	272	4	1.65	101	9	0.93
Collis Roofing	231	5	1.40	340	4	3.13
Seminole County Schools	222	6	1.35	*	*	*
S.I. Goldman	176	7	1.07	*	*	*
Longwood Health and Rehabilitation Center	162	8	0.98	*	*	*
Arc Delray	159	9	0.96	*	*	*
City of Longwood	157	10	0.95	152	6	1.40
Total	**3,452**		**20.92**	**2,100**		**16.27**

Sources:
1. Per City of Longwood's Economic Development Department
2. Per Orlando Economic Partnership (www.orlando.org)
** Information is unavailable*



WEST WARREN AVENUE
Complete Streets Study

Figure 8

Unemployment Rates
W Warren Ave Complete Street

Land Use Characteristics

Existing Land Use

Existing land use data was compiled from the Florida Geographic Data Library (FGDL) generalized land use derived from 2019 Florida Parcels.

Commercial and Residential land uses are the predominant existing land use for the lands abutting the study corridor and within the study area. Residential land along Warren Avenue include both low density residential and high density residential. Commercial land along Warren Avenue encompass business/office space and a shopping center at the west end. Institutional and Recreational comprise of the remaining land uses along the study corridor. The major Institutional land along Warren Avenue is occupied by Orlando Health South Seminole Hospital and the Recreational land along Warren Avenue is occupied by Reiter Park.

Reiter Park is City of Longwood's signature park. Amenities at the park include tennis courts, basketball court, walking path, playground, fishing pier, multi-use amphitheater, splash pad, exercise equipment, and pavilions. The park is at the west end of the city's historic district and includes theming unique to Longwood's history and character.

The existing land uses along the study corridor are illustrated in Figure 9.

Future Land Use

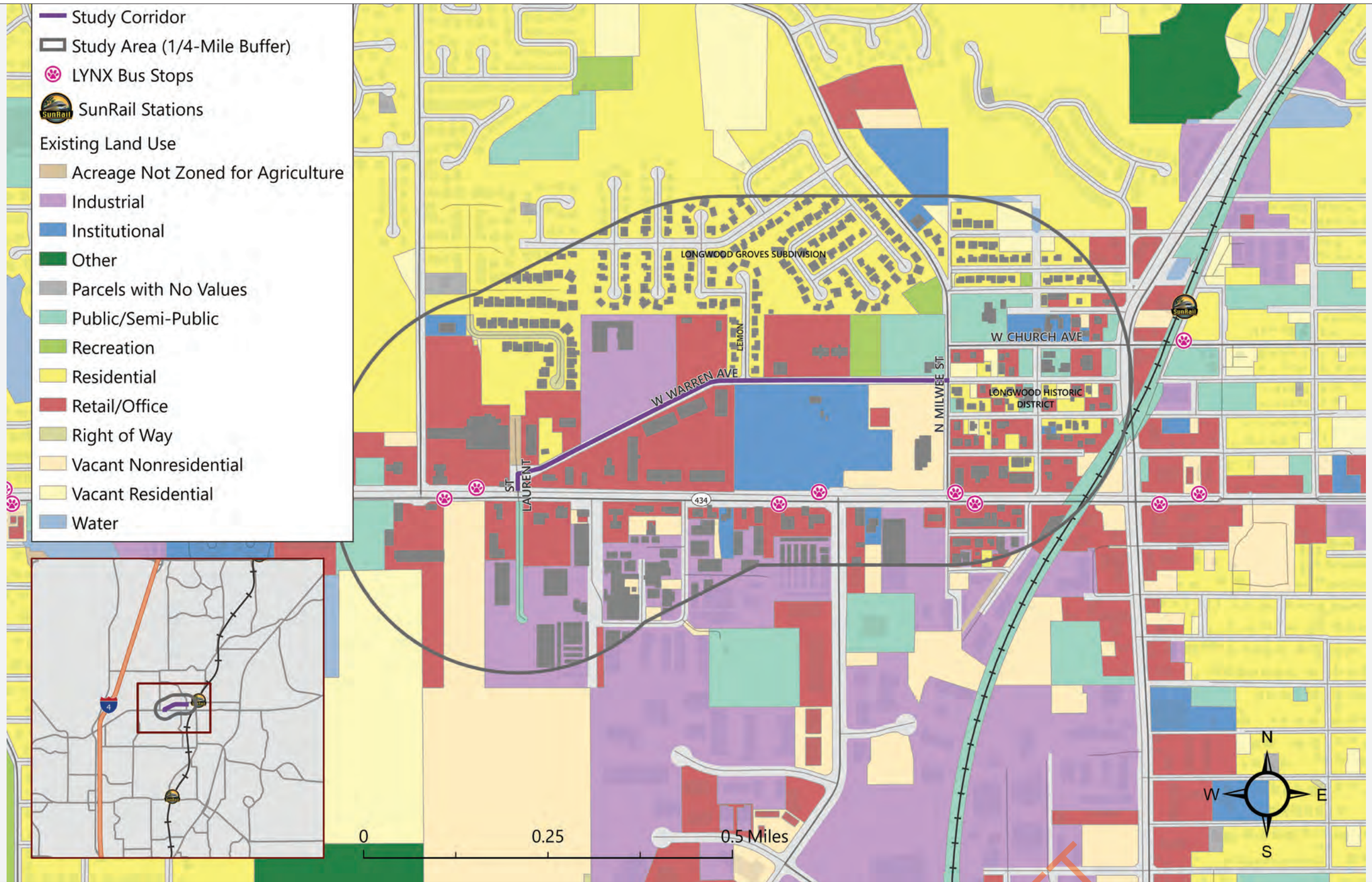
The study area's Future Land Use (FLU) shows the entirety of the corridor as infill and mixed use with the exception of the single family homes along Lemon Lane (low density residential), Reiter Park and the Fire Station (public/institutional). There is one potential change in land use for an existing single family residence at 915 W Warren Avenue, but there is currently no planned or programmed projects for this site.

The future land uses along the study corridor are illustrated in Figure 10.

Zoning

The Heritage Village Transit Oriented Development (TOD) Implementation Strategy was completed on August 20, 2012 (Resolution 12-1315) and related Heritage Village Urban Code (Ordinance 12-1992 and updated through Ordinance 20-2170) was adopted on September 4, 2012. The TOD Implementation Strategy recommends Primary Pedestrian Streetscape improvements along Warren Avenue for the entire length of the study corridor and intersection improvements at the Orlando Health South Seminole Hospital entrance on Warren Avenue and at Milwee Street. Warren Avenue adjacent to Reiter Park is within the 10-minute walk diameter from the Longwood SunRail Station. The following is the Heritage Village Urban Code:

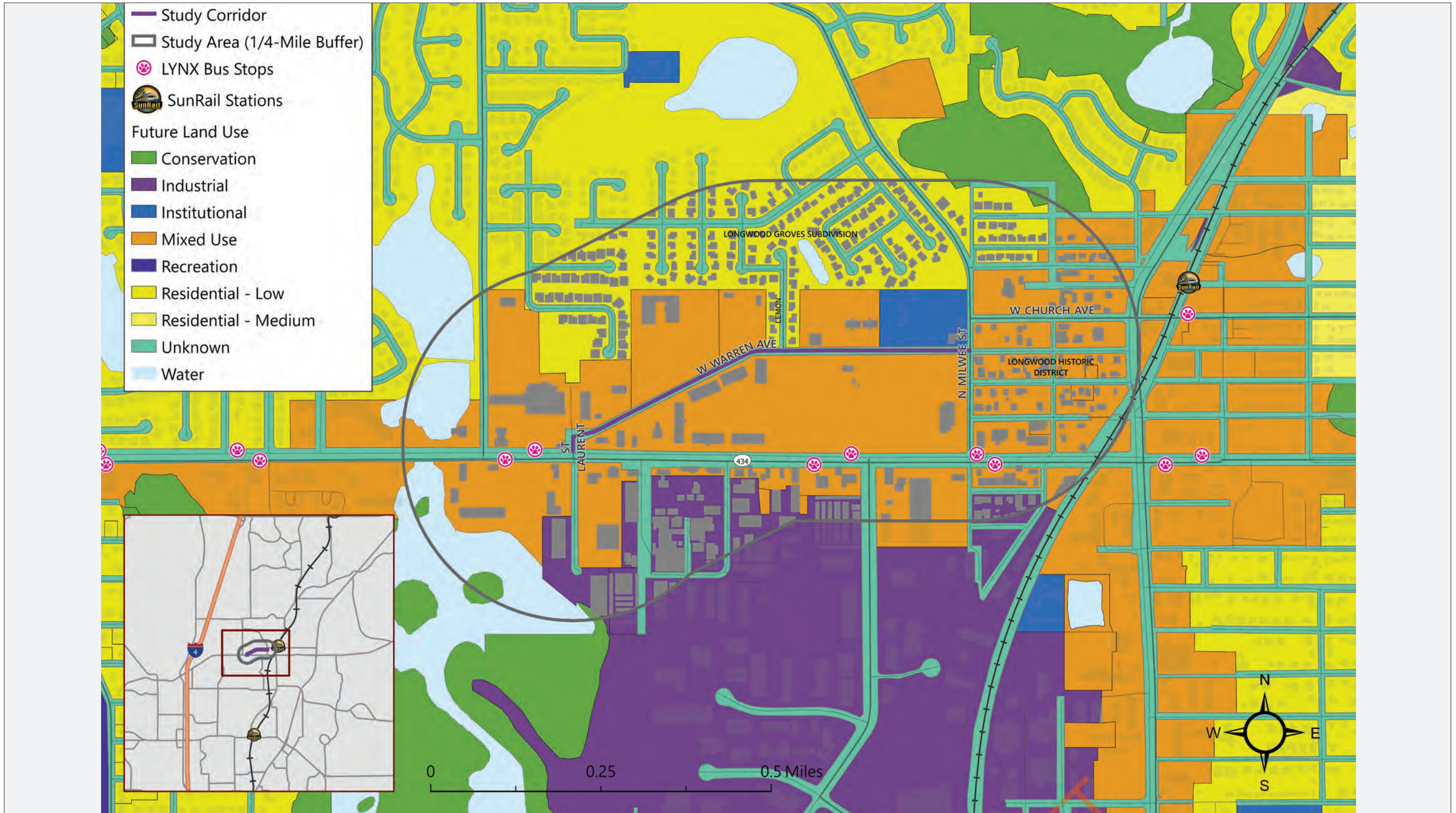
All development and redevelopment within the heritage village shall conform to the standards of the Heritage Village Urban Code. The Heritage Village Redevelopment Strategy shall serve as the primary visioning tool for the district. Where a conflict arises between the Heritage Village Urban Code and this Development Code, the standard of the Heritage Village Urban Code shall control. For any standard not described in the Heritage Village Urban Code, the standard established by the Development Code shall apply.



WEST WARREN AVENUE
Complete Streets Study

Figure 9

Existing Land Use Map
W Warren Ave Complete Street



WEST WARREN AVENUE
Complete Streets Study

Figure 10

Future Land Use Map
W Warren Ave Complete Street

Development Plans

The Alta Apartments is currently under construction and scheduled for completion in early 2021. The multi-family residential development, once complete, will include 263 units. Adjacent to the property, 10 feet of right of way has been dedicated to the city for use in this Warren Avenue Complete Streets project. A pedestrian access point from the development to Warren Avenue, shown in Figure 11, is being constructed.

Figure 11: Pedestrian Access to Alta Apartments

The Longwood Historic Redevelopment Plan is currently a proposal the City of Longwood is pursuing. The overall plan extends beyond the study corridor, however related redevelopment includes repurposing the existing office complex just west of Reiter Park to be used as the new location of the City Hall and Police Department and replacing the existing fire station in the northwest corner of the Warren Avenue and Milwee Street intersection with a brewery and food hall. The details of the proposal continue to evolve based on feedback and no final plan has been determined at this time.

Existing Physical Features

Roadway Classification, Jurisdiction, and Posted Speed

Warren Avenue from St. Laurent Street to Milwee Street is classified as a minor collector and is owned and maintained by the City of Longwood. The posted speed is 25 miles per hour (MPH) along the entire length of the study corridor.

Right of Way

The roadway right of way was collected utilizing the Seminole County property appraisers website. The right of way along Warren Avenue ranges between 50 and 57 feet. An additional 10 feet of right of way has been dedicated along the Alta Longwood Apartments for complete streets improvements, providing a total right of way width of approximately 66 feet adjacent to the parcel. The right of way opens up to approximately 120 feet at the St. Laurent Street intersection.

Typical Section

Warren Avenue is a two-lane facility providing one 11-foot-wide travel lane in each direction and approximately four-foot-wide sidewalk along the north side (except in front of Reiter Park where the sidewalk is six feet wide). For most of the length of the corridor, the sidewalk is separated from the roadway by a sodded strip up to approximately seven feet wide, at the western end of the corridor and on either side of the intersection with Lemon Lane, the sidewalk is immediately behind the curb. Figure 12 depicts the existing typical section.

Curb and gutter is present along the north side of Warren Avenue from St. Laurent Street to 385 feet east of the intersection, between Longwood Groves and Warren Profession Center, and from Reiter Park to Wilmee Street. The remaining segments along the north side and the entire south side of Warren Avenue are flush shoulder.

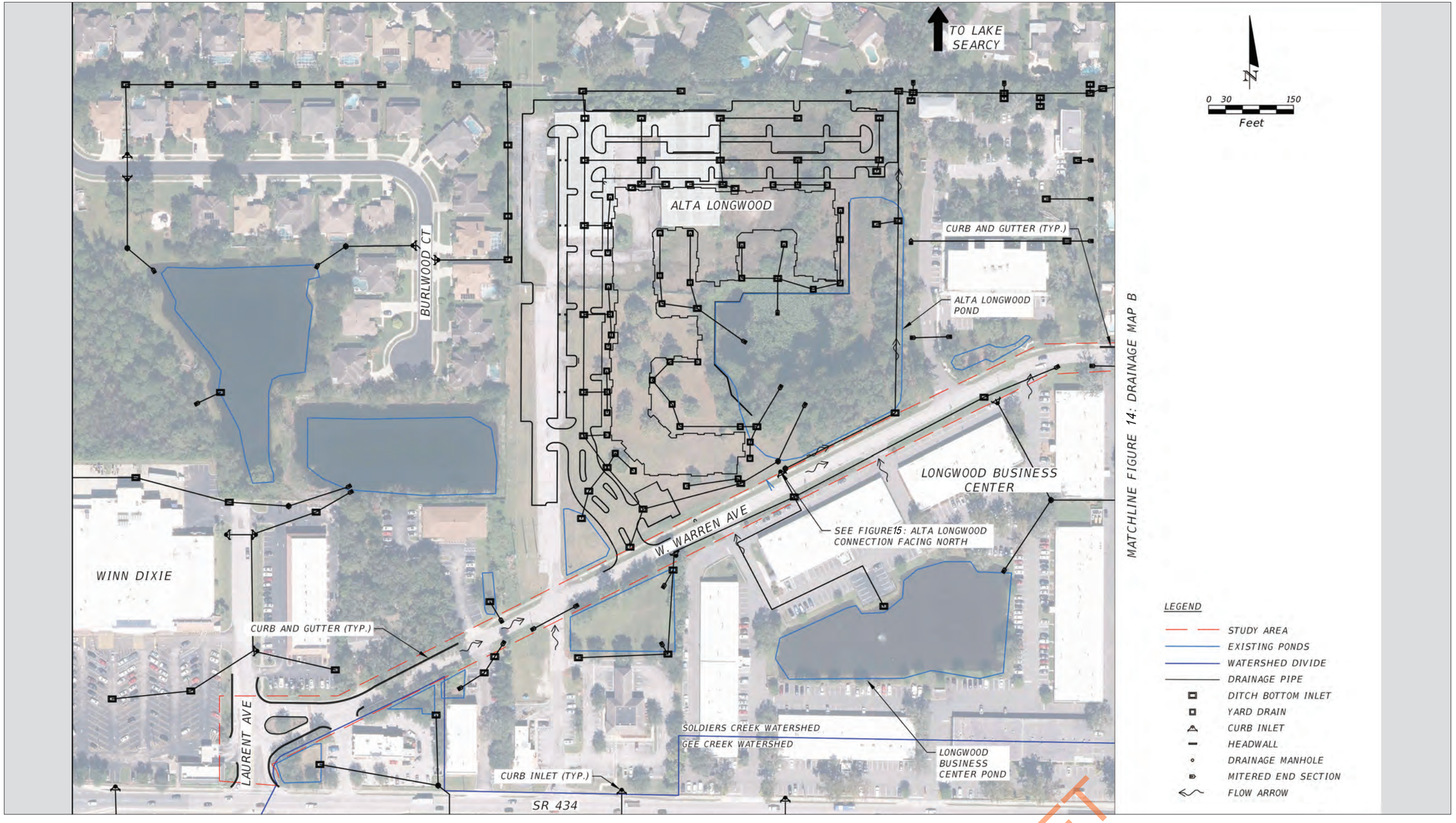
Figure 12: Existing Typical Section of Warren Avenue

Drainage

The Warren Avenue Study Area is within the St. Johns River Water Management District (SJRWMD) Soldiers Creek Watershed in the Middle St. Johns Watershed. Please refer to Figure 13: Drainage Map A and Figure 14: Drainage Map B for the remainder of this section. Additional drainage information is provided in Appendix C.

The project area is approximately 4.48 acres. The predominant stormwater conveyance systems that serve the West Warren Avenue corridor are roadside swales with catch basins and side drains to provide conveyance under driveways, as shown in the existing typical section (see Figure 12). There are small sections of curb and gutter on the north side of the corridor at the intersection of West Warren Avenue and SR 434/Laurent Street, at Lemon Lane, and at Milwee Street.

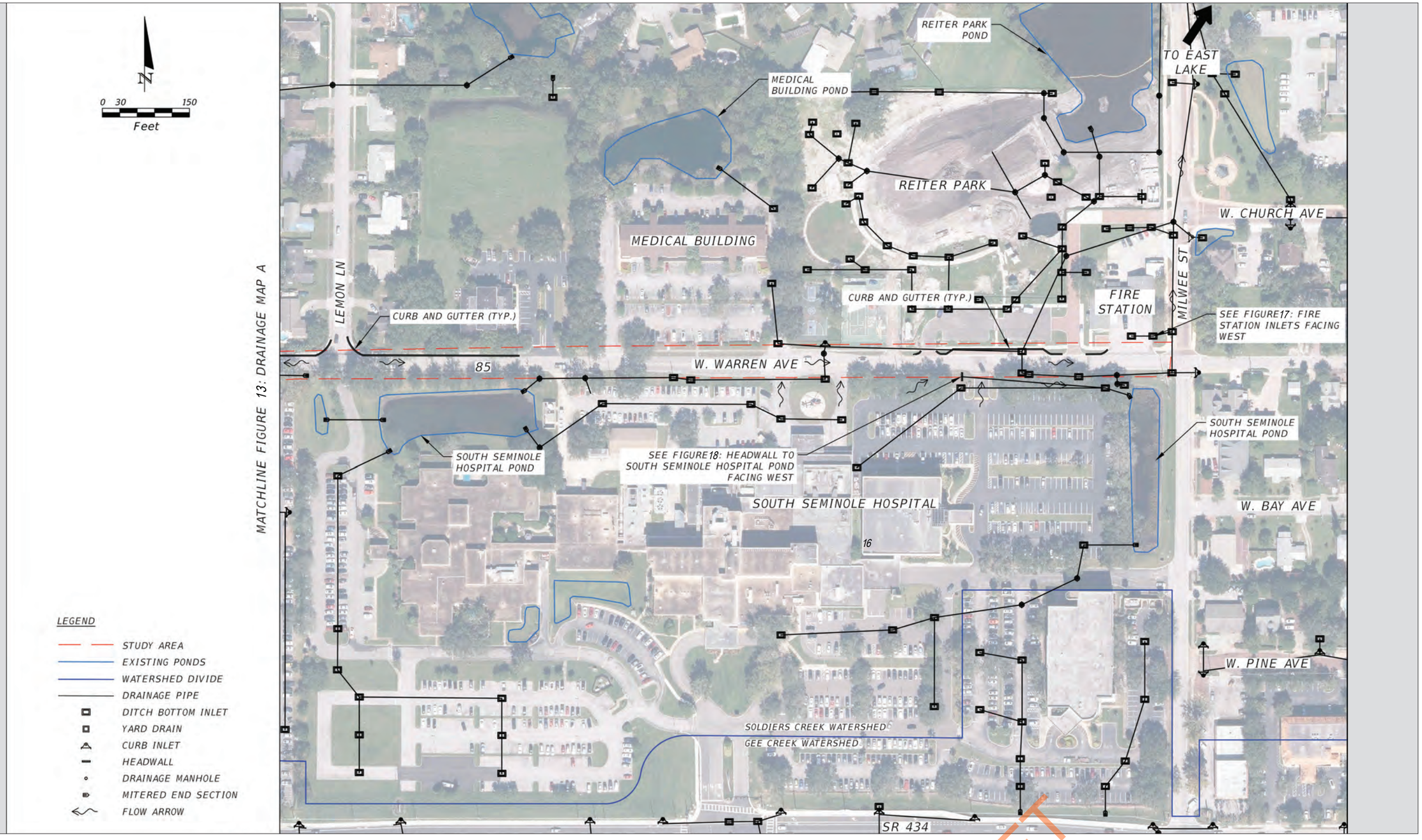
Elevations generally decrease as the corridor approaches the eastern limit of the Warren Avenue Study Area. However, the Warren Avenue Study Area is broken into two sub-basins with a basin divide at approximately Lemon Lane.



WEST WARREN AVENUE
Complete Streets Study

Figure 13

Drainage Map A
W Warren Ave Complete Street



WEST WARREN AVENUE
Complete Streets Study

Figure 14

Drainage Map B
W Warren Ave Complete Street

Lake Searcy Sub-Basin

SR 434/Laurent Street to Lemon Lane is ultimately conveyed to Lake Searcy (WBID 2986E), which is impaired for total phosphorous. Lake Searcy is a Class III water body. Water quality classifications are arranged in order of the degree of protection required, with Class I water having generally the most stringent water quality criteria and Class V the least. Class III designation necessitates that the waterbody is to remain viable for fish consumption; as well as recreation, propagation, and maintenance of a healthy, well-balanced population of fish and wildlife.

Lake Searcy outfalls to Soldiers Creek (WBID 2986) which is impaired for fecal coliform. Soldiers Creek outfalls to Lake Jessup (WBID 2981) which is impaired for biology, chlorophyll-a, total nitrogen and phosphorous, and un-ionized ammonia. Neither Soldiers Creek nor Lake Jessup are Outstanding Florida Waters (OFW). Ultimately, the stormwater runoff from the Study Area is conveyed to Middle St. Johns River, north of the Study Area.

Stormwater runoff on Warren Avenue, from Laurent Street to Lemon lane flows to roadside swales and intermitted roadside drainage inlets. In the Lake Searcy sub-basin there are no stormwater facilities to provide treatment for roadway runoff, prior to outfalling to Lake Searcy.

A curb inlet on Warren Avenue located south of the Alta Longwood stormwater management facility is shown in Figure 15**.** Per ERP Permit No. 156187-1 Alta Longwood, the stormsewer system on West Warren Avenue conveys stormwater runoff north to a stormwater pipe system on the east side of Alta Longwood property. Ultimately, the pipe system outfalls to Lake Searcy.

Many of the driveways connecting to Warren Avenue on the southside drain considerable areas from adjacent private properties on the South side. In addition, the offsite properties on the south side of Warren Avenue ultimately outfall to the stormsewer system across, along and under Warren Avenue.

East Lake Sub-Basin

East Lake is not impaired for nutrients. East Lake is a Class III water body and flows to Soldiers Creek (WBID 2986) and then Lake Jessup (WBID 2981), similar to Lake Searcy as previously discussed.

Stormwater runoff on Warren Avenue, from Lemon lane to Milwee Street flows to roadside swales and intermittent roadside drainage inlets. Many of the driveways connecting to Warren Avenue on the south side drain considerable areas from adjacent private properties on the south side. In addition, the offsite properties on the south side of Warren Avenue ultimately outfall to the stormsewer system across, along and under Warren Avenue.

There is a low point at the fire station on the corner of Warren Avenue and Milwee Street. Recently, an inlet was replaced, as shown in Figure 16**.** A pump was added to this location which, along with proper maintenance has resolved past flooding issues during large storm events at the Northwest corner of Warren Avenue and Milwee Street.

There is 1 location that may currently provide treatment for a small portion of stormwater runoff from the Warren Avenue Study Area. A pond to treat stormwater runoff from the South Seminole Hospital is located at the southwest corner of West Warren Avenue and Milwee Street. A small portion of Warren Avenue runoff appears to drain to this private pond. There is a headwall and culvert on the southside of Warren Avenue that appears to outfall to the pond, as shown in Figure 17. This provides informal stormwater treatment for a minor area of the Warren Avenue Study Area. However, per ERP Permit No. 66916-1 South Seminole Hospital Cardiac Lab Addition some of the South Seminole Hospital was constructed before 1983, so there is no design information on the pond.

Ultimately, stormwater runoff in this sub-basin discharges though a pipe system that flows north through Reiter Park and along the west side of Milwee Street per ERP Permit No. 106066-4 Reiter Park Phase 1 Hardscape and Landscape Improvements.

Figure 15: Alta Longwood Connection Facing North

Figure 16: Fire Station Inlets Facing West

Figure 17: Headwall to South Seminole Hospital Pond Facing East

Floodplains

The Study Area is not located within the 100-year floodplain per FEMA Flood Map 12117C0155F.

Soils and Geotech Data

Proposed improvements to the Warren Avenue Study Area are subject to the City of Longwood and St. John's River Water Management District (SJRWMD) criteria that are current at the time of the improvement.

Soil conditions were inventoried within the Study Area using the United States Department of Agriculture Natural Resources Conservation Service data. The soil is mostly Tavares-Millhopper complex (approximately 41% of the study area) with the water table between 42" – 60" below existing ground (Hydrologic Group A). Urban land accounts for approximately 39% of the project area. Urban land is a designation given to highly developed areas. The water table and soil hydrologic group is undefined for this area. The soil in the eastern half of the Study Area also contains sections of Adamsville-Sparr fine sands (approximately 20% of the study area) with the water table between 18" – 42" below existing ground (Hydrologic Group A/D).

City of Longwood Drainage & SJRWMD Criteria

SJRWMD

There is a possibility of obtaining an exemption from permitting from SJRWMD, if the proposed improvements adhere to Florida Administrative Code (F.A.C.) 62-330.051. See the potentially applicable exemption criteria below:

(4)(c) Minor roadway safety construction alteration, maintenance and operation, provided:

1. There is no work in, on, or over wetlands other than those in drainage ditches constructed in uplands;
2. There is no reduction in the capacity of existing swales, ditches, or other systems legally in existence under chapter 403 or Part IV of chapter 373, F.S.;
3. All work is conducted in compliance with subsection 62-330.050(9), F.A.C.; and
4. The work is limited to:
    a. Sidewalks having a width of six feet or less;
    b. Turn lanes less than 0.25 mile in length, and other safety-related intersection improvements; and
    c. Road widening and shoulder paving that does not create additional traffic lanes and is necessary to meet current, generally accepted roadway design and safety standards.

(d) Resurfacing and repair of existing paved roads, and grading of existing unpaved roads, provided:

1. Travel lanes are not paved that are not already paved;
2. No substantive changes occur to existing road surface elevations, grades, or profiles; and
3. All work is conducted in compliance with subsection 62-330.050(9), F.A.C.

If a permit exemption is not granted and a standard general permit is the next permitting option. It shall adhere to the applicable F.A.C. See the applicable criteria below:

62-330.405 General Conditions for All General Permits.

and

62-330.447 General Permit to the Florida Department of Transportation, Counties, and Municipalities for Minor Activities within Existing Rights-of-Way or Easements

A general permit is granted to the Florida Department of Transportation, counties, and municipalities to conduct the activities described below:

(1)(g) Roadway safety activities, such as installation of shoulders, sidewalks, guard rails, signs, poles, and mast arms within an existing right-of-way that incur no more dredging or filling than 500 square feet per activity, provided the total impact to wetlands or other surface waters does not involve more than 0.5 acre.

(2)(b) This general permit shall not apply to ditch construction in Class I or Class II surface waters, Outstanding National Resource Waters or waters designated as Outstanding Florida Waters.

(c) Activities under this general permit must not diminish existing stormwater treatment, attenuation, or conveyance capacity.

(d) This general permit does not authorize the construction of additional traffic lanes. Activities that require additional traffic lanes must first obtain an individual environmental resource permit under this chapter, as applicable, before the start of construction.

62-330.451 General Permit to Counties, Municipalities, and other Agencies to Conduct Stormwater Retrofit Activities.

(1) A general permit is granted to counties, municipalities, state agencies and water management districts to construct, operate, and maintain stormwater retrofit activities as authorized below for improving existing surface water and stormwater systems. This general permit may be used in conjunction with exempt activities.

(2) Types of stormwater retrofit activities authorized under this general permit are:

(a) Construction or alteration that will add additional treatment or attenuation capacity and capability to an existing stormwater management system;
(b) The modification, reconstruction, or relocation of an existing stormwater management system or stormwater discharge facility;

Should a permit exemption or a standard general permit be accepted, SJRWMD might require full treatment and attenuation volumes of the previously untreated existing road.

Specific nutrient requirements may apply to the project since the Study Area outfalls to Class III water bodies. Stormwater may need to be treated prior to its discharge to the respective water bodies and adequate erosion and turbidity barriers will be needed during the proposed construction activities. Since most of the roadway isn't formally treated prior to its outfall, SJRWMD may only require treatment of any new impervious areas.

If treatment volumes are required and off-line dry retention systems are used, the project will need to provide retention for the water quality volume equal to runoff from 0.5-inch runoff from the contributing area or 1.25-inches of runoff from the impervious area, per the requirements set forth by SJRWMD. On-line dry retention will require an additional 0.5-inch of runoff from the contributing area over the volume specified for off-line treatment. On-line treatment that provides for percolation from runoff from the three-year, one-hour storm can be substituted for the previous criteria.

If treatment volumes are required, and wet detention systems are used, the project will need to provide storage for the water quality volume equal to 1-inch of runoff over the contributing area, or 2.5-inches times the impervious area (excluding water bodies). The outfall structure shall be designed to drawdown one-half the required treatment volume within 24 and 30 hours following a storm event, but no more than one-half this volume will be discharged within the first 24 hours.

Stormwater management systems must be designed to treat and attenuate the 25-year, 24-hour storm for open basins. The Study Area is within an open basin.

Any impacts to existing permitted facilities will require permit modifications and additional stormwater treatment and attenuation.

<u>City of Longwood</u>

- Min. Pipe Size: 15"
- Min. Velocity: 2.5 feet per second (fps) when flowing full
- Max. Velocity: 20 fps for reinforced concrete pipe and 10 fps for metal pipe with sufficient erosion protection and/or energy dissipates at outlet ends
- Max. HGL: 6" below gutter for a 10-year storm event
- Max. Spread: One-half the travel lane width for a 10-year storm event
- Max. Bypass: 1 cubic foot per second (cfs). Offsite flows from impervious areas of more than one-half acre shall be intercepted prior to the right of way line. Inlets shall not be located within an intersection curb radius or in front of access to the pond.
- Max Pipe Lengths: 15" – 200 ft
18" – 300 ft
24" to 36" – 400 ft
≥ 42" – 500 ft
- Sump inlets shall be designed to intercept 100% of the design flow without exceeding the allowable spread.

Utilities

A Sunshine 811 design ticket was processed in March 2021 to identify a listing of potential utilities along the study corridor. Fourteen utility owners were listed in the design ticket with utilities types including telephone, communication lines, fiber, CATV, stormwater, wastewater, reclaimed water, and water. Table 4 lists the various utility companies/agencies that have facilities along with utility type and contact information. While present on both sides, the majority of overhead utilities and underground markers were observed predominantly along the south side of Warren Avenue as shown in Figure 18.

Table 4: Utility Owners

Utility Owner	Utility Type	Contact	Phone
A T & T / Distribution	Telephone	Dino Farruggio	561-683-2729
A T & T	Communication Lines, Fiber	Steve Hamer / Mike Gamboa	813-888-8300 x201
Black & Veatch	Fiber	Chad Arnett	813-207-7931
Century Link	Fiber, Telephone	Bill McCloud	850-599-1444
Century Link	Fiber	Network Relations	877-366-8344 x2
Charter Communications	CATV, Fiber, Telephone	Ramon Nunez	407-215-5870
City of Longwood	Stormwater, Wastewater, Water	Jammie Tackett	407-263-2382 x2
Crown Castle NG	Fiber	Fiberdig Team	888-632-0931 x2
Duke Energy	Electric	Stephanie Olmo	407-905-3376
FL Public Utilities	Gas	Colin Dunn	386-785-4554
MCI	Communication Lines, Fiber	MCIU01 Investigations	469-886-4091
Seminole County	Reclaimed Water, Sewer, Water	Paul Zimmerman	407-665-2040
Utilities, Inc of Florida Longwood	Sewer	Bryan Gongre	866-842-8432 x1360
Wiring Technologies, Inc	Communication Lines, Electric	Mark Downey	407-862-6290 x117

Figure 18: Existing Utilities Along South Side of Warren Avenue

Lighting

Street lighting is provided sporadically along the south side of Warren Avenue and one streetlight is provided on the north side of Warren Avenue near the St. Laurent Street intersection. The streetlights are mounted on utility poles, as shown in Figure 19.

Figure 19: Existing Lighting

Parking

Existing public parking facilities within the study area consist of the Reiter Park parking lot and on-street parking. The Reiter Park parking provides two access points along Warren Avenue and contain 32 parking spots, including 2 accessible parking. Approximately 154 feet of on-street parking is present along Warren Avenue adjacent to the Reiter Park parking lot. The brick paved on-street parking does not include striping (shown in Figure 20), however there is room for seven on-street parking spaces. A pedestrian ramp is provided within the on-street parking segment for the Reiter Park pedestrian entrance.

A private parking lot, owned by Orlando Health South Seminole Hospital, is often used by public for parking during events at Reiter Park.

Figure 20: Existing On-Street Parking

Transit

LYNX

No transit stops are present directly along Warren Avenue, however LYNX Route (Link) 434 Crosstown serves SR 434 with a stop at Orlando Health South Seminole Hospital and six stops along SR 434 within the study area. Service for this route runs Monday through Saturday with no Sunday or holiday service. The following is a list of the six stops along with accommodations:

- 6302 W SR 434 (eastbound) and Rangeline Road – sign and trash receptacle
- 6290 W SR 434 (westbound) and St. Laurent Street – sign only
- 6303 W SR 434 (eastbound) and Florida Central Parkway – sign only
- 6289 W SR 434 (westbound) and Florida Central Parkway – sign only
- 6341 W SR 434 (eastbound) and S Milwee Street – sign, shelter, bench and trash receptacle
- 6336 W SR 434 (westbound) and S Milwee Street – sign, shelter, bench and shelter

Ridership data for fiscal year (FY) 2019 (October 2018 to September 2019) was obtained from LYNX. The total annual ridership recorded for the route is 139,055. Figure 21 shows a breakdown of ridership by month. The following is a list of the average daily boarding and alighting for FY 2019 ridership data specific to each stop location:

- 6302 W SR 434 (eastbound) and Rangeline Road – 5 boarding and 6 alighting
- 6290 W SR 434 (westbound) and St. Laurent Street – 8 boarding and 7 alighting
- 6303 W SR 434 (eastbound) and Florida Central Parkway – 4 boarding and 5 alighting
- 6289 W SR 434 (westbound) and Florida Central Parkway – 3 boarding and 4 alighting
- 6341 W SR 434 (eastbound) and S Milwee Street – 4 boarding and 2 alighting
- 6336 W SR 434 (westbound) and S Milwee Street – 4 boarding and 3 alighting

Figure 21: LYNX 434 Crosstown 2019 Ridership

SunRail

The Longwood SunRail Station is located outside study area approximately 0.3 mile away from the eastern limit of the study corridor. The station includes Park & Ride (surface and garage) lot with 272 spaces. The LYNX 434 Crosstown provides connection to the station. Amenities at the station include free parking, bike parking, emergency phone, security cameras, water fountains, platform canopies and ADA accessibility.

The Longwood SunRail Station is accessed off of Church Street. A sidewalk path provides connection from the study corridor to the station.

Bicycle & Pedestrian

Bicycle Facilities

There are no bicycle lanes or separate path for bicycles currently along Warren Avenue. Adjacent to the study corridor, bicycle lanes are present along Milwee Street north of Warren Avenue. The Milwee Street bicycle lanes are six feet wide delineated with lighter color brick paver, as depicted in Figure 22. There are no bicycle lanes along SR 434 within the study area.

Figure 22: Brick Paver Bicycle Lanes along Milwee Street

Pedestrian Facilities

Sidewalks, approximately four feet wide (except in front of Reiter Park where the sidewalk is six feet wide), is present along the north side of the study corridor. The sidewalk is generally separated from the roadway with a seven-foot-wide sodded strip. There is no sidewalk present on the south side of the study corridor with the exception of a 100-foot segment at the St. Laurent Street intersection.

Several crosswalks along the corridor include brick paver (shown in Figure 23), including the crosswalk over Warren Avenue at St. Laurent Street, over Lemon Lane, over the two Reiter Park driveways along Warren Avenue, and the north leg of the Milwee Street intersection. The majority of curb ramps, with the exception of one Reiter Park driveway, are not equipped with detectible warning strips.

Sidewalks are present along SR 434 leading into the study corridor. Sidewalks continue along the south side of Warren Avenue east of Milwee Street. Sidewalks are present along both sides of Milwee Street north of Warren Avenue and along the east side south of Warren Avenue.

Figure 23: Existing Brick Paver Crosswalk at Milwee Street

A midblock crosswalk is provided at the Reiter Park pedestrian entrance to Orlando Health South Seminole Hospital. The recently added crosswalk is shown in Figure 24.

Figure 24: Midblock Crosswalk at Reiter Park

Existing Traffic and Safety Conditions

Introduction

The 0.635 mile section of Warren Avenue from SR 434 to Milwee Street, inclusive of the small segment of St. Laurent Street, is a critical connection in the City of Longwood. Running generally parallel to SR 434, Warren Avenue provides an entrance to the City's Historic District, which includes Longwood City Hall, the Longwood Police Department, and Reiter Park, the City's recently completed signature park. The subject area for this project is part of Longwood's Heritage Village, which is anchored by the City's SunRail station, located approximately one-quarter mile from the eastern boundary of the project.

Warren Avenue also provides access to several businesses, the most prominent of which being Orlando Health South Seminole Hospital, the City's largest employer, which is currently undergoing a more than $28 million expansion. Other notable businesses include Bentley Architects, J. Raymond Construction, Winn Dixie and associated stores, along with numerous other medical offices, fast-food establishments including Wendy's and Dunkin' Donuts, and Regions Bank. Additionally, Wood Partners Group began construction on Alta Apartments in late 2019, a 263-unit apartment complex that has its only access point on this portion of Warren Avenue that will bring a significant number of new residents to the area. Construction is underway and anticipated to be completed in early 2021. Warren Avenue is also an access point for the Longwood Groves subdivision.

The overall objective of this section is to provide the City of Longwood with the Annual Average Daily Traffic (AADT), peak hour volumes, intersection and roadway Level of Service (LOS) for the existing year 2021, and traffic forecasts for the future year 2040 for No Build and Build conditions.

Existing Traffic Conditions

The existing operational analysis was conducted at the following study intersections in the study area:

- SR 434 and St. Laurent Street/Savage Court
- Warren Avenue and St. Laurent Street
- Warren Avenue and Lemon Lane
- Warren Avenue and Milwee Street

Traffic Volume Data – Tube Counts

72-hour bi-directional counts were collected at the following locations from January 12 to January 15, 2021.

- SR 434, west of St. Laurent Street/Savage Court – Volume Count
- SR 434, east of St. Laurent Street/Savage Court – Volume Count
- Warren Avenue, east of St. Laurent Street/Savage Court – Classification Count
- Warren Avenue, between Milwee Street and CR 427 – Volume Count
- Lemon Lane, north of Warren Avenue – Volume Count
- Lemon Lane, south of Warren Avenue – Volume Count
- Milwee Street, north of Warren Avenue – Volume Count

The peak eleven hours (8:00 AM – 7:00 PM) were determined based on these volume/classification counts. The turning movement counts and pedestrian/bicycle counts were collected at all four study intersections on January 12, 2021. From this data, the AM and PM peak traffic hours for most of the study intersections were found to occur from 8:00 AM to 9:00 AM and 5:00 PM to 6:00 PM. K and D

factors were calculated from the tube count locations. The raw 72-hour bidirectional counts and turning movement counts are provided in Appendix D. The Average Daily Traffic (ADT) volumes for the roadway segments were adjusted based on FDOT Axle and seasonal factors. Further the AADT on SR 434, west of St. Laurent Street/Savage Court was compared with FDOT Cosite 770197 and 4.5% decrease in traffic was observed. The final AADTs are shown in Table 5 and Figure 25.

Table 5: Existing 2021 Traffic Volumes

Roadway Segment	Measured Characteristics							Axle Factor	Seasonal Factor	Adjustment Factor based on 4.5%	2021 AADT
	ADT	Peak Hour	NB/ EB	SB/ WB	K (%)	D (%)	T_{daily} (%)				
Warren Avenue, east of St. Laurent Street/Savage Court	3,368	321	144	177	9.7	55.1	13.9	1.00	0.98	1.045	3,400
SR 434, west of St. Laurent Street/Savage Court	39,964	3,037	1,525	1,512	7.8	50.2	-	0.99	0.98	1.045	41,000
SR 434. east of St. Laurent Street/Savage Court	39,358	2,971	1,474	1,497	7.7	50.4	-	0.99	0.98	1.045	40,000
Warren Avenue, between Milwee Street & CR 427	2,265	223	111	112	10.1	50.2	-	0.99	0.98	1.045	2,300
Lemon Lane, north of Warren Avenue	827	86	62	24	10.8	72.1	-	0.99	0.98	1.045	850
Lemon Lane, south of Warren Avenue	349	42	30	12	12.0	71.4	-	0.99	0.98	1.045	350
Milwee Street, north of Warren Avenue	3,832	514	462	52	13.9	89.9	-	0.99	0.98	1.045	3,900

Traffic Volume Data – Turning Movement Counts

A review of historical AADTs and TMCs from previous studies was conducted to verify if the field-collected TMCs must be adjusted to account for the impacts (on traffic) from the COVID-19 pandemic. Intersection TMCs were manually adjusted to pre-COVID conditions based on the TMCs from the Alta Longwood development Traffic Impact Analysis Report dated November 2018 (provided in Appendix E). Truck factors and Peak Hour Factors (PHF) were obtained from the field-collected TMC data and were used in Synchro analysis. Figure 26 shows the adjusted existing turning movement volumes at the study intersections.

N

N.T.S.

Study Area

XX,XXX AADT (Volume Counts)

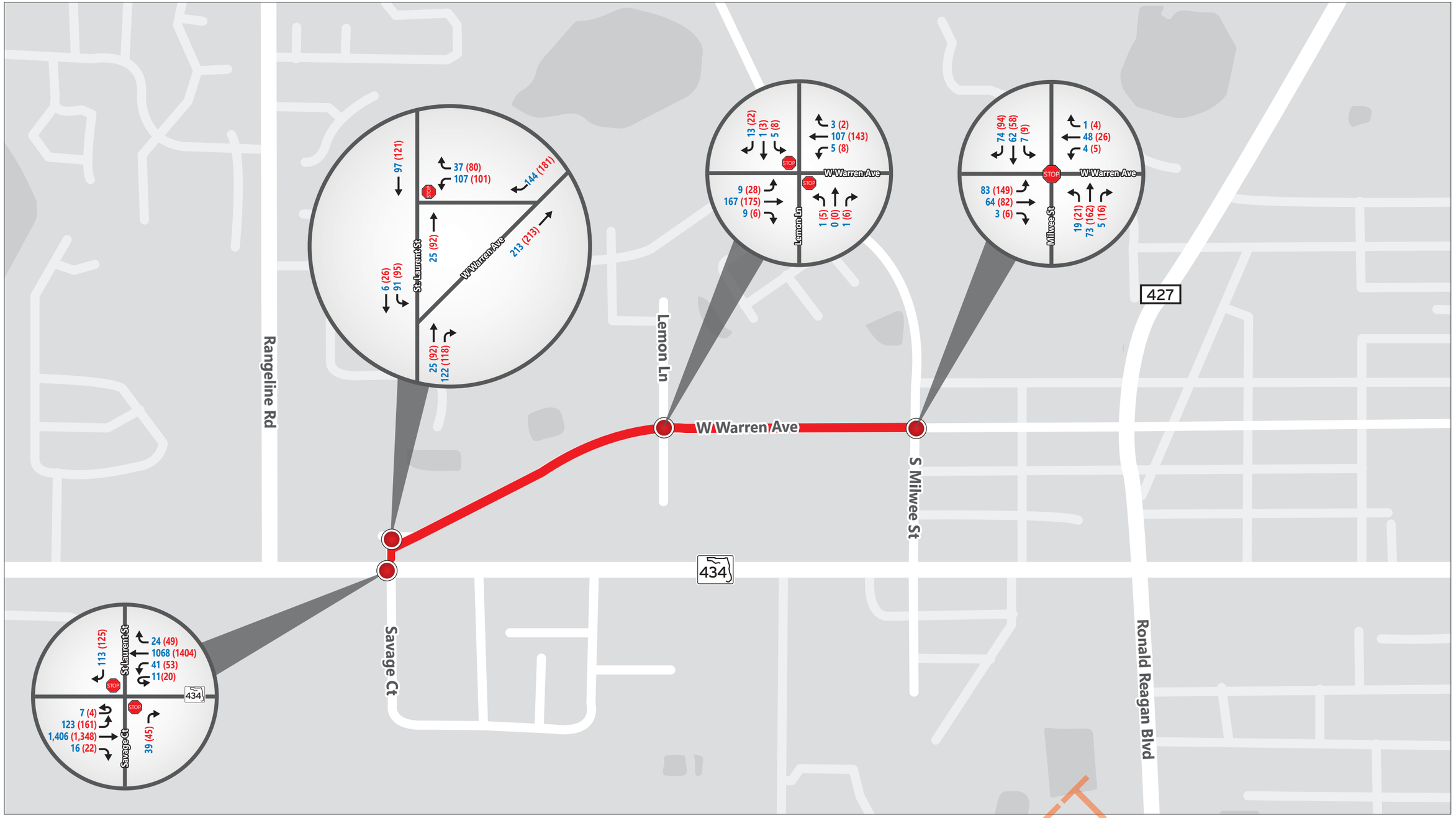
XX,XXX AADT (Classification Counts)

DRAFT

WEST WARREN AVENUE
Complete Streets Study

Figure 25

Existing Year 2021 Traffic Volumes
W Warren Ave Complete Street



DRAFT

WEST WARREN AVENUE
Complete Streets Study

Figure 26

Existing Turning Movement Volumes
W Warren Ave Complete Street

Existing Traffic Operations Analysis

The operational analysis was performed for 2021 existing conditions. Synchro 10 software was used to evaluate the study intersections for the existing conditions for auto traffic, while the *FDOT Quality/Level of Service Handbook* was used to evaluate multi-modal LOS for pedestrians, cyclists, and transit.

Existing Year 2021 Auto Analysis

The existing street network was modeled in Synchro using the turning movement volumes shown in Figure 26. None of the intersections are signalized, so all four intersections were analyzed using HCM 6th Edition methodology for the stop-controlled intersections. Table 6 summarizes the operation conditions, intersection delay and levels of service (LOS), for the study intersections for AM and PM peak hours. The synchro results are provided in Appendix F. Table 6 shows the worst-case delay (seconds per vehicle) for the critical movements (highest delay movements) at each stop-controlled intersection. As shown in Table 6, the study intersections operate at LOS C or better during the AM and PM peak conditions.

Table 6: Existing Year 2021 Intersection Analysis Results

Intersection Name	Year 2021 AM Peak			Year 2021 PM Peak		
	Critical Movement	Delay* (sec/veh)	LOS	Critical Movement	Delay* (sec/veh)	LOS
SR 434 and St. Laurent Street/Savage Court	WBL	20.6	C	WBL	20.5	C
Warren Avenue and St. Laurent Street	WBL	9.6	A	WBL	10.3	B
Warren Avenue and Lemon Lane	NBL/T/R	10.4	B	NBL/T/R	11.4	B
Warren Avenue and Milwee Street	EBL/T/R	9.3	A	EBL/T/R	13.1	B

**sec/veh = delay in seconds per vehicle*

Existing Year 2021 Multi-Modal Analysis

The multi-modal analysis is based on the generalized service volume Table 1 of the 2020 *FDOT Q/LOS Handbook* (included in Appendix F) using available sidewalk coverage, paved shoulder/bike lane coverage, lanes, transit frequency, and existing AADTs. Despite the relatively low AADTs, the lack of pedestrian and bicycle infrastructure results in lower LOS. Furthermore, Warren Avenue is not served by any transit lines (except for being within the ADA service area), though the adjacent SR 434 is served by LYNX Route 434 Crosstown. The results are provided in Table 7.

Table 7: Existing Year 2021 Multi-Modal Segment Analysis Results

Roadway/Segments	2021 AADT	Bicycle Mode LOS		Pedestrian Mode LOS		Transit Mode LOST*	
		Paved Shoulder/Bicycle Lane Coverage	LOS	Sidewalk Coverage	LOS	Sidewalk Coverage (No Transit)	LOS
Warren Avenue from St. Laurent Street to Lemon Lane	3,400	0-49%	D	50-84%	D	50-84%	F
Warren Avenue and St. Laurent Street**	3,500	0-49%	D	50-84%	D	50-84%	F

**There are no bus routes along Warren Avenue. However, it is covered in the ADA service area and SR 434 is served by LYNX Route 434 Crosstown.*

***2021 AADT – estimated based on TMC*

Future Traffic Projections

The development of traffic projections for the study corridor required the examination of historical growth patterns, overall countywide population projections, and projected travel patterns in the surrounding region. As such, the following three main sources were used to derive reasonable future traffic forecasts for the study area roadways. In addition, the existing and anticipated future land uses were reviewed to determine the recommended growth rate.

- **Travel Demand Model**: The Central Florida Regional Planning Model (CFRPM) version 6.1 was used in the traffic forecasting process.
- **Population Projections**: The population estimates obtained from the most current Bureau of Economic and Business Research (BEBR), Florida Population Studies, Volume 53 Bulletin 186, dated January 2020 was used.
- **Historical Traffic Trends Analysis**: Historical traffic trends analysis based on least squares regression analysis was conducted for the study roadways using traffic data from the Florida Traffic Online (FTO).

Travel Demand Model

The adopted regional planning model for FDOT District 5, CFRPM version 6.1, is the appropriate travel-forecasting tool for generating future daily traffic volume projections during a typical weekday within the study area. This travel demand model has the base year 2010 and horizon year 2040. The horizon year 2040 model plots are included in Appendix G. Table 8 summarizes the growth rates derived based on Traffic Analysis Zones (TAZ) #92, #93 and #224 (since Warren Avenue is not part of the model) using the 2010 base year and the horizon year 2040 model volumes.

Table 8: Model-based Growth Rate Summary

TAZs (Zones)	Years		Percentage Growth
	2010	2040	
92	5,120	6,583	0.95%
93	6,104	9,416	1.81%
224	15,497	16,581	0.23%
Total	**26,721**	**32,580**	**0.73%**

BEBR Growth Rates

The University of Florida's latest BEBR projections were obtained for Seminole County. The BEBR projections show an estimate for 2019 and projections for 2040. The low, medium, and high projections for 2040 are summarized in Table 9. The growth rates between 2019 and 2040 range from approximately 0.25% to 1.85% for Seminole County. BEBR population study data is included in Appendix H.

Table 9: BEBR Population-based Growth Rates

Growth Level	Years		Percentage Growth
	2019	2040	
Low	471,735	496,900	0.25%
Medium	471,735	574,700	1.04%
High	471,735	655,400	1.85%

Historical Traffic Trends

Based on the historical count information obtained from the 2019 FTO counts, linear regression trends analyses were performed for SR 434, Warren Avenue and Milwee Street. Table 10 shows the growth rates for each station and the average growth rate, weighted by AADT. The trends analysis sheets are provided in Appendix I.

Table 10: Historical TRENDS Analysis Growth Rates

Station	Location	2019 FTO AADT	2040 Trends AADT	Trends Growth%	R2 Value
770197	SR 434, west of Rangeline Road	41,000	42,000	0.12%	0.54%
770063	SR 434, west of CR 427	35,400	24,300	-1.49%	75.60%
778107	West Warren Avenue, west of South Milwee Street	4,300	10,300	6.64%	83.23%
778106	South Milwee Street, south of West Warren Avenue	2,800	2,700	-0.17%	1.71%

Historical AADT data retrieved from Florida Traffic Online

Despite the significantly higher TRENDS growth rate on Warren Avenue, it is anticipated that the 6.64% growth will not be met for the following reasons. Firstly, the surrounding area is already largely developed with mixed-uses such as residential, medical, commercial, and office uses. To account for the upcoming Alta Longwood residential development, these project trips will be added in addition to the background growth. Furthermore, traffic calming implementations as part of the Complete Streets design are anticipated to reduce diversion trips between CR 427 and SR 434, and the planned facilities are unlikely to attract an annual 6.64% increase in demand. CR 427 and SR 434 are higher speed, higher volume corridors, and the more logical choice for commuters passing through the area.

Programmed & Planned Improvements

The following are proposed Seminole County projects near the Warren Avenue study area:

- Church Avenue from Warren Avenue to Rangeline Road – Reconstruction
- Florida Central Parkway from SR 434 to Hunt Park Cove – Reconstruction
- Street improvements within Historic District (from Cent for Seminole Projects GIS Map)
    - Warren Avenue from SR 434 to CR 427
    - Milwee Street from SR 434 to Church Avenue
    - Wilma Street from SR 434 to Church Avenue
- CIP #01785234 Grace Lake Flood Improvements Subdivision Rehabilitation (located immediately south of the western end of the study corridor)
- CIP #00205311 SR 434 at CR 427 Intersection Improvements
- CIP #00251403 Quiet Zone Rail Crossings #622072W CR 427 at Longwood Street

Recommended Traffic Growth Rate & Future Volumes

Based on a comparison of annual growth rates from the three primary sources (CFRPM models, BEBR population estimates, and historical trends analysis), and a review of the existing and future land uses near the study corridor, an annual growth rate of 0.5% (average of BEBR low and CFRPM based growth rates) was used to derive the year 2040 projected turning movement volumes (from the adjusted year 2021 volumes), by applying a 1.09 long term growth factor to scale counts from 2021 to 2040. In

addition to the long-term growth factor, future project trips from the planned Alta Longwood residential development were added at the impacted intersections of SR 434 and St. Laurent Street intersection and Warren Avenue and St. Laurent Street intersection. Future AADTs were estimated from future TMCs to account for the Alta Longwood Development as well as the growth factor. Figure 27 and Figure 28 illustrate the projected the year 2040 AADTs and 2040 TMCs.

Future Operational Analysis Projections

The operational analysis was performed for the No-Build and Build 2040 design year conditions. Synchro 10 software was used to evaluate the study intersections for auto traffic, while the FDOT Quality/Level of Service Handbook was used to evaluate multi-modal LOS for pedestrians, cyclists, and transit.

Future Year 2040 Auto Analysis – No Build Alternative

Under the No Build alternative, the corridor operations are evaluated assuming the existing geometry. Table 11 summarizes the operational conditions, intersection delay and LOS, for study intersections for AM and PM design hours. As shown in Table 11, the study intersections are projected to operate without deficiencies, except for the EBL (at the median opening) at SR 434 and St. Laurent Street/Savage Court which operates at LOS E with a 95th percentile queue length of five vehicles. This 95th percentile queue is not anticipated to spill onto SR 434. The 95th percentile queues were found not exceeding three vehicles at the remaining study intersections. The 2040 No Build synchro results are provided in Appendix J.

Table 11: Future Year (2040) Intersection Analysis Results (No Build)

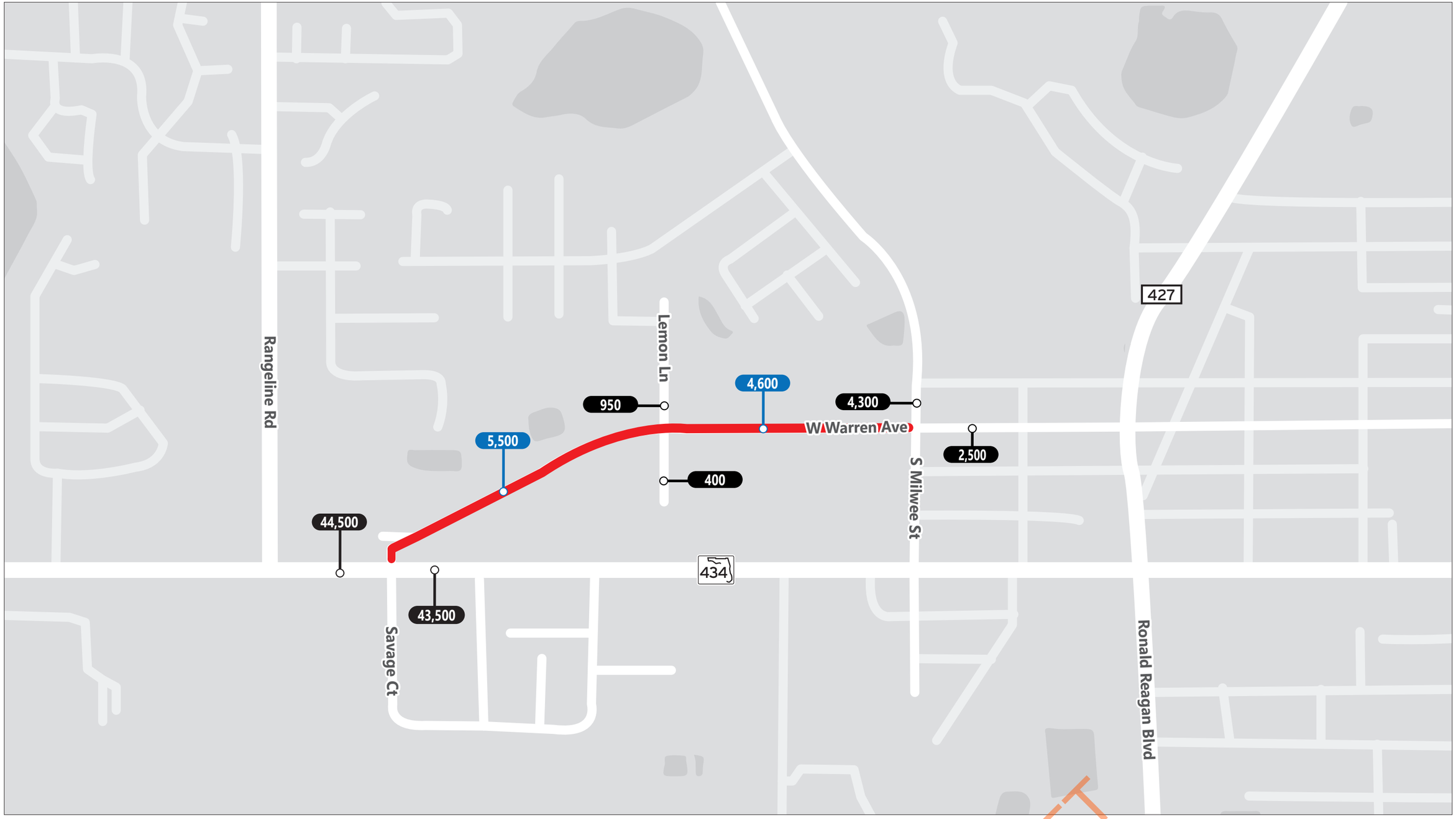
Intersection Name	Year 2040 No Build AM			Year 2040 No Build PM		
	Critical Movement	Delay (s)	LOS	Critical Movement	Delay (s)	LOS
SR 434 and St. Laurent Street/Savage Court	WBL	25.3	D	EBL	35.1	E
Warren Avenue and St. Laurent Street	WBL	10.3	B	WBL	10.9	B
Warren Avenue and Lemon Lane	NBL/T/R	10.7	B	NBL/T/R	11.7	B
Warren Avenue and Milwee Street	EBL/T/R	9.6	A	EBL/T/R	14.6	B

** sec/vehicle – delay in* seconds per vehicle

Future Year 2040 Auto Analysis – Build Alternative

For this study, the realignment alternative as shown in the SR 434 Corridor Study, dated March 2017, is evaluated as the Build alternative. Under the Build condition, St. Laurent Street and Warren Avenue will be realigned such that the stop control on the WB approach is converted to a stop control on the SB approach. The realignment plans from the SR 434 corridor study dated March 2017 are included in Appendix K.

Since none of the turn lane movements at the remaining study intersections are anticipated to exceed LOS D condition by the year 2040 with the No Build geometry, no other changes were evaluated as part of the Build alternative.



N.T.S.

Study Area

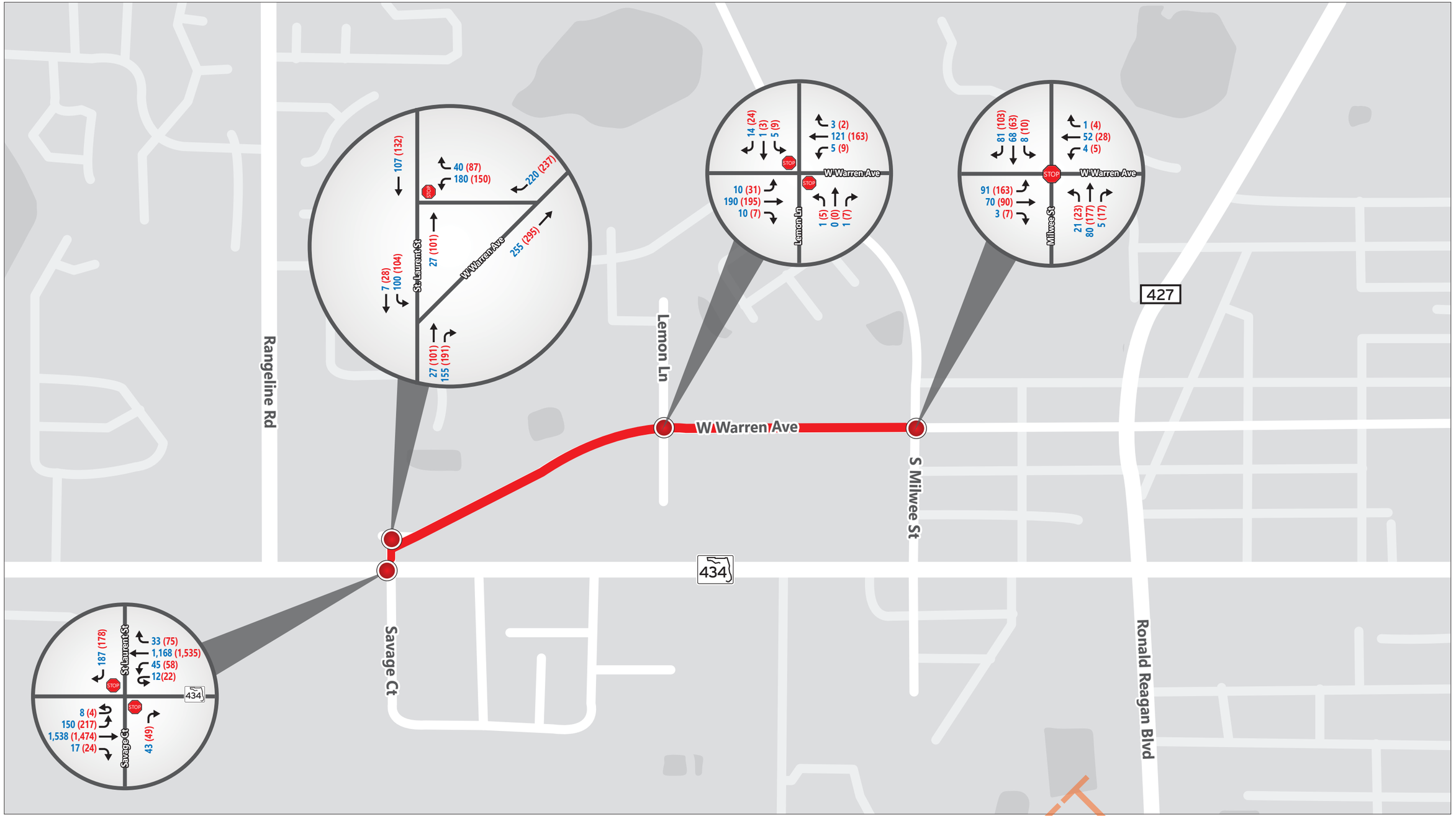
XX,XXX Projected AADT (Turning Movement Counts Estimate)

XX,XXX Projected AADT (Tube Counts Estimate)

WEST WARREN AVENUE
Complete Streets Study

Figure 27

Year 2040 Projected Traffic Volumes
W Warren Ave Complete Street



N.T.S.

Study Area

Study Intersections

AM (PM) Peak Hour Traffic Volumes

STOP Stop-Controlled Intersection

Traffic Movement

DRAFT

WEST WARREN AVENUE
Complete Streets Study

Figure 28

Projected Year 2040
Turning Movement Volumes
W Warren Ave Complete Street

As shown in Table 12, the study intersections are projected to operate without deficiencies, except for the EBL (at the median opening) at SR 434 and St. Laurent Street/Savage Court which operates at LOS E with a 95th percentile queue length of five vehicles. This 95th percentile queue is not anticipated to spill onto SR 434. Also, the results show a negligible queue length for the EBL movement at the realigned St. Laurent Street and Warren Avenue intersection (which will not back up to SR 434). The 2040 Build synchro results are provided in Appendix J. Please note that a separate signal warrant analysis was not conducted since none of the study intersections are anticipated to fail (below LOS D) under the year 2040 No Build and Build conditions.

Table 12: Future Year (2040) Intersection Analysis Results (Build)

Intersection Name	Year 2040 Build AM			Year 2040 Build PM		
	Critical Movement	Delay (s)	LOS	Critical Movement	Delay (s)	LOS
Warren Avenue and St. Laurent Street (Build)	SBL/R	10.6	B	SBL/R	10.7	B

** sec/vehicle – delay in* seconds per vehicle

Future Year 2040 Multi-Modal Analysis

It is anticipated that, as part of Complete Streets implementation, full sidewalk and bike lane coverage will be available along Warren Avenue in the Build condition. As such, the multi-modal LOS results are substantially improved despite the increased projected volumes, with the exception of transit LOS which is based on transit frequency. Table 13 demonstrates the anticipated transit LOS at buildout.

Table 13: Future Year (2040) Multi-Modal Segment Analysis Results

Roadway/Segments	2040 AADT	Bicycle Mode LOS		Pedestrian Mode LOS		Transit Mode LOS*	
		Paved Shoulder/Bicycle Lane Coverage	LOS	Sidewalk Coverage	LOS	Sidewalk Coverage (No Transit)	LOS
Warren Avenue from St. Laurent Street to Lemon Lane	5,500	85-100%	B	85-100%	C	85-100%	F
West Warren Avenue from Lemon Lane to South Milwee Street**	4,600	85-100%	B	85-100%	C	85-100%	F

* There are no bus routes along Warren Avenue. However, it is covered in the ADA service area and SR 434 is served by Lynx Route 434 Crosstown

*** 2040 AADT* – estimated based on TMC

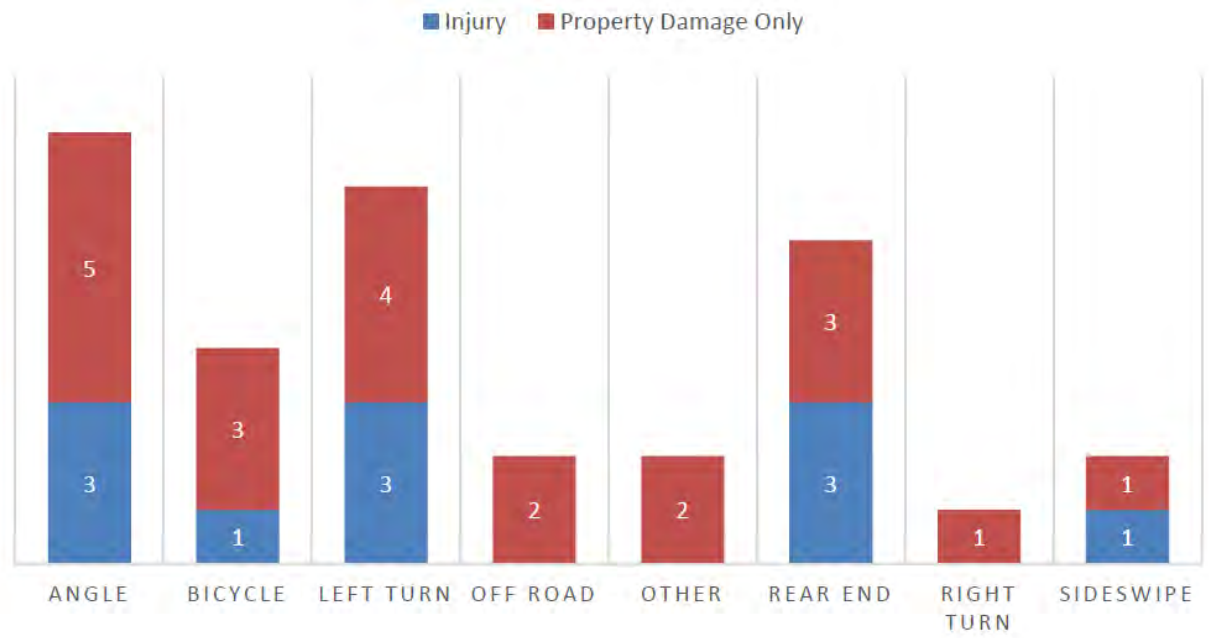
Safety and Crash Analysis

The latest available five years (from January 1st, 2016 to December 31st, 2020) of crash data in the study area were obtained using Signal Four Analytics. A total of 32 crashes were reported within the study area. Eleven crashes occurred within the influence of the SR 434 and St. Laurent Street intersection, while the two other intersections reported 15 crashes. The remaining six crashes occurred along Warren Avenue, not within the influence of the intersections. The crashes were analyzed to identify any crash hazards in the study area. Crashes were divided among four intersections and one segment:

- SR 434 and St. Laurent Street – 11 crashes
- Warren Avenue and St. Laurent Street – 4 crashes
- Warren Avenue and Lemon Lane – 3 crashes
- Warren Avenue and Milwee Street – 8 crashes
- Warren Avenue from St. Laurent Street to Milwee Street (not within intersection influence area) – 6 crashes

The severity and type of crashes were relatively low impact, with injuries accounting for 11 of the crashes while the remaining crashes resulted in property damage only. There were four cyclist-involved crashes within the five-year period but no fatalities. The major crash types were angle accounting for 25% of crashes, left turns for 22% of crashes, and rear-end for 19% of crashes. Three crashes involved alcohol, but none involved drug usage. Figure 29 describes all 32 crashes by type and severity. The following sections describe the crash characteristics by intersection and segment. The raw crash data is included in Appendix L.

Figure 29: Crash Summary Chart by Type and Severity (2016 – 2020)



Crash Summary by Intersection

SR 434 at St. Laurent Street

Due to the high occurrence of unrelated crashes along SR 434 (such as rear-ends within the vicinity), the crashes at this location were filtered by reading through the police reports and including only the collisions involving vehicles entering or exiting St. Laurent Street. In total, 11 crashes were recorded specifically related to St. Laurent Street. The most popular crash types were rear-ends (3), left-turns (3) and pedestrian/bicycle crashes (3). All three pedestrian/bicycle crashes occurred within the crosswalk along SR 434 at the St. Laurent Street approach. The singular 'other' crash was the result of a driver attempting a 3-point turn in an attempt to make an eastbound U-turn and reversing into the following eastbound left-turning vehicle. Four of these crashes resulted in injury with the remaining seven causing property damage only. Pavement conditions were dry (10) and in daylight (9) for the majority of crashes. Table 14 describes the crash circumstances by year.

Table 14: Crash Summary - SR 434 and St. Laurent Street

Crash Type	2016	2017	2018	2019	2020	Total	Proportion
Rear End	0	0	2	1	0	**3**	27%
Angle	0	0	0	0	1	**1**	9%
Left Turn	0	0	0	2	1	**3**	18%
Pedestrian & Bicycle	0	0	1	1	1	**3**	27%
Other	0	0	0	1	0	**1**	18%
Total	**0**	**0**	**3**	**5**	**3**	**11**	100%
Crash Severity	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**	**Proportion**
Injury	0	0	0	3	1	**4**	36%
Property Damage Only	0	0	3	1	3	**7**	64%
Total	**0**	**0**	**3**	**4**	**4**	**11**	100%
Pavement Condition	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**	**Proportion**
Wet	0	0	0	0	1	**1**	9%
Dry	0	0	3	4	3	**10**	91%
Total	**0**	**0**	**3**	**4**	**4**	**11**	100%
Light Condition	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**	**Proportion**
Daylight	0	0	3	3	3	**9**	82%
Dawn	0	0	0	0	1	**1**	9%
Dark	0	0	0	1	0	**1**	9%
Total	**0**	**0**	**3**	**4**	**4**	**11**	100%

Warren Avenue and St. Laurent Street

Only four crashes were recorded at the adjacent intersection of St. Laurent Street with Warren Avenue to the north of SR 434. The crash types included one of each rear-end, sideswipe, left-turn, and pedestrian/bicycle crashes. The crashes were relatively severe, with three resulting in injury and one resulted in property damage only. Conditions were dry and in daylight for all crashes. Alcohol influence was a major factor accounting for two of the crashes. Table 15 describes the crash circumstances by year.

Table 15: Crash Summary –Warren Avenue and St. Laurent Street

Crash Type	2016	2017	2018	2019	2020	Total	Proportion
Rear End	0	1	0	0	0	1	25%
Sideswipe	0	1	0	0	0	1	25%
Left Turn	0	1	0	0	0	1	25%
Pedestrian & Bicycle	0	0	0	1	0	1	25%
Total	**0**	**3**	**0**	**1**	**0**	**4**	100%
Crash Severity	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**	**Proportion**
Injury	0	2	0	1	0	3	75%
Property Damage Only	0	1	0	0	0	1	25%
Total	**0**	**3**	**0**	**1**	**0**	**4**	100%
Pavement Condition	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**	**Proportion**
Dry	0	3	0	1	0	4	100%
Total	**0**	**3**	**0**	**1**	**0**	**4**	100%
Light Condition	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**	**Proportion**
Daylight	0	3	0	1	0	4	100%
Total	**0**	**3**	**0**	**1**	**0**	**4**	100%
Under the Influence	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**	**Proportion**
Alcohol	0	2	0	0	0	2	50%

Warren Avenue at Lemon Lane

Only three crashes were reported at the intersection of Warren Avenue and Lemon Lane. These crashes consisted entirely of angle crashes, with two resulting in injury and the remaining crash causing property damage only. None of the crashes occurred in wet conditions, but one occurred during dark conditions. There were no pedestrian/bicycle related crashes at this intersection and there were also no drug or alcohol related incidents. Table 16 describes the circumstances by year.

Table 16: Crash Summary –Warren Avenue and Lemon Lane

Crash Type	2016	2017	2018	2019	2020	Total	Proportion
Angle	0	1	1	1	0	3	100%
Total	0	1	1	1	0	3	100%
Crash Severity	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**	**Proportion**
Injury	0	1	0	1	0	2	67%
Property Damage Only	0	0	1	0	0	1	33%
Total	0	1	1	1	0	3	100%
Pavement Condition	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**	**Proportion**
Dry	0	1	1	1	0	3	100%
Total	0	1	1	1	0	3	100%
Light Condition	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**	**Proportion**
Daylight	0	0	1	1	0	2	67%
Dark	0	1	0	0	0	1	33%
Total	0	1	1	1	0	3	100%

Warren Avenue at Milwee Street

There were eight crashes reported at this intersection, consisting of three angle crashes, two left turn crashes, and one each of rear end, sideswipe, and right turn crash types. Only one of these crashes resulted in injury, with the remaining seven causing property damage only. Of the eight total crashes, only two occurred in wet conditions, and five during dark conditions. There were no pedestrian or bicycle related crashes at this intersection and there were also no drug or alcohol related incidents. Table 17 describes the crash circumstances by year.

Table 17: Crash Summary –Warren Avenue and Milwee Street

Crash Type	2016	2017	2018	2019	2020	Total	Proportion
Rear End	1	0	0	0	0	1	13%
Sideswipe	0	0	0	1	0	1	13%
Angle	2	0	1	0	0	3	38%
Left Turn	2	0	0	0	0	2	25%
Right Turn	0	1	0	0	0	1	13%
Total	5	1	1	1	0	8	100%
Crash Severity	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**	**Proportion**
Injury	1	0	0	0	0	1	13%
Property Damage Only	4	1	1	1	0	7	88%
Total	5	1	1	1	0	8	100%
Pavement Condition	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**	**Proportion**
Wet	1	0	1	0	0	2	25%
Dry	4	0	0	1	0	5	63%
Slippery	0	1	0	0	0	1	13%
Total	5	1	1	1	0	8	100%
Light Condition	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**	**Proportion**
Daylight	2	0	0	1	0	3	38%
Dark	3	1	1	0	0	5	63%
Total	5	1	1	1	0	8	100%

Crash Summary by Segment

Eighteen crashes were recorded along Warren Avenue between SR 434/St. Laurent Street and Milwee Street, including crashes within the influence of intersections. Only six crashes occurred outside of the intersection influence areas. Angle crashes were notably the most common type of crash accounting for seven of the total crashes, followed by left turn and off-road crashes at three crashes each. Five crashes resulted in injury, while the remaining caused property damage only. Most crashes occurred in dry (15 crashes) and daylight (10 crashes) conditions. Notably, eight crashes occurred in dark conditions. Two crashes involved alcohol. Only one cyclist related crash occurred along the segment at the St. Laurent Street intersection. Table 18 describes the crash circumstances by year.

Table 18: Crash Summary –Warren Avenue between St. Laurent Street and Milwee Street

Crash Type	2016	2017	2018	2019	2020	Total	Proportion
Rear End	1	1	0	0	0	**2**	11%
Angle	2	1	2	1	1	**7**	39%
Left Turn	2	1	0	0	0	**3**	17%
Right Turn	0	1	0	0	0	**1**	6%
Off Road	1	0	0	2	0	**3**	17%
Pedestrian & Bicycle	0	0	0	1	0	**1**	6%
Other	0	0	0	1	0	**1**	6%
Total	**6**	**4**	**2**	**5**	**1**	**18**	100%
Crash Severity	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**	**Proportion**
Injury	0	3	0	2	0	**5**	28%
Property Damage Only	6	1	2	3	1	**13**	72%
Total	**6**	**4**	**2**	**5**	**1**	**18**	100%
Pavement Condition	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**	**Proportion**
Wet	1	0	1	0	0	**2**	11%
Dry	5	3	1	5	1	**15**	83%
Mud, Dirt, Gravel	0	1	0	0	0	**1**	6%
Total	**6**	**4**	**2**	**5**	**1**	**18**	100%
Light Condition	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**	**Proportion**
Daylight	2	2	1	4	1	**10**	56%
Dawn	0	0	0	1	0	**1**	6%
Dark	4	2	1	0	0	**8**	39%
Total	**6**	**4**	**2**	**5**	**1**	**18**	100%
Under the Influence	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**	**Proportion**
Alcohol	1	1	0	0	0	**2**	11%

Overview of Pedestrian and Bicycle Crashes

A total of four bicycle-related crashes occurred during the study period, none of which resulted in a fatality. No pedestrian crashes were recorded at the study intersections. Three of the bicycle collisions resulted in property damage only, while the remaining one resulted in a non-incapacitating injury (Crash #889758731). Of the four, one crash occurred in each of years 2018 and 2020, and two occurred in 2019. All four crashes were related to the intersection crossings at St. Laurent Street. Table 19 describes the crash circumstances in chronological order.

Table 19: Pedestrian and Cyclist Crash Summary

Condition	Vehicle Orientation	Location	Description
Crash #87772380			
Dry/Daytime	Southbound	In Marked Crosswalk	A vehicle entering the SR 434 intersection traveling southbound on St. Laurent Street struck a bicyclist traveling eastbound along the crosswalk.
Crash #88959212			
Dry/Daytime	Southbound	In Marked Crosswalk	A vehicle entering the SR 434 intersection traveling southbound on St. Laurent Street struck a bicyclist traveling eastbound along the crosswalk.
Crash #88958731			
Dry/Daytime	Southbound	In Unmarked Crosswalk	A westbound vehicle on West Warren Avenue approaching the intersection with St. Laurent Street failed to stop for the stop sign, striking the cyclist before fleeing. The cyclist reported a sore leg and the injury was noted as non-incapacitating.
Crash #89857709			
Dry/Daytime	Southbound	In Marked Crosswalk	A vehicle entering the SR 434 intersection traveling southbound on St. Laurent Street struck a bicyclist traveling eastbound along the crosswalk.

Summary of Safety Conditions

Based on the crash conditions and types at the four intersections, the following patterns are noted which can help identify potential mitigation strategies at the study intersection:

- All the pedestrian/bicycle related crashes have occurred at the intersection of SR 434 and St. Laurent Street. Out of these four crashes, three of them occurred in the marked crosswalk on the north leg of this intersection where a bicycle was hit by a southbound vehicle on St. Laurent Street. The most likely reason is the obstruction of the sightline because of the Chase Bank building.
- The highest frequency crash location was at the SR 434 and St. Laurent Street intersection, accounting for approximately 34% of all study area crashes. A significant portion (5 out of 11) of these crashes were from vehicles crossing through the eastbound median opening to take a left or U-turn and being struck by oncoming westbound traffic.
- Angle and left-turn crashes are common at the Lemon Lane and Milwee Street intersections.

Environmental Assessment

Soils

Soil types were mapped within the Study Area using GIS data obtained from the Natural Resources Conservation Service (NRCS). The Study Area NRCS soils map can be found in Appendix M. The following are general descriptions of the soil types and their characteristics, taken from the USDA *Soil Conservation Service's Soil Survey of Seminole County, Florida* (March 1990). Hydric and non-hydric

soil designations are based on the *Hydric Soils of Florida Handbook*. Non-hydric soils are typically associated with uplands and hydric soils are generally associated with wetlands.

Adamsville-Sparr fine sand (2)-This level to nearly level and somewhat poorly drained soil is typically found on low ridges in uplands and low knolls in flatwoods. Slopes are dominantly less than 2 percent. The seasonal high-water table is within 12 to 36 inches of the surface for Adamsville and Sparr soils for up to 6 months. Permeability of Adamsville soil is rapid whereas permeability of Sparr soil is rapid in the surface and subsurface but slow to moderately slow in the subsoil. The water capacity is low to very low for Adamsville soil and low in the surface and subsurface and moderate in the subsoil for Sparr soil. This is considered a non-hydric soil typically indicative of uplands.

Myakka & EauGallie fine sand (20)-This nearly level and poorly drained soil is typically found on broad plains in flatwoods. Slopes are dominantly less than 2 percent. The seasonal high-water table is within 12 inches of the surface for 1 to 4 months during most years. Permeability of Myakka soil is rapid in the surface and subsurface layers and moderately rapid in the subsoil. The permeability of EauGallie soil is rapid in the surface and subsurface layers, moderately rapid in the sandy portion of the subsoil and moderately slow in the in the loamy subsoil. The available water capacity is very low in the surface and subsurface layers and moderate to high in the subsoil of Myakka and EauGallie soils. This is considered a hydric soil with non-hydric inclusions and can be indicative of uplands or wetlands depending on where it lies in the landscape.

Pomello fine sand 0-5% slopes (27)-This nearly level to gently sloping, moderately well drained soil is found on low ridges and knolls in flatwoods. Slopes range from 0 to 5 percent. In most years, the seasonal high-water table is at a depth of 36 to 60 inches for 1 to 4 months. Permeability is very rapid in the surface and subsurface layers and moderately rapid in the subsoil. The available water capacity is very low in the surface and subsurface layers and high in the subsoil. This is considered a non-hydric soil typically indicative of uplands.

Tavares-Millhopper fine sand 0-5% slopes (31)-This nearly level to gently sloping, moderately well drained soil is typically located on low ridges and knolls in uplands. Slopes are nearly smooth to slightly convex. The seasonal high-water table is typically at a depth of 36 to 60 inches for 2 to 6 months. Permeability of Tavares soil is rapid to very rapid. The permeability of Millhopper is rapid in the surface and subsurface layers and moderately slow in the subsoil. This is considered a hydric soil with non-hydric inclusions and can be indicative of uplands or wetlands depending on where it lies in the landscape.

Urban Land (34)-This soil designation is a result of natural soils that cannot be observed or identified because it is covered by urban facilities such as shopping centers, parking lots, industrial buildings, houses, streets, airports, and other structures. Soils in unoccupied areas such as lawns, vacant lots, playgrounds and parks, mostly consist of Astatula, Apopka, Millhopper, Myakka, Pomello, St. Lucie, Paola, Smyrna, Tavares, and EauGallie soils. These soils have been altered by grading and shaping, or a fill material has been used to cover the natural soils to a depth of 12 inches. Drainage systems have been established in most areas and the seasonal high-water table is dependent upon the functioning of the system. This disturbed soil designation is considered a non-hydric soil associated with developed lands which are typically classified as uplands.

Wetlands and Other Surface Waters

The wetland and surface water analysis used the 2014 St. Johns River Water Management District (SJRWMD) Land Use and Cover GIS shapefile and aerial interpretation based on satellite imagery dated 2019. The data shows that there are no natural wetland systems within the Study Area. Surface waters (permitted stormwater ponds) are present within the Study Area. A map of wetlands and surface

waters can be found in Appendix M. There are no anticipated impacts to wetlands and therefore this project will be exempt from state and federal wetland permitting and mitigation requirements.

Floodplain

According to the Federal Emergency Management Agency (FEMA) Digital Flood Insurance Rate Map (DFIRM) dated October 2019, the majority of the Study Area is located within Floodplain Zone X. This zone has a 0.2% annual chance of flood; areas of 1% chance of flood with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance of flood. A small area in the southwestern portion of the Study Area is within the 100-year floodplain where there is a 1% annual chance of flood. This floodplain Zone (AE) has determined base flood elevations of 85 NAVD and is associated with Lake Seminole.

Any fill of floodplain occurring in this project between the Seasonal Highwater Level (SHWL) and the floodplain elevation will require floodplain compensation. No net encroachment into the floodplain is allowed between the SHWL and the floodplain elevation. It is anticipated the floodplain encroachment can be avoided.

The location of floodplain that falls within the Study Area is illustrated in Appendix M.

Cultural Resources

Cultural resources are defined by the National Historic Preservation Act (NHPA) of 1966 and governed by federal and state regulations. Section 106 of the NHPA provides a general process for cultural resource assessments and requires historic and archaeological resources be considered in project planning for federally funded or permitted projects. Cultural resources or "historic properties" include any "prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the National Register of Historic Places (NRHP)."

Archaeological sites or historic resources that are listed, determined eligible, or considered potentially eligible by the State Historic Preservation Office (SHPO) for listing in the NRHP, are identified in Table 20. These sites along with other state recorded sites and survey locations are graphically depicted in the map series found in Appendix M.

Table 20: Summary of Cultural Resources

Cultural Resources	Within Warren Avenue Study Area
SHPO Structures	4
SHPO Bridges	0
SHPO Resource Groups	1
National Register (Site, District, Building)	0
Archaeological Sites	0
SHPO Surveys	3

According to the Florida Master Site File (FMSF), there are four (4) historic sites within the Study Area. All four sites are listed as ineligible for inclusion in the NRHP but have not been evaluated by SHPO. These include the Baptist Church Parsonage (SE 01608), the R.S. Entzminger House (SE01617), the Loder House (SE01619), and the 241 W Bay Ave Site (SE01634). Three (3) of the sites are classified as being a potential contributor to the National Register District however, the Loder House is listed as ineligible and does not contribute to the resource group. One historic resource group located in the Study Area is associated with the Longwood Historic District and is eligible for inclusion in the NRHP.

In addition, three (3) cultural resource assessment surveys have been conducted within and in the vicinity of the Study Area. These previous surveys cover the entire study area.

Threatened and Endangered Species

The Florida Natural Areas Inventory (FNAI) and GIS data from the U.S. Fish and Wildlife Service (USFWS) and the Florida Fish and Wildlife Conservation Commission (FWC) identified Core Foraging Habitat (CFA) and Consultation areas for threatened and endangered species within the Study Area. Consultation areas, identified by USFWS, encompass all areas where populations are known to exist. Table 21 provides a summary of threatened and endangered species with the potential to occur within the Study Area.

Table 21: Summary of Protected Species with the Potential to Occur

Flora and Fauna	Federal Status	State Status	Probability of Occurrence
Many-flowered grass-pink (Calopogon multiflorus)	NL	T	Low
Chapmans's sedge (Carex chapmanii)	NL	T	Low
Sand butterfly pea (Centrosema arenicola)	NL	E	Low
Piedmont jointgrass (Coelorachis tuberculosa)	NL	T	Low
Beautiful pawpaw (Deeringothamnus pulchellus)	E	FE	Low
Hartwrightia (Hartwrightia floridana)	NL	T	Low
Star anise (Illicium parviflorum)	NL	E	Low
Nodding pinweed (Lechea cernua)	NL	T	Low
Scrub lupine (Lupinus aridorum)	E	FE	Low
Florida spiny-pod (Matelea floridana)	NL	E	Low
Celestial lily (Nemastylis floridana)	NL	E	Low
Florida beargrass (Nolina atopocarpa)	NL	T	Low
Cutthroat grass (Panicum abscissum)	NL	E	Low
Giant orchid (Pteroglossaspis ecristata)	NL	T	Low
Florida willow (Salix floridana)	NL	E	Low
Clasping warea (Warea amplexifolia)	E	FE	Low
Carter's warea (Warea warea)	E	FE	Low
Wood Stork	T	FT	Low
Everglades Snail Kite	E	FE	Low
Florida Scrub Jay	FT	FT	Low
Bald Eagle	NL*	NL*	Low
Florida Sandhill Crane	NL	T	Moderate
Gopher Tortoise	C	T	Low
Eastern Indigo Snake	T	FT	Low

F = Federally
E = Endangered: species in danger of extinction throughout all or a significant portion of its range.
T = Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.
C = Candidate for listing at the Federal level by the U. S. Fish and Wildlife Service
*NL = Not currently listed, *protected under the Bald and Golden Eagle Protection Act*
Source: US Fish and Wildlife Service (USFWS); Florida Natural Areas Inventory (FNAI).

Onsite stormwater ponds and swales may provide intermittent habitat for wading and colonial birds that may utilize these areas for nesting and foraging. As such, wood storks (*Mycteria americana*), a Federally Threatened species, and the sandhill crane (*Grus canadensis pratensis*), a State Threatened species and are not likely to occur; however, if impacts to wood stork Core Foraging Area exceeds 0.5 acre, mitigation may be required. The Study Area falls within the USFWS consultation area for the Everglades snail kite (*Rostrhamus sociabilis plumbeus*) and the Florida scrub-jay (*Aphelocoma coerulescens*); however, no habitat is present for these species and given the high urban density, they are not anticipated to utilize the Study Area. The bald eagle (*Haliaeetus leucocephalus*) is protected under the Federal Bald and Golden Eagle Protection Act. The USFWS indicates that all projects greater than 660 feet from a bald eagle nest do not need USFWS review and the nearest known nest is located over two (2) miles away.

Open areas within the Study Area may contain habitat suitable for the gopher tortoise (*Gopherus polyphemus*), a State Threatened species. If gopher tortoise burrows are found onsite and cannot be avoided, the appropriate permits will need to be obtained from FWC to relocate the tortoises to an approved offsite recipient area prior to construction activities. No permit will be required if all burrows can be avoided by a 25-foot radius. Eastern indigo snakes (*Drymarchon couperi*) are often associated with gopher tortoise burrows. Given the Study Area contains less than 25 acres of xeric habitat and if less than 25 gopher tortoises burrows are impacted, and provided the developer adheres to the USFWS's 2010 Eastern Indigo Snake Standard Protection Measures, this project should not have an adverse effect on the Eastern indigo snake.

Four (4) federally listed and seventeen (17) state-listed plants may occur within the project vicinity based on the results of an Information for Planning and Conservation (IPaC) and FNAI review; however, no listed plant species are expected to occur or be disturbed within the Study Area due to the highly developed nature of the area. There are no restrictions on the presence of any state-listed plant species unless the sale of plants is involved.

Contamination Sites

Contaminated sites within the Study Area were identified using data made available by the Florida Department of Health (DOH) and the Florida Department of Environmental Protection (FDEP). Table 22 summarizes the number of sites that have the potential for contamination or are being monitored, while a map depicting the locations of these sites can be found in Appendix M. It must be noted that the facilities shown are regulated facilities which have the potential for contamination or environmental concern but are not necessarily contaminated.

Table 22: Summary of Contamination Analysis

Analysis Type	Within Study Area
Biomedical Waste Facility	4
Brownfield Area	5
Hazardous Waste Facility	4
National Pollutant Discharge Elimination System (NPDES)	5
Petroleum Contamination Monitoring Site (PCMS)	1
Storage Tank Contamination Monitoring (STCM)	3
SUPER Act Risk Sources	0
US Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCA) Regulated Facilities	5
Toxic Release Inventory Sites	0
Waste Cleanup Responsible Party Sites - Open	0

As shown in Appendix M, the majority of the Study Area is within the Longwood Economic Enhancement Program (LEEP) brownfield area whereas redevelopment may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Additionally, the Study Area contains potential hazard and risk sites which include four (4) biomedical waste facilities and four (4) hazardous waste facilities. The National Pollutant Discharge Elimination System (NPDES) was created in 1972 by the Clean Water Act to address water pollution by regulating point sources that discharge pollutants to waters of the U.S. of which five (5) sites are within the Study Area. The Study Area contains one (1) facility being monitored for petroleum contamination with work already having been completed and three (3) storage tank contamination monitoring (STCM) sites with only one (1), Orlando Health South Seminole Hospital, being open. In addition, there are five (5) U.S. EPA Resource Conservation and Recovery Act (RCA) regulated facilities which include the generation, transportation, treatment, storage and/or the disposal of hazardous waste within the Study Area. These facilities include: Tire Kingdom, Energy Systems and Service Inc., E-Z Go Textron Inc. EZR Co Inc. and Orlando Health South Seminole Hospital.

Social Resources

Any public or private social resources that were considered relevant to the Study Area were considered. Table 23 below summarizes the public facilities within the Study Area. The results of the social resource evaluation depicting the existing community resources are illustrated in Appendix M.

Table 23: Summary of Social Resources

Social Resources	Within Study Area
Cemetery	0
Community Center	0
Cultural Center	0
Fire Station	1
Government Building	0
Health Care Facility	4
Hospital	1
Park	2
Religious Center	0
School	0
Social Service Facility	0
Veteran Facility	0

Source: FGDL, ETDM

Reiter Park and Heroes Park are within and adjacent to the Study Area along the eastern extent of Warren Avenue. These parks are protected under the Department of Transportation Act (DOT Act) of 1966, section 4(f), which limits the use of public land. Reiter Park is a neighborhood, athletic/recreational park with fishing piers while serving as a hub for social gathering for concerts and festivals in the amphitheater. A small portion of Heroes Park is located within the Study Area and is a tribute to fallen first responders and military after the collapse of the World Trade Center. The Study Area also encompasses the Longwood Fire Department adjacent to Reiter Park, four (4) health care facilities, and one (1) hospital.

Field Review & Local Input

Field Review

A field review was conducted on February 18, 2021. Accompanying the project manager were city staff and drainage, engineering, and multi-modal specialists. The following list summarizes input noted during the field review:

- The city has identified the need for sidewalk along the west side of Milwee Street south of Warren Avenue. The desire is to provide connection with a sidewalk along the south side of Warren Avenue within the study limits.
- The city prefers continuing brick pavers for any new on-street parking or bicycle lanes added to Warren Avenue as part of this Complete Streets project.
- There are several utilities present in the study corridor, especially along the south side of Warren Avenue. Utility observed include AT&T, MCI, gas, overhead electric, and fiber. If utility is relocated underground, considerations will be needed for adding lighting.
- The city has interest in installing better lighting, noting cobra (similar to lighting in Reiter Park) or more decorative poles (similar to lighting on Milwee Street).
- There is a local desire for additional parking to support events at Reiter Park.
- Consider midblock crossing locations for hospital staff crossing to Reiter Park. At Reiter Park entrance, a curb cut already exists. Consider bulb out to prevent on-street parking blocking the curb cut.
- Flooded areas identified in sidewalk/crosswalk.
- Make consideration for proper spacing from hospital helipad and potential impacts to hospital signage.
- A more permanent, aesthetically pleasing wall is needed along the Heritage Business Centre parcel.
- There is a pedestrian entrance to the Alta Apartments property.
- Northbound vehicles on St. Laurent Street headed into the bank drive-thru were observed striking curb.
- Eastbound left turns from SR 434 into St. Laurent Street were observed queuing over 120 seconds at 10:45 am with a queue of two to three cars. Southbound right turns from St. Laurent Street onto SR 434 were observed queuing on average 15 to 20 seconds.
- Westbound right turning vehicles from SR 434 were observed turning into the channelized right turn to Warren Avenue at high speeds, potentially providing conflicts for pedestrians in the crosswalk and vehicles exiting Wendy's driveway. Driver confusion was observed for southbound left turn vehicles from St. Laurent Street to Warren Avenue on where to negotiate the turn. No queuing was observed for westbound left turning vehicles from Warren Avenue onto St. Laurent Street.
- Reiter Park is the city's signature park including the following amenities: tennis courts, basketball court, walking path, playground, fishing pier, multi-use amphitheater, splash pad, fitness equipment, zen garden, and pavilions. Potentially consider extending theme of park out into Warren Avenue.

PVT Meeting #1

A Project Visioning Team (PVT) was established with the following representation:

- City of Longwood – Public Works, Community Development, and Fire Department

- Seminole County – Engineering
- FDOT District Five – Traffic Operations
- MetroPlan Orlando
- LYNX
- East Central Florida Regional Planning Council
- Wood Partners Group/Alta Apartments
- Orlando Health South Seminole Hospital
- Team D/Longwood Groves Subdivision
- Judy's Doll Shop
- Longwood Historic Society
- J Raymond Construction

The first PVT meeting was held on March 9, 2021. During the meeting, the project team presented on topics including project location and background, overview of the complete streets study process, roles of the PVT, anticipated project schedule, guiding principles, existing conditions, and next steps. The following key takeaways were discussed during the open forum meeting:

- The PVT voted top guiding principles for the project as public safety, drainage improvements, enhanced connections to Reiter Park and historic district, recreational opportunities, economic growth, improve health, and social equality. The PVT suggested the following guiding principles in addition to the ones presented:
  - Aesthetics – streetscaping and business entrances; public art
  - Wildlife preservation
  - Innovative intersection treatments
  - Event parking and traffic management though dynamic messaging signs
- Be mindful during study and recommendations of wildlife and protected species in the area.
- When presenting guiding principles to the public for feedback, consider separating bicycle and pedestrian safety from traffic safety to get clear input from the public on priority.
- Review traffic with new improvements at St. Laurent Street to verify no significant impact to westbound Warren Avenue.
- Consider benefit or disadvantage to closing off some access currently providing cut throughs from Warren Avenue to SR 434.
- There is a need for additional parking during events at Reiter Park.
- The addition of bicycle lanes would significantly increase existing pavement width, potentially promoting high speeds. A separate path or brick paver would be recommended to accommodate bicycles. Currently there are challenges during events with pedestrians and bicyclists in sidewalk.
- Additional input:
  - Implement more brick
  - Traffic speed concerns
  - Relocate powerlines underground
  - Need safe connections and crossings
  - Need of a sidewalk from hospital to Warren Avenue
  - Sanitary sewer main improvements

Next Steps

The next step for the Warren Avenue Complete Streets Study is to analyze future conditions, develop the guiding principles, and identify the issues and opportunities. Alternatives will then be defined and

analyzed using the guiding principles and issues and opportunities. Last, a recommended alternative will be selected, and a concept plan will be developed. The complete streets study process is shown in Figure 30. The PVT and public will be engaged throughout the study process.

Figure 30: Complete Streets Study Process

Appendices

Appendix A	LYNX Route Map
Appendix B	Planning Documents
Appendix C	Drainage
Appendix D	Raw Traffic Counts
Appendix E	Alta Longwood Traffic Impact Study
Appendix F	Existing Conditions Synchro Analysis
Appendix G	CFRPM Year 2040 Model Plots
Appendix H	BEBR Estimates
Appendix I	Historical Trends Analyses
Appendix J	Year 2040 No Build / Build Synchro Analysis
Appendix K	SR 434 Corridor Study Realignment Plans
Appendix L	Raw Crash Data
Appendix M	Environmental Assessment Maps

Appendix A

LYNX Route Map

WELCOME ABOARD!

LYNX operates 83 Links to great places throughout Central Florida. If you don't see your destination here, **CONTACT US** and we can connect you to the right Link for your trip.

Riding LYNX is also easy on your wallet.
You can pay for your trip as you board the bus:

ONE RIDE	ALL-DAY	
$2.00 Regular	**$4.50** Regular	Link 709 and LYMMO are currently Fare Free.
$1.00 with LYNX discount fare ID	**$2.25** with LYNX discount fare ID	Please see individual Link schedules for more information.
		EXACT FARE REQUIRED No change given.

Ready to roll? Look inside for more info...

Public Notice of Title VI Rights
The Central Florida Regional Transportation Authority d/b/a LYNX:

- LYNX operates its programs and services without regard to race, color, and national origin in accordance with Title VI of the Civil Rights Act. Any person who believes she or he has been aggrieved by any unlawful discriminatory practice under Title VI may file a complaint with LYNX.
- For more information on LYNX' Civil Rights Program, and the procedures to file a complaint, contact, 407-841-2279 ext. 6117, email Title6officer@golynx.com, or visit our administrative office at 455 N. Garland Avenue, Orlando, Florida 32801. For more information, visit www.golynx.com
- A complainant may file a complaint directly with the Federal Transit Administration Office of Civil Rights, Attention Title VI Program Coordinator, East Building, 5th Floor-TCR, 1200 New Jersey Avenue, SE, Washington, DC 20590.
- If information is needed in another language, contact 407-841-2279 ext. 6117.

LYNX®

LYNX is the public transit provider for Orange, Osceola and Seminole counties. Additional connectivity with Lake and Polk counties.

CONTACT US for information on fares, bus stops, schedules and trip planning:

407-841-5969 *phone*

golynx.com *web*

THANK YOU FOR RIDING LYNX!

BROCHURE

UCF AREA

Links 13, 15, 104, 434, NL621, NL622

DIRECT SERVICE TO:

- Bithlo
- Downtown Orlando
- Orlando VA Clinic
- Oviedo
- Seminole State College Altamonte and Oviedo Campuses
- U of Central Florida
- Waterford Lakes Town Center

LYNX®

Effective: DECEMBER 2020

Other accessible formats available upon request

SUNRAIL
CENTRAL FLORIDA'S COMMUTER TRAIN
sunrail.com 855.RAIL.411 Easy LYNX connections

NeighborLink 621 provides pick ups from Waterford Lakes Town Center to Bithlo Health Center. It provides curb-to-curb service in the Bithlo and Wedgefield communities.

See brochure for Links: 6, 51, 313 — Colonial Plaza SuperStop

104 LIMITED-STOP SERVICE FROM LYNX CENTRAL STATION TO SEMORAN BLVD

LEGEND
- Regular Links: Service every 30 minutes or better during day times
- Service every 60 minutes or less frequently
- Select Service
- Connecting Links
- FastLinks (Stops only as shown)
- SunRail line and station

SEE ROUTE SCHEDULES FOR DETAILED INFO

LYNX SuperStop · Hospital · Point of Interest

Schematic Map Not to Scale

NORTH

UCF AREA

BUS SERVICE FREQUENCY

To plan your trip or view full bus schedule visit **golynx.com**

EFFECTIVE DECEMBER 2020 - ALL BUS SERVICE FREQUENCIES ARE APPROXIMATE AND SUBJECT TO CHANGE

Times indicate departures from the BEGINNING of the route. Diagrams show major points on each Link – buses make additional local stops along the way.

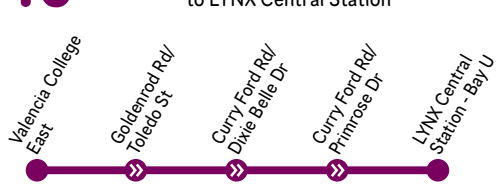
13 INBOUND
to LYNX Central Station

MINS AFTER THE HOUR	MON–FRI	SAT	SUN/HOL
FIRST TRIP	6:00 am	6:05 am	6:10 am
DAY 6–7 am	:50	:55	--
DAY 7–8 am			:05
DAY 8 am–1 pm			:00
DAY 1–2 pm	--		
DAY 2–6 pm	:00		
EVE 6–7 pm		--	
EVE 7–9 pm		:00	
NIGHT 9–11 pm			--
LAST TRIP	11:00 pm	11:00 pm	9:00 pm

13 OUTBOUND
to University of Central Florida

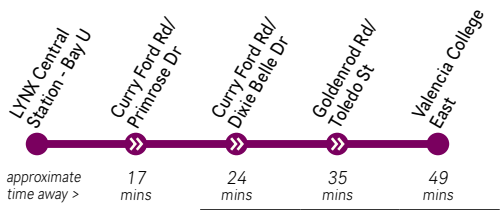
MINS AFTER THE HOUR	MON–FRI	SAT	SUN/HOL
FIRST TRIP	5:30 am	5:30 am	6:45 am
DAY 6 am–7 pm	:30	:30	:45
NIGHT 7–11 pm	:45	:45	:45
LAST TRIP	10:45 pm	10:45 pm	7:45 pm

15 INBOUND
to LYNX Central Station



MINS AFTER THE HOUR	MON–FRI	SAT	SUN/HOL
FIRST TRIP	5:15 am	5:25 am	5:20 am
DAY 5–6 am	:15, :45	:25, :45	--
DAY 6–9 am	:10, :40	:15, :45	:15
DAY 9 am–5 pm	:15, :45		
EVE 5–7 pm	:20, :50		
EVE 7–8 pm		:15, :50	
NIGHT 8–11 pm	:15	:20	
LAST TRIP	11:15 pm	10:20 pm	9:15 pm

15 OUTBOUND
to Valencia College East



MINS AFTER THE HOUR	MON–FRI	SAT	SUN/HOL
FIRST TRIP	4:50 am	4:45 am	5:15 am
DAY 5 am–6 pm	:15, :45	:15, :45	:15
EVE 6–7 pm	:20, :50		
NIGHT 7–11 pm	:15	:15	
LAST TRIP	11:15 pm	9:15 pm	8:15 pm

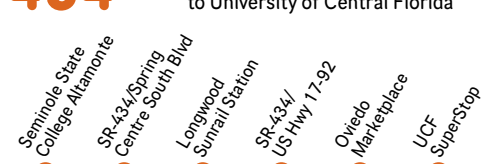
104 INBOUND
to LYNX Central Station

MINS AFTER THE HOUR	MON–FRI	SAT	SUN/HOL
FIRST TRIP	4:35 am	5:10 am	5:05 am
DAY 5–6 am	:05, :30, :55	:10, :40	:05
DAY 6–7 am	:25, :55		
DAY 7–8 am		:10, :35	
DAY 8–9 am		:05, :30	
DAY 9 am–4 pm		:00, :30	:00
DAY 4–5 pm	:25		
DAY 5–6 pm	:00, :30	:00, :35	
EVE 6–7 pm	:05, :30	:10	:05
EVE 7–8 pm	:00		
NIGHT 8–9 pm	:15		:10
NIGHT 9–10 pm	:10		--
LAST TRIP	10:10 pm	10:10 pm	8:10 pm

104 OUTBOUND
to University of Central Florida

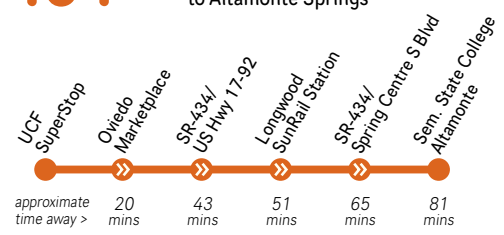
MINS AFTER THE HOUR	MON–FRI	SAT	SUN/HOL
FIRST TRIP	5:15 am	5:15 am	5:45 am
DAY 5 am–2 pm	:15, :45	:15, :45	:45
DAY 2–3 pm			
DAY 3–7 pm			
NIGHT 7–10 pm	:15	:15	
LAST TRIP	10:15 pm	10:15 pm	7:45 pm

434 EASTBOUND
to University of Central Florida



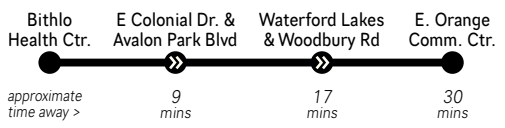
MINS AFTER THE HOUR	MON–FRI	SAT	SUN/HOL
FIRST TRIP	5:15 am	5:25 am	NO SERVICE
ALL-DAY	:15	:25	
LAST TRIP	8:15 pm	8:25 pm	

434 WESTBOUND
to Altamonte Springs



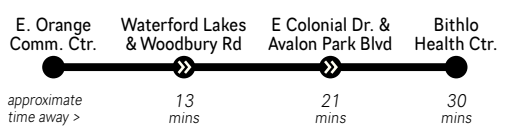
MINS AFTER THE HOUR	MON–FRI	SAT	SUN/HOL
FIRST TRIP	5:45 am	5:55 am	NO SERVICE
ALL-DAY	:45	:55	
LAST TRIP	7:45 pm	7:55 pm	

621 WESTBOUND
to Alafaya Trl & Colonial Dr



APPROX. FREQ. IN MINS	MON–SAT	SUN/HOL
FIRST TRIP	5:10 am	NO SERVICE
DAY	Scheduled pick-up / drop-off every 60 minutes	
LAST TRIP	6:05 pm	

621 EASTBOUND
to Bithlo Health Center



APPROX. FREQ. IN MINS	MON–SAT	SUN/HOL
FIRST TRIP	5:45 am	NO SERVICE
DAY	Scheduled pick-up / drop-off every 60 minutes	
LAST TRIP	6:45 pm	

NeighborLink 621 *is based at Colonial Drive and Sophie Boulevard It provides pick ups along Colonial Drive between Alafaya Trail and the Bithlo Health Center. It operates as a curb-to-curb service within Bithlo, Avalon Park and Wedgefield.*

Passengers must call 407-244-0808 at least two hours in advance to arrange a pickup in the curb-to-curb service areas of Bithlo and Wedgefield or use the NeighborLink app.

622 NEIGHBORLINK
Oviedo

NeighborLink 622 *is based out of the Oviedo Medical Center and operates a service area primarily within the City of Oviedo. It also provides a fixed route to and from the Oviedo Mall from the Oviedo Medical Center.*

Passengers must call 407-244-0808 at least two hours in advance to arrange a pickup or use the NeighborLink app.

MINS AFTER THE HOUR	MON–FRI	SAT	SUN/HOL
FIRST TRIP	5:54 am	6:04 am	NO SERVICE
DAY 5–7 am	:54	:04	
DAY 7–10 am	:59		
DAY 10 am–3 pm	:54		
DAY 3–7 pm	:59		
LAST TRIP	6:59 pm	7:04 pm	

Departing from Oviedo Medical Center to Oviedo Mall

LYNX Bus Tracker · LYNX PawPass · LYNX See & Say · NeighborLink

Download our apps to help you pay your fare, report safety and security concerns, get real-time information and schedule your NeighborLink ride.

Download on the App Store · GET IT ON Google Play

CAN'T FIND YOUR LINK?

LYNX has 21 brochures, listed below, to help you find your bus. Each one shows the Links serving a certain area, like Fern Park, or a particular service, like LYMMO. You can also use the table to the right, which shows each Link and the brochure it appears on. Note that some Links are shown on more than one brochure.

LYNX BUS SERVICE BROCHURES

- (A) Apopka SuperStop
- (B) Colonial Plaza SuperStop
- (C) Colonial Dr East/West
- (D) Colonial Dr West/West Oaks Mall
- (E) Destination Parkway
- (F) Dixie Belle Dr & Gatlin Ave
- (G) FastLink Services
- (H) Fern Park SuperStop
- (I) Florida Mall SuperStop
- (K) Kissimmee Intermodal Station
- (L) LYNX Central Station
- (M) LYMMO
- (N) Orlando International Airport
- (O) Poinciana Walmart Center
- (P) Rosemont SuperStop
- (Q) Sanford Seminole Centre
- (R) SunRail Connections
- (S) UCF Area
- (T) Disney Area
- (U) Washington Shores SuperStop
- (V) Winter Park Village Area

QUESTIONS?

Visit us online
golynx.com

Give us a call
407.841.LYNX

Like us on Facebook
facebook.com/golynx

Follow us on Twitter
@lynxbusorlando

Link	Brochure
1	R V
3	F L
6	B F
7	I L
8	E L
9	P R V
10	K
11	L N R
13	B L S
15	L S
18	K L R
20	L U
21	L U
23	P R V
24	U
25	L U
26	K O
28	C L
29	C L
34	Q R
36	L U
37	I
38	E L
40	L R U
42	E I N R
44	A
45	Q R
46E	Q R
46W	Q R
48	C L
49	C L
50	L T
51	B L N
54	D L
55	K
56	K T
57	K U
58	E
102	H L R V
103	H Q
104	C L S
105	C D L
106	A L P
107	I L
108	I K
111	E I N R
125	D L R
155	K R
300	L T
301	T
302	P T
303	T U
304	T
305	T
306	O R T
313	B L
319	L U
405	A
426	O
434	R S
436N	A H R
436S	F H N
443	P R V
709	K
FastLink	
407	G N K
418	G I R
441	G I K L
LYMMO	
L M	Orange Line
L M	Lime Line
M	Grapefruit Line
NeighborLink	
601	O
604	O R
611	D
612	C D
613	D
621	S
622	S
631	K R
632	K R
641	E
651	Q R
652	A H R V

Appendix B

Planning Documents

metroplan orlando
A REGIONAL TRANSPORTATION PARTNERSHIP

2045

Metropolitan Transportation Plan

Cost Feasible Plan

Strategies, Programs and Projects

Adopted: 12/09/2020

MTP ID#	County	Facility Name & Limits	Project Description	Length (miles)	Project Phase	Total Project Cost (2020 $'s) *Shown in Millions*	Existing TIP: 2020-2025		Plan Period I: 2026-2030		Plan Period II: 2031-2035		Plan Period III: 2036-2045		Unfunded Needs	
							Phase	*YOE $'s*	*Phase*	*YOE $'s*	*Phase*	*YOE $'s*	*Phase*	*YOE $'s*	*Phase*	*YOE $'s*
2004	Orange / Osceola	John Young Pkwy From: Ball Park Rd - To: Town Loop Blvd	ITS/Technology	1.68	PD&E	$ -		$ -		$ -		$ -		$ -		$ -
					PE	$ 0.04		$ -	PE	$ 0.06		$ -		$ -		$ -
					ROW	$ -		$ -		$ -		$ -		$ -		$ -
					ENV	$ -		$ -		$ -		$ -		$ -		$ -
					CST	$ 1.26		$ -		$ -	CST	$ 1.95		$ -		$ -
					CEI	$ 0.13		$ -		$ -	CEI	$ 0.20		$ -		$ -
2103	Orange	SR 527 / Orange Ave From: Grant St - To: Gore St	Safety Improvements	1.01	PD&E	$ -		$ -		$ -		$ -		$ -		$ -
					PE	$ 0.04		$ -	PE	$ 0.06		$ -		$ -		$ -
					ROW	$ 0.57		$ -	ROW	$ 0.75		$ -		$ -		$ -
					ENV	$ 0.63		$ -	ENV	$ 0.83		$ -		$ -		$ -
					CST	$ 1.26		$ -		$ -	CST	$ 1.95		$ -		$ -
					CEI	$ 0.13		$ -		$ -	CEI	$ 0.20		$ -		$ -
2150	Seminole	SR 434 From: Rangeline Rd - To: US 17/92	Complete Streets w/Shared Use Path	2.14	PD&E	$ 0.54		$ -	PD&E	$ 0.71		$ -		$ -		$ -
					PE	$ 0.36		$ -	PE	$ 0.47		$ -		$ -		$ -
					ROW	$ 1.52		$ -	ROW	$ 2.01		$ -		$ -		$ -
					ENV	$ 1.34		$ -	ENV	$ 1.77		$ -		$ -		$ -
					CST	$ 10.17		$ -	CST	$ 13.42		$ -		$ -		$ -
					CEI	$ 1.02		$ -	CEI	$ 1.34		$ -		$ -		$ -
2172	Orange	SR 527 / Orange Ave From: Michigan St - To: Gore Ave	Complete Streets / Safety / Ops	1.25	PD&E	$ 0.31		$ -	PD&E	$ 0.41		$ -		$ -		$ -
					PE	$ 0.22		$ -	PE	$ 0.29		$ -		$ -		$ -
					ROW	$ 0.31		$ -	ROW	$ 0.41		$ -		$ -		$ -
					ENV	$ 0.79		$ -	ENV	$ 1.04		$ -		$ -		$ -
					CST	$ 6.26		$ -	CST	$ 8.26		$ -		$ -		$ -
					CEI	$ 0.63		$ -	CEI	$ 0.83		$ -		$ -		$ -
2055	Orange	SR 435 / Kirkman Rd From: Conroy Rd - To: Raleigh St	Operational / Safety	2.35	PD&E	$ -		$ -		$ -		$ -		$ -		$ -
					PE	$ 0.19		$ -	PE	$ 0.24		$ -		$ -		$ -
					ROW	$ 2.51		$ -	ROW	$ 3.31		$ -		$ -		$ -
					ENV	$ 1.47		$ -	ENV	$ 1.95		$ -		$ -		$ -
					CST	$ 5.58		$ -		$ -	CST	$ 8.65		$ -		$ -
					CEI	$ 0.56		$ -		$ -	CEI	$ 0.86		$ -		$ -
2112	Orange	SR 527 / Orange Ave From: Holden Ave - To: Gatlin Ave	Safety Improvements	0.27	PD&E	$ -		$ -		$ -		$ -		$ -		$ -
					PE	$ 0.25		$ -		$ -	PE	$ 0.39		$ -		$ -
					ROW	$ 1.00		$ -		$ -	ROW	$ 1.55		$ -		$ -
					ENV	$ 2.00		$ -		$ -	ENV	$ 3.10		$ -		$ -
					CST	$ 3.50		$ -		$ -	CST	$ 5.43		$ -		$ -
					CEI	$ 0.03		$ -		$ -	CEI	$ 0.05		$ -		$ -
2120	Osceola	US 192 From: Hoagland Blvd - To: John Young Pkwy	Safety Improvements	1.76	PD&E	$ -		$ -		$ -		$ -		$ -		$ -
					PE	$ 0.08		$ -		$ -	PE	$ 0.12		$ -		$ -
					ROW	$ 0.99		$ -		$ -	ROW	$ 1.54		$ -		$ -
					ENV	$ 1.11		$ -		$ -	ENV	$ 1.72		$ -		$ -
					CST	$ 2.21		$ -		$ -	CST	$ 3.42		$ -		$ -
					CEI	$ 0.22		$ -		$ -	CEI	$ 0.34		$ -		$ -
2163	Orange	SR 527 / Orange Ave From: Gem St - To: Kelsey Rd	Complete Streets / Safety / Ops	1.55	PD&E	$ 0.39		$ -		$ -	PD&E	$ 0.60		$ -		$ -
					PE	$ 0.27		$ -		$ -	PE	$ 0.42		$ -		$ -
					ROW	$ 0.39		$ -		$ -	ROW	$ 0.60		$ -		$ -
					ENV	$ 0.97		$ -		$ -	ENV	$ 1.50		$ -		$ -
					CST	$ 7.73		$ -		$ -		$ -	CST	$ 15.84		$ -
					CEI	$ 0.77		$ -		$ -		$ -	CEI	$ 1.58		$ -

MTP ID#	County	Facility Name & Limits	Project Description	Length (miles)	Project Phase	Total Project Cost (2020 $'s) *Shown in Millions*	Existing TIP: 2020-2025		Plan Period I: 2026-2030		Plan Period II: 2031-2035		Plan Period III: 2036-2045		Unfunded Needs	
							Phase	*YOE $'s*	*Phase*	*YOE $'s*	*Phase*	*YOE $'s*	*Phase*	*YOE $'s*	*Phase*	*YOE $'s*
4014	Seminole	North St From: Raymond Ave. - To: S Ronald Reagan Blvd	Complete Streets	2.44	PD&E	$ 0.61		$ -		$ -	PD&E	$ 0.95		$ -		$ -
					PE	$ 0.34		$ -		$ -	PE	$ 0.53		$ -		$ -
					ROW	$ 0.98		$ -		$ -	ROW	$ 1.51		$ -		$ -
					ENV	$ 1.53		$ -		$ -	ENV	$ 2.38		$ -		$ -
					CST	$ 9.77		$ -		$ -		$ -	CST	$ 4.00	Local	$ 4.20
					CEI	$ 0.98		$ -		$ -		$ -	CEI	$ 2.00		$ -
4020	Osceola	Poinciana Blvd From: Lizzia Brown Rd - To: Trafalgar Blvd	Complete Streets	0.99	PD&E	$ 0.25		$ -		$ -	PD&E	$ 0.38		$ -		$ -
					PE	$ 0.14		$ -		$ -	PE	$ 0.21		$ -		$ -
					ROW	$ 0.40		$ -		$ -		$ -	ROW	$ 0.81		$ -
					ENV	$ 0.62		$ -		$ -		$ -	ENV	$ 1.27		$ -
					CST	$ 3.95		$ -		$ -		$ -	CST	$ 4.00	Local	$ 4.20
					CEI	$ 0.40		$ -		$ -		$ -	CEI	$ 0.81		$ -
4010	Orange	N Rock Springs Rd From: Votaw Rd - To: Ponkan Rd	Complete Streets	3.05	PD&E	$ 0.76		$ -		$ -		$ -	PD&E	$ 1.56		$ -
					PE	$ 0.43		$ -		$ -		$ -	PE	$ 0.87		$ -
					ROW	$ 1.22		$ -		$ -		$ -	ROW	$ 2.50		$ -
					ENV	$ 1.91		$ -		$ -		$ -	ENV	$ 3.92		$ -
					CST	$ 12.18		$ -		$ -		$ -	CST	$ 4.00	Local	$ 4.20
					CEI	$ 1.22		$ -		$ -		$ -	CEI	$ 2.50		$ -
4013	Seminole	Mitchell Hammock Rd From: SR 426 - To: Lockwood Blvd	Complete Streets	2.85	PD&E	$ 0.71		$ -		$ -		$ -	PD&E	$ 1.46		$ -
					PE	$ 0.40		$ -		$ -		$ -	PE	$ 0.82		$ -
					ROW	$ 1.14		$ -		$ -		$ -	ROW	$ 2.33		$ -
					ENV	$ 1.79		$ -		$ -		$ -	ENV	$ 3.66		$ -
					CST	$ 11.39		$ -		$ -		$ -	CST	$ 4.00	Local	$ 4.20
					CEI	$ 1.14		$ -		$ -		$ -	CEI	$ 2.33		$ -
4009	Seminole	W Warren Ave From: St. Laurent St - To: S. Milwee St	Complete Streets w/Shared Use Path	0.61	PD&E	$ 0.15		$ -		$ -		$ -	PD&E	$ 0.31		$ -
					PE	$ 0.10		$ -		$ -		$ -	PE	$ 0.21		$ -
					ROW	$ 0.44		$ -		$ -		$ -	ROW	$ 0.89		$ -
					ENV	$ 0.38		$ -		$ -		$ -	ENV	$ 0.79		$ -
					CST	$ 2.91		$ -		$ -		$ -	CST	$ 4.00	Local	$ 4.20
					CEI	$ 0.29		$ -		$ -		$ -	CEI	$ 0.60		$ -
4017	Orange	Vick Road From: Sun Bluff Ln - To: Lester Rd	Complete Streets	1.03	PD&E	$ 0.26		$ -		$ -		$ -	PD&E	$ 0.53		$ -
					PE	$ 0.14		$ -		$ -		$ -	PE	$ 0.30		$ -
					ROW	$ 0.41		$ -		$ -		$ -	ROW	$ 0.85		$ -
					ENV	$ 0.65		$ -		$ -		$ -	ENV	$ 1.33		$ -
					CST	$ 4.13		$ -		$ -		$ -		$ -	CST	$ 8.47
					CEI	$ 0.41		$ -		$ -		$ -		$ -	CEI	$ 0.85
4018	Orange	Vick Road From: Lester Rd - To: Ponkan Rd	Complete Streets	0.81	PD&E	$ 0.20		$ -		$ -		$ -	PD&E	$ 0.41		$ -
					PE	$ 0.11		$ -		$ -		$ -	PE	$ 0.23		$ -
					ROW	$ 0.32		$ -		$ -		$ -	ROW	$ 0.66		$ -
					ENV	$ 0.51		$ -		$ -		$ -	ENV	$ 1.04		$ -
					CST	$ 3.23		$ -		$ -		$ -		$ -	CST	$ 6.63
					CEI	$ 0.32		$ -		$ -		$ -		$ -	CEI	$ 0.66
4016	Orange	Vick Road From: Old Dixie Hwy - To: Sun Bluff Ln	Complete Streets	1.04	PD&E	$ 0.26		$ -		$ -		$ -	PD&E	$ 0.53		$ -
					PE	$ 0.15		$ -		$ -		$ -	PE	$ 0.30		$ -
					ROW	$ 0.42		$ -		$ -		$ -	ROW	$ 0.85		$ -
					ENV	$ 0.65		$ -		$ -		$ -	ENV	$ 1.34		$ -
					CST	$ 4.16		$ -		$ -		$ -		$ -	CST	$ 8.54
					CEI	$ 0.42		$ -		$ -		$ -		$ -	CEI	$ 0.85

Source: 2045 Metropolitan Transportaiton Plan Needs Assessment & MetroPlan Orlando Prioritized Project List (2040 PPL)

FY 2020/21 - 2024/25
Orlando Urban Area
Transportation Improvement Program

Adopted June 29, 2020

Amended March 10, 2021

metroplan orlando

A REGIONAL TRANSPORTATION PARTNERSHIP

FY 2020/21 - 2024/25

Orlando Urban Area

Transportation Improvement Program

Prepared By

MetroPlan Orlando

Adopted by the MetroPlan Orlando Board on June 29, 2020

(Amended March 10, 2021)

This report was prepared under the FY 2020/21 Orlando Urban Area Unified Planning Work Program Element 300. It was financed by a grant through the U.S. Department of Transportation in conjunction with the Florida Department of Transportation and local governments of the Orlando Urban Area.

metroplan orlando
A REGIONAL TRANSPORTATION PARTNERSHIP

APPROVED BY
METROPLAN ORLANDO
C Goldfarb 6-29-2020

RESOLUTION NO. 20-10

SUBJECT:
Endorsement of FY 2020/21 - 2024/25
Transportation Improvement Program

WHEREAS, MetroPlan Orlando is the organization designated by the Governor as being responsible, together with the State, for carrying out the provisions of 23 U.S.C. 134, as provided in 23 U.S.C. 104 (f) (3), and capable of meeting the requirements of Section 3 (a) (2) and (e) (1), and 4 (a), and 5 (9) (1) and (1) of the Federal Transit Act 49 U.S.C. 1602 (a) (2) and (e) (1), 1603 (a) and 1604 (9) (1) and (1); and

WHEREAS, the Transportation Improvement Program, including the annual element, shall be endorsed annually by the MetroPlan Orlando Board and submitted (1) to the Governor and the Federal Transit Administrator and (2) through the State to the Federal Highway Administrator as provided in 23 U.S.C. 450.316;

NOW, THEREFORE, BE IT RESOLVED by the MetroPlan Orlando Board that the FY 2020/21 - 2024/25 Orlando Urban Area Transportation Improvement Program (TIP) is hereby endorsed as an accurate representation of the area's priorities as developed through a continuing, comprehensive planning process carried on cooperatively by the State and local communities in accordance with the provisions of 23 U.S.C. 134.

Passed and duly adopted this 29th day of June, 2020.

CERTIFICATE

The undersigned duly qualified as Chairwoman of the MetroPlan Orlando Board certifies that the foregoing is a true and correct copy of a Resolution adopted at a legally convened meeting of the MetroPlan Orlando Board.

Honorable Bob Dallari, Chairman

Attest:
Cathy Goldfarb

Cathy Goldfarb, Sr. Board Services Coordinator
and Recording Secretary

MetroPlan Orlando
Transportation Improvement Program
State Highway Projects

Seminole County

FDOT Financial Management Number	Project Name or Designation	Project Description: From	To	Length (Miles)	Work Description	2045 MTP Reference	Historic Cost Prior to 2020/21 ($000's)	Project Status and Cost ($000's): 2020/21	2021/22	2022/23	2023/24	2024/25	Funding Sources	Project Phases	Estimated Future Cost After 2024/25 ($000's)	Total Project Cost ($000's)	Responsible Agency
4452211	SR 426	SR 417 Overpass	Eyrie Dr.	3.63	Resurfacing	Cost Feas. Plan Page 17		1,045	0	0	0	0	DDR	PE			FDOT
								35	0	0	0	0	DIH	PE			
								0	0	815	0	0	DDR	CST			
								0	0	11	0	0	DIH	CST			
								0	0	6,574	0	0	DS	CST			
							10	**1,080**	**0**	**7,400**	**0**	**0**	**Total**		**0**	**8,490**	
4453161	SR 46	SR 15/600/US 17/92	Mellonville Ave.	1.02	Resurfacing	Cost Feas. Plan Page 17		686	0	0	0	0	DDR	PE			FDOT
								10	0	0	0	0	DIH	PE			
								0	0	2,601	0	0	DDR	CST			
								0	0	11	0	0	DIH	CST			
							0	**696**	**0**	**2,612**	**0**	**0**	**Total**		**0**	**3,308**	
4453961	SR 434	SR 436	SR 419	0.01	Bridge Repair/Rehabilitation	Cost Feas. Plan Page 17		2	0	0	0	0	DIH	PE			FDOT
								396	0	0	0	0	BRRP	CST			
								2	0	0	0	0	DIH	CST			
							29	**400**	**0**	**0**	**0**	**0**	**Total**		**0**	**429**	
4464451	SR 15/600/US 17/92	School St.	Orange Blvd.	0.14	Truck Parking Facility	Cost Feas. Plan Page 17		9	0	0	0	0	DIH	PE			FDOT
								1,500	1,125	1,800	2,250	5,147	DDR	ROW			
								20	25	25	0	0	DIH	ROW			
							1	**1,529**	**1,150**	**1,825**	**2,250**	**5,147**	**Total**		**TBD**	**TBD**	
4464881	Warren Ave.	SR 434	Milwee St.	0.64	Urban Corridor Improvements	Cost Feas. Plan Page 17		301	0	0	0	0	SU	PLN			Longwood
							0	**301**	**0**	**0**	**0**	**0**	**Total**		**TBD**	**TBD**	
4464911	SR 434 Roundabouts	W of Jetta Pt.	S of Artesia St.	2.06	Miscellaneous Construction	Cost Feas. Plan Page 17		750	0	0	0	0	ACSA	PE			Seminole Co.
								797	0	0	0	0	SU	PE			
							0	**1,547**	**0**	**0**	**0**	**0**	**Total**		**TBD**	**TBD**	
4464931	Winter Park Dr.	Red Bug Lake Rd.	SR 434	3.75	Urban Corridor Improvements	Cost Feas. Plan Page 17		301	0	0	0	0	ACSA	PLN			Casselberry
							0	**301**	**0**	**0**	**0**	**0**	**Total**		**TBD**	**TBD**	
4469031	E. Church Ave.	CR 427/N. Ronald Reagan Blvd.	SR 15/600/US 17/92	1.18	Urban Corridor Improvements	Cost Feas. Plan Page 17		0	0	0	0	296	SU	PE			Longwood
							0	**0**	**0**	**0**	**0**	**296**	**Total**		**TBD**	**TBD**	
4488551	Railroad Crossing	at E. Lake Mary Blvd. in Lake Mary			Railroad Signal Safety Project *Amendment 3/10/21*	Cost Feas. Plan Page 17		3	0	0	0	0	RHP	RRU			FDOT
							0	**3**	**0**	**0**	**0**	**0**	**Total**		**0**	**3**	

Districtwide

4477241	Truck & Freight Alternative Site Analysis for Truck Parking Facilities	MetroPlan Orlando Region & Volusia Co.			Project Development & Environment Study *Amendment 3/10/21*	Cost Feas. Plan Page 17		2,000	0	0	0	0	ACFP	PD&E			FDOT
							0	**2,000**	**0**	**0**	**0**	**0**	**Total**		**0**	**2,000**	

MetroPlan Orlando
Prioritized Project List

State Roadway Projects - Widening and Complete Streets

FDOT FM #	PM Score	MPO Priority #	Performance Measure(s)	Project Location	Responsible Agency	Project Type	Project Name / Designation	From	To	Length (Mi.)	Work Description	Phase(s) Funded in TIP	Phases(s) Unfunded	Est. Cost of Next Phase	Est. Year of Next Phase
New Projects for Next 5th Year															
---	16	8	Safety/ System Performance	Orange Co./ Orlando	FDOT	Complete Street	SR 436	SR 50	OIA	7.28	Context Sensitive Improvements	Study - FY 2018/19	PE CST	$ 4,100,000 TBD $ 4,100,000	
---	15.5	9	Safety/ System Performance	Orange Co.	FDOT	TSMO	SR 527 / Orange Ave.	at Sand Lake Rd.	---	---	Improve intersection	---	PE CST	$ 238,366 $ 1,656,550 $ 1,894,916	
435733-1 441144-1	15.5	10	Safety/ System Performance	Orange Co.	FDOT	Complete Street	SR 527/Orange Ave.	SR 482/Sand Lake Rd.	SR 15/Hoffner Ave.		Context Sensitive Improvements	*CST - FY 2020/21*	---	---	---
---	15.5	11	Safety/ System Performance	Orlando	FDOT	Complete Street	SR 552/Curry Ford Rd.	Crystal Lake Dr.	SR 436	2.03	Context Sensitive Improvements	---	PE CST	$ 1,522,500 $ 8,120,000 $ 9,642,500	
---	15.5	12	Safety/ System Performance	Orange Co.	FDOT	TSMO ITS - Mplan	Bicycle & Pedestrian Innovative ITS on US 441	Holden Ave.	I-4	1.08 4.00	Install bicycle and pedestrian ITS technologies	---	CST	$ 100,000	
---	14.5	13	Safety	Orlando	FDOT	Sidewalk	US 441 / Orange Blossom Tr.	SR 50	Church St.	0.91	Fill in Sidewalk Gaps	---	PE CST	$ 1,000,000 $ 4,700,000 $ 5,700,000	
---	14.5	14	Safety/ System Performance	Sanford	FDOT	Complete Street	US 17/92	SR 417	SR 46/1st St.	2.80	Context Sensitive Improvements	Study - FY 2016/17	PE CST	$ 2,100,000 $ 11,200,000 $ 13,300,000	
---	14.5	15	Safety/ System Performance	Orlando	FDOT	Complete Street	SR 50	N. Tampa Ave.	Hughey Ave.	1.40	Context Sensitive Improvements	---	PE CST	$ 1,050,000 $ 5,600,000 $ 6,650,000	
---	14.5	16	Safety/ System Performance	Orlando	FDOT	Complete Street	SR 500/US 441	SR 50	Clarcona-Ocoee Rd.	4.80	Convert roadway segment from rural to urban	---	PE CST	$ 3,600,000 $ 19,200,000 $ 22,800,000	
	14.5	17	Safety/ System Performance	Seminole Co.	FDOT	TSMO	SR 46 (25th St)	at US 17/92			Intersection Improvements		PE CST	$ 100,000 $ 400,000 $ 500,000	
---	14	18	Safety	Orange Co.	FDOT	Sidewalk	SR 482 (Sand Lake Rd.)	US 441 / OBT	Orange Ave	2.26	Fill in Sidewalk Gaps	---	PE CST	$ 110,000 $ 550,000 $ 660,000	
---	14	19	Safety/ System Performance	Orange Co.	FDOT	TSMO	SR 438/Silver Star Rd.	at Hiawassee Rd.	---	---	Improve intersection	---	PE CST	$ 100,000 $ 400,000 $ 500,000	
---	14	20	Safety/ System Performance	Orange Co.	FDOT	Complete Street	SR 482/Sand Lake Rd.	SR 500/US 441	SR 527/Orange Ave.	2.30	Context Sensitive Improvements	---	PE CST	$ 1,725,000 $ 9,200,000 $ 10,925,000	
---	14	21	Safety/ System Performance	Osceola Co.	FDOT	Complete Street	US 17/92	Poinciana Blvd.	Pleasant Hill Rd.	3.10	Context Sensitive Improvements	---	PE CST	$ 2,325,000 $ 12,400,000 $ 14,725,000	
---	13.5	22	Safety/ System Performance	Seminole Co. Longwood	FDOT	Complete Street	SR 434	Range Line Rd.	Myrtle St.	2.10	Context Sensitive Improvements	Study - FY 2016/17	PE CST	$ 2,000,000 $ 12,000,000 $ 14,000,000	

MetroPlan Orlando
Prioritized Project List
Multimodal System Projects - Roadway & Complete Streets

FDOT FM #	PM Score	MPO Priority #	Performance Measure(s)	Project Location	Local Agency Sponsor	Project Type	Project Name / Designation	From	To	Length (MI.)	Work Description	Phase(s) Funded in TIP	Phase(s) Unfunded	Est. Cost of Next Phase	Est. Year of Next Phase
New Projects for Next 5th Year															
4464881	8	12	Safety/ Multimodal Con.	Longwood	Longwood	Complete Street	Warren Ave. Complete Street	St. Laurent St.	S. Milwee St.	0.67	Context Sensitive Improvements Corridor Study	*PLN - FY 2020/21*	PE / CST	$ 3,182,500 $ 3,482,500	
4469031	8	13	Safety/ Multimodal Con.	Longwood	Longwood	Complete Street	East Church Ave. Complete Streets	N Ronald Reagan Blvd (CR 427)	US 17 / 92	0.20	Context Sensitive Improvements	*PE - FY 2024/25*	CST	$ 1,131,586 $ 4,614,086	
	7.6	14	Safety/ Multimodal Con.	Orlando	Orlando	Bike / Ped	Downtown Orlando Bicycle Study	Community Redevelopment Area of Downtown Orlando			Planning Study for bicyclist accommodation	---	Planning	$ 200,000	
	7.5	15	Safety/ Multimodal Con.	Orlando	Orlando	Bike / Ped	Packing District Bikeways	Golfview St	Cinderlane Pkwy	10.10	Bikeways	---	CST Local Funds	$ 4,000,000 $ 7,000,000 $ 10,000,000	
	7	16	Safety/ Multimodal Con.	Orange Co. Apopka	Orange Co.	Complete Street	N Rock Springs Rd. Complete Streets Study	Votaw Rd.	Ponken Rd.	3.00	Context Sensitive Improvements	---	Planning PE / CST	$ 300,000 TBD $ 250,000	FY 2019/20
4464931	5.5	17	Safety/ Multimodal Con.	Casselberry	Casselberry	Complete Street	Winter Park Drive Complete Street	Red Bug Lake Rd	SR 434	3.80	Context Sensitive Improvements	*PLN - FY 2020/21*	PE / CST	TBD	
4379321	5	18	Safety/ Multimodal Con.	Kissimmee	Kissimmee	Complete Street	Central Ave. Bike & Ped	Martin Luther King Blvd.	Donegan Ave.	1.50	Context Sensitive Improvements	Planning - FY 2017/18	PE CST	$ 1,125,000 $ 6,000,000 $ 7,125,000	
	3.5	19	Safety/ Multimodal Con.	Oviedo	Oviedo	Complete Street	Mitchell Hammock Rd.	SR 426	Lockwood Blvd.	0.50	Context Sensitive Improvements	---	PE CST	$ 375,000 $ 2,000,000 $ 2,375,000	
	3	20	Safety/ Multimodal Con.	Oviedo	Oviedo	Bike / Ped	Lake Jessup Ave.	Mitchel Hammock	Artesia St.	2.00	Sidewalks	---	PE CST	$ 47,500 $ 100,000 $ 147,500	
	3	21	Safety/ Multimodal Con.	Orange Co. Oakland	Orange Co	Bike / Ped	Sidewalks - Oakland & Tubb	Citywide	Oakland Ave - 2mi Tubb St - 1mi	3.00	Add Sidewalks	---	PE CST	$ 390,000 $ 2,600,000 $ 2,990,000	
	2	22	Safety/ Multimodal Con.	Casselberry	Casselberry	Bike / Ped	Quail Pond Cir.	Sunset Dr.	Lake Concord Park		Path / Sidewalk	---	CST	$ 287,000	
		23	Safety/ Multimodal Con.	Belle Isle	MetroPlan	Complete Street Bike / Ped	Belle Isle Bike / Ped Safety Study	Hoffner Ave	and Nela Ave		Path / Sidewalk	Planning - FY 2019/20	PE CST	TBD TBD $ -	

Unfunded phases or projects that will be programmed between FY 2020/21 through FY 2023/24

Unfunded phases or projects that will be programmed in FY 2024/2025

BD	Name	Item Description	Item	Work Mix Description	Phase	Phase Description	BE	Category	Category Description	Funding Source	2021	2022	2023	2024	2025	Grand Total
05	SEMINOLE	LAKE MONROE LOOP TRAIL FROM MELONVILLE AVE TO SR 415	444628-1	BIKE PATH/TRAIL	58	CONST OTHER AGENCY	55150200	088717	ARTERIAL HIGHWAY CONSTR	Federal			2,500,000			2,500,000
					68	CONST SUP OTHER AGCY	55150200	088718	CONSTRUCT INSPECT CONSULT	Federal			250,000			250,000
		LIGHTING AGREEMENTS	413615-7	LIGHTING	78	MAINT OTHER AGENCY	55150200	088712	HIGHWAY MAINTENANCE CONTR	State 100%	351,390	358,035	368,772	379,834	391,230	1,849,261
		LONGWOOD SOUTH PEDESTRIAN FROM W OF SR 434 TO N OF RONALD REAGAN CR427	444681-1	SIDEWALK	38	PE OTHER AGENCY	55100100	088849	PRELIMINARY ENGR CONSULT	Federal		70,000				70,000
					58	CONST OTHER AGENCY	55150200	088717	ARTERIAL HIGHWAY CONSTR	Federal				200,000		200,000
					68	CONST SUP OTHER AGCY	55150200	088718	CONSTRUCT INSPECT CONSULT	Federal				20,000		20,000
		LYNX BUSES, ORLANDO, FUNDS TO PURCHASE BUSES FTA SECTION #5309	428432-1	PURCHASE VEHICLES/EQUIPMENT	94	CAPITAL GRANT	55100100	NSB	NOT STATE BUDGET	Federal	1,500,000					1,500,000
										Local	375,000					375,000
		LYNX/CENTRAL STATION IMPROVEMENTS, ORLANDO, FL FTA SECTION #5309	428433-1	TRANSIT IMPROVEMENT	94	CAPITAL GRANT	55100100	NSB	NOT STATE BUDGET	Federal	550,000					550,000
										Local	137,500					137,500
		MOA - LONGWOOD	244853-1	ROUTINE MAINTENANCE	78	MAINT OTHER AGENCY	55150200	088712	HIGHWAY MAINTENANCE CONTR	State 100%	118,000	118,000	59,000	59,000	59,000	413,000
		MOA CASSELBERRY	244549-1	ROUTINE MAINTENANCE	78	MAINT OTHER AGENCY	55150200	088712	HIGHWAY MAINTENANCE CONTR	State 100%	132,000	132,000	132,000	132,000	132,000	660,000
		MOA CITY OF OVIEDO	422041-1	ROUTINE MAINTENANCE	78	MAINT OTHER AGENCY	55150200	088712	HIGHWAY MAINTENANCE CONTR	State 100%	55,156	55,156	55,156	55,156	55,156	275,780
		MOA W/WINTER SPRINGS	244880-1	ROUTINE MAINTENANCE	78	MAINT OTHER AGENCY	55150200	088712	HIGHWAY MAINTENANCE CONTR	State 100%	66,000	66,000	66,000	66,000	66,000	330,000
		NORTH VILLAGE CONNECTIVITY VARIOUS SIDEWALKS	444994-1	SIDEWALK	38	PE OTHER AGENCY	55100100	088849	PRELIMINARY ENGR CONSULT	Federal		45,000				45,000
					58	CONST OTHER AGENCY	55150200	088717	ARTERIAL HIGHWAY CONSTR	Federal					250,000	250,000
					68	CONST SUP OTHER AGCY	55150200	088718	CONSTRUCT INSPECT CONSULT	Federal					25,000	25,000
		ORLANDO SANFORD INTERNATIONAL AIRPORT TAXIWAY IMPROVEMENTS	444443-2	AVIATION PRESERVATION PROJECT	94	CAPITAL GRANT	55100100	088719	AVIATION DEV/GRANTS	Federal		3,600,000	5,850,000	10,800,000		20,250,000
										Local		200,000	325,000	600,000		1,125,000
										State 100%		200,000	325,000	600,000		1,125,000
		PIPE VIDEO & DESILT	444000-1	ROUTINE MAINTENANCE	72	MAINT CONSULTANT	55150200	088712	HIGHWAY MAINTENANCE CONTR	State 100%	300,000					300,000
		SANFORD TROLLY PROJECT - SANFORD CRA	446776-1	OPERATING FOR FIXED ROUTE	84	OPERATIONS GRANT	55100100	088774	PUBLIC TRANSIT DEV/GRANTS	State 100%	318,194					318,194
								NSB	NOT STATE BUDGET	Local	318,194					318,194
		SEMINOLE COUNTY INTERSECTION MOVEMENT TRAFFIC CONTROL DEVICES	442546-1	TRAFFIC CONTROL DEVICES/SYSTEM	93	CAPITAL PURCHASE	55150200	088716	INTRASTATE HIGHWAY CONSTR	Federal	12,648					12,648
		SEMINOLE COUNTY PEDESTRIAN LIGHTING BUNDLE A	439884-2	LIGHTING	58	CONST OTHER AGENCY	55150200	088796	HIWAY SAFETY CONSTR/GRANTS	Federal	10,000					10,000
		SEMINOLE COUNTY SR 15/SR 600/CR 15 FROM SCHOOL ST TO ORANGE BLVD	446445-1	PARKING FACILITY	43	ROW PURCHASE	55100100	088777	RIGHT-OF-WAY LAND ACQ	State 100%	1,200,000	800,000	1,500,000	2,000,000	5,000,000	10,500,000
					45	ROW RELOCATE	55100100	088777	RIGHT-OF-WAY LAND ACQ	State 100%	50,000	175,000	50,000			275,000
					4B	ROW SERVICES	55100100	088853	RIGHT-OF-WAY SUPPORT	State 100%	250,000	150,000	250,000	250,000	147,000	1,047,000
		SEMINOLE- ORL SANFORD INTL AIRPORT PARKING	438488-1	AVIATION REVENUE/OPERATIONAL	94	CAPITAL GRANT	55100100	088719	AVIATION DEV/GRANTS	State 100%		1,550,000	1,400,000	3,500,000	400,000	6,850,000
								NSB	NOT STATE BUDGET	Local		1,550,000	1,400,000	3,500,000	400,000	6,850,000
		SEMINOLE PRIMARY IN-HOUSE	418110-1	ROUTINE MAINTENANCE	72	MAINT CONSULTANT	55150200	088712	HIGHWAY MAINTENANCE CONTR	State 100%	70,000	70,000	70,000			210,000
		SEMINOLE-ORL SANFORD TAXIWAY IMPROVEMENTS	444443-1	AVIATION CAPACITY PROJECT	94	CAPITAL GRANT	55100100	088719	AVIATION DEV/GRANTS	State 100%	400,000					400,000
								NSB	NOT STATE BUDGET	Federal	7,200,000					7,200,000
										Local	400,000					400,000
		SEMINOLE-ORL SANFORD WIDEN AIRPORT BLVD	438844-1	AVIATION CAPACITY PROJECT	94	CAPITAL GRANT	55100100	088719	AVIATION DEV/GRANTS	State 100%			1,000,000		2,000,000	3,000,000
								NSB	NOT STATE BUDGET	Local			1,000,000		2,000,000	3,000,000
		SEMINOLE-ORLANDO SANFORD TERMINAL EXPANSION	437713-1	AVIATION REVENUE/OPERATIONAL	94	CAPITAL GRANT	55100100	088719	AVIATION DEV/GRANTS	State 100%	1,900,000					1,900,000
								NSB	NOT STATE BUDGET	Local	1,900,000					1,900,000
		SOUTHCOT DRIVE SIDEWALK FROM SUNSET DRIVE TO LAKE TRIPLETT DRIVE	439064-1	SIDEWALK	58	CONST OTHER AGENCY	55150200	088717	ARTERIAL HIGHWAY CONSTR	Federal			158,357			158,357
					68	CONST SUP OTHER AGCY	55150200	088718	CONSTRUCT INSPECT CONSULT	Federal			30,000			30,000
		SR 15/600 (US 17/92) FROM SHEPARD RD TO LAKE MARY BLVD	240196-1	ADD LANES & RECONSTRUCT	52	CONST CONTRACT	55150200	088716	INTRASTATE HIGHWAY CONSTR	State 100%	2,278					2,278
					56	CONST UTILITY	55150200	088716	INTRASTATE HIGHWAY CONSTR	Local	150,727					150,727
					62	CONST SUP CONSULTANT	55100100	088849	PRELIMINARY ENGR CONSULT	State 100%	150,099					150,099
							55150200	088718	CONSTRUCT INSPECT CONSULT	State 100%	216,150					216,150
		SR 15/SR600 (US 17/92) AT AIRPORT BLVD	436679-2	TRAFFIC OPS IMPROVEMENT	62	CONST SUP CONSULTANT	55100100	088849	PRELIMINARY ENGR CONSULT	Federal	292					292
		SR 15/SR600 (US 17/92) FROM N OF LAKE MARY BLVD TO AIRPORT BLVD	436857-1	RESURFACING	52	CONST CONTRACT	55150200	088797	RESURFACING	Federal	167,310					167,310
		SR 15/SR600 (US 17/92) FROM N OF LAKE MARY BLVD TO N OF AIRPORT BLVD	436679-1	WIDEN/RESURFACE EXIST LANES	4B	ROW SERVICES	55100100	088853	RIGHT-OF-WAY SUPPORT	Federal	50,547					50,547
					62	CONST SUP CONSULTANT	55100100	088849	PRELIMINARY ENGR CONSULT	State 100%		57,915				57,915
		SR 400 (I-4) 1 MILE E OF SR 434 TO E OF SR 15/600 (US 17/92)	242592-4	ADD LANES & RECONSTRUCT	32	PE CONSULTANT	55100100	088849	PRELIMINARY ENGR CONSULT	Federal	248,587				750,000	998,587
					43	ROW PURCHASE	55100100	088777	RIGHT-OF-WAY LAND ACQ	R/W and Bridge Bonds		8,000,000				8,000,000
										State 100%			8,000,000	8,000,000	8,000,000	24,000,000
					45	ROW RELOCATE	55100100	088777	RIGHT-OF-WAY LAND ACQ	State 100%		50,000	150,000	100,000	36,836	336,836
					4B	ROW SERVICES	55100100	088853	RIGHT-OF-WAY SUPPORT	State 100%		800,000	400,000	600,000	800,000	2,600,000
		SR 419 FROM US 17-92 TO SR 434	441019-1	RESURFACING	52	CONST CONTRACT	55150200	088797	RESURFACING	Federal		1,220,942				1,220,942
										State 100%		2,131,892				2,131,892
					62	CONST SUP CONSULTANT	55100100	088849	PRELIMINARY ENGR CONSULT	State 100%		10,530				10,530
							55150200	088718	CONSTRUCT INSPECT CONSULT	State 100%		391,812				391,812
		SR 426 FROM SR 417 OVERPASS TO EYRIE DR	445221-1	RESURFACING	32	PE CONSULTANT	55100100	088849	PRELIMINARY ENGR CONSULT	State 100%	1,045,000					1,045,000
					52	CONST CONTRACT	55150200	088797	RESURFACING	State 100%			6,573,593			6,573,593
					62	CONST SUP CONSULTANT	55100100	088849	PRELIMINARY ENGR CONSULT	State 100%			27,025			27,025
							55150200	088718	CONSTRUCT INSPECT CONSULT	State 100%			787,587			787,587
		SR 426/CR 419 FROM PINE AVENUE TO AVENUE B	415030-3	ADD LANES & RECONSTRUCT	43	ROW PURCHASE	55100100	088777	RIGHT-OF-WAY LAND ACQ	Local	853,163					853,163
										State 100%	6,329,847	738,717				7,068,564
					45	ROW RELOCATE	55100100	088777	RIGHT-OF-WAY LAND ACQ	State 100%	278,171					278,171
					4B	ROW SERVICES	55100100	088853	RIGHT-OF-WAY SUPPORT	State 100%	600,919	600,000				1,200,919
			415030-6	ADD LANES & RECONSTRUCT	52	CONST CONTRACT	55150200	088572	COUNTY TRANSPORTATION PROGRAMS	State 100%	8,248,377					8,248,377
								088716	INTRASTATE HIGHWAY CONSTR	Local	2,378,854					2,378,854
										State 100%	5,231,260					5,231,260
					56	CONST UTILITY	55150200	088716	INTRASTATE HIGHWAY CONSTR	Local	2,058,000					2,058,000
										State 100%	846,000					846,000
					62	CONST SUP CONSULTANT	55150200	088718	CONSTRUCT INSPECT CONSULT	State 100%	1,500,000					1,500,000
		SR 429 (WEKIVA PKWY) FROM ORANGE BOULEVARD TO W OF I-4 (SR 400)	240200-4	NEW ROAD CONSTRUCTION	43	ROW PURCHASE	55100100	088777	RIGHT-OF-WAY LAND ACQ	State 100%	7,910,355					7,910,355
					45	ROW RELOCATE	55100100	088777	RIGHT-OF-WAY LAND ACQ	State 100%	375,446					375,446
					4B	ROW SERVICES	55100100	088853	RIGHT-OF-WAY SUPPORT	State 100%	1,738,691					1,738,691
					53	CONST PURCHASE	55150200	088716	INTRASTATE HIGHWAY CONSTR	State 100%	1,784,210					1,784,210
					5A	CONST CONTRACT BONUS	55150200	088716	INTRASTATE HIGHWAY CONSTR	State 100%	4,600,000					4,600,000
		SR 429 FROM ORANGE BLVD TO WEST OF I-4	437114-9	LANDSCAPING	52	CONST CONTRACT	55150200	088716	INTRASTATE HIGHWAY CONSTR	State 100%				3,686,437		3,686,437
		SR 434 AT WINDING HOLLOW BLVD	432642-1	ADD TURN LANE(S)	58	CONST OTHER AGENCY	55150200	088716	INTRASTATE HIGHWAY CONSTR	Federal		362,204				362,204
					62	CONST SUP CONSULTANT	55150200	088718	CONSTRUCT INSPECT CONSULT	Federal		56,069				56,069
		SR 434 FROM OLEANDER ST TO 525' WEST PF SR 15/ 600 / US 17-92	443838-1	TRAFFIC OPS IMPROVEMENT	32	PE CONSULTANT	55100100	088849	PRELIMINARY ENGR CONSULT	State 100%	741,000					741,000
					43	ROW PURCHASE	55100100	088777	RIGHT-OF-WAY LAND ACQ	State 100%			2,299,000			2,299,000
					4B	ROW SERVICES	55100100	088853	RIGHT-OF-WAY SUPPORT	State 100%			100,000			100,000
					52	CONST CONTRACT	55150200	088716	INTRASTATE HIGHWAY CONSTR	State 100%					1,112,186	1,112,186
					62	CONST SUP CONSULTANT	55100100	088849	PRELIMINARY ENGR CONSULT	State 100%					25,000	25,000
							55150200	088718	CONSTRUCT INSPECT CONSULT	State 100%					175,000	175,000
		SR 434 OVER OUTFALL BRIDGE# 770031	445396-1	BRIDGE-REPAIR/REHABILITATION	52	CONST CONTRACT	55150200	088799	BRIDGE CONSTRUCTION	State 100%	353,584					353,584
					62	CONST SUP CONSULTANT	55100100	088849	PRELIMINARY ENGR CONSULT	State 100%	5,130					5,130
							55150200	088718	CONSTRUCT INSPECT CONSULT	State 100%	37,609					37,609
		SR 434 ROUNDABOUTS FROM W. OF JETTA PT. TO S. OF ARTESIA ST.	446491-1	MISCELLANEOUS CONSTRUCTION	38	PE OTHER AGENCY	55100100	088849	PRELIMINARY ENGR CONSULT	Federal	1,542,000					1,542,000
		SR 436 FROM S HOWELL BRANCH RD TO N HOWELL BRANCH RD INTERSECTION	441365-1	SAFETY PROJECT	52	CONST CONTRACT	55150200	088796	HIWAY SAFETY CONSTR/GRANTS	Federal	1,090,009					1,090,009
										Local	175,844					175,844
										State 100%	105,369					105,369
					62	CONST SUP CONSULTANT	55100100	088849	PRELIMINARY ENGR CONSULT	Federal	10,260					10,260
							55150200	088718	CONSTRUCT INSPECT CONSULT	Federal	78,695					78,695
		SR 436 FROM WYMORE RD TO BOSTON AVE	441140-1	RESURFACING	32	PE CONSULTANT	55100100	088849	PRELIMINARY ENGR CONSULT	State 100%	650,000					650,000
					52	CONST CONTRACT	55150200	088797	RESURFACING	Federal			1,931,446			1,931,446
										State 100%			1,200,459			1,200,459
					62	CONST SUP CONSULTANT	55100100	088849	PRELIMINARY ENGR CONSULT	State 100%			10,810			10,810
							55150200	088718	CONSTRUCT INSPECT CONSULT	State 100%			416,709			416,709
		SR 436/E ALTAMONTE DRIVE FROM BOSTON AVE TO E OF ANCHOR RD	434931-1	TRAFFIC OPS IMPROVEMENT	52	CONST CONTRACT	55150200	088716	INTRASTATE HIGHWAY CONSTR	Federal	742					742
					62	CONST SUP CONSULTANT	55100100	088849	PRELIMINARY ENGR CONSULT	State 100%	59,744					59,744
		SR 46 (WEKIVA PKWY) FROM ORANGE BLVD TO N. OREGON ST/WAYSIDE DR	240200-3	ADD LANES & RECONSTRUCT	56	CONST UTILITY	55150200	088716	INTRASTATE HIGHWAY CONSTR	Local	12,026					12,026
		SR 46 FROM ORANGE BLVD TO I-4 (SR400)	437114-8	LANDSCAPING	52	CONST CONTRACT	55150200	088716	INTRASTATE HIGHWAY CONSTR	State 100%		670,378				670,378
		SR 46 FROM US 17/92 TO MELLONVILLE AVE	445316-1	RESURFACING	32	PE CONSULTANT	55100100	088849	PRELIMINARY ENGR CONSULT	State 100%	686,000					686,000
					52	CONST CONTRACT	55150200	088797	RESURFACING	State 100%			2,298,516			2,298,516
					62	CONST SUP CONSULTANT	55100100	088849	PRELIMINARY ENGR CONSULT	State 100%			27,025			27,025
							55150200	088718	CONSTRUCT INSPECT CONSULT	State 100%			275,890			275,890
		SR 46/SR 429 FROM WEKIVA RIVER ROAD TO ORANGE BLVD	437114-7	LANDSCAPING	32	PE CONSULTANT	55100100	088849	PRELIMINARY ENGR CONSULT	State 100%	85,000					85,000
					52	CONST CONTRACT	55150200	088716	INTRASTATE HIGHWAY CONSTR	State 100%			3,620,701			3,620,701
					62	CONST SUP CONSULTANT	55100100	088849	PRELIMINARY ENGR CONSULT	State 100%			10,810			10,810
		SR429/46 (WEKIVA PKWY) FROM E OF OSPREY HAMMOCK TRAIL TO ORANGE BLVD	240200-2	NEW ROAD CONSTRUCTION	43	ROW PURCHASE	55100100	088777	RIGHT-OF-WAY LAND ACQ	State 100%	153,800					153,800
					45	ROW RELOCATE	55100100	088777	RIGHT-OF-WAY LAND ACQ	State 100%	14,007					14,007
					53	CONST PURCHASE	55150200	088716	INTRASTATE HIGHWAY CONSTR	State 100%	1,200,000					1,200,000
					62	CONST SUP CONSULTANT	55150200	088718	CONSTRUCT INSPECT CONSULT	Federal	2,811,218					2,811,218
										State 100%	111,860					111,860
		SUNSET DRIVE LIVABLE STREETS/FROM OXFORD ROAD TO BUTTON ROAD	439075-1	PEDESTRIAN SAFETY IMPROVEMENT	58	CONST OTHER AGENCY	55150200	088717	ARTERIAL HIGHWAY CONSTR	Federal		2,096,484				2,096,484
					68	CONST SUP OTHER AGCY	55150200	088718	CONSTRUCT INSPECT CONSULT	Federal		184,491				184,491
		TOWN CENTER SIDEWALKS VARIOUS STREETS	444900-1	SIDEWALK	32	PE CONSULTANT	55100100	088849	PRELIMINARY ENGR CONSULT	Federal		50,000				50,000
					58	CONST OTHER AGENCY	55150200	088717	ARTERIAL HIGHWAY CONSTR	Federal				250,000		250,000
					68	CONST SUP OTHER AGCY	55150200	088718	CONSTRUCT INSPECT CONSULT	Federal				25,000		25,000
		US 17 / 92 / ORLANDO AVE / FRENCH AVE FROM RAVEN AVE TO DOG TRACK RD	443793-1	LANDSCAPING	58	CONST OTHER AGENCY	55150200	088716	INTRASTATE HIGHWAY CONSTR	State 100%	316,002					316,002
		US HWY 17/92 AND SUNSET DRIVE FROM US 17/92 TO SUNSET DRIVE- TRAIL	439059-1	BIKE PATH/TRAIL	58	CONST OTHER AGENCY	55150200	088717	ARTERIAL HIGHWAY CONSTR	Federal			300,000			300,000
					68	CONST SUP OTHER AGCY	55150200	088718	CONSTRUCT INSPECT CONSULT	Federal			30,000			30,000
		WARREN AVE FROM SR 434 TO MILWEE ST	446488-1	URBAN CORRIDOR IMPROVEMENTS	18	PLANNING OTHER AGCY	55100100	088704	TRANSP PLANNING CONSULT	Federal	300,000					300,000
		WINTER PARK DR FROM RED BUG LAKE RD TO SR 434	446493-1	URBAN CORRIDOR IMPROVEMENTS	18	PLANNING OTHER AGCY	55100100	088704	TRANSP PLANNING CONSULT	Federal	300,000					300,000
	SUMTER	ASSET MAINTENANCE - SUMTER COUNTY	446247-1	ROUTINE MAINTENANCE	72	MAINT CONSULTANT	55150200	088712	HIGHWAY MAINTENANCE CONTR	State 100%	2,100,000	2,100,000	2,100,000	2,100,000	2,100,000	10,500,000
		C-478 FROM SR 471 TO CENTER HILL CITY LIMITS	439223-1	FLEXIBLE PAVEMENT RECONSTRUCT.	54	CONST GRANT	55150200	085576	SM COUNTY OUTREACH PROGRAM	State 100%	1,750,000					1,750,000
		CR 478 FROM US 301 TO CITY OF CENTER HILL SOUTHERN LIMIT	439912-1	SAFETY PROJECT	58	CONST OTHER AGENCY	55150200	088796	HIWAY SAFETY CONSTR/GRANTS	Federal	37,569					37,569
		I-75 (SR 93) SUMTER COUNTY NORTHBOUND REST AREA	438562-2	REST AREA	52	CONST CONTRACT	55150200	088716	INTRASTATE HIGHWAY CONSTR	State 100%				18,736,739		18,736,739

CITY OF LONGWOOD, FLORIDA

COMPREHENSIVE PLAN
GOALS, OBJECTIVES, AND POLICIES

AS AMENDED THROUGH
OCTOBER 2014

BY ORDINANCES:

92-1019	01-1532
93-1143	01-1562
95-1287	02-1615
96-1303	05-1774
01-0581	06-1817
01-1532	07-1825
01-1562	07-1835
02-1615	08-1872
05-1774	08-1878
92-1019	09-1889
93-1143	10-1913
95-1287	11-1955
96-1303	14-2026
01-0581	

SECTION II
MULTI-MODAL TRANSPORTATION ELEMENT

Purpose and Overall Goal

The purpose of the Multi-Modal Transportation Element is, in conjunction with the complementary land use goals (in particular those that promote Smart Growth, transit oriented and transit supportive design) established in the Future Land Use Element, to provide the City's residents and visitors with mobility choice through the creation and maintenance of an efficient and effective multi-modal transportation system throughout the city.

The City, as a Transportation Concurrency Exception Area, is required through the following objectives and policies provide a framework to promote, support and fund mobility within the City through specific proposals and activities. Objectives of the Multi-modal Transportation Element generally provide for the planning of and measurable implementation of the City's desired roadway, pedestrian, cyclist, transit and on-site circulation systems and which is coordinated and compatible with the City's Future Land Use Plan. Policies represent the specific position or course of action that the City will undertake to further each objective.

Maps

The following maps are adopted as part of the Longwood Comprehensive Plan.

Map T-10: Major Thoroughfares by Functional Classification (2025)
Map T-11: Roadway Jurisdictional and Maintenance Responsibility Map (2025)
Map T-12: Major Thoroughfares by Number of Lanes (2025)
Map T-13: Future Peak Hour Peak Direction Levels of Service (LOS) on Major Thoroughfares (2025)
Map T-14: Parking Facilities (2025)
Map T-15: Future Transit Facilities (2025)
Map T-16: Major Trip Generators and Attractors (2025)
Map T-17: Future Bicycle and Pedestrian Facilities (2025)
Map T-18: Future Rail Lines, Terminals, and Intermodal Facilities (2025)
Map T-19: Future Designated Evacuation Routes (2025)
Map T-20: Longwood Transportation Concurrency Exception Area (TCEA)

Goal I. To develop and maintain a city-wide multi-modal transportation system that provides for and supports the transportation needs of residents and visitors along with providing and enhancing mobility choice in a safe, efficient, cost-effective and aesthetically pleasing manner.

Objective I. In order to ensure that the City's multi-modal transportation systems are functioning at acceptable levels to accommodate current needs and future growth, to establish benchmarks and priorities geared toward the improvement of mobility options and in which to direct available funding and planning efforts, the City shall establish level of service standards for all modes of transportation.

Policy A. The City shall establish the Transportation Element as the major policy reference in all decision-making relative to land use issues, development approvals and roadway network improvements. With regard to the potential local funding of capacity related roadway improvements, the City shall use the Transportation Element as a principal basis for the programming of local revenues.

The City of Longwood hereby adopts the following peak hour level of service standards for the roads listed below:

Roadway	LOS
US 17/92	E
SR 434	E
CR 427	E
Dogtrack Road	E
Longwood Hills Road	E
Rangeline Road	E
North Street	E
Grant Street	E
Church Avenue	E

The adopted level of service standard for all otherwise undesignated collector streets (i.e., Warren Ave., Wildmere Ave.) shall be LOS "E". The level of service standard for local streets shall be LOS "E".

Policy B. The City shall generally rely upon readily available information from Seminole County, FDOT, and City planning efforts in order to measure and otherwise assess adherence to the LOS standards for roadway operation.

The City shall consider level of service calculations based on more in-depth studies of roadway operation as these are available, provided that such studies are prepared in a professionally acceptable manner and, if necessary, are

subjected to independent review and confirmation. Such studies may be performed by regional agencies, Seminole County, the City and/or individual developers subject to the stipulations herein.

In determining whether to make improvements to City roadways that fall below the adopted LOS the city shall consider utilizing improvements to the multi-modal system as a possible remedy. The City shall also coordinate with Seminole County and Florida Department of Transportation to request that when they are considering roadway improvements that they also consider directing improvements to the multi-modal system instead of just directing funds and energies solely toward auto-oriented projects.

Policy C. Within two years of the effective date of this amendment to the City's Comprehensive Plan and dependent on the availability of funding from FDOT, MetroPlan and/or other sources, the City shall have prepared the necessary analysis and plans, to develop a Bicycle and Pedestrian Master Plan to include the establishment of level of service goals for pedestrian and bicycle facilities and identify the projects needed to achieve the identified LOS.

Policy D. The City shall coordinate with Seminole County and LYNX to determine an acceptable level of service for bus services within the City. The City will continue to encourage LYNX to improve bus services within the City to ensure bus transportation is available to service the commuter rail station, future transit supportive development along the City's major corridors existing, proposed major trip generators and attractors, and provide safe and convenient public transit, and accommodation of the special needs of the transportation disadvantaged.

Policy E. The City shall coordinate with SunRail to ensure that City plans along with those of new major development within the city are taken into consideration as the level of service for commuter rail are being established and revised.

Policy F. Prior to the adoption of a Mobility Fee Impact Schedule new development that will have anything but a di minimus impact

on any transportation system within the City shall be required to provide an analysis of those impacts along with a mitigation strategy to include but not be limited to developer-funded bike, pedestrian, and transit improvements on and off-site.

Policy G. The City will continue to implement parking and on-site traffic circulation standards and requirements to govern roadway access and the provision of safe and adequate on-site traffic circulation, parking and pedestrian facilities. Such standards will be maintained in the Longwood Development Code.

Policy H. As part of the capital programming and annual budgeting process, the City shall continue to fund a coordinated program of dirt street paving or stabilization, resurfacing and/or reconstruction of local roadways. The city shall incorporate bicycle and pedestrian improvements in these projects where practical.

Policy I. The City shall require appropriate access management standards and techniques for all new development and redevelopment that increases trip generation by more than 20% for a site.

Policy J. Through continued implementation of the Longwood Development Code, the City shall not allow new or existing unpaved streets to provide access to new subdivisions or other land development projects. Developers shall be required to provide paved roadway, pedestrian and bicycle improvements and access from their development's exit/entrance streets to the closest suitable paved street used for connection purposes. This policy shall not apply to single-family home lots in subdivisions platted at the time of adoption of this Plan Amendment.

Policy K. The City shall require that all road and highway improvements within the City must consider provisions for transit and pedestrian/bicycle mobility including bike lanes, minimum sidewalk widths, safe crosswalks, pedestrian scale lighting and other bike and pedestrian friendly features.

Policy L. Detention/retention facilities located within the City or County ROW shall not be located at intersections or along transportation corridors unless the City waives this requirement based on a finding that the detention/retention facility does not negatively impact bicycle and pedestrian access to adjoining development or the negative impacts have been adequately mitigated.

Policy M. Applicants of development or redevelopment exceeding 20,000 square feet gross floor area shall coordinate with LYNX regarding transit facilities necessary to serve that development. The developer/property owner shall install any improvements requested by LYNX unless otherwise waived by the City.

Policy N. The City shall seek to establish working relationships with major local employment centers, specifically South Seminole Hospital and the Florida Central Commerce Park, to explore opportunities for alternative local transit connections to the SunRail Commuter Rail station including enhanced pedestrian and bicycle facilities, small- scale public/private vehicular transportation modes, and the like. The City shall take the lead in coordinating the provision of these services with applicable governmental agencies where appropriate.

Policy O. Property annexed into the City limits shall become a part of the city-wide TCEA.

Objective II. **To ensure that the City of Longwood improves mobility choices for its residents and visitors through the provision of public transit options along with well-maintained pedestrian and bicycle facilities, providing for the improvement of these facilities through a comprehensive approach to the planning for bicycles and pedestrians and continue to implement the plan by continuing to increase the availability of sidewalks, pedestrian paths, and/or bikeways through public and private efforts.**

Policy A. Per current Code requirements, the City shall continue to require the construction of sidewalks and bicycle facilities in conjunction with subdivision and non-residential site development activities.

Policy B. As part of the annual budgeting process, the City shall consider funding sidewalk, pedestrian ways and/or bike paths as funding becomes available. The City shall also require and support provisions for such facilities as part of State and County road improvements.

Policy C. All new development and redevelopment are required to adhere to the Longwood Development Code requirements for land use, site, and building design promoting pedestrian, bicycle, and transit modes including: direct pedestrian pathways from building entranceways to public sidewalks and transit stops including pathways connecting residential neighborhoods and other commercial properties to those properties which are adjacent to major roadways; building orientation towards public streets; transit easements on private property; bicycle parking facilities; pedestrian, parking, lot and street lighting; reduction of internal circulation conflicts between motorized and non-motorized users; improved intersection design; provision for bus shelters and pull-off locations; and streetscape design compatible with pedestrian, bicycle, and transit facilities.

Policy D. The City shall coordinate bicycle and pedestrian plans with adjacent cities, Seminole County and MetroPlan Orlando through its continued participation on the Bicycle and Pedestrian Advisory Committee of MetroPlan Orlando.

Policy E. The City shall provide bicycle parking facilities at all City properties frequently visited by the general public. The city shall continue to include requirements for bicycle parking facilities for all new development, redevelopment and change in use according to standards provided in the Longwood Development Code.

Policy F. The City shall request LYNX and FDOT to provide bicycle rack or storage facilities on or within all buses and other transit or rail vehicles serving Longwood as well as rail stations and bus shelters.

Policy G. Within two years of the effective date of this amendment to the City's Comprehensive plan, dependent on the allocation of funding from MetroPlan and/or FDOT, the City shall complete a Bicycle and Pedestrian Master Plan which will document existing facilities and gaps, create a community based bike and pedestrian system plan with the goal of serving the majority of the residents and businesses in the

City with safe and efficient bicycle and pedestrian facilities, development an optimum LOS for the City along with interim implementation goals, and develop a list of specific infrastructure projects needed to implement the plan.

The Bicycle and Pedestrian Master Plan shall concentrate on continuity and connectivity of pedestrian systems throughout the entire City and focus on making improvements (as funds become available through Mobility Impact Fees and other sources of funding), on projects within a one quarter mile walk of the SunRail Commuter station and LYNX bus stops along with bicycle facilities within a three mile radius of the SunRail Commuter station and LYNX Bus stops.

Policy H. The City will continue to monitor the status of funding for the City's Bicycle and Pedestrian Master Plan on the MetroPlan Orlando Bicycle and Pedestrian Action Committee Project Prioritization list.

Policy I. The City will continue to coordinate with Seminole County on the availability of potential funding for the Bicycle and Pedestrian Master Plan and the availability of funding for any improvements that will improve the City's bicycle and pedestrian facilities.

Policy J. Upon completion of the Bicycle and Pedestrian Master Plan study, the City will adopt the proposed Level of Service (LOS) standards into the Comprehensive Plan.

Objective III. **The City shall continue formal coordination efforts with Seminole County, MetroPlan Orlando, and the Florida Department of Transportation to implement the City's Multi-modal Transportation Element. Such actions shall include the forwarding of City correspondence and support documentation, staff attendance of agency meetings and passage of commission resolutions as necessary.**

Policy A. The City of Longwood supports the State and County roadway improvements identified in the Orlando Urban Area Transportation Study (OUATS) Financially Feasible Plan, except for planned 6-lane improvements to SR 434 and CR 427. The City shall forward the City's adopted Multi-modal

Transportation Element for inclusion in the OUATS Plan Update.

Policy B. The City staff shall actively cooperate with the staffs of adjacent jurisdictions, MetroPlan Orlando, State agencies and Federal agencies to find other ways to accommodate the projected transportation needs without sacrificing the City's residential character.

Objective IV. **The City shall protect rights-of-way necessary for multi-modal projects identified in the Multi-Modal Transportation Element. Protection may be through preservation techniques, dedication, site design requirements, or other methods consistent with the timing of the proposed development or redevelopment and consistent with the timing of the right-of-way needs**.

Policy A. The City shall continue to use information from roadway plans from the State and County in formulating building location and setback requirements in the Longwood Development Code. The City shall request that State and County agencies consider the City's desired urban form including location and setback requirements along with mobility goals in formulating roadway plans.

Policy B. Initiate discussion with the County and FDOT to limit or constrain the number of lanes on collector and arterial roadways within the city limits and focus regulations and fiscal planning on alternatives to road widening.

Policy C. Coordinate with FDOT or Seminole County during any right-of-way acquisition program to limit the number of lots or parcels that are made non-conforming through the acquisition process.

Policy D. Limit roadway improvement plans to not more than 4-lanes per facility and to utilize transportation system management and intelligent transportation system improvements and strategies instead of road-widening.

Policy E. Where it has been mutually agreed upon by the City and FDOT and/or Seminole County, and only after an analysis of alternative transportation options, to be paid by the funding agency and prepared by an impartial licensed transportation engineer with multi-modal credentials, that road widening is the only option, the resulting improvements must result in

improved bicycle and pedestrian facilities consistent with the City's adopted Bicycle and Pedestrian Master Plan.

GOAL II. **To establish, implement and fund land use and transportation strategies which support, serve and enhance the multi-modal mobility needs of the City.**

Objective I. The City of Longwood, as a Transportation Concurrency Exception Area (TCEA) shall explore land use and funding strategies to realize stated mobility goals.

Policy A. The City will continue to work with Seminole County, FDOT, and MetroPlan Orlando to promote, develop, and fund mobility improvements within the City.

Policy B. Research the creation of, or participation in, a ride-sharing program in Longwood and adjacent local governments.

Objective II. The City shall continue seek methods and sources to fund new transportation improvements and programs, including multi-modal facilities.

Policy A. *Impact Fees* – The City shall continue to collect transportation impact fees for Seminole County and applicable Fair-Share fees for the City as prescribed in the Concurrency Management article of the Longwood Development Code for new construction.

Policy B. *Mobility Fees* - Within a time frame to be determined after the effective date of this amendment to the City's Comprehensive plan, the City shall evaluate and prepare a Mobility Fee Schedule and methodology of determination to include all multi-modal transportation impacts projected from new construction and apply fees accordingly for the construction of identified necessary and desirable improvements.

As part of the development approval process, projects may be granted credit towards Mobility Fees and/or Impact Fees for on-site and/or off-site improvements which are determined to advance the mobility goals of the City.

Policy C. *Tax Increment Financing* – The City may utilize revenue from tax increment finance districts to fund needed multi modal transportation improvements within those districts.

Policy D. *State Funds for Improvements and Services* – The City shall support changes to state legislation that enable local and regional governments to increase the revenue base for transportation improvements and services, including transit and pedestrian programs.

Policy E. *Federal and State Funds* – The City will coordinate with federal and state transportation and transit agencies to identify potential federal and state funds that may be available for transportation improvements and programs within the City of Longwood, including multi-modal systems and associated improvements.

Policy F. *Alternative Funding Sources to Supplement Transit Funds* – The City shall evaluate the feasibility of establishing special assessment districts, impact fees or other alternative methods to fund ongoing, operating, management and capital costs for transit serving the City of Longwood. Any special City transit funding source is intended to augment but not supplant funds provided b LYNX, Seminole County, Orange County and other governments served by the same sub-regional transit systems serving Longwood.

Policy G. *Transportation Grants* – the City shall coordinate with FDOT, MetroPlan Orlando, Seminole County, LYNX, the Federal Highway Administration and the Federal Transit Authority to identify federal and state transportation grant programs which may be available to the City as a means to implement and advance improvements or programs proposed in the City's Multi-Modal Transportation Plan.

Goal III. **Promote maximum energy efficiency through improved mobility and transportation system design and operations as a method of reducing green house gas emissions.**

Objective I. **Support the expansion of the SunRail commuter rail system, bus transportation, and bicycle and pedestrian facilities and avoid transportation system improvements that favor the use of single-occupancy vehicles as the primary means of transportation.**

Policy A. Support commuter rail through establishment of the SunRail station and implementation of future land use categories that

allow mixed use and transit oriented design and development.

Policy B. Encourage travel on the SunRail system.

Policy C. The City working with the appropriate transportation provider shall enhance connections and encourage ease of transfer between the SunRail station and other transit modes by supporting the expansion of public transportation including additional bus routes and park-and-ride parking facilities.

Policy D. Develop a program for bicycle and pedestrian connections from residential areas to commercial and institutional areas. (See also Housing Policy II, E).

Policy E. Where a road link is found to be deficient according to level of service methodology, the appropriate remedy to restore a satisfactory level of service is one of the following options:

- Intersection improvements
- Signal timing changes
- Turning or auxiliary lanes,
- Access management
- Improvements in parallel corridors
- SunRail system installation
- Improvements in bus system routing
- Improvements in other modes of travel
- Transportation demand management such as ridesharing, staggered work hours, or flex time
- Transportation system management strategies such as computerized Intelligent Transportation Systems (ITS) to manage congestion through timing of traffic signals, High Occupancy Vehicle (HOV) lanes, or
- Other traffic engineering measures

Policy F. The City shall continue to request that FDOT, MetroPlan Orlando, and the County use funds targeted for road widening projects for alternative mobility system projects related to the SunRail station, additional bus routes, pedestrian access, bike facilities and other transportation system management improvements.

Policy G. In the event that the City is unsuccessful in implementing Policy F above, the City will use any method available its available legal powers to ensure that money is allocated and used to construct safe pedestrian crossings on SR 434 and CR 427 to provide links between the SunRail station and the

historic downtown district and between the SunRail station and the portions of the City lying south of SR 434. Safe crossings may include the use of median landings, narrower lanes, timing on crosswalks, mid-block crossings, or other similar techniques.

Policy H. To enhance pedestrian safety, the City will coordinate planned roadway improvements with the appropriate responsible jurisdiction or agency to consider the inclusion of traffic calming devices such as chicanes and design elements that improve bus stop locations.

CITY OF LONGWOOD

Bicycle and Pedestrian Master Plan

Kimley-Horn and Associates, Inc.

Goals, Objectives, and Strategies

GOALS, OBJECTIVE, AND STRATEGIES OF THE BICYCLE AND PEDESTRIAN MASTER PLAN

Goal 1: Connect to regional trail system

Objective 1: Identify possible regional trail connections
- Strategy 1: Gain input from stakeholders about locations of need for regional connectivity
- Strategy 2: Collect and analyze data to identify regional trails around Longwood
- Strategy 3: Identify areas that would be well served by multiuse trail connections

Objective 2: Identify trailhead locations
- Strategy 1: Identify areas where there is sufficient land to locate a trailhead
- Strategy 2: Gain input from stakeholders about potential locations of trailheads

Objective 3: Provide a system of signage to aid in wayshowing and wayfinding within the City
- Strategy 1: Develop design concepts for a family of signs that provide for wayshowing and wayfinding within the City to regional connections
- Strategy 2: Identify key locations within the City for the placement of wayshowing and wayfinding signs that identify regional connections

Goal 2: Provide multimodal connectivity by linking bicycle and pedestrian facilities to future SunRail station

Objective 1: Identify potential connections from the SunRail station to existing regional trails
- Strategy 1: Gain input from stakeholders about feasible connections between the SunRail station and regional multi-use trails
- Strategy 2: Determine roadways with sufficient right-of-way for multiuse trail
- Strategy 3: Promote the use of multi-modal transportation networks by providing bicycle parking and other amenities

Objective 2: Support the Sun Rail System
- Strategy 1: Request that the City use funds targeted for road widening projects to implement bicycle and pedestrian facilities related to SunRail.
- Strategy 2: Coordinate with SunRail to ensure that new plans and developments are taken into consideration as the level of service for SunRail are being established and revised

Goal 3: Provide safe walking routes and pedestrian connectivity throughout Longwood

Objective 1: Identify and provide safe corridors for students to access school facilities
- Strategy 1: Identify gaps in the bicycle and pedestrian network within a reasonable walking distance from schools
- Strategy 2: Outline strategies to leverage Safe Routes to School (SRTS) funding and the Community Traffic Safety Team (CTST) to implement projects that provide for safer routes to schools

Objective 2: Address gaps in the pedestrian facilities network
- Strategy 1: Collect and analyze data to identify gaps and to develop recommendations to address network deficiencies
- Strategy 2: Gain input from key stakeholders in the City familiar with the needs of City residents
- Strategy 3: Gain input from the public in a workshop to identify and prioritize pedestrian facility needs within the City

Bicycle Element

The following bicycle and multiuse transportation trail recommendations are based on data analysis, stakeholder interviews, public involvements, and professional planning and engineering judgement. Together, the recommendations included in this Bicycle Element form a network of facilities that improve connectivity and provide for transportation alternatives throughout the City of Longwood. The proposed network provides connections to major activity centers, including transit stops, the future SunRail station, existing trails, parks, educational facilities, shopping centers, major employers, the Historic District, and the industrial core. Policy recommendations are also included to support the implementation and maintenance of this network as well as to provide for supportive facilities, such as bicycle parking.

BICYCLE AND MULTIUSE FACILITY RECOMMENDATIONS

The City currently has minimal roadways with designated bike lanes or paved shoulders suitable for bicyclist to comfortably share the road with vehicles. Through the development of this Bicycle and Pedestrian Master Plan, a series of corridors were identified as potential locations for multiuse transportation trails or bicycle lanes.

A preliminary list of recommendations were developed based on data collection, analysis, and input from local stakeholders. These recommendations were presented to the public at a workshop, where participants were asked to provide feedback, refine draft recommendations, suggest additional recommendations, and prioritize projects. Based on this public participation, the draft recommendations were refined and are included in this Element of the Bicycle and Pedestrian Master Plan. The revised bicycle and multiuse facility recommendations are broken down into specified segments that can be implemented as a whole or in phases, depending on priorities, funding, and level of usage. A feasibility report has been completed for the highest priority corridors and is outlined in the Implementation section of this Bicycle and Pedestrian Master Plan. The prioritized recommended bicycle and multiuse facility network is illustrated in Figure 15, which shows only those segments identified as higher priority corridors. The preferred routes are shown as solid lines and the secondary connections are shown as dashed lines. Included in the bicycle and multiuse facility recommendations are five multiuse facility connection recommendations and a road treatment recommendation.

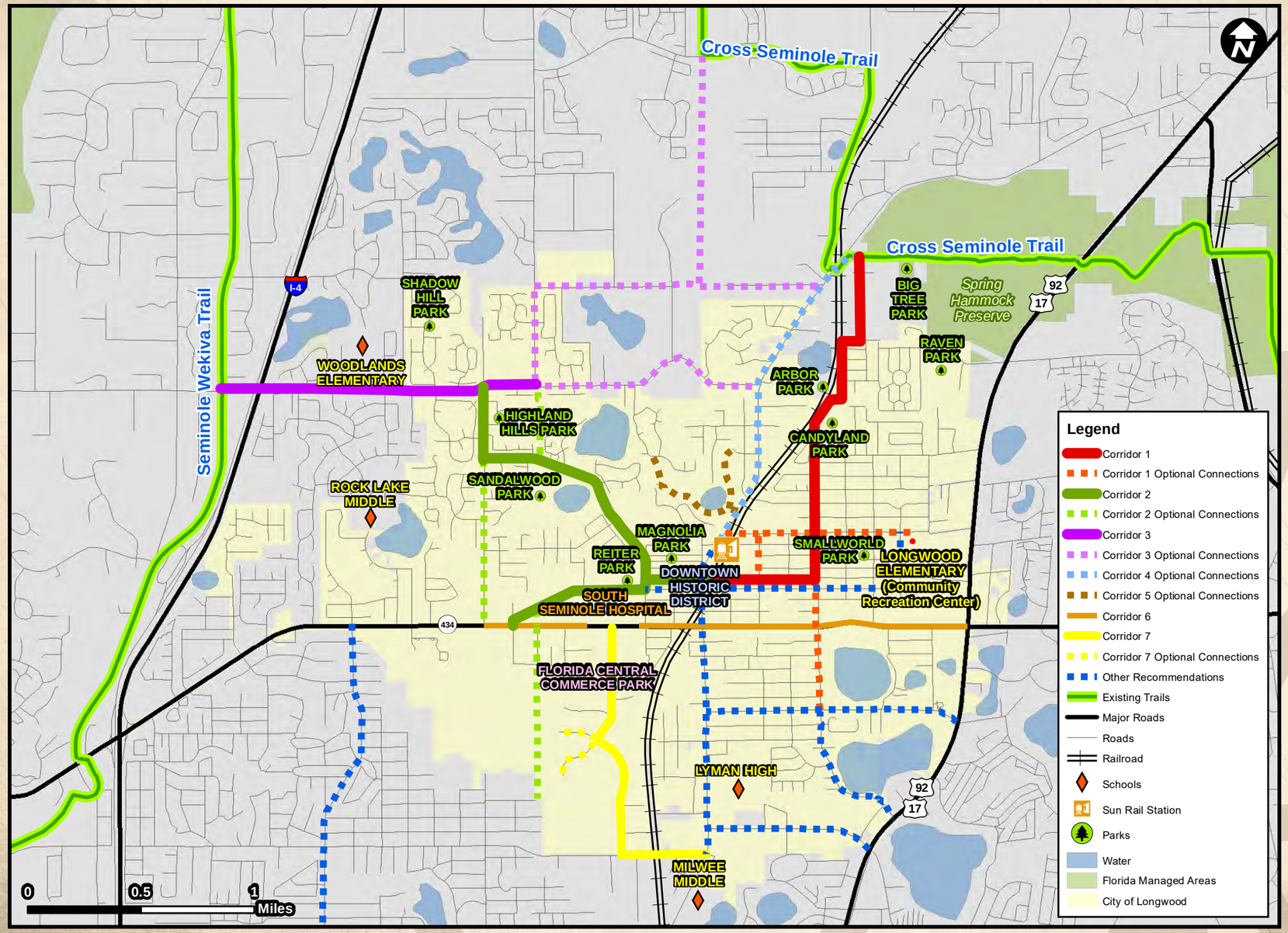
Proposed Segments and Recommendations

The following are the five corridor recommendations and one recommended facilities enhancement:

Corridor 1: Candyland/Cross Seminole Trail/SunRail Connection
Corridor 2: Reiter Park/SunRail Connection
Corridor 3: Seminole Wekiva Trail/Woodlands Elementary Connection
Corridor 4: Ronald Reagan Avenue
Corridor 5: Community Connector
Corridor 6: SR 434 Designated Bicycle Lanes
Corridor 7: Florida Central Parkway Bicycle Lanes
Other Bicycle Facility Recommendations

Figure 15

Recommended Bicycle and Multiuse Facility Network



Bicycle Element

Corridor 1 - Candyland Park/Cross Seminole Trail/SunRail Connection

As illustrated in Figure 16, this corridor would provide over 2.5 miles of bicycle facilities east of Ronald Reagan Boulevard with over 1.5 miles of optional connections. The following community features would be connected by this corridor:

- Future SunRail Station
- Cross Seminole Trail (Existing regional trail network
- Candyland Park
- Arbor Park
- Proposed community recreation center (Longwood Elementary School property)

Segment Breakdown:

Segment 1: Candyland Park North to Cross Seminole Trail – 1.04 mile

Segment 1 begins at the southwest corner of Candyland Park at the intersection of N Grant Street and Longdale Avenue and follows N Grant Street north to the ditch south of Timocuan Way. The segment heads east along ditch approximately 400 feet, then turns north onto Timocuan Way continuing to the intersection of Timocuan Way and General Hutchinson Parkway. The portion of segment 1 from Winding Oak Lane to the Cross Seminole Trail should be constructed as a multiuse trail (shared use path). The portion of segment 1 from Longdale Avenue to Winding Oak Lane should be designated bicycle lanes during needed resurfacing.

This segment of the corridor would provide a regional connection, linking Candyland Park to the existing Cross Seminole Trail.

Segment 2: Future SunRail Station to Candyland Park by way of E Church Street and N Grant Street – 1.02 Mile

Segment 2 begins on E Church Avenue at the future SunRail Station and heads east to the intersection of N Grant Street. This portion of Segment 2 should include designated bicycle lanes during resurfacing or reconstruction. Signage and sharrows can be implemented along this portion of Segment 2 for a shorter-term solution. The segment then follows N Grant Street north, connecting to Segment 1 at the intersection of Longdale Avenue and the southwest corner of Candyland Park. This portion of Segment 2 should be designated bicycle lanes, added during needed resurfacing of the roadway.

This segment would extend the regional connection created from Segment 1 by providing a link between the future SunRail station, proposed Corridor 2, Candyland Park, and the Cross Seminole Trail.

Optional Additional Connections:

Segment 3 (Optional): Wildmere Avenue to E Church Street – 0.59 Mile

Optional segment 3 begins at the intersection of Wildmere Avenue and S Grant Street, follows S Grant Street north across SR 434, and continues on N Grant Street to E Church Avenue. Optional segment 3 would provide bicycle lanes that connect to the proposed network corridor, providing a continual connection for the residential neighborhoods north and south of SR 434 to the future SunRail station, Candyland Park, and the Cross Seminole Trail.

Segment 4 (Optional) – N Grant St to Future SunRail Station, by way of Orange Ave – 0.4 Mile

Optional segment 4 begins at the intersection of N Grant Street and Orange Avenue and follows Orange Avenue west to N Oleander Street. The segment follows N Oleander Street south until it dead-ends. With a speed limits of 25 miles per hour on along this corridor, shared lane markings (sharrows) should be used to mark segment 4. This segment would connect a proposed senior housing development to the future SunRail Station. The proposed segment includes the construction of a bicycle and pedestrian bridge or road that would connect N Oleander Street to S Oleander Street, creating a continual connection between Orange Avenue and E Church Street. An alternative to this Oleander Street connection would be to continue the path west on Orange Avenue to Ronald Reagan Boulevard.

Segment 5 (Optional) - N Grant Street to Community Recreation Center via Orange Avenue – 0.4 Mile

Optional Segment 5 would provide shared lane markings that begins at the intersection of N Grant Street and Orange Avenue and follows Orange Avenue east to the intersection of N Grant Street and N Lakeview Drive.

This segment would provide a link to the future community recreation center, proposed for the Longwood Elementary school site.

Bicycle Element

Corridor 2 - Reiter Park/SunRail Connection

As illustrated in Figure 17, this corridor would provide over 2 miles of bicycle facilities west of Ronald Reagan Boulevard, with the opportunity to add an additional 2 miles of optional connections. The following community features would be connected along this corridor:

- Future SunRail Station
- Reiter Park
- Downtown Historic District
- Commercial/Retail areas
- South Seminole Hospital
- Florida Central Commerce Park

Segment Breakdown:

Segment 1: Future SunRail Station to Reiter Park – 0.31 mile

Segment 1 begins at the future SunRail station, east of the intersection of Ronald Reagan Boulevard and W. Church Avenue. The segment follows W. Church Avenue west to the Milwee Street intersection at Reiter Park. Given the 20 MPH speed limit, segment 1 should include signage and shared lane markings.

Segment would provide a connection through the Longwood Historic District between Reiter Park and the future SunRail station.

Segment 2: Reiter Park to Longwood Hills Rd./EE Williamson Rd. – 1.30 mile

Segment 2 begins at the intersection of Milwee Street and W. Church Avenue at Reiter Park and follows W. Church Avenue northwest 1 mile to Rangeline Road. The segment then heads north on Rangeline Road, connecting to the intersection of EE Williamson Road and Longwood Hills Road. Designated bicycle lanes should be added to W. Church Avenue from Milwee Street to just south of Tiberon Cove Road, where curbs are present. Shared lane markings and signage can be used from this portion of the segment to Sandalwood Way. Designated bicycle lanes should be added from Sandalwood Way to Rangeline Road. Signage and shared lane markings should be added to Rangeline Road from Church Avenue to EE Williamson Road. Designated bicycle lanes can be considered during future resurfacing or reconstruction of this corridor.

Segment 2 would provide a connection for residents in the northwest portion of the City to Reiter Park and the Longwood Historic District.

Segment 3: W. Warren Ave to SR 434 – 0.63 mile

Segment 3 begins at the intersection of Milwee Street and W. Church Avenue at Reiter Park. The path follows Milwee Street south to W. Warren Avenue, and turns west to continue along W. Warren Avenue past the South Seminole Hospital to St. Laurent Street, adjacent to the Winn Dixie shopping center. Segment 3 terminates at the St. Laurent Street and SR 434 intersection. Segment 3 would provide a connection between Reiter Park, the Longwood Historic District, South Seminole Hospital and the Winn Dixie shopping center. Designated bicycle lanes should be added to segment 3 during resurfacing or reconstruction of the roadway. Signage and shared lane markings can be added as a short-term strategy along this segment until designated bicycle lanes can be added.

The following considerations should be given when traveling from SR 434 to W. Warren Avenue (and vice-versa):

- The intersections of W. Warren Avenue/St. Laurent Avenue and St. Laurent Avenue/SR 434 are very close in proximity and the landscaped island median reduces visibility.
- Limited sight lines, a non-traditional layout, and closely spaced intersections lead to relatively difficult conditions.

An alternative connection to SR 434 from W. Warren Avenue is suggested to avoid the potential visual constraints present at the W. Warren and St. Laurent intersection. The connection would start at the intersection of SR 434 and the access road between the Regions Bank and the Dunkin Donuts. The connection would run adjacent to the access road and connect into W. Warren Avenue. This connection would include signage and shared lane markings.

Optional Additional Connections:

Segment 4 (Optional) – The power line Easement between Longwood Hills Road and W. Church Avenue – 0.35 mile

Optional segment 4 would provide an multiuse trail alternative connection between W. Church Avenue and Longwood Hills Road. The optional segment 4 begins at the intersection of Lake Emma Road and Longwood Hills Road and heads south along the power line easement between W. Church Avenue and Longwood Hills Road. The segment would connect to the proposed Segment 2 at W. Church Avenue between Harbour Drive and Sandalwood Way.

Linear ponds along the optional segment 4 would likely need to be modified or replaced in order to provide adequate separation from the trail. Further negotiations would also need to be made with property owners along the power line easement before any action could be made.

Bicycle Element

An additional connection between W. Church Avenue and W. Warren Avenue, following the same power line easement, was also assessed but was removed as a recommendation due to lack of local support and the potential high cost that would be associated with the right-of-way acquisitions from private property owners along the corridor. This segment of the corridor would have traveled through a number of private residences. These residents would have needed to agree to significantly reduce their yard space in order to provide a continuous trail.

Segment 5 (Optional): Rangeline Road – 0.74 mile
Rangeline Road has a speed limit of 35 mph between SR 434 and W. Church Avenue. North of W. Church Avenue, the speed reduces to 25 mph. Designated bicycle lanes should be added along the segment 5 connection from the intersection of SR 434 and Rangeline Road, north W Church Avenue, where signage and shared lane markings should be added per the segment 2 recommendations.

Segment 6 (Optional): Powerline Easement (South) – 0.74 mile
Optional segment 6 would provide a multiuse trail that begins at the intersection of SR 434 and Highline Drive and follows the powerline easement south to the southern City limits.

Optional segment 6 would provide an connection between SR 434 and the Florida Central Commerce Park. South of SR 434, the alignment goes through existing industrial areas, with much of the alignment being used for parking.

Current Right of Way for roadways in Corridor 2 are:

Rangeline Rd right-of-way by block
- 62-65' Church to Woodgate
- 52-60' Woodgate to McClintock
- 73-66 McClintock to EE Williamson EE

Williamson Rd right-of-way by block
- 73' Rangeline to just east of Sunset
- 60' Sunset to Myrtle Lake Hills
- 78'-105' Myrtle Lake Hills to Cove Blvd
- 75'-72' Cove to E of Foxridge
- 192'-160' E of Foxridge to I-4
- 80'-101' I-4 to Seminole Wekiva Trail

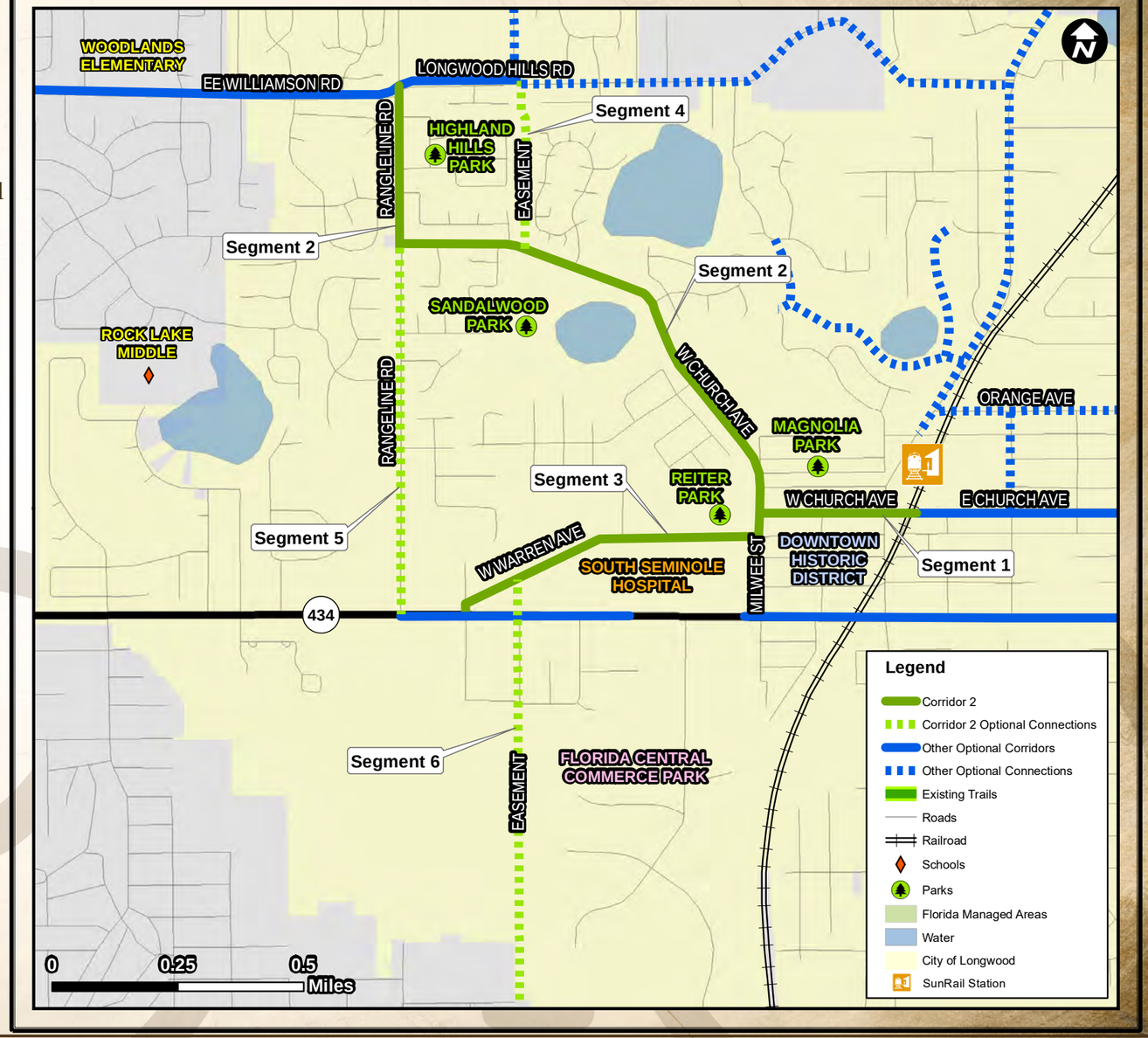
St Laurent Ave: 92'
Transmission Easement: 92'

Church Ave right-of-way by block:
- 50' Grant to Myrtle
- 47' Myrtle to Railroad
- 44' Railroad to CR 427 (Ronald Reagan)
- 61' CR 427 to Milwee St
- 46' Milwee to Florida Ave
- 57' – 62' Florida Ave to Parson Brown
- 51'-54' Parson Brown to Transmission Line
- 60' Transmission Line to Range line Road

W Warren Ave right-of-way by block
- 60' Milwee to west of Lemon
- 55' west of Lemon to St Laurent

Figure 17

Corridor 2 and Optional Connections



Bicycle Element

BICYCLE POLICY RECOMMENDATIONS

Performance Standards
The City of Longwood should consider adding a policy to the Comprehensive Plan that details performance standards for the implementation of bicycle facilities. A policy could be added to the Multi-Modal Transportation Element (Goal I, Objective II) that states: The City will strive to implement the development of at least one mile of multiuse trail each year until the Bicycle and Pedestrian Master Plan is implemented, dependent on the availability of funding.

Funding
The City of Longwood should consider adding a policy to the Comprehensive Plan that details performance standards for the implementation of bicycle facilities. A policy could be added to the Multi-Modal Transportation Element (Goal I, Objective II) that states: The City strive to identify grants and other funding opportunities that would supplement funding from the city's budget in order to implement the development of bicycle and pedestrian facilities within the City.

Annual Evaluation of the Bicycle and Pedestrian Master Plan
The City of Longwood should consider adopting a policy that states: The City shall conduct an annual evaluation to determine the progress of implementing the recommendations in the Bicycle and Pedestrian Master Plan.

Five-Year Update of the Bicycle and Pedestrian Master Plan
The City of Longwood should consider adopting a policy that states: The City shall pursue funding and conduct a recurring five-year update of the Bicycle and Pedestrian Master Plan until fully implemented. The update should determine projects that have been implemented, identify significant changes in the City, develop additional recommendations, re-prioritize projects for the City, and identify new funding opportunities and strategies.

Adopt a Context Sensitive Complete Streets Policy
The City should adopt a complete streets policy that is sensitive to the streets design and context. The policy should include provisions for bicycle and pedestrian facilities on streets and should establish a hierarchy for the types of facilities provided. The hierarchy should include:
- Provision of a 12 foot or wider multiuse trail where right of way is available
- Provision of an 8 to 10 foot multiuse trail where a 12 foot multiuse trail is not feasible
- Designated bicycle lanes or paved shoulders on all roadways, where feasible
- Shared lane markings (sharrow) on roads with speed limits below 35 miles per hour where bicycle lanes are not feasible
- Speed limits of 20 miles per hours or less on residential streets

Bicycle Lanes and Paved Shoulders
During resurfacing and reconstruction, 5-foot paved shoulders should be added to all roadways where right-of-way is available. Four-foot paved shoulders should be considered if 5-foot paved shoulders are not feasible. In urban areas, these paved shoulders should be marked as designated bicycle lanes.

Bicycle Advisory Committee
The City should consider establishing a bicycle advisory committee (BAC) to build public support for bicycling improvements. The establishment of this committee creates a systematic method for ongoing citizen input into the development of bicycle-related policies, plans, and projects. The committee membership should be comprised completely or predominantly of volunteer citizens with involvement from law enforcement, community development, and public works representatives. The committee should be involved with developing relevant policy and planning documents, setting priorities, reviewing annual pedestrian program work plans, and reviewing major public and private projects. The committee can meet monthly, bi-monthly, or quarterly.

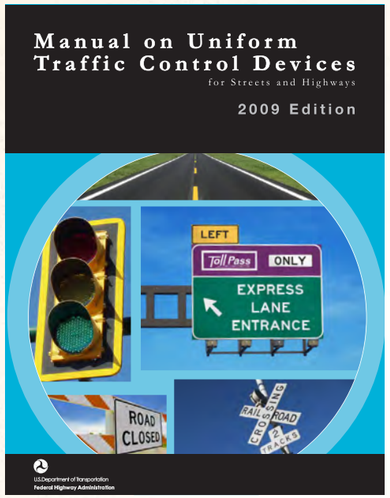
Bicycle Program Manager
The City of Longwood should consider designating a Bicycle Program Manager. This role can be part of the regular duties of an existing position in the City. The Bicycle Program Manager would be responsible for implementing the recommendations in this plan, coordinate with other entities to provide training courses (such as Traffic Skills 101, Cycling Skills, Commuting, and other League of American Bicyclist courses), and promote bicycling events (such as National Bike Month and Bike to Work Day).

Bicycle Element

Bicycle Education
The City of Longwood should investigate opportunities to promote bicycle education through a variety of means, including:
- Bicycle education in schools through Safe Routes to Schools (SRTS)
- Partnerships with schools and school districts
- Public service announcements
- Community newsletters
- Utility bills inserts
- New resident packets
- Newspaper articles
- Blogs and social media
- Bicycling page on the City's website
- Drivers education courses

City Employee Training
City engineers and planners should be trained in American Association of State Highway and Transportation Officials (AASHTO) and Manual on Uniform Traffic Control Devices (MUTCD) standards.

Maintenance Policies
The City of Longwood should consider adopting maintenance policies that address:
- Regular street sweeping that clears bicycle lanes and paved shoulders
- Post-storm street sweeping to remove debris
- Pothole and surface repair with a specific timeframe following a complaint (i.e. 24 hours, 1 week, or 1 month following a complaint)
- Sweeping of multiuse trails
- Vegetation maintenance on multiuse trails
- Lighting
- Signage
- Striping



Bicycle Suitability Map
The City should make available bicycle suitability maps in both printed and electronic format. The maps could be available on the City's website for download.
- The map identifies the suitability of roadways for bicycling based on speed limits and traffic volumes.
- The back of the map provides bicycle resources and safety information

Design Guidelines
The City should review and consult the design guidelines documentation developed in conjunction with this Bicycle and Pedestrian Master Plan when making decisions about the implementation of bicycle facilities as well as during the design of such facilities.

Bicycle Friendly Community Designation
As the projects identified in this plan are implemented, the City of Longwood should consider applying for designation as a Bicycle Friendly Community (BFC). This designation will provide recognition for the City and may help attract cyclists and tourists to the City.

Bicycle Friendly Community
League of American Bicyclists

Transit Oriented Development

Transit Oriented Development (TOD)

According to the American Planning Association's Planning Advisory Service QuickNotes Number 21, *Planning for Transit Oriented Development*:

Transit-oriented development, commonly known as TOD, is more than just more densely arranged homes, offices, and stores near a rail station or bus line. Successful TOD is defined by activities and urban design features that generate ridership for a transit system as well as tangible benefits for a community. The role of planning is to balance multiple interests and lay the groundwork for building high-quality places. In the case of TOD planning, making transit use safe and convenient are critical aspects of quality.

With a SunRail Station and future transit oriented development planned for the City of Longwood, the bicycle and pedestrian recommendations included in this plan should be closed coordinated with future development to support sucessful TOD in the City.

Key TOD Components:

- Get the land uses right
- Promote density
- Create convenient pedestrian connections
- Ensure good urban design
- Create compact development patterns
- Manage parking
- Make each station a place

Benefits of TOD's:

- Provide housing and mobility choices
- Improves environmental performance
- Results in infrastructure cost savings
- Helps support healthy lifestyles
- Strengthens transit systems
- Creates lasting value
- Reduces greenhouse gas emissions

Example of TOD Zones in Virginia

Transit Oriented Development

Coordinating the Bicycle and Pedestrian Master Plan with the TOD Implementation Strategy

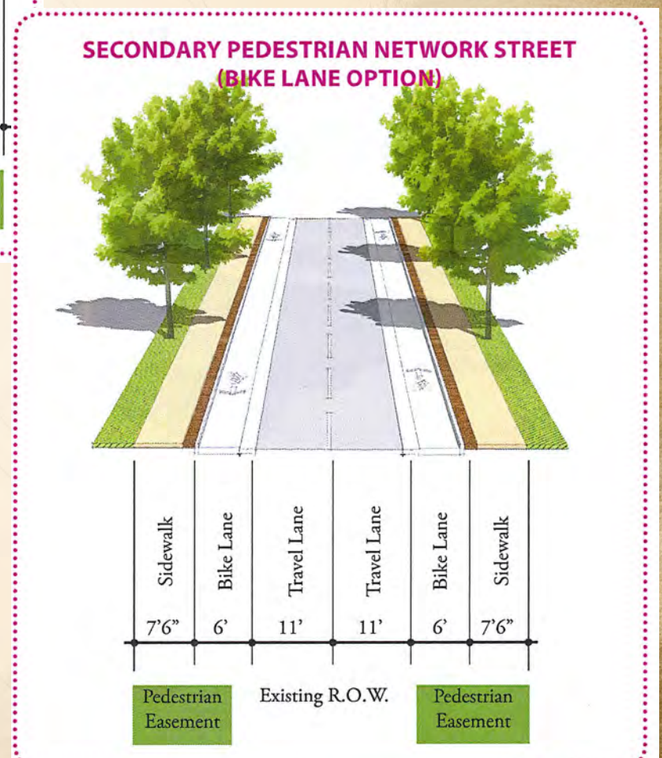
Pedestrian Network Streets

The City of Longwood's TOD Implementation Strategy identifies the following corridors as Primary Pedestrian Network Streets:

- East Church Avenue (Oleander to RR)
- East Church Avenue (RR to 427)
- West Church Avenue (Milwee to 427)
- West Warren Avenue (West of Milwee)
- Longwood Street (South of Church)
- Longwood Street (Church to Florida)
- Longwood Street (Florida to Palmetto)
- Myrtle Street (Church to 434)
- Oleander Street (Magnolia to Orange)
- Oleander Street (Jessup to Church)
- South Milwee Street (Church to Warren)

The City of Longwood's TOD Implementation Strategy identifies the following corridors as Secondary Pedestrian Network Streets:

- **West Warren Avenue (Milwee to 427)**
- **South Milwee Street (Warren to 434)**
- **South Wilma Street (Church to 434)**
- **East Pine Avenue (Oleander to 427)**
- **East Bay Avenue (Oleander to Longwood)**
- **East Warren Avenue (Oleander to Myrtle)**
- **North Myrtle Street (Church to Florida)**
- **East Palmetto Avenue (Oleander to Longwood)**
- **South Oleander Street (Church to 434)**



Proposed
Primary and Secondary
Pedestrian Network Streets

Transit Oriented Development

Pedestrian Network Street Recommendations

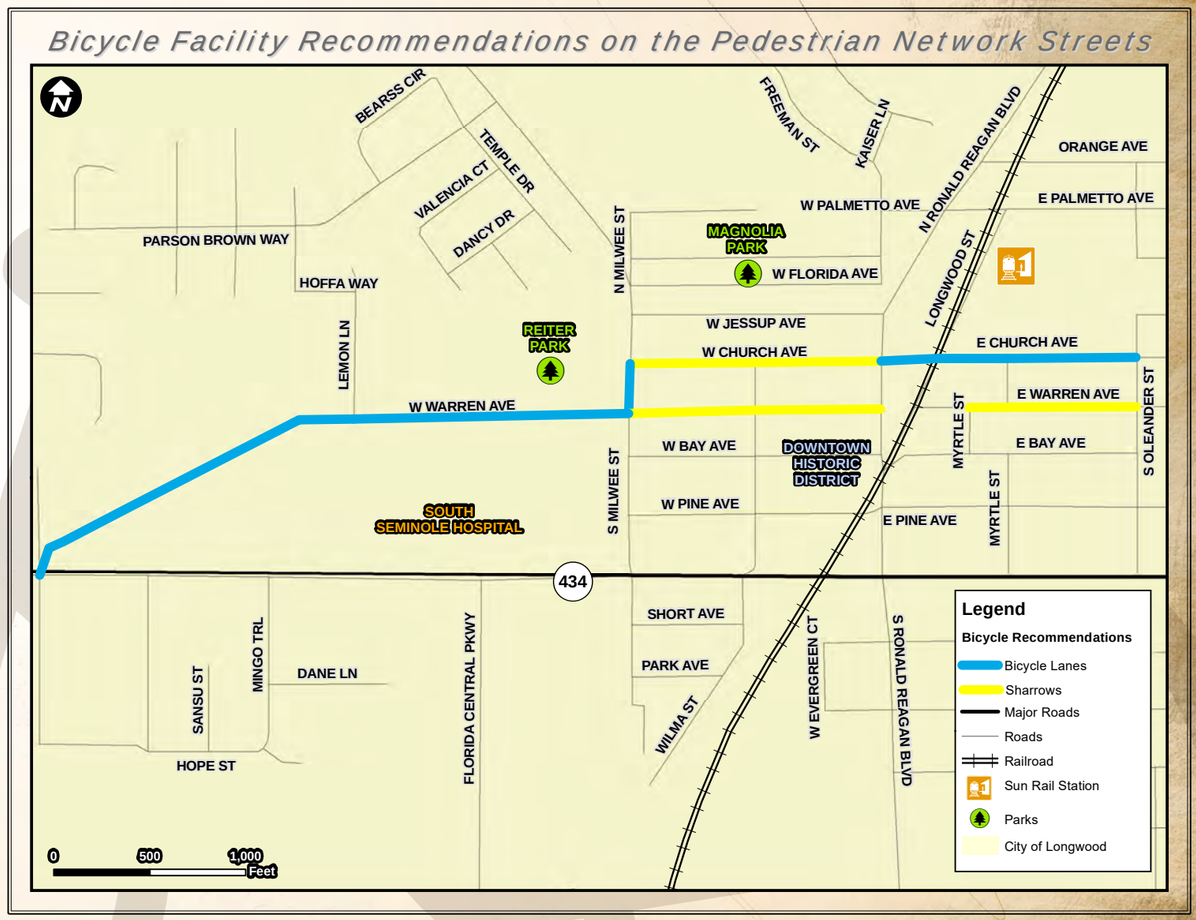
As the City of Longwood moves forward with the TOD implementation strategy, the Primary and Secondary Pedestrian Network Streets with the bike lane option should be selected over the non-bike lane options. Bicycle lanes should be no less than 4-feet in width, though 5-feet is the preferred width. Where on-street parking is included in the typical section, bicycle lanes should be no less than 6-feet in width. Where right-of-way constraints limit the ability to incorporate bicycle lanes on the proposed Pedestrian Network Streets, the speed limit should be no higher than 35 miles per hour, and shared lane markings (sharrows) with associated signage should be implemented along the corridors. Where constructable, sidewalks should be included on both sides of the street for all Pedestrian Network Streets.

Consistent with the recommendations in the Bicycle Element section of this plan, the following bicycle facilities are recommended for Primary and Secondary Pedestrian Street Networks. As illustrated in Figure 26, bicycle facility recommendations have been included for the following corridors on the Primary and Secondary Pedestrian Street Network:

- East Church Avenue
- West Church Avenue
- Longwood Street
- South Milwee Street
- East Warren Avenue
- West Warren Avenue

Figure 26

Bicycle Facility Recommendations on the Pedestrian Network Streets



Implementation

Figure 31B: Bicycle Facility Cost Estimates Continued

Segment	Roadway	From	To	Length		Improvement(s)	Project Cost	Coordination with other agencies / property owners	Funding Source	Next Step(s) for Project Implementation
Corridor 2: South Corridor										
Segment 1	W. Church Avenue	Future SunRail Station	Milwee Street	0.31	mi.	Provide signage and shared lane markings (Sharrows)	$2,210	Longwood Public Works department/ SunRail	MPO, Transportation Enhancement Program, General funds	Add pavement markings
Segment 2 (Bike Lanes)	W. Church Avenue	Milwee Street Sandalwood Way	Tiburon Cove Road Rangeline Road	0.68	mi.	Add designated bicycle lanes during repaving	$286,271	Longwood Public Works department	MPO, Transportation Enhancement Program, General funds	Schedule resurfacing
Segment 2 (Sharrows)	W. Church Avenue	Tiburon Cove Road Rangeline Road	Sandalwood Way EE Williamson Road	0.61	mi.	Provide signage and shared lane markings (Sharrows)	$3,965	Longwood Public Works department/ Seminole County	MPO, Transportation Enhancement Program, General funds	Add pavement markings
Segment 3 (Short-Term)	W. Warren Ave	Milwee Street	SR 434	0.63	mi.	Provide signage and shared lane markings (Sharrows)	$4,095	Longwood Public Works department	MPO, Transportation Enhancement Program, General funds	Add pavement markings
Segment 3 (Long-Term)	W. Warren Ave	Milwee Street	SR 434	0.63	mi.	Add designated bicycle lanes during repaving	$265,222	Longwood Public Works department	MPO, Transportation Enhancement Program, General funds	Schedule resurfacing
Segment 4 (Optional)	Power line Easement	Longwood Hill Road	W Church Aveue	0.35	mi.	Construct 10' or 12' Asphalt Path	$88,591	Utilities / Property Owners	MPO, Transportation Enhancement Program, General funds	Feasibility study
Segment 5 (Optional)	Rangeline Road	SR 434	W Church Aveue	0.74	mi.	Add designated bicycle lanes during repaving	$311,531	Seminole County	MPO, Transportation Enhancement Program, General funds	Schedule resurfacing
Segment 6 (Optional)	Power line Easement (South)	SR 434	southern City Limits	0.73	mi.	Construct 10' Asphalt Path	$184,776	Utilities / FDOT	Recreational Trails Program, MPO, Transportation Enhancement Program, General	Feasibility Study / Coordination with Progress Energy
Corridor 2: South Corridor Total Estimated Cost:							**$1,146,661**			

Implementation

Figure 32A: Project Implementation Phasing

Project Description	Project Study Area	Length		Estimated Project Cost
Immediate Term				
Design and Survey for multiuse trail	Winding Oak Lane to Cross Seminole Trail	0.96	mile	$48,599
Design and Survey for multiuse trail	EE Williamson Road Woodlands Elementary School to Seminole Wekiva Trail	0.57	mile	$28,855
Shared Lane Markings and Signage	Church Street from Future SunRail Station to Grant Street	0.51	mile	$3,315
Shared Lane Markings and Signage	Orange Avenue from Grant Street to Oleander Street	0.4	mile	$2,600
Shared Lane Markings and Signage	Orange Avenue from Grant Street to Community Recreation Center	0.36	mile	$2,340
Shared Lane Markings and Signage	Church Avenue from Future SunRail Station to Reiter Park	0.31	mile	$2,210
Shared Lane Markings and Signage	W. Warren Avenue from Milwee Street to SR 434	0.63	mile	$4,095
Feasibility Study for multiuse trail	Power line easement between Longwood Hills Road and W. Church Avenue	0.35	mile	$8,500
Feasibility Study for multiuse trail	Power line easement from SR 434 to southern city limits	0.73	mile	$10,000
Shared Lane Markings and Signage	Wildmere Avenue from Ronald Reagan Boulevard to 17/92	1.12	mile	$7,280
Shared Lane Markings and Signage	Warren Avenue from S. Lakeview Drive to N. Longwood Street	0.89	mile	$5,785
Shared Lane Markings and Signage	Warren Avenue from Ronald Reagan Boulevard to Milwee Street	0.25	mile	$1,625
Construct sidewalks	Longwood Hills Road from Lake Emma Road to Hearthstone Lane	0.07	mile	$1,265
Construct sidewalks	Longwood Hills Road from Lincolnwood Lane to Stone Court	0.07	mile	$8,890

Figure 32d: Project Implementation Phasing Continued

Project Description	Project Study Area	Length		Estimated Project Cost
Long Term				
Resurface road and add bike lanes	W. Warren Avenue from Milwee Street to SR 434	0.63	mile	$265,222
Construct multiuse trail	Power line easement between Longwood Hills Road and W. Church Avenue	0.35	mile	$88,591
Construct multiuse trail	Power line easement from SR 434 to southern city limits	0.73	mile	$184,776
Construct multiuse trail	Lazy Acres Lane and Bay Meadow Road from Lake Emma Road to Ronald Reagan Boulevard	1.27	mile	$321,460
Construct multiuse trail	Connection to Cross Seminole Trail - power line easement from Lazy Acres Lane/Bay Meadow Road to Cross Seminole Trail	1	mile	$230,000
Construct multiuse trail	Community Connectors (East Lake)	0.8	mile	$202,495
Construct sidewalks	Land Avenue from Grant Street to Highland Street	0.93	mile	$224,299
Construct sidewalks	Tullis Avenue from east of Ronald Reagan Boulevard to Grant Street	0.8	mile	$191,475
Construct sidewalks	Reider Avenue from east of Ronald Reagan Boulevard to Grant Street	0.8	mile	$191,475
Construct sidewalks	E. Lake Avenue from Ronald Reagan Boulevard to S Oak Street	0.73	mile	$176,886
Construct sidewalks	2nd Place from Ronald Reagan Boulevard to 14th Avenue	0.64	mile	$153,180
Construct sidewalks	Oleander Street from Lake Avenue to Marvin Avenue	0.62	mile	$149,533
Construct sidewalks	S. Oak Street from E. Maine Avenue to Overstreet Avenue	0.62	mile	$149,533
Construct sidewalks	Logan Drive from Hamilton Avenue to Hunt Road	0.37	mile	$44,450
Construct sidewalks	Hunt Road from Logan Drive to Longdale Avenue	0.14	mile	$17,324
Construct sidewalks	Selma Road from Logan Drive to Longdale Avenue	0.29	mile	$69,296
Construct sidewalks	Ridgecrest Lane from Ridgeline Run to Grange Circle	0.16	mile	$37,839
Construct sidewalks	Wren Avenue from Pelican Street to Sparrow Lane	0.13	mile	$15,044
Construct sidewalks	Overstreet from S. Oleander Street to S. Oak Street	0.12	mile	$14,589
Construct connection	Ronald Reagan Boulevard to Reider Avenue	0.08	mile	$9,628
Construct connection	Ronald Reagan Boulevard to Tullis Avenue	0.15	mile	$18,053
Pave Roadway	Tullis Avenue from Oleander Street to Ronald Reagan Boulevard	0.15	mile	$719,051
Pave Roadway	Overstreet Avenue from Grant Street to Oleander Street	0.25	mile	$1,198,418

Appendix C

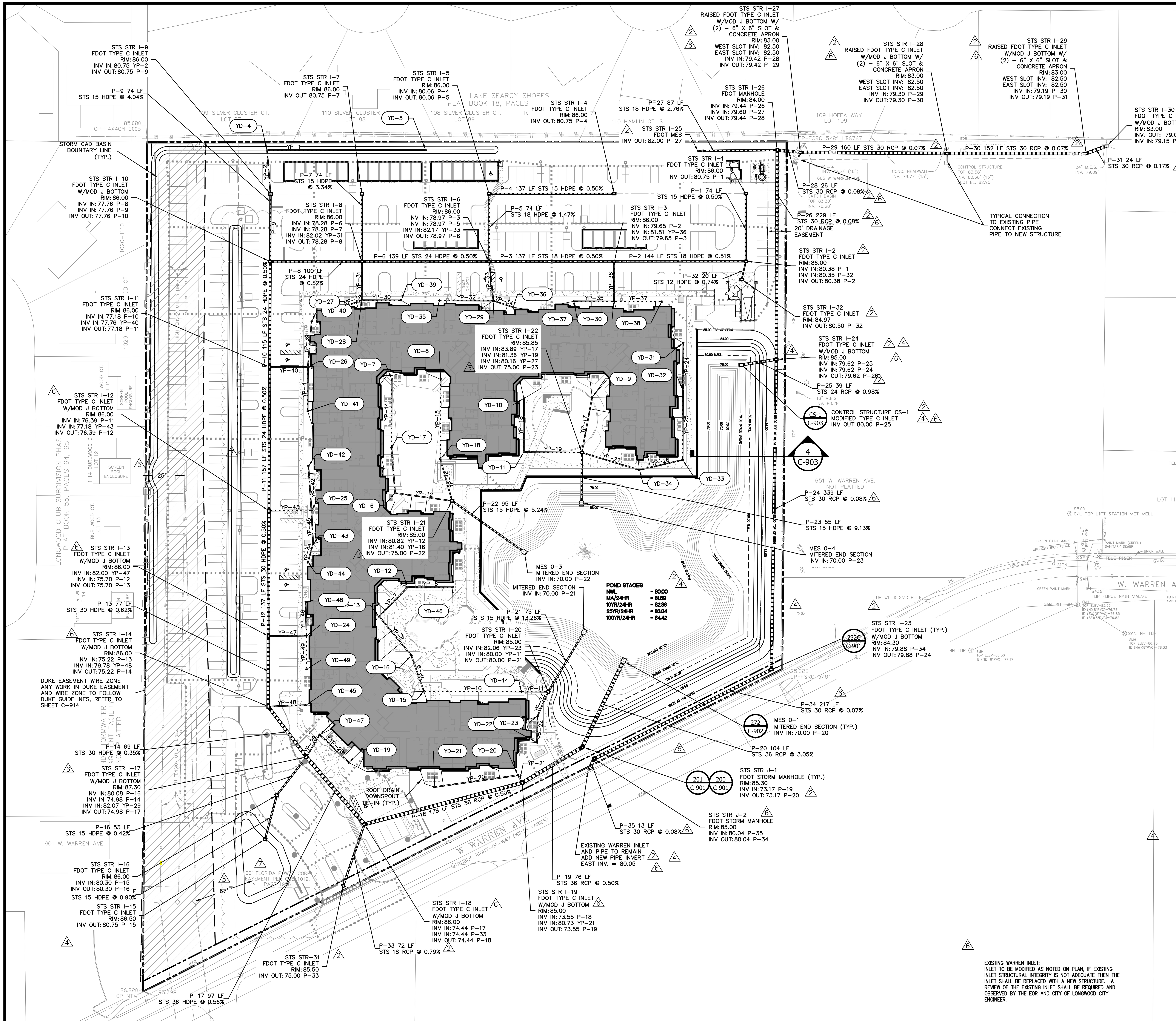
Drainage

Pertinent Drainage Information

1. ERP Permit No: 156187-1 Alta Longwood
2. ERP Permit No: 106066-4 Reiter Park Phase 1 Hardscape and Landscape Improvements
3. ERP Permit No: 66916-1 South Seminole Hospital Cardiac Lab Addition

1. ERP Permit No: 156187-1

Alta Longwood


GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.
LAKE SEARCY SHORES
PLAT BOOK 18, PAGES
STORM CAD BASIN BOUNTARY LINE (TYP.)
STS STR I-9
FDOT TYPE C INLET
RIM: 86.00
INV IN: 80.75 YP-2
INV OUT: 80.75 P-9
P-9 74 LF
STS 15 HDPE @ 4.04%
STS STR I-10
FDOT TYPE C INLET
W/MOD J BOTTOM
RIM: 86.00
INV IN: 77.76 P-8
INV IN: 77.76 P-9
INV OUT: 77.76 P-10
STS STR I-7
FDOT TYPE C INLET
RIM: 86.00
INV OUT: 80.75 P-7
STS STR I-5
FDOT TYPE C INLET
RIM: 86.00
INV IN: 80.06 P-4
INV OUT: 80.06 P-5
STS STR I-4
FDOT TYPE C INLET
RIM: 86.00
INV OUT: 80.75 P-4
P-27 87 LF
STS 18 RCP @ 2.76%
STS STR I-25
FDOT MES
INV OUT: 82.00 P-27
STS STR I-27
RAISED FDOT TYPE C INLET
W/MOD J BOTTOM W/
(2) - 6" X 6" SLOT &
CONCRETE APRON
RIM: 83.00
WEST SLOT INV: 82.50
EAST SLOT INV: 82.50
INV IN: 79.42 P-28
INV OUT: 79.42 P-29
STS STR I-26
FDOT MANHOLE
RIM: 84.00
INV IN: 79.44 P-26
INV IN: 79.60 P-27
INV OUT: 79.44 P-28
STS STR I-28
RAISED FDOT TYPE C INLET
W/MOD J BOTTOM W/
(2) - 6" X 6" SLOT &
CONCRETE APRON
RIM: 83.00
WEST SLOT INV: 82.50
EAST SLOT INV: 82.50
INV IN: 79.30 P-29
INV OUT: 79.30 P-30
STS STR I-29
RAISED FDOT TYPE C INLET
W/MOD J BOTTOM W/
(2) - 6" X 6" SLOT &
CONCRETE APRON
RIM: 83.00
WEST SLOT INV: 82.50
EAST SLOT INV: 82.50
INV IN: 79.19 P-30
INV OUT: 79.19 P-31
STS STR I-30
FDOT TYPE C INLET
W/MOD J BOTTOM
RIM: 83.00
INV. OUT: 79.09 EXISTING PIPE
INV IN: 79.15 P-31
P-29 160 LF STS 30 RCP @ 0.07%
P-30 152 LF STS 30 RCP @ 0.07%
P-31 24 LF
STS 30 RCP @ 0.17%
STS STR I-1
FDOT TYPE C INLET
RIM: 86.00
INV OUT: 80.75 P-1
P-28 26 LF
STS 30 RCP @ 0.08%
P-26 229 LF
STS 30 RCP @ 0.08%
20' DRAINAGE EASEMENT
TYPICAL CONNECTION
TO EXISTING PIPE
CONNECT EXISTING
PIPE TO NEW STRUCTURE
P-7 74 LF
STS 15 HDPE @ 3.34%
P-4 137 LF STS 15 HDPE @ 0.50%
P-1 74 LF
STS 15 HDPE @ 0.50%
STS STR I-8
FDOT TYPE C INLET
RIM: 86.00
INV IN: 78.28 P-6
INV IN: 78.28 P-7
INV IN: 82.02 YP-31
INV OUT: 78.28 P-8
STS STR I-6
FDOT TYPE C INLET
RIM: 86.00
INV IN: 78.97 P-3
INV IN: 78.97 P-5
INV IN: 82.17 YP-33
INV OUT: 78.97 P-6
P-5 74 LF
STS 18 HDPE @ 1.47%
STS STR I-3
FDOT TYPE C INLET
RIM: 86.00
INV IN: 79.65 P-2
INV IN: 81.81 YP-36
INV OUT: 79.65 P-3
P-6 139 LF STS 24 HDPE @ 0.50%
P-3 137 LF STS 18 HDPE @ 0.50%
P-2 144 LF STS 18 HDPE @ 0.51%
P-8 100 LF
STS 24 HDPE
@ 0.52%
STS STR I-2
FDOT TYPE C INLET
RIM: 86.00
INV IN: 80.38 P-1
INV IN: 80.35 P-32
INV OUT: 80.38 P-2
P-32 20 LF
STS 12 HDPE @ 0.74%
STS STR I-32
FDOT TYPE C INLET
RIM: 84.97
INV OUT: 80.50 P-32
STS STR I-24
FDOT TYPE C INLET
W/MOD J BOTTOM
RIM: 85.00
INV IN: 79.62 P-25
INV IN: 79.62 P-24
INV OUT: 79.62 P-26
P-25 39 LF
STS 24 RCP @ 0.98%
CONTROL STRUCTURE CS-1
MODIFIED TYPE C INLET
INV OUT: 80.00 P-25
STS STR I-11
FDOT TYPE C INLET
RIM: 86.00
INV IN: 77.18 P-10
INV IN: 77.76 YP-40
INV OUT: 77.18 P-11
STS STR I-22
FDOT TYPE C INLET
RIM: 85.85
INV IN: 83.89 YP-17
INV IN: 81.36 YP-19
INV IN: 80.16 YP-27
INV OUT: 75.00 P-23
STS STR I-12
FDOT TYPE C INLET
W/MOD J BOTTOM
RIM: 86.00
INV IN: 76.39 P-11
INV IN: 77.18 YP-43
INV OUT: 76.39 P-12
P-10 115 LF STS 24 HDPE @ 0.50%
P-11 157 LF STS 24 HDPE @ 0.50%
P-12 137 LF STS 30 HDPE @ 0.50%
LONGWOOD CLUB SUBDIVISION PHASE
PLAT BOOK 55, PAGES 64, 65
651 W. WARREN AVE.
NOT PLATTED
P-24 339 LF
STS 30 RCP @ 0.08%
P-23 55 LF
STS 15 HDPE @ 9.13%
MES O-4
MITERED END SECTION
INV IN: 70.00 P-23
P-22 95 LF
STS 15 HDPE @ 5.24%
STS STR I-21
FDOT TYPE C INLET
RIM: 85.00
INV IN: 80.82 YP-12
INV IN: 81.40 YP-16
INV OUT: 75.00 P-22
MES O-3
MITERED END SECTION
INV IN: 70.00 P-22
MITERED END SECTION
INV IN: 70.00 P-21
POND STAGES
NWL = 80.00
MA/24HR = 81.69
10YR/24HR = 82.86
25YR/24HR = 83.34
100YR/24HR = 84.42
STS STR I-13
FDOT TYPE C INLET
W/MOD J BOTTOM
RIM: 86.00
INV IN: 82.00 YP-47
INV IN: 75.70 P-12
INV OUT: 75.70 P-13
P-13 77 LF
STS 30 HDPE @ 0.62%
P-21 75 LF
STS 15 HDPE @ 13.26%
STS STR I-20
FDOT TYPE C INLET
RIM: 85.00
INV IN: 82.06 YP-23
INV IN: 80.00 YP-11
INV OUT: 80.00 P-21
STS STR I-14
FDOT TYPE C INLET
W/MOD J BOTTOM
RIM: 86.00
INV IN: 75.22 P-13
INV IN: 79.78 YP-48
INV OUT: 75.22 P-14
DUKE EASEMENT WIRE ZONE
ANY WORK IN DUKE EASEMENT
AND WIRE ZONE TO FOLLOW
DUKE GUIDELINES, REFER TO
SHEET C-914
STS STR I-23
FDOT TYPE C INLET (TYP.)
W/MOD J BOTTOM
RIM: 84.30
INV IN: 79.88 P-34
INV OUT: 79.88 P-24
P-34 217 LF
STS 30 RCP @ 0.07%
MES O-1
MITERED END SECTION (TYP.)
INV IN: 70.00 P-20
P-20 104 LF
STS 36 RCP @ 3.05%
STS STR J-1
FDOT STORM MANHOLE (TYP.)
RIM: 85.30
INV IN: 73.17 P-19
INV OUT: 73.17 P-20
P-14 69 LF
STS 30 HDPE @ 0.35%
STS STR I-17
FDOT TYPE C INLET
W/MOD J BOTTOM
RIM: 87.30
INV IN: 80.08 P-16
INV IN: 74.98 P-14
INV IN: 82.07 YP-29
INV OUT: 74.98 P-17
ROOF DRAIN
DOWNSPOUT
TIE-IN (TYP.)
P-18 178 LF STS 36 RCP @ 0.50%
STS STR J-2
FDOT STORM MANHOLE
RIM: 85.00
INV IN: 80.04 P-35
INV OUT: 80.04 P-34
P-35 13 LF
STS 30 RCP @ 0.08%
EXISTING WARREN INLET
AND PIPE TO REMAIN
ADD NEW PIPE INVERT
EAST INV. = 80.05
P-16 53 LF
STS 15 HDPE @ 0.42%
901 W. WARREN AVE.
W. WARREN AVE.
PUBLIC RIGHT-OF-WAY (WIDTH VARIES)
STS STR I-16
FDOT TYPE C INLET
RIM: 86.00
INV IN: 80.30 P-15
INV OUT: 80.30 P-16
P-15 STS 15 HDPE @ 0.90%
STS STR I-15
FDOT TYPE C INLET
RIM: 86.50
INV OUT: 80.75 P-15
P-19 76 LF
STS 36 RCP @ 0.50%
STS STR I-19
FDOT TYPE C INLET
W/MOD J BOTTOM
RIM: 85.00
INV IN: 73.55 P-18
INV IN: 80.73 YP-21
INV OUT: 73.55 P-19
STS STR I-18
FDOT TYPE C INLET
W/MOD J BOTTOM
RIM: 86.00
INV IN: 74.44 P-17
INV IN: 74.44 P-33
INV OUT: 74.44 P-18
P-33 72 LF
STS 18 RCP @ 0.79%
STS STR-31
FDOT TYPE C INLET
RIM: 85.50
INV OUT: 75.00 P-33
P-17 97 LF
STS 36 HDPE @ 0.56%
LEMON LANE
W. WARREN AVE.
LOT 118

EXISTING WARREN INLET:
INLET TO BE MODIFIED AS NOTED ON PLAN, IF EXISTING INLET STRUCTURAL INTEGRITY IS NOT ADEQUATE THEN THE INLET SHALL BE REPLACED WITH A NEW STRUCTURE. A REVIEW OF THE EXISTING INLET SHALL BE REQUIRED AND OBSERVED BY THE EOR AND CITY OF LONGWOOD CITY ENGINEER.

DUKE EASEMENT AND WIRE ZONE: ANY PERSON PERFORMING WORK WITHIN THE DUKE EASEMENT AND/OR WIRE ZONE SHALL ADHERE TO THE DUKE REQUIREMENTS FOR CONSTRUCTION ACTIVITIES, SEE SHEET C-914 FOR GUIDELINES

YARD DRAIN NOTES:

1. CLEANOUTS TO BE INSTALLED AT EVERY END, BEND, AND TEE.
2. INLET TOP ELEVATIONS TO BE SET AT TIME OF FINAL GRADING.
3. PIPING TO BE INSTALLED 3-FT MINIMUM BELOW FINISHED FLOOR.
4. ALL DRAIN INLETS IN MULCHED AREAS TO HAVE DOMED GRATES.

MADDEN
MOORHEAD & STOKES, INC.
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330

DRAINAGE PLAN
FOR
ALTA LONGWOOD
FLORIDA
CITY OF LONGWOOD

WP SOUTH ACQUISITIONS, L.L.C.
636 W. YALE STREET
ORLANDO, FL 32804
407-982-2516

ENGINEER: DANIEL A. STOKES, P.E. No. 66527
CERTIFICATE OF AUTHORIZATION NO. EB-0007723

NO.	DATE	REVISIONS
1	12/11/18	ENTIRE PLAN HAS BEEN REVISED
2	1/10/19	REVISED PER CITY COMMENTS
3	2/19/19	REVISED PER CITY COMMENTS
4	3/20/19	REVISED PER DUKE/CITY COMMENTS
5	4/19/19	REVISED PER DUKE COMMENTS
6	5/21/19	REVISED STORM
7	5/29/19	REVISED PER WMD
8		
9		
10		
11		

JOB #	18038
DATE:	10/25/18
SCALE:	1"=50'
DESIGNED BY:	TB
DRAWN BY:	TB
APPROVED BY:	DAS

C-300

INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT TECHNICAL STAFF REPORT
05-Jun-2019
APPLICATION #: 156187-1

Applicant: Bryan Borland
WP South Acquisitions, L.L.C.
636 W Yale St
Orlando, FL 32804-5356
(407) 982-2516

Jeffery Fuqua
LJF Acquisitions, LLC
Ste 1000
300 S Orange Ave
Orlando, FL 32801-5403

Owner: Jeffery Fuqua
LJF Acquisitions, LLC
Ste 1000
300 S Orange Ave
Orlando, FL 32801-5403

ODonnell Laura
VBJ Investments, LLC
222 S Harbor Dr
Holmes Beach, FL 34217-1918

Consultant: Steve Butler
Bio Tech Consulting
3025 E South St
Orlando, FL 32803-6460
(407) 894-5965

David A Stokes
Madden, Moorhead & Stokes, Inc.
Ste 260
431 E Horatio Ave
Maitland, FL 32751-7327
(407) 629-8330

Project Name: Alta Longwood
Acres Owned: 11.81
Project Acreage: 12.05
County: Seminole
STR:

Section(s):	Township(s):	Range(s):
31	20S	30E

Receiving Water Body:

Name	Class
Lake Searcy	III Fresh, IW

Authority:	62-330.020 (2)(d), 62-330.020 (2)(a), 62-330.020 (2)(b), 62-330.020 (2)(c)
Existing Land Use:	Coniferous Plantations(4410), Disturbed Land(7400), Streams and Waterways(5100), Wholesale Sales and Services(1420), Reservoirs less than 10 acres (4 hectares) which are dominant features.(5340)
Mitigation Drainage Basin:	Lake Jesup
Special Regulatory Basin:	
Final O&M Entity:	WP South Acquisitions, L.L.C.
ERP Conservation Easements/Restrictions:	No
Interested Parties:	No
Objectors:	No

Authorization Statement:
Construction and operation of a Stormwater Management System for a 11.81 - acre project known as Alta Longwood as per plans received by the District on December 18, 2018, amended Sheet C903, received by the District on May 28, 2019, and amended Sheets C-300, C-400 and C-401, received by the District on May 30, 2019.

Recommendation: Approval
Reviewers: Victoria Nations; Erica Dorn; Carmen Cadenas; Ana Arsova

Staff Comments

Project Applicant and Sufficient Real Property Interest: *Under rule 62-330.060, Florida Administrative Code (F.A.C.), and subsection 4.2.3(d), Environmental Resource Permit Applicant's Handbook Volume I (ERP A.H. Volume I), a permit applicant must certify that it has sufficient real property interest over the land upon which the activities subject to the application will be conducted.*

The permit applicant has a contract to purchase the property on which the proposed activities will be conducted.

Project Location and Brief Description:
The proposed project is located northeast of the intersection between West State Road 434 and Range Line Road, and has a physical address of 881 West Warren Avenue in Longwood, Seminole County. The applicant proposes to construct an apartment complex with associated utilities, drives, and parking, and a wet detention pond.

Permitting History:
There are no prior permits for this site.

2. ERP Permit No: 106066-4

Reiter Park Phase 1 Hardscape and Landscape Improvements

MINOR MODIFICATION TECHNICAL STAFF REPORT
21-Mar-2016
APPLICATION #: 106066-4

Applicant:
Jon Williams
City of Longwood
175 West Warren Avenue
Longwood, FL 32750-4461
(407) 260-3446

Owner:
Jon Williams
City of Longwood
175 West Warren Avenue
Longwood, FL 32750-4461
(407) 260-3446

Consultant:
Jeff Earhart
CPWG
2215 Wembley Place
Oviedo, FL 32765
407-267-8905

Project Name: Reiter Park Phase 1 Hardscape and Landscape Improvements
Acres Owned: 7.7
Project Acreage: 0.42
County: Seminole
STR:

Section(s):	Township(s):	Range(s):
31	20S	30E

Receiving Water Body:

Name	Class
East Lake	III Fresh

Authority: 62-330.020 (2)(b), 62-330.020 (2)(c) , 62-330.020 (2)(j)
Existing Land Use: Governmental(1750), Community Recreational Facilities(1860)
Mitigation Drainage Basin: Lake Jesup
Special Regulatory Basin:
Final O&M Entity: City of Longwood
ERP Conservation Easements/Restrictions: No
Interested Parties: No
Objectors: No

Authorization Statement:

Minor Modification of Permit No. 40-117-106066-2 for Reiter Park to include the construction and operation of a 0.42-acre project known as Reiter Park Phase 1 Hardscape and Landscape Improvements as per plans received by the District on February 25, 2016.

3. ERP Permit No: 66916-1

South Seminole Hospital Cardiac Lab Addition

NOTICED GENERAL ENVIRONMENTAL RESOURCE PERMIT
TECHNICAL STAFF REPORT
August 17, 2000
APPLICATION #: 400-117-66916-1

Applicant: Orlando Regional Healthcare System
Attn: Ken Drury Corp Mgr
76 West Sturtevant Street
Orlando, FL
32806
(407) 841-5111

Agent: Frith & Associates Inc
C/O Attn: Mr. John Frith, P.E.
8811 Great Cove Dr
Orlando, FL
32819
(407) 363-0739

Project Name: South Seminole Hospital Cardiac Lab Addition
County: Seminole
Section(s): 31 Township(s): 20S Range(s): 30E
Project Acreage: 8.319
ERP Conservation Easements/Restrictions: N/A

Authority: 40C-400.475

LOCATION AND BRIEF DESCRIPTION OF SYSTEM:

The project proposes the construction of a 5,000 square foot cardiac laboratory and a 3,972 square foot energy plant. Both structures will be situated adjacent to the South Seminole Hospital located at 555 West S.R. 434 in Longwood.

STAFF COMMENTS:

The project proposes the placement of less than 9,000 square feet of impervious surface in uplands. The existing South Seminole Hospital structures were built prior to 1983. The applicant has provided reasonable assurance that no adverse impacts to water quality or aquatic dependent listedspecies will occur.

A PERMIT AUTHORIZING:

The construction of a 5,000 square foot cardiac laboratory and a 3,972 square foot energy plant adjacent to the South Seminole Hospital located at 555 West S.R. 434 in Longwood.

Interested Parties: No
Objectors: No

Special Basin Criteria: N/A
Receiving Water Body: Swale draining to East Lake UNKNOWN (REMOVE) Class: III Fresh. Other/Unknown.

Appendix D

Raw Traffic Counts

TRAFFIC COUNT DATA

VHB PROJECT NO:	63742.00 Warren Ave Complete Street
LOCATION CODE:	1
COUNT LOCATION:	Warren Ave, East of St. Laurent St/Savage Ct
EQUIPMENT ID:	70

TYPE OF COUNT: 72 Hour Classification Count

TIME OF COUNT:

Start Date:	1/12/2021	Start Time:	Midnight
End Date:	1/14/2021	End Time:	Midnight

VOLUMES:

		Peak Hour Time:	6:00 PM
Average Daily:	3,368	Average Peak Hour:	321
Daily Truck Avg:	467	Max Hour Truck Avg:	48
		Peak Hour Truck Avg:	40

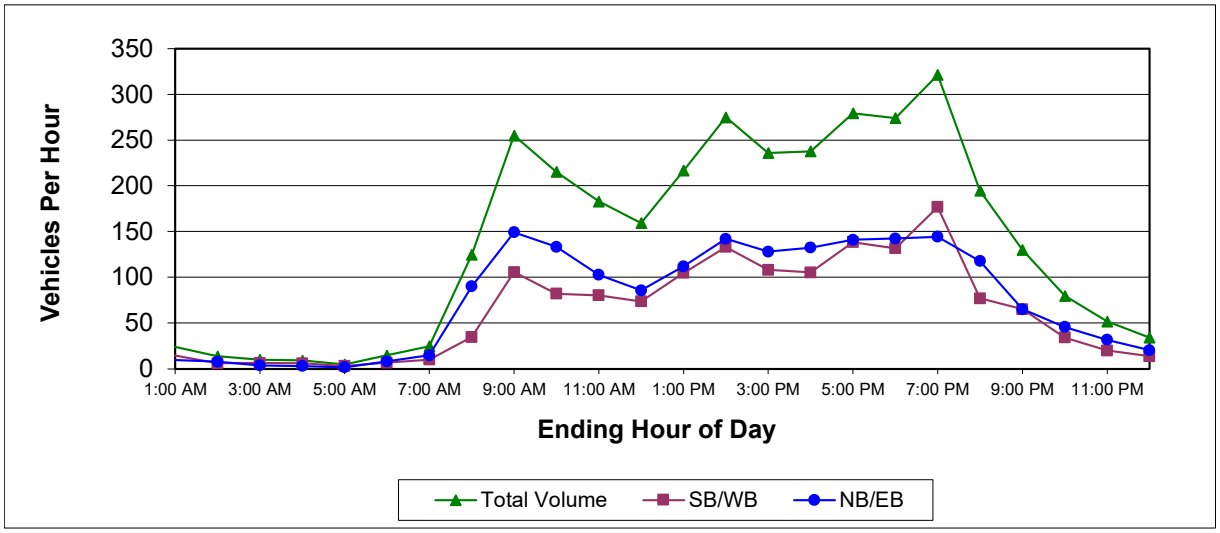
TRAVEL CHARACTERISTICS:

K MEASURED		D MEASURED	
K=	9.5%	D=	55.1%
T Max Hour	15.0%	T daily	13.9%
T med (max)	13.9%	T med Daily	13.2%
T heavy (max)	1.1%	T heavy Daily	0.6%
T Peak Hour	12.3%		
T med Peak Hour	12.1%	Axle Factor	1.00
T heavy Peak Hour	0.2%		

HOURLY DISTRIBUTIONS OF TRAFFIC VOLUMES

VHB PROJECT NO: 63742.00 Warre 0
LOCATION CODE: 1
COUNT LOCATION: Warren Ave, East of St. Laurent St/Savage Ct
EQUIPMENT ID: 70

HOUR ENDING AT	HOURLY VOLUME DIRECTION (NB OR EB)	HOURLY VOLUME DIRECTION (SB OR WB)	TOTAL VOLUME BOTH DIRECTIONS	DISTRIBUTION PERCENT DIRECTION (NB OR EB)	DISTRIBUTION PERCENT DIRECTION (SB OR WB)	TOTAL PERCENT BOTH DIRECTIONS
1:00 AM	10	14	24	0.53%	0.93%	0.71%
2:00 AM	8	6	14	0.42%	0.39%	0.41%
3:00 AM	4	6	10	0.20%	0.41%	0.30%
4:00 AM	3	6	9	0.16%	0.39%	0.27%
5:00 AM	2	3	5	0.09%	0.20%	0.14%
6:00 AM	8	7	15	0.44%	0.43%	0.44%
7:00 AM	15	10	25	0.80%	0.65%	0.73%
8:00 AM	90	35	125	4.91%	2.26%	3.70%
9:00 AM	149	106	255	8.15%	6.88%	7.57%
10:00 AM	133	82	215	7.28%	5.34%	6.39%
11:00 AM	103	80	183	5.61%	5.23%	5.43%
12:00 PM	86	74	159	4.68%	4.79%	4.73%
1:00 PM	112	105	217	6.11%	6.81%	6.43%
2:00 PM	142	133	275	7.75%	8.66%	8.17%
3:00 PM	128	108	236	6.99%	7.03%	7.01%
4:00 PM	132	105	238	7.22%	6.86%	7.06%
5:00 PM	141	138	279	7.70%	9.00%	8.29%
6:00 PM	142	132	274	7.77%	8.57%	8.14%
7:00 PM	144	177	321	7.88%	11.52%	9.54%
8:00 PM	118	77	195	6.42%	5.01%	5.78%
9:00 PM	65	65	130	3.55%	4.23%	3.86%
10:00 PM	46	34	80	2.49%	2.21%	2.37%
11:00 PM	32	20	52	1.73%	1.30%	1.53%
12:00 AM	20	14	34	1.11%	0.89%	1.01%
TOTALS	1,832	1,536	3,368	100.0%	100.0%	100.0%



ANNUAL VEHICLE CLASSIFICATION REPORT

VHB PROJECT NO: 63311.02 - 2019 Orange County Counts
LOCATION CODE: 1
COUNT LOCATION: Warren Ave, East of St. Laurent St/Savage Ct
EQUIPMENT ID: 70

Vehicle Classification	Vehicle Type	Average Daily Statistics	
		Volume	Percentage
Class 1	Motorcycles	18	0.53%
Class 2	Cars	2,441	72.48%
Class 3	Pick-Ups & Vans	443	13.15%
Class 4	Buses	15	0.45%
Class 5	2 Axle, Single Unit Trucks	431	12.80%
Class 6	3 Axle, Single Unit Trucks	8	0.24%
Class 7	4 Axle, Single Unit Trucks	0	0.00%
Class 8	2 Axle Trctr with 1 or 2 Axle Trlr, 3 Axle Trctr with 1 Axle	9	0.27%
Class 9	3 Axle Tractor with 2 Axle Trailer	3	0.09%
Class 10	3 Axle Tractor with 3 Axle Trailer	0	0.00%
Class 11	5 Axle Multi Trailer	0	0.00%
Class 12	6 Axle Multi Trailer	0	0.00%
Class 13	7 or more Axles	0	0.00%
Class 14	Not Used	0	0.00%
Class 15	Other	0	0.00%
TOTALS		**3,368**	**100.00%**

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021 Start Time 00:00
Stop Date : January 15, 2021 Stop Time 24:00
County : Orange
Location : SR 434, West of St. Laurent StSavage Ct

VHB Project #: 63311.01

12-Jan-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	54	32	17	18	18	18	59	142	354	403	366	303
30	57	22	22	14	34	25	75	219	336	389	331	342
45	40	22	13	14	48	22	83	346	390	401	359	424
00	36	13	16	20	33	44	130	412	493	437	341	344
Hr Total	**187**	**89**	**68**	**66**	**133**	**109**	**347**	**1,119**	**1,573**	**1,630**	**1,397**	**1,413**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	332	313	352	370	366	313	363	332	272	154	110	75
30	303	437	332	352	379	362	368	340	234	148	94	74
45	355	322	346	364	399	401	376	301	182	147	107	61
00	362	381	357	378	402	407	384	265	159	140	99	68
Hr Total	**1,352**	**1,453**	**1,387**	**1,464**	**1,546**	**1,483**	**1,491**	**1,238**	**847**	**589**	**410**	**278**

24 Hour Total : 21,669
AM Peak Hour begins : 8:45 AM Peak Volume : 1,686 AM Peak Hour Factor : 0.86
PM Peak Hour begins : 16:00 PM Peak Volume : 1,546 PM PeaK Hour Factor : 0.96

12-Jan-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	48	25	15	16	12	19	40	118	242	260	272	323
30	55	18	14	14	18	29	46	111	280	273	235	260
45	43	24	16	9	16	39	78	170	297	322	288	320
00	25	24	13	6	18	36	92	196	272	296	356	278
Hr Total	**171**	**91**	**58**	**45**	**64**	**123**	**256**	**595**	**1,091**	**1,151**	**1,151**	**1,181**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	286	342	300	270	362	382	416	306	219	215	141	73
30	283	317	274	324	331	335	382	307	239	154	102	63
45	339	358	342	327	380	383	403	264	224	142	80	57
00	265	300	266	313	370	362	337	273	164	127	63	63
Hr Total	**1,173**	**1,317**	**1,182**	**1,234**	**1,443**	**1,462**	**1,538**	**1,150**	**846**	**638**	**386**	**256**

24 Hour Total : 18,602
AM Peak Hour begins : 10:45 AM Peak Volume : 1,259 AM Peak Hour Factor : 0.88
PM Peak Hour begins : 17:45 PM Peak Volume : 1,563 PM PeaK Hour Factor : 0.94

12-Jan-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	102	57	32	34	30	37	99	260	596	663	638	626
30	112	40	36	28	52	54	121	330	616	662	566	602
45	83	46	29	23	64	61	161	516	687	723	647	744
00	61	37	29	26	51	80	222	608	765	733	697	622
Hr Total	**358**	**180**	**126**	**111**	**197**	**232**	**603**	**1,714**	**2,664**	**2,781**	**2,548**	**2,594**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	618	655	652	640	728	695	779	638	491	369	251	148
30	586	754	606	676	710	697	750	647	473	302	196	137
45	694	680	688	691	779	784	779	565	406	289	187	118
00	627	681	623	691	772	769	721	538	323	267	162	131
Hr Total	**2,525**	**2,770**	**2,569**	**2,698**	**2,989**	**2,945**	**3,029**	**2,388**	**1,693**	**1,227**	**796**	**534**

24 Hour Total : 40,271
AM Peak Hour begins : 8:45 AM Peak Volume : 2,813 AM Peak Hour Factor : 0.92
PM Peak Hour begins : 17:30 PM Peak Volume : 3,082 PM PeaK Hour Factor : 0.98

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021 Start Time 00:00
Stop Date : January 15, 2021 Stop Time 24:00
County : Orange
Location : SR 434, West of St. Laurent StSavage Ct

VHB Project #: 63311.01

13-Jan-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	68	26	16	16	17	21	44	142	354	422	355	311
30	37	25	17	17	39	14	65	188	336	402	344	332
45	30	22	20	26	26	20	77	288	377	399	345	221
00	34	23	18	17	33	33	122	338	466	422	341	288
Hr Total	**169**	**96**	**71**	**76**	**115**	**88**	**308**	**956**	**1,533**	**1,645**	**1,385**	**1,152**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	321	345	353	358	361	382	374	308	232	136	100	86
30	301	370	345	361	335	423	358	368	236	129	81	65
45	359	365	381	300	359	378	367	277	214	145	94	71
00	341	392	341	387	353	382	358	274	176	107	86	69
Hr Total	**1,322**	**1,472**	**1,420**	**1,406**	**1,408**	**1,565**	**1,457**	**1,227**	**858**	**517**	**361**	**291**

24 Hour Total : 20,898
AM Peak Hour begins : 8:45 AM Peak Volume : 1,689 AM Peak Hour Factor : 0.91
PM Peak Hour begins : 17:00 PM Peak Volume : 1,565 PM PeaK Hour Factor : 0.93

13-Jan-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	55	26	27	16	14	15	45	104	249	289	271	297
30	61	23	16	16	12	25	49	124	291	307	274	282
45	52	30	14	14	15	30	72	193	226	312	323	282
00	38	32	12	8	21	41	80	150	258	272	301	268
Hr Total	**206**	**111**	**69**	**54**	**62**	**111**	**246**	**571**	**1,024**	**1,180**	**1,169**	**1,129**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	281	314	313	308	311	374	435	345	264	186	140	70
30	259	314	283	277	310	300	331	275	228	171	113	71
45	311	339	364	276	353	346	384	243	209	142	94	62
00	306	258	323	341	325	323	305	225	178	124	87	61
Hr Total	**1,157**	**1,225**	**1,283**	**1,202**	**1,299**	**1,343**	**1,455**	**1,088**	**879**	**623**	**434**	**264**

24 Hour Total : 18,184
AM Peak Hour begins : 10:30 AM Peak Volume : 1,203 AM Peak Hour Factor : 0.93
PM Peak Hour begins : 17:45 PM Peak Volume : 1,473 PM PeaK Hour Factor : 0.85

13-Jan-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	123	52	43	32	31	36	89	246	603	711	626	608
30	98	48	33	33	51	39	114	312	627	709	618	614
45	82	52	34	40	41	50	149	481	603	711	668	503
00	72	55	30	25	54	74	202	488	724	694	642	556
Hr Total	**375**	**207**	**140**	**130**	**177**	**199**	**554**	**1,527**	**2,557**	**2,825**	**2,554**	**2,281**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	602	659	666	666	672	756	809	653	496	322	240	156
30	560	684	628	638	645	723	689	643	464	300	194	136
45	670	704	745	576	712	724	751	520	423	287	188	133
00	647	650	664	728	678	705	663	499	354	231	173	130
Hr Total	**2,479**	**2,697**	**2,703**	**2,608**	**2,707**	**2,908**	**2,912**	**2,315**	**1,737**	**1,140**	**795**	**555**

24 Hour Total : 39,082
AM Peak Hour begins : 8:45 AM Peak Volume : 2,855 AM Peak Hour Factor : 0.99
PM Peak Hour begins : 17:15 PM Peak Volume : 2,961 PM PeaK Hour Factor : 0.92

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021 Start Time 00:00
Stop Date : January 15, 2021 Stop Time 24:00
County : Orange
Location : SR 434, West of St. Laurent StSavage Ct

VHB Project #: 63311.01

14-Jan-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	56	44	16	18	16	22	68	142	411	411	455	312
30	60	35	20	15	28	25	70	199	342	399	366	332
45	55	30	11	14	55	22	88	322	404	401	359	444
00	56	15	14	20	40	35	144	422	466	425	352	388
Hr Total	**227**	**124**	**61**	**67**	**139**	**104**	**370**	**1,085**	**1,623**	**1,636**	**1,532**	**1,476**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	325	313	365	366	355	322	366	330	254	145	115	68
30	323	425	332	350	388	362	368	333	234	144	101	66
45	335	312	355	355	390	398	364	311	221	147	107	60
00	362	377	357	368	388	411	377	255	166	132	88	61
Hr Total	**1,345**	**1,427**	**1,409**	**1,439**	**1,521**	**1,493**	**1,475**	**1,229**	**875**	**568**	**411**	**255**

24 Hour Total : 21,891
AM Peak Hour begins : 8:30 AM Peak Volume : 1,680 AM Peak Hour Factor : 0.90
PM Peak Hour begins : 17:30 PM Peak Volume : 1,543 PM PeaK Hour Factor : 0.94

14-Jan-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	73	31	27	14	12	24	47	121	235	305	263	251
30	49	18	17	24	19	17	55	146	239	263	293	282
45	46	28	15	17	18	21	73	176	284	337	314	220
00	21	13	4	21	24	33	88	155	274	253	276	276
Hr Total	**189**	**90**	**63**	**76**	**73**	**95**	**263**	**598**	**1,032**	**1,158**	**1,146**	**1,029**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	305	318	313	301	357	378	417	342	293	225	135	71
30	278	305	279	290	337	330	396	291	249	165	115	98
45	319	319	321	303	387	395	372	265	227	133	114	66
00	266	281	340	353	363	346	311	281	187	139	80	66
Hr Total	**1,168**	**1,223**	**1,253**	**1,247**	**1,444**	**1,449**	**1,496**	**1,179**	**956**	**662**	**444**	**301**

24 Hour Total : 18,634
AM Peak Hour begins : 8:45 AM Peak Volume : 1,179 AM Peak Hour Factor : 0.88
PM Peak Hour begins : 17:30 PM Peak Volume : 1,554 PM PeaK Hour Factor : 0.93

14-Jan-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	129	75	43	32	28	46	115	263	646	716	718	563
30	109	53	37	39	47	42	125	345	581	662	659	614
45	101	58	26	31	73	43	161	498	688	738	673	664
00	77	28	18	41	64	68	232	577	740	678	628	664
Hr Total	**416**	**214**	**124**	**143**	**212**	**199**	**633**	**1,683**	**2,655**	**2,794**	**2,678**	**2,505**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	630	631	678	667	712	700	783	672	547	370	250	139
30	601	730	611	640	725	692	764	624	483	309	216	164
45	654	631	676	658	777	793	736	576	448	280	221	126
00	628	658	697	721	751	757	688	536	353	271	168	127
Hr Total	**2,513**	**2,650**	**2,662**	**2,686**	**2,965**	**2,942**	**2,971**	**2,408**	**1,831**	**1,230**	**855**	**556**

24 Hour Total : 40,525
AM Peak Hour begins : 8:45 AM Peak Volume : 2,856 AM Peak Hour Factor : 0.97
PM Peak Hour begins : 17:30 PM Peak Volume : 3,097 PM PeaK Hour Factor : 0.98

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021 Start Time 00:00
Stop Date : January 15, 2021 Stop Time 24:00
County : Orange
Location : SR 434, West of St. Laurent StSavage Ct

VHB Project #: 63311.01

AVERAGE **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	59	34	16	17	17	20	57	142	373	412	392	309
30	51	27	20	15	34	21	70	202	338	397	347	335
45	42	25	15	18	43	21	83	319	390	400	354	363
00	42	17	16	19	35	37	132	391	475	428	345	340
Hr Total	**194**	**103**	**67**	**69**	**129**	**99**	**342**	**1,054**	**1,576**	**1,637**	**1,438**	**1,347**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	326	324	357	365	361	339	368	323	253	145	108	76
30	309	411	336	354	367	382	365	347	235	140	92	68
45	350	333	361	340	383	392	369	296	206	146	103	64
00	355	383	352	378	381	400	373	265	167	126	91	66
Hr Total	**1,340**	**1,451**	**1,406**	**1,437**	**1,492**	**1,513**	**1,475**	**1,231**	**861**	**557**	**394**	**274**

24 Hour Total : 21,486
AM Peak Hour begins : 8:45 AM Peak Volume : 1,684 AM Peak Hour Factor : 0.89
PM Peak Hour begins : 17:15 PM Peak Volume : 1,542 PM PeaK Hour Factor : 0.96

AVERAGE **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	59	27	23	15	13	19	44	114	242	285	269	290
30	55	20	16	18	16	24	50	127	270	281	267	275
45	47	27	15	13	16	30	74	180	269	324	308	274
00	28	23	10	12	21	37	87	167	268	274	311	274
Hr Total	**189**	**97**	**64**	**58**	**66**	**110**	**255**	**588**	**1,049**	**1,164**	**1,155**	**1,113**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	291	325	309	293	343	378	423	331	259	209	139	71
30	273	312	279	297	326	322	370	291	239	163	110	77
45	323	339	342	302	373	375	386	257	220	139	96	62
00	279	280	310	336	353	344	318	260	176	130	77	63
Hr Total	**1,166**	**1,256**	**1,240**	**1,228**	**1,395**	**1,419**	**1,497**	**1,139**	**894**	**641**	**422**	**273**

24 Hour Total : 18,478
AM Peak Hour begins : 10:30 AM Peak Volume : 1,184 AM Peak Hour Factor : 0.95
PM Peak Hour begins : 17:45 PM Peak Volume : 1,523 PM PeaK Hour Factor : 0.90

AVERAGE **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	118	61	39	32	30	39	101	256	615	697	661	599
30	106	47	36	33	50	45	120	329	608	678	614	610
45	89	52	30	31	59	51	157	499	659	724	662	637
00	70	40	26	31	56	74	219	558	743	702	656	614
Hr Total	**383**	**200**	**131**	**127**	**195**	**209**	**597**	**1,642**	**2,625**	**2,801**	**2,593**	**2,460**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	617	649	666	658	704	717	791	654	512	354	247	147
30	582	723	615	651	693	704	735	638	474	303	202	145
45	673	672	703	642	756	767	755	553	426	285	199	126
00	634	663	662	714	734	744	691	525	343	256	168	129
Hr Total	**2,506**	**2,707**	**2,646**	**2,665**	**2,887**	**2,932**	**2,972**	**2,370**	**1,755**	**1,198**	**816**	**547**

24 Hour Total : 39,964
AM Peak Hour begins : 8:45 AM Peak Volume : 2,842 AM Peak Hour Factor : 0.96
PM Peak Hour begins : 17:30 PM Peak Volume : 3,037 PM PeaK Hour Factor : 0.96

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021
Stop Date : January 15, 2021
County : Orange
Location : SR 434. East of St. Laurent St

Start Time 00:00
Stop Time 24:00

VHB Project #: 63311.01

12-Jan-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	22	18	16	19	19	53	159	328	341	357	288	335
30	24	26	14	42	23	74	206	310	356	308	352	322
45	20	12	14	38	24	85	308	348	356	336	348	335
00	14	17	16	32	41	112	362	448	406	340	336	360
Hr Total	**80**	**73**	**60**	**131**	**107**	**324**	**1,035**	**1,434**	**1,459**	**1,341**	**1,324**	**1,352**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	327	346	348	377	350	374	316	257	159	103	75	61
30	415	324	354	388	347	356	306	243	148	98	66	34
45	318	358	348	399	402	361	304	164	141	94	61	33
00	383	376	324	350	363	337	241	159	118	92	64	26
Hr Total	**1,443**	**1,404**	**1,374**	**1,514**	**1,462**	**1,428**	**1,167**	**823**	**566**	**387**	**266**	**154**

24 Hour Total : 20,708
AM Peak Hour begins : 7:45 AM Peak Volume : 1,501 AM Peak Hour Factor : 0.84
PM Peak Hour begins : 15:00 PM Peak Volume : 1,514 PM PeaK Hour Factor : 0.95

12-Jan-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	22	12	15	13	19	42	121	250	254	282	327	318
30	19	13	15	16	29	50	112	271	261	239	283	307
45	26	19	9	15	39	76	165	293	330	311	304	356
00	21	8	5	19	40	89	193	254	293	355	292	283
Hr Total	**88**	**52**	**44**	**63**	**127**	**257**	**591**	**1,068**	**1,138**	**1,187**	**1,206**	**1,264**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	374	346	276	353	389	422	300	216	200	145	82	48
30	328	283	344	348	340	346	334	251	151	97	63	57
45	361	365	321	378	387	386	266	233	141	86	55	49
00	319	286	328	367	352	302	270	164	124	63	64	31
Hr Total	**1,382**	**1,280**	**1,269**	**1,446**	**1,468**	**1,456**	**1,170**	**864**	**616**	**391**	**264**	**185**

24 Hour Total : 18,876
AM Peak Hour begins : 9:30 AM Peak Volume : 1,276 AM Peak Hour Factor : 0.90
PM Peak Hour begins : 16:30 PM Peak Volume : 1,507 PM PeaK Hour Factor : 0.89

12-Jan-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	44	30	31	32	38	95	280	578	595	639	615	653
30	43	39	29	58	52	124	318	581	617	547	635	629
45	46	31	23	53	63	161	473	641	686	647	652	691
00	35	25	21	51	81	201	555	702	699	695	628	643
Hr Total	**168**	**125**	**104**	**194**	**234**	**581**	**1,626**	**2,502**	**2,597**	**2,528**	**2,530**	**2,616**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	701	692	624	730	739	796	616	473	359	248	157	109
30	743	607	698	736	687	702	640	494	299	195	129	91
45	679	723	669	777	789	747	570	397	282	180	116	82
00	702	662	652	717	715	639	511	323	242	155	128	57
Hr Total	**2,825**	**2,684**	**2,643**	**2,960**	**2,930**	**2,884**	**2,337**	**1,687**	**1,182**	**778**	**530**	**339**

24 Hour Total : 39,584
AM Peak Hour begins : 8:15 AM Peak Volume : 2,641 AM Peak Hour Factor : 0.95
PM Peak Hour begins : 16:30 PM Peak Volume : 3,002 PM PeaK Hour Factor : 0.94

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021
Stop Date : January 15, 2021
County : Orange
Location : SR 434. East of St. Laurent St

Start Time 00:00
Stop Time 24:00

VHB Project #: 63311.01

13-Jan-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	24	15	19	17	22	50	139	273	377	339	280	328
30	27	20	23	33	34	63	202	298	357	346	299	347
45	14	17	17	34	37	90	277	366	339	326	308	310
00	23	14	19	26	45	98	373	419	410	300	330	326
Hr Total	**88**	**66**	**78**	**110**	**138**	**301**	**991**	**1,356**	**1,483**	**1,311**	**1,217**	**1,311**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	332	378	372	396	326	379	322	230	152	113	80	73
30	367	355	351	306	310	364	286	236	131	108	60	49
45	358	357	341	336	358	371	288	202	133	86	61	42
00	347	374	324	333	347	346	230	173	139	74	52	37
Hr Total	**1,404**	**1,464**	**1,388**	**1,371**	**1,341**	**1,460**	**1,126**	**841**	**555**	**381**	**253**	**201**

24 Hour Total : 20,235
AM Peak Hour begins : 7:30 AM Peak Volume : 1,519 AM Peak Hour Factor : 0.91
PM Peak Hour begins : 13:00 PM Peak Volume : 1,464 PM PeaK Hour Factor : 0.97

13-Jan-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	28	19	14	12	15	46	103	246	286	277	310	292
30	24	16	16	14	22	51	126	291	289	275	302	289
45	28	16	12	14	29	70	185	224	301	327	297	323
00	37	13	6	21	41	82	156	267	296	309	290	330
Hr Total	**117**	**64**	**48**	**61**	**107**	**249**	**570**	**1,028**	**1,172**	**1,188**	**1,199**	**1,234**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	347	353	319	319	358	423	342	270	177	144	70	70
30	339	307	297	319	298	316	277	229	167	115	77	41
45	355	400	304	358	346	390	255	218	145	89	58	45
00	280	318	315	322	327	317	238	193	135	89	66	25
Hr Total	**1,321**	**1,378**	**1,235**	**1,318**	**1,329**	**1,446**	**1,112**	**910**	**624**	**437**	**271**	**181**

24 Hour Total : 18,599
AM Peak Hour begins : 9:30 AM Peak Volume : 1,248 AM Peak Hour Factor : 0.95
PM Peak Hour begins : 16:45 PM Peak Volume : 1,456 PM PeaK Hour Factor : 0.86

13-Jan-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	52	34	33	29	37	96	242	519	663	616	590	620
30	51	36	39	47	56	114	328	589	646	621	601	636
45	42	33	29	48	66	160	462	590	640	653	605	633
00	60	27	25	47	86	180	529	686	706	609	620	656
Hr Total	**205**	**130**	**126**	**171**	**245**	**550**	**1,561**	**2,384**	**2,655**	**2,499**	**2,416**	**2,545**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	679	731	691	715	684	802	664	500	329	257	150	143
30	706	662	648	625	608	680	563	465	298	223	137	90
45	713	757	645	694	704	761	543	420	278	175	119	87
00	627	692	639	655	674	663	468	366	274	163	118	62
Hr Total	**2,725**	**2,842**	**2,623**	**2,689**	**2,670**	**2,906**	**2,238**	**1,751**	**1,179**	**818**	**524**	**382**

24 Hour Total : 38,834
AM Peak Hour begins : 8:00 AM Peak Volume : 2,655 AM Peak Hour Factor : 0.94
PM Peak Hour begins : 16:45 PM Peak Volume : 2,917 PM PeaK Hour Factor : 0.91

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021
Stop Date : January 15, 2021
County : Orange
Location : SR 434. East of St. Laurent St

Start Time 00:00
Stop Time 24:00

VHB Project #: 63311.01

14-Jan-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	29	15	20	20	22	44	153	310	358	334	295	300
30	27	13	22	11	26	57	199	301	369	284	282	299
45	27	10	26	26	23	78	301	387	393	278	313	333
00	31	24	38	19	53	93	323	415	416	317	320	313
Hr Total	**114**	**62**	**106**	**76**	**124**	**272**	**976**	**1,413**	**1,536**	**1,213**	**1,210**	**1,245**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	359	374	360	392	368	375	296	267	139	111	62	57
30	357	363	353	362	350	368	329	224	172	106	65	50
45	351	382	355	340	373	365	284	194	142	96	79	31
00	385	362	370	329	362	331	323	166	130	98	71	42
Hr Total	**1,452**	**1,481**	**1,438**	**1,423**	**1,453**	**1,439**	**1,232**	**851**	**583**	**411**	**277**	**180**

24 Hour Total : 20,567
AM Peak Hour begins : 8:00 AM Peak Volume : 1,536 AM Peak Hour Factor : 0.92
PM Peak Hour begins : 12:45 PM Peak Volume : 1,504 PM PeaK Hour Factor : 0.98

14-Jan-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	29	26	14	14	24	51	116	227	309	290	277	317
30	18	15	21	19	17	53	143	219	278	311	283	302
45	26	13	19	18	18	73	186	284	331	320	275	327
00	15	6	18	22	34	97	163	280	247	274	298	291
Hr Total	**88**	**60**	**72**	**73**	**93**	**274**	**608**	**1,010**	**1,165**	**1,195**	**1,133**	**1,237**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	345	347	296	393	397	439	334	284	231	131	71	54
30	330	302	314	329	328	378	330	233	163	121	98	38
45	337	333	295	415	420	374	289	231	134	114	60	47
00	290	328	350	348	335	301	284	188	145	83	69	31
Hr Total	**1,302**	**1,310**	**1,255**	**1,485**	**1,480**	**1,492**	**1,237**	**936**	**673**	**449**	**298**	**170**

24 Hour Total : 19,095
AM Peak Hour begins : 10:45 AM Peak Volume : 1,244 AM Peak Hour Factor : 0.95
PM Peak Hour begins : 16:30 PM Peak Volume : 1,572 PM PeaK Hour Factor : 0.90

14-Jan-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	58	41	34	34	46	95	269	537	667	624	572	617
30	45	28	43	30	43	110	342	520	647	595	565	601
45	53	23	45	44	41	151	487	671	724	598	588	660
00	46	30	56	41	87	190	486	695	663	591	618	604
Hr Total	**202**	**122**	**178**	**149**	**217**	**546**	**1,584**	**2,423**	**2,701**	**2,408**	**2,343**	**2,482**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	704	721	656	785	765	814	630	551	370	242	133	111
30	687	665	667	691	678	746	659	457	335	227	163	88
45	688	715	650	755	793	739	573	425	276	210	139	78
00	675	690	720	677	697	632	607	354	275	181	140	73
Hr Total	**2,754**	**2,791**	**2,693**	**2,908**	**2,933**	**2,931**	**2,469**	**1,787**	**1,256**	**860**	**575**	**350**

24 Hour Total : 39,662
AM Peak Hour begins : 7:45 AM Peak Volume : 2,733 AM Peak Hour Factor : 0.94
PM Peak Hour begins : 16:30 PM Peak Volume : 3,050 PM PeaK Hour Factor : 0.94

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021
Stop Date : January 15, 2021
County : Orange
Location : SR 434. East of St. Laurent St

Start Time 00:00
Stop Time 24:00

VHB Project #: 63311.01

AVERAGE **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	25	16	18	19	21	49	150	304	359	343	288	321
30	26	20	20	29	28	65	202	303	361	313	311	323
45	20	13	19	33	28	84	295	367	363	313	323	326
00	23	18	24	26	46	101	353	427	411	319	329	333
Hr Total	**94**	**67**	**81**	**107**	**123**	**299**	**1,000**	**1,401**	**1,494**	**1,288**	**1,251**	**1,303**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	339	366	360	388	348	376	311	251	150	109	72	64
30	380	347	353	352	336	363	307	234	150	104	64	44
45	342	366	348	358	378	366	292	187	139	92	67	35
00	372	371	339	337	357	338	265	166	129	88	62	35
Hr Total	**1,433**	**1,450**	**1,400**	**1,435**	**1,419**	**1,443**	**1,175**	**838**	**568**	**393**	**265**	**178**

24 Hour Total : 20,505
AM Peak Hour begins : 7:30 AM Peak Volume : 1,514 AM Peak Hour Factor : 0.89
PM Peak Hour begins : 16:30 PM Peak Volume : 1,474 PM PeaK Hour Factor : 0.98

AVERAGE **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	26	19	14	13	19	46	113	241	283	283	305	309
30	20	15	17	16	23	51	127	260	276	275	289	299
45	27	16	13	16	29	73	179	267	321	319	292	335
00	24	9	10	21	38	89	171	267	279	313	293	301
Hr Total	**97**	**59**	**54**	**66**	**109**	**259**	**590**	**1,035**	**1,159**	**1,190**	**1,179**	**1,244**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	355	349	297	355	381	428	325	257	203	140	74	57
30	332	297	318	332	322	347	314	238	160	111	79	45
45	351	366	307	384	384	383	270	227	140	96	58	47
00	296	311	331	346	338	307	264	182	135	78	66	29
Hr Total	**1,334**	**1,323**	**1,253**	**1,417**	**1,425**	**1,465**	**1,173**	**904**	**638**	**425**	**277**	**178**

24 Hour Total : 18,853
AM Peak Hour begins : 11:00 AM Peak Volume : 1,244 AM Peak Hour Factor : 0.93
PM Peak Hour begins : 16:30 PM Peak Volume : 1,497 PM PeaK Hour Factor : 0.87

AVERAGE **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	51	35	32	32	40	95	263	545	642	626	593	630
30	46	35	37	45	51	116	329	563	637	588	600	622
45	47	29	32	49	57	157	474	634	684	632	615	661
00	47	27	34	47	84	190	524	694	690	632	622	634
Hr Total	**191**	**126**	**135**	**173**	**232**	**558**	**1,590**	**2,436**	**2,653**	**2,478**	**2,430**	**2,547**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	694	715	657	743	729	804	636	508	353	249	146	121
30	712	644	671	684	658	710	621	472	310	215	143	89
45	693	732	655	742	762	749	562	414	279	188	125	82
00	668	682	670	683	695	645	529	348	264	166	128	64
Hr Total	**2,767**	**2,773**	**2,653**	**2,852**	**2,844**	**2,908**	**2,348**	**1,742**	**1,206**	**818**	**542**	**356**

24 Hour Total : 39,358
AM Peak Hour begins : 7:45 AM Peak Volume : 2,657 AM Peak Hour Factor : 0.96
PM Peak Hour begins : 16:30 PM Peak Volume : 2,971 PM PeaK Hour Factor : 0.92

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021 Start Time 00:00
Stop Date : January 15, 2021 Stop Time 24:00
County : Orange
Location : Warren Ave, bw S Milwee St at Ronald Reagan Blvd

VHB Project #: 63311.01

12-Jan-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	1	1	0	1	1	0	1	11	15	22	18
30	1	1	1	0	0	0	2	3	16	18	21	22
45	1	0	2	1	1	2	2	8	22	11	30	32
00	0	1	2	1	0	2	1	12	22	22	25	25
Hr Total	**2**	**3**	**6**	**2**	**2**	**5**	**5**	**24**	**71**	**66**	**98**	**97**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	22	36	33	22	15	10	11	6	4	1	0	3
30	15	30	25	18	14	15	8	6	3	3	2	2
45	33	32	27	15	11	17	7	4	2	5	0	0
00	27	28	25	22	17	9	8	3	2	2	0	2
Hr Total	**97**	**126**	**110**	**77**	**57**	**51**	**34**	**19**	**11**	**11**	**2**	**7**

24 Hour Total : 983
AM Peak Hour begins : 10:00 AM Peak Volume : 98 AM Peak Hour Factor : 0.82
PM Peak Hour begins : 12:30 PM Peak Volume : 126 PM PeaK Hour Factor : 0.88

12-Jan-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	2	1	1	1	0	1	2	5	5	18	19	22
30	1	0	0	1	2	1	4	2	14	20	19	19
45	1	0	1	2	2	2	3	15	19	14	18	22
00	2	2	0	0	0	3	4	16	19	27	22	19
Hr Total	**6**	**3**	**2**	**4**	**4**	**7**	**13**	**38**	**57**	**79**	**78**	**82**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	21	29	28	29	35	29	49	26	14	12	8	5
30	19	29	29	19	34	23	33	18	8	7	5	6
45	24	34	23	22	32	40	33	19	8	3	6	1
00	33	25	22	25	23	46	26	10	13	8	5	1
Hr Total	**97**	**117**	**102**	**95**	**124**	**138**	**141**	**73**	**43**	**30**	**24**	**13**

24 Hour Total : 1,370
AM Peak Hour begins : 10:45 AM Peak Volume : 85 AM Peak Hour Factor : 0.97
PM Peak Hour begins : 17:30 PM Peak Volume : 168 PM PeaK Hour Factor : 0.86

12-Jan-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	2	2	2	1	1	2	2	6	16	33	41	40
30	2	1	1	1	2	1	6	5	30	38	40	41
45	2	0	3	3	3	4	5	23	41	25	48	54
00	2	3	2	1	0	5	5	28	41	49	47	44
Hr Total	**8**	**6**	**8**	**6**	**6**	**12**	**18**	**62**	**128**	**145**	**176**	**179**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	43	65	61	51	50	39	60	32	18	13	8	8
30	34	59	54	37	48	38	41	24	11	10	7	8
45	57	66	50	37	43	57	40	23	10	8	6	1
00	60	53	47	47	40	55	34	13	15	10	5	3
Hr Total	**194**	**243**	**212**	**172**	**181**	**189**	**175**	**92**	**54**	**41**	**26**	**20**

24 Hour Total : 2,353
AM Peak Hour begins : 10:45 AM Peak Volume : 182 AM Peak Hour Factor : 0.84
PM Peak Hour begins : 12:45 PM Peak Volume : 250 PM PeaK Hour Factor : 0.95

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021 Start Time 00:00
Stop Date : January 15, 2021 Stop Time 24:00
County : Orange
Location : Warren Ave, bw S Milwee St at Ronald Reagan Blvd

VHB Project #: 63311.01

13-Jan-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	3	0	0	0	0	0	1	2	9	16	18	21
30	0	0	1	0	2	2	1	2	8	15	22	20
45	0	0	0	0	0	1	3	3	11	21	17	18
00	1	1	0	1	0	0	2	11	13	14	22	30
Hr Total	**4**	**1**	**1**	**1**	**2**	**3**	**7**	**18**	**41**	**66**	**79**	**89**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	27	29	22	24	23	28	21	6	3	2	3	0
30	22	31	27	26	34	25	20	4	3	3	2	1
45	26	27	28	21	37	22	15	4	2	2	1	2
00	22	30	33	18	30	19	11	3	2	2	0	0
Hr Total	**97**	**117**	**110**	**89**	**124**	**94**	**67**	**17**	**10**	**9**	**6**	**3**

24 Hour Total : 1,055
AM Peak Hour begins : 11:00 AM Peak Volume : 89 AM Peak Hour Factor : 0.74
PM Peak Hour begins : 16:15 PM Peak Volume : 129 PM PeaK Hour Factor : 0.87

13-Jan-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	2	2	1	3	2	1	1	4	12	26	18	16
30	2	2	0	1	1	1	1	5	13	23	18	22
45	1	2	0	2	2	2	5	13	14	17	17	18
00	2	4	0	4	0	2	3	13	31	31	22	19
Hr Total	**7**	**10**	**1**	**10**	**5**	**6**	**10**	**35**	**70**	**97**	**75**	**75**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	19	40	33	23	20	28	61	17	15	12	6	4
30	23	26	24	30	25	30	36	17	15	4	1	2
45	29	26	18	43	25	28	26	16	11	3	4	1
00	14	20	25	21	27	18	19	11	14	4	3	1
Hr Total	**85**	**112**	**100**	**117**	**97**	**104**	**142**	**61**	**55**	**23**	**14**	**8**

24 Hour Total : 1,319
AM Peak Hour begins : 8:45 AM Peak Volume : 97 AM Peak Hour Factor : 0.78
PM Peak Hour begins : 17:30 PM Peak Volume : 143 PM PeaK Hour Factor : 0.59

13-Jan-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	5	2	1	3	2	1	2	6	21	42	36	37
30	2	2	1	1	3	3	2	7	21	38	40	42
45	1	2	0	2	2	3	8	16	25	38	34	36
00	3	5	0	5	0	2	5	24	44	45	44	49
Hr Total	**11**	**11**	**2**	**11**	**7**	**9**	**17**	**53**	**111**	**163**	**154**	**164**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	46	69	55	47	43	56	82	23	18	14	9	4
30	45	57	51	56	59	55	56	21	18	7	3	3
45	55	53	46	64	62	50	41	20	13	5	5	3
00	36	50	58	39	57	37	30	14	16	6	3	1
Hr Total	**182**	**229**	**210**	**206**	**221**	**198**	**209**	**78**	**65**	**32**	**20**	**11**

24 Hour Total : 2,374
AM Peak Hour begins : 11:00 AM Peak Volume : 164 AM Peak Hour Factor : 0.84
PM Peak Hour begins : 16:15 PM Peak Volume : 234 PM PeaK Hour Factor : 0.94

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021 Start Time 00:00
Stop Date : January 15, 2021 Stop Time 24:00
County : Orange
Location : Warren Ave, bw S Milwee St at Ronald Reagan Blvd

VHB Project #: 63311.01

14-Jan-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	2	2	0	0	1	2	3	1	7	9	16	18
30	0	2	0	0	0	2	3	3	6	14	14	15
45	0	0	1	0	1	0	1	1	10	18	15	16
00	0	1	1	0	0	1	1	8	11	11	16	20
Hr Total	**2**	**5**	**2**	**0**	**2**	**5**	**8**	**13**	**34**	**52**	**61**	**69**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	18	22	25	15	22	16	16	4	1	3	0	2
30	15	26	20	16	19	21	14	2	2	1	1	0
45	16	19	29	14	21	18	11	2	2	0	1	1
00	21	22	18	14	17	20	8	1	1	1	0	1
Hr Total	**70**	**89**	**92**	**59**	**79**	**75**	**49**	**9**	**6**	**5**	**2**	**4**

24 Hour Total : 792
AM Peak Hour begins : 11:00 AM Peak Volume : 69 AM Peak Hour Factor : 0.86
PM Peak Hour begins : 13:45 PM Peak Volume : 96 PM PeaK Hour Factor : 0.83

14-Jan-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	2	0	2	1	2	1	1	3	8	12	17	13
30	2	0	0	0	2	1	1	3	19	19	8	21
45	2	1	0	1	1	1	2	11	20	17	11	16
00	0	0	0	0	0	2	2	10	20	27	19	21
Hr Total	**6**	**1**	**2**	**2**	**5**	**5**	**6**	**27**	**67**	**75**	**55**	**71**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	20	33	27	23	20	24	44	35	7	7	6	5
30	34	23	28	26	34	27	40	20	14	7	5	2
45	21	27	20	34	27	38	21	16	9	3	3	3
00	24	25	29	26	34	28	34	14	10	2	5	0
Hr Total	**99**	**108**	**104**	**109**	**115**	**117**	**139**	**85**	**40**	**19**	**19**	**10**

24 Hour Total : 1,286
AM Peak Hour begins : 9:15 AM Peak Volume : 80 AM Peak Hour Factor : 0.74
PM Peak Hour begins : 17:30 PM Peak Volume : 150 PM PeaK Hour Factor : 0.85

14-Jan-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	4	2	2	1	3	3	4	4	15	21	33	31
30	2	2	0	0	2	3	4	6	25	33	22	36
45	2	1	1	1	2	1	3	12	30	35	26	32
00	0	1	1	0	0	3	3	18	31	38	35	41
Hr Total	**8**	**6**	**4**	**2**	**7**	**10**	**14**	**40**	**101**	**127**	**116**	**140**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	38	55	52	38	42	40	60	39	8	10	6	7
30	49	49	48	42	53	48	54	22	16	8	6	2
45	37	46	49	48	48	56	32	18	11	3	4	4
00	45	47	47	40	51	48	42	15	11	3	5	1
Hr Total	**169**	**197**	**196**	**168**	**194**	**192**	**188**	**94**	**46**	**24**	**21**	**14**

24 Hour Total : 2,078
AM Peak Hour begins : 11:00 AM Peak Volume : 140 AM Peak Hour Factor : 0.85
PM Peak Hour begins : 17:30 PM Peak Volume : 218 PM PeaK Hour Factor : 0.91

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021 Start Time 00:00
Stop Date : January 15, 2021 Stop Time 24:00
County : Orange
Location : Warren Ave, bw S Milwee St at Ronald Reagan Blvd

VHB Project #: 63311.01

AVERAGE **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	2	1	0	0	1	1	1	1	9	13	19	19
30	0	1	1	0	1	1	2	3	10	16	19	19
45	0	0	1	0	1	1	2	4	14	17	21	22
00	0	1	1	1	0	1	1	10	15	16	21	25
Hr Total	**2**	**3**	**3**	**1**	**3**	**4**	**6**	**18**	**48**	**62**	**80**	**85**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	22	29	27	20	20	18	16	5	3	2	1	2
30	17	29	24	20	22	20	14	4	3	2	2	1
45	25	26	28	17	23	19	11	3	2	2	1	1
00	23	27	25	18	21	16	9	2	2	2	0	1
Hr Total	**87**	**111**	**104**	**75**	**86**	**73**	**50**	**14**	**10**	**8**	**4**	**5**

24 Hour Total : 942
AM Peak Hour begins : 11:00 AM Peak Volume : 85 AM Peak Hour Factor : 0.85
PM Peak Hour begins : 13:00 PM Peak Volume : 111 PM PeaK Hour Factor : 0.96

AVERAGE **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	2	1	1	2	1	1	1	4	8	19	18	17
30	2	1	0	1	2	1	2	3	15	21	15	21
45	1	1	0	2	2	2	3	13	18	16	15	19
00	1	2	0	1	0	2	3	13	23	28	21	20
Hr Total	**6**	**5**	**1**	**6**	**5**	**6**	**9**	**33**	**64**	**84**	**69**	**77**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	20	34	29	25	25	27	51	26	12	10	7	5
30	25	26	27	25	31	27	36	18	12	6	4	3
45	25	29	20	33	28	35	27	17	9	3	4	2
00	24	23	25	24	28	31	26	12	12	5	4	1
Hr Total	**94**	**112**	**101**	**107**	**112**	**120**	**140**	**73**	**45**	**24**	**19**	**11**

24 Hour Total : 1,323
AM Peak Hour begins : 9:00 AM Peak Volume : 84 AM Peak Hour Factor : 0.75
PM Peak Hour begins : 17:30 PM Peak Volume : 153 PM PeaK Hour Factor : 0.75

AVERAGE **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	4	2	1	2	2	2	2	5	17	32	37	36
30	2	2	1	1	3	2	4	6	25	37	34	40
45	1	1	1	2	3	3	5	17	32	33	36	41
00	1	3	1	2	0	3	4	23	38	44	42	45
Hr Total	**8**	**8**	**4**	**7**	**8**	**10**	**15**	**51**	**112**	**146**	**149**	**162**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	42	63	56	45	45	45	67	31	15	12	8	7
30	42	55	51	45	53	47	50	22	15	8	6	4
45	50	55	48	50	51	54	38	20	11	5	5	3
00	47	50	50	42	49	47	35	14	14	7	4	2
Hr Total	**181**	**223**	**205**	**182**	**198**	**193**	**190**	**87**	**55**	**32**	**23**	**16**

24 Hour Total : 2,265
AM Peak Hour begins : 11:00 AM Peak Volume : 162 AM Peak Hour Factor : 0.90
PM Peak Hour begins : 13:00 PM Peak Volume : 223 PM PeaK Hour Factor : 0.89

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021
Stop Date : January 15, 2021
County : Orange
Location : emon Ln, north of Warren Ave

Start Time 00:00
Stop Time 24:00

VHB Project #: 63311.01

12-Jan-21 **Northbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	2	1	1	0	0	1	1	1	3	1	5	3
30	1	0	1	0	0	0	0	3	2	3	3	8
45	2	1	0	0	0	1	0	0	1	5	3	6
00	0	2	0	0	0	3	1	3	3	3	6	5
Hr Total	**5**	**4**	**2**	**0**	**0**	**5**	**2**	**7**	**9**	**12**	**17**	**22**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	7	0	5	6	8	5	18	13	10	4	5	2
30	5	5	5	6	3	8	21	13	7	8	3	2
45	2	6	3	9	10	12	16	12	4	4	5	3
00	3	2	4	6	6	9	15	14	4	15	5	3
Hr Total	**17**	**13**	**17**	**27**	**27**	**34**	**70**	**52**	**25**	**31**	**18**	**10**

24 Hour Total : 426
AM Peak Hour begins : 10:45 AM Peak Volume : 23 AM Peak Hour Factor : 0.72
PM Peak Hour begins : 18:00 PM Peak Volume : 70 PM PeaK Hour Factor : 0.83

12-Jan-21 **Southbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	3	0	1	0	0	0	0	3	6	4	6	0
30	1	0	0	0	1	0	0	1	7	8	2	0
45	0	0	0	0	0	1	3	1	6	1	8	0
00	0	2	1	0	0	0	3	4	11	4	3	0
Hr Total	**4**	**2**	**2**	**0**	**1**	**1**	**6**	**9**	**30**	**17**	**19**	**0**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	6	3	1	8	4	8	4	10	4	2	3	2
30	2	6	1	3	7	10	6	8	4	2	2	1
45	5	2	2	4	6	11	6	8	3	2	2	1
00	3	2	6	4	6	7	9	5	2	1	2	0
Hr Total	**16**	**13**	**10**	**19**	**23**	**36**	**25**	**31**	**13**	**7**	**9**	**4**

24 Hour Total : 297
AM Peak Hour begins : 8:00 AM Peak Volume : 30 AM Peak Hour Factor : 0.68
PM Peak Hour begins : 17:00 PM Peak Volume : 36 PM PeaK Hour Factor : 0.82

12-Jan-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	5	1	2	0	0	1	1	4	9	5	11	3
30	2	0	1	0	1	0	0	4	9	11	5	8
45	2	1	0	0	0	2	3	1	7	6	11	6
00	0	4	1	0	0	3	4	7	14	7	9	5
Hr Total	**9**	**6**	**4**	**0**	**1**	**6**	**8**	**16**	**39**	**29**	**36**	**22**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	13	3	6	14	12	13	22	23	14	6	8	4
30	7	11	6	9	10	18	27	21	11	10	5	3
45	7	8	5	13	16	23	22	20	7	6	7	4
00	6	4	10	10	12	16	24	19	6	16	7	3
Hr Total	**33**	**26**	**27**	**46**	**50**	**70**	**95**	**83**	**38**	**38**	**27**	**14**

24 Hour Total : 723
AM Peak Hour begins : 8:00 AM Peak Volume : 39 AM Peak Hour Factor : 0.70
PM Peak Hour begins : 18:15 PM Peak Volume : 96 PM PeaK Hour Factor : 0.89

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021
Stop Date : January 15, 2021
County : Orange
Location : emon Ln, north of Warren Ave

Start Time 00:00
Stop Time 24:00

VHB Project #: 63311.01

13-Jan-21 **Northbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	1	2	2	3	1	1	1	6	10	8	10	10
30	1	3	1	0	1	1	3	2	7	4	7	5
45	1	2	2	3	0	1	1	4	6	10	6	12
00	2	4	1	1	0	1	1	5	11	10	8	13
Hr Total	**5**	**11**	**6**	**7**	**2**	**4**	**6**	**17**	**34**	**32**	**31**	**40**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	6	2	7	7	2	8	17	14	7	1	2	2
30	7	7	6	6	10	9	12	15	11	5	1	3
45	8	3	7	9	10	11	13	14	11	5	1	3
00	4	5	5	3	14	9	14	11	5	4	4	1
Hr Total	**25**	**17**	**25**	**25**	**36**	**37**	**56**	**54**	**34**	**15**	**8**	**9**

24 Hour Total : 536
AM Peak Hour begins : 11:00 AM Peak Volume : 40 AM Peak Hour Factor : 0.77
PM Peak Hour begins : 18:45 PM Peak Volume : 57 PM PeaK Hour Factor : 0.95

13-Jan-21 **Southbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	2	1	1	1	0	0	2	1	8	5	12	2
30	1	1	1	0	1	1	3	2	9	5	4	6
45	0	0	1	0	1	2	2	5	11	5	4	4
00	2	2	0	1	1	0	2	7	7	6	2	2
Hr Total	**5**	**4**	**3**	**2**	**3**	**3**	**9**	**15**	**35**	**21**	**22**	**14**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	7	3	1	7	3	10	5	5	4	3	1	1
30	6	5	4	8	6	11	8	6	4	2	4	0
45	11	5	4	7	4	5	6	5	6	2	2	1
00	9	9	7	1	7	8	9	4	4	1	1	1
Hr Total	**33**	**22**	**16**	**23**	**20**	**34**	**28**	**20**	**18**	**8**	**8**	**3**

24 Hour Total : 369
AM Peak Hour begins : 7:45 AM Peak Volume : 35 AM Peak Hour Factor : 0.80
PM Peak Hour begins : 17:00 PM Peak Volume : 34 PM PeaK Hour Factor : 0.77

13-Jan-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	3	3	3	4	1	1	3	7	18	13	22	12
30	2	4	2	0	2	2	6	4	16	9	11	11
45	1	2	3	3	1	3	3	9	17	15	10	16
00	4	6	1	2	1	1	3	12	18	16	10	15
Hr Total	**10**	**15**	**9**	**9**	**5**	**7**	**15**	**32**	**69**	**53**	**53**	**54**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	13	5	8	14	5	18	22	19	11	4	3	3
30	13	12	10	14	16	20	20	21	15	7	5	3
45	19	8	11	16	14	16	19	19	17	7	3	4
00	13	14	12	4	21	17	23	15	9	5	5	2
Hr Total	**58**	**39**	**41**	**48**	**56**	**71**	**84**	**74**	**52**	**23**	**16**	**12**

24 Hour Total : 905
AM Peak Hour begins : 8:00 AM Peak Volume : 69 AM Peak Hour Factor : 0.96
PM Peak Hour begins : 18:00 PM Peak Volume : 84 PM PeaK Hour Factor : 0.91

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021
Stop Date : January 15, 2021
County : Orange
Location : emon Ln, north of Warren Ave

Start Time 00:00
Stop Time 24:00

VHB Project #: 63311.01

14-Jan-21 **Northbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	4	2	0	1	1	0	0	2	4	4	8	6
30	4	3	0	0	0	0	2	3	9	7	4	4
45	1	0	3	0	1	0	2	2	8	7	8	10
00	0	0	0	0	0	1	3	7	8	12	4	6
Hr Total	**9**	**5**	**3**	**1**	**2**	**1**	**7**	**14**	**29**	**30**	**24**	**26**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	6	11	6	11	14	9	13	15	5	11	8	2
30	6	5	8	9	12	9	10	9	2	10	5	2
45	11	7	12	10	17	16	16	10	5	5	9	4
00	4	4	12	10	11	10	23	12	14	3	4	4
Hr Total	**27**	**27**	**38**	**40**	**54**	**44**	**62**	**46**	**26**	**29**	**26**	**12**

24 Hour Total : 582
AM Peak Hour begins : 9:15 AM Peak Volume : 34 AM Peak Hour Factor : 0.71
PM Peak Hour begins : 18:15 PM Peak Volume : 64 PM PeaK Hour Factor : 0.70

14-Jan-21 **Southbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	1	2	1	1	0	1	0	2	7	8	6	4
30	1	1	2	1	0	0	2	2	7	8	5	4
45	1	0	0	0	2	0	1	2	6	7	5	0
00	0	1	1	1	0	1	2	5	4	7	9	0
Hr Total	**3**	**4**	**4**	**3**	**2**	**2**	**5**	**11**	**24**	**30**	**25**	**8**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	1	3	1	3	5	9	3	3	2	2	2	0
30	1	3	7	4	5	8	5	7	3	1	3	2
45	0	4	7	4	2	3	5	2	3	0	2	0
00	3	2	2	4	5	6	7	3	3	1	1	1
Hr Total	**5**	**12**	**17**	**15**	**17**	**26**	**20**	**15**	**11**	**4**	**8**	**3**

24 Hour Total : 274
AM Peak Hour begins : 9:00 AM Peak Volume : 30 AM Peak Hour Factor : 0.94
PM Peak Hour begins : 17:00 PM Peak Volume : 26 PM PeaK Hour Factor : 0.72

14-Jan-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	5	4	1	2	1	1	0	4	11	12	14	10
30	5	4	2	1	0	0	4	5	16	15	9	8
45	2	0	3	0	3	0	3	4	14	14	13	10
00	0	1	1	1	0	2	5	12	12	19	13	6
Hr Total	**12**	**9**	**7**	**4**	**4**	**3**	**12**	**25**	**53**	**60**	**49**	**34**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	7	14	7	14	19	18	16	18	7	13	10	2
30	7	8	15	13	17	17	15	16	5	11	8	4
45	11	11	19	14	19	19	21	12	8	5	11	4
00	7	6	14	14	16	16	30	15	17	4	5	5
Hr Total	**32**	**39**	**55**	**55**	**71**	**70**	**82**	**61**	**37**	**33**	**34**	**15**

24 Hour Total : 856
AM Peak Hour begins : 9:15 AM Peak Volume : 62 AM Peak Hour Factor : 0.82
PM Peak Hour begins : 18:30 PM Peak Volume : 85 PM PeaK Hour Factor : 0.71

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021
Stop Date : January 15, 2021
County : Orange
Location : emon Ln, north of Warren Ave

Start Time 00:00
Stop Time 24:00

VHB Project #: 63311.01

AVERAGE **Northbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	2	2	1	1	1	1	1	3	6	4	8	6
30	2	2	1	0	0	0	2	3	6	5	5	6
45	1	1	2	1	0	1	1	2	5	7	6	9
00	1	2	0	0	0	2	2	5	7	8	6	8
Hr Total	**6**	**7**	**4**	**2**	**1**	**4**	**6**	**13**	**24**	**24**	**25**	**29**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	6	4	6	8	8	7	16	14	7	5	5	2
30	6	6	6	7	8	9	14	12	7	8	3	2
45	7	5	7	9	12	13	15	12	7	5	5	3
00	4	4	7	6	10	9	17	12	8	7	4	3
Hr Total	**23**	**19**	**26**	**30**	**38**	**38**	**62**	**50**	**29**	**25**	**17**	**10**

24 Hour Total : 512
AM Peak Hour begins : 11:00 AM Peak Volume : 29 AM Peak Hour Factor : 0.81
PM Peak Hour begins : 18:00 PM Peak Volume : 62 PM PeaK Hour Factor : 0.91

AVERAGE **Southbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	2	1	1	1	0	0	1	2	7	6	8	2
30	1	1	1	0	1	0	2	2	8	7	4	3
45	0	0	0	0	1	1	2	3	8	4	6	1
00	1	2	1	1	0	0	2	5	7	6	5	1
Hr Total	**4**	**4**	**3**	**2**	**2**	**1**	**7**	**12**	**30**	**23**	**23**	**7**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	5	3	1	6	4	9	4	6	3	2	2	1
30	3	5	4	5	6	10	6	7	4	2	3	1
45	5	4	4	5	4	6	6	5	4	1	2	1
00	5	4	5	3	6	7	8	4	3	1	1	1
Hr Total	**18**	**16**	**14**	**19**	**20**	**32**	**24**	**22**	**14**	**6**	**8**	**4**

24 Hour Total : 315
AM Peak Hour begins : 8:00 AM Peak Volume : 30 AM Peak Hour Factor : 0.94
PM Peak Hour begins : 17:00 PM Peak Volume : 32 PM PeaK Hour Factor : 0.80

AVERAGE **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	4	3	2	2	1	1	2	5	13	10	16	8
30	3	3	2	0	1	0	4	5	14	12	9	9
45	1	1	2	1	1	2	3	5	13	11	12	10
00	2	4	1	1	0	2	4	10	14	14	11	9
Hr Total	**10**	**11**	**7**	**4**	**3**	**5**	**13**	**25**	**54**	**47**	**48**	**36**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	11	7	7	14	12	16	20	20	10	7	7	3
30	9	11	10	12	14	19	20	19	11	10	6	3
45	12	9	11	14	16	19	21	17	11	6	7	4
00	9	8	12	9	16	16	25	16	11	8	5	4
Hr Total	**41**	**35**	**40**	**49**	**58**	**70**	**86**	**72**	**43**	**31**	**25**	**14**

24 Hour Total : 827
AM Peak Hour begins : 8:00 AM Peak Volume : 54 AM Peak Hour Factor : 0.96
PM Peak Hour begins : 18:00 PM Peak Volume : 86 PM PeaK Hour Factor : 0.86

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021
Stop Date : January 15, 2021
County : Orange
Location : Lemon Ln, South of Warren Ave

Start Time 00:00
Stop Time 24:00

VHB Project #: 63311.01

12-Jan-21 **Northbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	3	1	1	0	0	1	2	8	1	2	2	5
30	0	0	0	0	0	0	7	3	3	1	3	0
45	0	0	1	0	0	0	14	7	1	2	2	7
00	0	0	0	0	0	1	2	7	5	1	4	6
Hr Total	**3**	**1**	**2**	**0**	**0**	**2**	**25**	**25**	**10**	**6**	**11**	**18**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	9	3	3	7	10	7	2	6	2	1	1	3
30	8	5	4	7	3	5	6	8	0	0	2	0
45	6	7	3	10	5	2	4	5	1	2	1	0
00	3	1	0	9	6	2	1	2	1	1	1	1
Hr Total	**26**	**16**	**10**	**33**	**24**	**16**	**13**	**21**	**4**	**4**	**5**	**4**

24 Hour Total : 279
AM Peak Hour begins : 6:15 AM Peak Volume : 31 AM Peak Hour Factor : 0.55
PM Peak Hour begins : 15:15 PM Peak Volume : 36 PM PeaK Hour Factor : 0.90

12-Jan-21 **Southbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	1	0	0	1	0	0	2	2	4	2	0	2
30	0	0	1	0	0	0	2	2	0	0	1	2
45	0	1	0	0	0	1	5	3	0	1	0	1
00	0	0	0	1	1	0	0	6	0	1	0	2
Hr Total	**1**	**1**	**1**	**2**	**1**	**1**	**9**	**13**	**4**	**4**	**1**	**7**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	6	1	0	0	2	0	3	1	0	0	1	0
30	2	2	0	0	0	1	1	1	0	0	0	0
45	3	2	3	1	0	1	6	0	0	0	1	0
00	1	2	2	0	0	2	1	0	1	0	0	0
Hr Total	**12**	**7**	**5**	**1**	**2**	**4**	**11**	**2**	**1**	**0**	**2**	**0**

24 Hour Total : 92
AM Peak Hour begins : 7:15 AM Peak Volume : 15 AM Peak Hour Factor : 0.63
PM Peak Hour begins : 12:00 PM Peak Volume : 12 PM PeaK Hour Factor : 0.50

12-Jan-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	4	1	1	1	0	1	4	10	5	4	2	7
30	0	0	1	0	0	0	9	5	3	1	4	2
45	0	1	1	0	0	1	19	10	1	3	2	8
00	0	0	0	1	1	1	2	13	5	2	4	8
Hr Total	**4**	**2**	**3**	**2**	**1**	**3**	**34**	**38**	**14**	**10**	**12**	**25**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	15	4	3	7	12	7	5	7	2	1	2	3
30	10	7	4	7	3	6	7	9	0	0	2	0
45	9	9	6	11	5	3	10	5	1	2	2	0
00	4	3	2	9	6	4	2	2	2	1	1	1
Hr Total	**38**	**23**	**15**	**34**	**26**	**20**	**24**	**23**	**5**	**4**	**7**	**4**

24 Hour Total : 371
AM Peak Hour begins : 6:15 AM Peak Volume : 40 AM Peak Hour Factor : 0.53
PM Peak Hour begins : 15:15 PM Peak Volume : 39 PM PeaK Hour Factor : 0.81

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021
Stop Date : January 15, 2021
County : Orange
Location : Lemon Ln, South of Warren Ave

Start Time 00:00
Stop Time 24:00

VHB Project #: 63311.01

13-Jan-21 **Northbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	1	0	1	0	0	0	3	7	5	2	1	1
30	0	0	1	0	0	0	9	9	3	0	1	0
45	0	0	0	0	0	0	8	3	3	2	4	2
00	0	0	0	0	0	1	5	9	2	3	2	6
Hr Total	**1**	**0**	**2**	**0**	**0**	**1**	**25**	**28**	**13**	**7**	**8**	**9**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	0	5	1	6	5	5	3	5	0	3	2	3
30	3	8	3	8	3	3	5	10	2	0	0	1
45	5	5	4	3	7	5	3	4	3	0	1	0
00	6	4	2	12	3	2	3	2	0	0	0	0
Hr Total	**14**	**22**	**10**	**29**	**18**	**15**	**14**	**21**	**5**	**3**	**3**	**4**

24 Hour Total : 252
AM Peak Hour begins : 6:15 AM Peak Volume : 29 AM Peak Hour Factor : 0.81
PM Peak Hour begins : 15:00 PM Peak Volume : 29 PM PeaK Hour Factor : 0.60

13-Jan-21 **Southbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	0	0	0	1	1	1	3	1	0	1	1
30	1	0	2	0	0	0	0	3	0	1	1	0
45	0	1	0	0	0	0	4	2	2	1	0	2
00	1	0	0	0	0	1	2	2	3	2	1	5
Hr Total	**2**	**1**	**2**	**0**	**1**	**2**	**7**	**10**	**6**	**4**	**3**	**8**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	2	0	3	6	1	2	0	2	3	1	1	0
30	1	1	0	0	0	2	3	0	0	0	0	0
45	0	2	2	2	0	1	7	0	2	1	0	0
00	0	1	2	0	2	2	0	0	0	0	0	2
Hr Total	**3**	**4**	**7**	**8**	**3**	**7**	**10**	**2**	**5**	**2**	**1**	**2**

24 Hour Total : 100
AM Peak Hour begins : 6:30 AM Peak Volume : 12 AM Peak Hour Factor : 0.75
PM Peak Hour begins : 17:45 PM Peak Volume : 12 PM PeaK Hour Factor : 0.43

13-Jan-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	1	0	1	0	1	1	4	10	6	2	2	2
30	1	0	3	0	0	0	9	12	3	1	2	0
45	0	1	0	0	0	0	12	5	5	3	4	4
00	1	0	0	0	0	2	7	11	5	5	3	11
Hr Total	**3**	**1**	**4**	**0**	**1**	**3**	**32**	**38**	**19**	**11**	**11**	**17**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	2	5	4	12	6	7	3	7	3	4	3	3
30	4	9	3	8	3	5	8	10	2	0	0	1
45	5	7	6	5	7	6	10	4	5	1	1	0
00	6	5	4	12	5	4	3	2	0	0	0	2
Hr Total	**17**	**26**	**17**	**37**	**21**	**22**	**24**	**23**	**10**	**5**	**4**	**6**

24 Hour Total : 352
AM Peak Hour begins : 6:30 AM Peak Volume : 41 AM Peak Hour Factor : 0.85
PM Peak Hour begins : 15:00 PM Peak Volume : 37 PM PeaK Hour Factor : 0.77

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021
Stop Date : January 15, 2021
County : Orange
Location : Lemon Ln, South of Warren Ave

Start Time 00:00
Stop Time 24:00

VHB Project #: 63311.01

14-Jan-21 **Northbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	0	0	0	0	0	4	7	6	6	3	6
30	3	1	0	0	1	0	4	15	2	3	4	6
45	1	0	0	0	0	0	9	5	1	1	2	4
00	0	0	2	0	0	2	3	10	0	0	2	7
Hr Total	**4**	**1**	**2**	**0**	**1**	**2**	**20**	**37**	**9**	**10**	**11**	**23**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	4	1	2	7	6	2	5	5	1	0	0	0
30	3	4	1	7	3	5	8	12	0	1	0	0
45	4	6	11	2	6	5	7	2	0	0	2	2
00	4	4	4	6	4	3	4	0	1	1	0	0
Hr Total	**15**	**15**	**18**	**22**	**19**	**15**	**24**	**19**	**2**	**2**	**2**	**2**

24 Hour Total : 275
AM Peak Hour begins : 7:00 AM Peak Volume : 37 AM Peak Hour Factor : 0.62
PM Peak Hour begins : 14:30 PM Peak Volume : 29 PM PeaK Hour Factor : 0.66

14-Jan-21 **Southbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	0	0	0	0	1	0	5	1	0	1	0
30	0	0	0	0	0	0	4	3	2	0	0	1
45	1	0	1	0	0	1	5	5	1	0	1	1
00	0	0	0	0	0	0	1	2	1	1	0	0
Hr Total	**1**	**0**	**1**	**0**	**0**	**2**	**10**	**15**	**5**	**1**	**2**	**2**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	2	1	1	0	1	0	0	0	0	1	0	0
30	2	2	4	1	1	1	1	0	1	0	0	0
45	0	0	2	0	2	0	2	0	0	1	1	0
00	3	1	0	0	1	1	0	0	0	0	0	0
Hr Total	**7**	**4**	**7**	**1**	**5**	**2**	**3**	**0**	**1**	**2**	**1**	**0**

24 Hour Total : 72
AM Peak Hour begins : 6:15 AM Peak Volume : 15 AM Peak Hour Factor : 0.75
PM Peak Hour begins : 13:45 PM Peak Volume : 8 PM PeaK Hour Factor : 0.50

14-Jan-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	0	0	0	0	1	4	12	7	6	4	6
30	3	1	0	0	1	0	8	18	4	3	4	7
45	2	0	1	0	0	1	14	10	2	1	3	5
00	0	0	2	0	0	2	4	12	1	1	2	7
Hr Total	**5**	**1**	**3**	**0**	**1**	**4**	**30**	**52**	**14**	**11**	**13**	**25**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	6	2	3	7	7	2	5	5	1	1	0	0
30	5	6	5	8	4	6	9	12	1	1	0	0
45	4	6	13	2	8	5	9	2	0	1	3	2
00	7	5	4	6	5	4	4	0	1	1	0	0
Hr Total	**22**	**19**	**25**	**23**	**24**	**17**	**27**	**19**	**3**	**4**	**3**	**2**

24 Hour Total : 347
AM Peak Hour begins : 7:00 AM Peak Volume : 52 AM Peak Hour Factor : 0.72
PM Peak Hour begins : 14:30 PM Peak Volume : 32 PM PeaK Hour Factor : 0.62

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021
Stop Date : January 15, 2021
County : Orange
Location : Lemon Ln, South of Warren Ave

Start Time 00:00
Stop Time 24:00

VHB Project #: 63311.01

AVERAGE **Northbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	1	0	1	0	0	0	3	7	4	3	2	4
30	1	0	0	0	0	0	7	9	3	1	3	2
45	0	0	0	0	0	0	10	5	2	2	3	4
00	0	0	1	0	0	1	3	9	2	1	3	6
Hr Total	**2**	**0**	**2**	**0**	**0**	**1**	**23**	**30**	**11**	**7**	**11**	**16**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	4	3	2	7	7	5	3	5	1	1	1	2
30	5	6	3	7	3	4	6	10	1	0	1	0
45	5	6	6	5	6	4	5	4	1	1	1	1
00	4	3	2	9	4	2	3	1	1	1	0	0
Hr Total	**18**	**18**	**13**	**28**	**20**	**15**	**17**	**20**	**4**	**3**	**3**	**3**

24 Hour Total : 265
AM Peak Hour begins : 7:00 AM Peak Volume : 30 AM Peak Hour Factor : 0.83
PM Peak Hour begins : 15:00 PM Peak Volume : 28 PM PeaK Hour Factor : 0.78

AVERAGE **Southbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	0	0	0	0	1	1	3	2	1	1	1
30	0	0	1	0	0	0	2	3	1	0	1	1
45	0	1	0	0	0	1	5	3	1	1	0	1
00	0	0	0	0	0	0	1	3	1	1	0	2
Hr Total	**0**	**1**	**1**	**0**	**0**	**2**	**9**	**12**	**5**	**3**	**2**	**5**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	3	1	1	2	1	1	1	1	1	1	1	0
30	2	2	1	0	0	1	2	0	0	0	0	0
45	1	1	2	1	1	1	5	0	1	1	1	0
00	1	1	1	0	1	2	0	0	0	0	0	1
Hr Total	**7**	**5**	**5**	**3**	**3**	**5**	**8**	**1**	**2**	**2**	**2**	**1**

24 Hour Total : 84
AM Peak Hour begins : 6:30 AM Peak Volume : 12 AM Peak Hour Factor : 0.60
PM Peak Hour begins : 17:45 PM Peak Volume : 10 PM PeaK Hour Factor : 0.50

AVERAGE **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	1	0	1	0	0	1	4	10	6	4	3	5
30	1	0	1	0	0	0	9	12	4	1	4	3
45	0	1	0	0	0	1	15	8	3	3	3	5
00	0	0	1	0	0	1	4	12	3	2	3	8
Hr Total	**2**	**1**	**3**	**0**	**0**	**3**	**32**	**42**	**16**	**10**	**13**	**21**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	7	4	3	9	8	6	4	6	2	2	2	2
30	7	8	4	7	3	5	8	10	1	0	1	0
45	6	7	8	6	7	5	10	4	2	2	2	1
00	5	4	3	9	5	4	3	1	1	1	0	1
Hr Total	**25**	**23**	**18**	**31**	**23**	**20**	**25**	**21**	**6**	**5**	**5**	**4**

24 Hour Total : 349
AM Peak Hour begins : 7:00 AM Peak Volume : 42 AM Peak Hour Factor : 0.88
PM Peak Hour begins : 15:00 PM Peak Volume : 31 PM PeaK Hour Factor : 0.86

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021
Stop Date : January 15, 2021
County : Orange
Location : S Milwee St, north of Warren Ave

Start Time 00:00
Stop Time 24:00

VHB Project #: 63311.01

12-Jan-21 **Northbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	5	1	4	0	1	0	0	2	27	65	25	46
30	2	1	2	0	3	1	5	10	31	57	30	25
45	1	0	7	1	2	3	5	19	48	47	56	48
00	4	0	3	1	1	0	7	25	76	37	54	29
Hr Total	**12**	**2**	**16**	**2**	**7**	**4**	**17**	**56**	**182**	**206**	**165**	**148**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	28	55	48	53	53	82	153	80	39	41	22	5
30	47	49	59	41	73	69	101	39	41	11	11	4
45	39	67	33	52	78	106	98	43	22	9	5	14
00	28	44	45	57	81	105	82	30	28	23	6	3
Hr Total	**142**	**215**	**185**	**203**	**285**	**362**	**434**	**192**	**130**	**84**	**44**	**26**

24 Hour Total : 3,119
AM Peak Hour begins : 8:30 AM Peak Volume : 246 AM Peak Hour Factor : 0.81
PM Peak Hour begins : 17:30 PM Peak Volume : 465 PM PeaK Hour Factor : 0.76

12-Jan-21 **Southbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	3	0	0	0	1	0	2	13	11	13	17	9
30	1	0	0	0	2	1	3	15	27	23	16	15
45	0	1	0	1	1	0	2	27	28	17	12	15
00	0	4	0	0	0	3	6	21	37	16	13	9
Hr Total	**4**	**5**	**0**	**1**	**4**	**4**	**13**	**76**	**103**	**69**	**58**	**48**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	15	8	9	9	18	3	9	7	2	6	0	2
30	13	17	13	16	16	7	27	8	2	4	3	4
45	7	16	11	9	6	7	18	13	3	4	3	3
00	18	14	8	9	6	11	10	8	2	6	2	1
Hr Total	**53**	**55**	**41**	**43**	**46**	**28**	**64**	**36**	**9**	**20**	**8**	**10**

24 Hour Total : 798
AM Peak Hour begins : 8:15 AM Peak Volume : 105 AM Peak Hour Factor : 0.71
PM Peak Hour begins : 17:45 PM Peak Volume : 65 PM PeaK Hour Factor : 0.60

12-Jan-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	8	1	4	0	2	0	2	15	38	78	42	55
30	3	1	2	0	5	2	8	25	58	80	46	40
45	1	1	7	2	3	3	7	46	76	64	68	63
00	4	4	3	1	1	3	13	46	113	53	67	38
Hr Total	**16**	**7**	**16**	**3**	**11**	**8**	**30**	**132**	**285**	**275**	**223**	**196**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	43	63	57	62	71	85	162	87	41	47	22	7
30	60	66	72	57	89	76	128	47	43	15	14	8
45	46	83	44	61	84	113	116	56	25	13	8	17
00	46	58	53	66	87	116	92	38	30	29	8	4
Hr Total	**195**	**270**	**226**	**246**	**331**	**390**	**498**	**228**	**139**	**104**	**52**	**36**

24 Hour Total : 3,917
AM Peak Hour begins : 8:30 AM Peak Volume : 347 AM Peak Hour Factor : 0.77
PM Peak Hour begins : 17:45 PM Peak Volume : 522 PM PeaK Hour Factor : 0.81

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021
Stop Date : January 15, 2021
County : Orange
Location : S Milwee St, north of Warren Ave

Start Time 00:00
Stop Time 24:00

VHB Project #: 63311.01

13-Jan-21 **Northbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	9	1	4	4	3	1	0	8	25	64	28	35
30	2	5	4	3	1	0	6	5	34	56	41	39
45	6	3	0	2	0	4	1	15	46	47	40	33
00	0	1	0	0	0	1	4	36	64	38	33	35
Hr Total	**17**	**10**	**8**	**9**	**4**	**6**	**11**	**64**	**169**	**205**	**142**	**142**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	35	43	48	55	52	68	143	52	30	20	24	10
30	29	37	34	58	78	81	116	50	24	16	7	7
45	30	58	65	59	81	101	80	35	22	10	13	4
00	47	36	58	51	62	83	83	35	25	8	6	4
Hr Total	**141**	**174**	**205**	**223**	**273**	**333**	**422**	**172**	**101**	**54**	**50**	**25**

24 Hour Total : 2,960
AM Peak Hour begins : 8:45 AM Peak Volume : 231 AM Peak Hour Factor : 0.90
PM Peak Hour begins : 17:30 PM Peak Volume : 443 PM PeaK Hour Factor : 0.77

13-Jan-21 **Southbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	0	2	0	0	1	2	1	18	17	19	4
30	1	0	0	0	0	0	8	14	18	29	15	7
45	3	0	1	0	0	0	1	28	25	25	6	7
00	0	0	0	1	1	2	4	16	24	21	9	14
Hr Total	**4**	**0**	**3**	**1**	**1**	**3**	**15**	**59**	**85**	**92**	**49**	**32**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	11	16	11	11	15	9	10	17	5	3	2	2
30	7	15	26	13	13	9	2	5	3	5	0	3
45	19	13	11	8	11	8	15	8	4	3	1	1
00	21	21	12	8	7	13	6	10	4	2	1	1
Hr Total	**58**	**65**	**60**	**40**	**46**	**39**	**33**	**40**	**16**	**13**	**4**	**7**

24 Hour Total : 765
AM Peak Hour begins : 8:30 AM Peak Volume : 95 AM Peak Hour Factor : 0.82
PM Peak Hour begins : 12:30 PM Peak Volume : 71 PM PeaK Hour Factor : 0.85

13-Jan-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	9	1	6	4	3	2	2	9	43	81	47	39
30	3	5	4	3	1	0	14	19	52	85	56	46
45	9	3	1	2	0	4	2	43	71	72	46	40
00	0	1	0	1	1	3	8	52	88	59	42	49
Hr Total	**21**	**10**	**11**	**10**	**5**	**9**	**26**	**123**	**254**	**297**	**191**	**174**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	46	59	59	66	67	77	153	69	35	23	26	12
30	36	52	60	71	91	90	118	55	27	21	7	10
45	49	71	76	67	92	109	95	43	26	13	14	5
00	68	57	70	59	69	96	89	45	29	10	7	5
Hr Total	**199**	**239**	**265**	**263**	**319**	**372**	**455**	**212**	**117**	**67**	**54**	**32**

24 Hour Total : 3,725
AM Peak Hour begins : 8:45 AM Peak Volume : 326 AM Peak Hour Factor : 0.93
PM Peak Hour begins : 17:30 PM Peak Volume : 476 PM PeaK Hour Factor : 0.78

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021
Stop Date : January 15, 2021
County : Orange
Location : S Milwee St, north of Warren Ave

Start Time 00:00
Stop Time 24:00

VHB Project #: 63311.01

14-Jan-21 **Northbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	5	1	6	2	0	2	1	3	30	42	31	34
30	6	1	0	2	0	5	1	7	45	42	41	27
45	4	3	1	1	0	0	3	20	57	27	33	29
00	5	2	1	0	0	4	3	23	74	32	37	38
Hr Total	**20**	**7**	**8**	**5**	**0**	**11**	**8**	**53**	**206**	**143**	**142**	**128**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	37	54	46	50	65	100	142	69	49	26	20	5
30	33	38	42	43	60	81	119	50	40	25	10	8
45	51	42	48	56	68	107	97	45	24	19	3	7
00	34	41	52	50	58	109	69	30	24	19	9	0
Hr Total	**155**	**175**	**188**	**199**	**251**	**397**	**427**	**194**	**137**	**89**	**42**	**20**

24 Hour Total : 3,005
AM Peak Hour begins : 8:15
PM Peak Hour begins : 17:30

AM Peak Volume : 218
PM Peak Volume : 477

AM Peak Hour Factor : 0.74
PM PeaK Hour Factor : 0.84

14-Jan-21 **Southbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	0	0	0	2	2	2	8	13	24	13	10
30	1	0	0	0	0	1	8	8	22	31	15	9
45	0	1	0	2	0	0	1	17	15	36	15	13
00	0	1	0	0	0	2	8	17	39	23	16	17
Hr Total	**1**	**2**	**0**	**2**	**2**	**5**	**19**	**50**	**89**	**114**	**59**	**49**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	11	14	14	12	18	8	26	8	1	5	3	2
30	19	16	6	16	24	13	15	1	6	4	5	2
45	8	12	12	8	10	14	12	10	6	0	1	0
00	16	24	6	20	20	13	7	6	4	0	2	3
Hr Total	**54**	**66**	**38**	**56**	**72**	**48**	**60**	**25**	**17**	**9**	**11**	**7**

24 Hour Total : 855
AM Peak Hour begins : 8:45
PM Peak Hour begins : 15:45

AM Peak Volume : 130
PM Peak Volume : 72

AM Peak Hour Factor : 0.83
PM PeaK Hour Factor : 0.75

14-Jan-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	5	1	6	2	2	4	3	11	43	66	44	44
30	7	1	0	2	0	6	9	15	67	73	56	36
45	4	4	1	3	0	0	4	37	72	63	48	42
00	5	3	1	0	0	6	11	40	113	55	53	55
Hr Total	**21**	**9**	**8**	**7**	**2**	**16**	**27**	**103**	**295**	**257**	**201**	**177**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	48	68	60	62	83	108	168	77	50	31	23	7
30	52	54	48	59	84	94	134	51	46	29	15	10
45	59	54	60	64	78	121	109	55	30	19	4	7
00	50	65	58	70	78	122	76	36	28	19	11	3
Hr Total	**209**	**241**	**226**	**255**	**323**	**445**	**487**	**219**	**154**	**98**	**53**	**27**

24 Hour Total : 3,860
AM Peak Hour begins : 8:30
PM Peak Hour begins : 17:30

AM Peak Volume : 324
PM Peak Volume : 545

AM Peak Hour Factor : 0.72
PM PeaK Hour Factor : 0.81

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : January 12, 2021
Stop Date : January 15, 2021
County : Orange
Location : S Milwee St, north of Warren Ave

Start Time 00:00
Stop Time 24:00

VHB Project #: 63311.01

AVERAGE **Northbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	6	1	5	2	1	1	0	4	27	57	28	38
30	3	2	2	2	1	2	4	7	37	52	37	30
45	4	2	3	1	1	2	3	18	50	40	43	37
00	3	1	1	0	0	2	5	28	71	36	41	34
Hr Total	**16**	**6**	**11**	**5**	**3**	**7**	**12**	**57**	**185**	**185**	**149**	**139**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	33	51	47	53	57	83	146	67	39	29	22	7
30	36	41	45	47	70	77	112	46	35	17	9	6
45	40	56	49	56	76	105	92	41	23	13	7	8
00	36	40	52	53	67	99	78	32	26	17	7	2
Hr Total	**145**	**188**	**193**	**209**	**270**	**364**	**428**	**186**	**123**	**76**	**45**	**23**

24 Hour Total : 3,025
AM Peak Hour begins : 8:30 AM Peak Volume : 230 AM Peak Hour Factor : 0.81
PM Peak Hour begins : 17:30 PM Peak Volume : 462 PM PeaK Hour Factor : 0.79

AVERAGE **Southbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	1	0	1	0	1	1	2	7	14	18	16	8
30	1	0	0	0	1	1	6	12	22	28	15	10
45	1	1	0	1	0	0	1	24	23	26	11	12
00	0	2	0	0	0	2	6	18	33	20	13	13
Hr Total	**3**	**3**	**1**	**1**	**2**	**4**	**15**	**61**	**92**	**92**	**55**	**43**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	12	13	11	11	17	7	15	11	3	5	2	2
30	13	16	15	15	18	10	15	5	4	4	3	3
45	11	14	11	8	9	10	15	10	4	2	2	1
00	18	20	9	12	11	12	8	8	3	3	2	2
Hr Total	**54**	**63**	**46**	**46**	**55**	**39**	**53**	**34**	**14**	**14**	**9**	**8**

24 Hour Total : 807
AM Peak Hour begins : 8:45 AM Peak Volume : 105 AM Peak Hour Factor : 0.80
PM Peak Hour begins : 13:00 PM Peak Volume : 63 PM PeaK Hour Factor : 0.79

AVERAGE **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	7	1	6	2	2	2	2	11	41	75	44	46
30	4	2	2	2	2	3	10	19	59	80	52	40
45	5	3	3	2	1	2	4	42	73	66	54	49
00	3	3	1	0	0	4	11	46	104	56	54	47
Hr Total	**19**	**9**	**12**	**6**	**5**	**11**	**27**	**118**	**277**	**277**	**204**	**182**

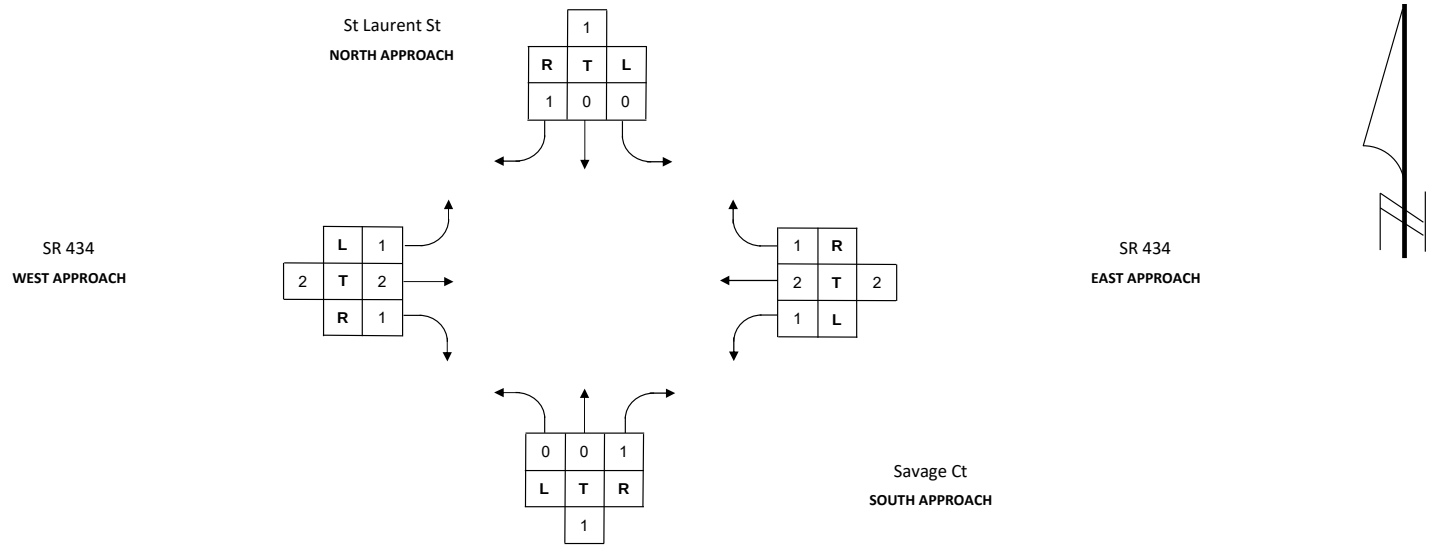
End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	45	64	58	64	74	90	161	78	42	34	24	9
30	49	57	60	62	88	87	127	51	39	21	12	9
45	51	70	60	64	85	115	107	51	27	15	9	9
00	54	60	61	65	78	111	86	40	29	20	9	4
Hr Total	**199**	**251**	**239**	**255**	**325**	**403**	**481**	**220**	**137**	**90**	**54**	**31**

24 Hour Total : 3,832
AM Peak Hour begins : 8:30 AM Peak Volume : 332 AM Peak Hour Factor : 0.80
PM Peak Hour begins : 17:30 PM Peak Volume : 514 PM PeaK Hour Factor : 0.80

FLORIDA DEPARTMENT OF TRANSPORTATION

SUMMARY OF VEHICLE MOVEMENTS

		CITY:	Orlando	**COUNTY:**	Seminole
MAJOR ROUTE:	SR 434	**INTERSECTING ROUTE:**	St Laurent St/Savage Ct		
OBSERVER:	VHB	**DATE:**	1/12/21	**COMPLETED BY:**	ME
WEATHER:	Good	**ROAD CONDITION:**	Good	**DATE COMPLETED:**	1/25/21
REMARKS:					



TIME	NORTHBOUND						SOUTHBOUND						TOTAL	EASTBOUND						WESTBOUND						TOTAL
BEGIN/END	**U**	**L**	**T**	**R**	**RTOR**	**TOT**	**U**	**L**	**T**	**R**	**RTOR**	**TOT**	**N/S**	**U**	**L**	**T**	**R**	**RTOR**	**TOT**	**U**	**L**	**T**	**R**	**RTOR**	**TOT**	**E/W**
8:00 - 9:00	0	0	0	39	0	**39**	0	0	0	55	0	**55**	**94**	7	116	1,406	16	0	**1,545**	11	41	1,068	17	0	**1,137**	**2,682**
9:00 - 10:00	0	0	0	49	0	**49**	0	0	0	42	0	**42**	**91**	11	90	1,198	17	0	**1,316**	20	65	1,033	35	0	**1,153**	**2,469**
10:00 - 11:00	0	0	0	43	0	**43**	0	0	0	46	0	**46**	**89**	7	71	1,140	110	0	**1,328**	27	55	1,058	43	0	**1,183**	**2,511**
11:00 - 12:00	0	0	0	80	0	**80**	0	0	0	58	0	**58**	**138**	4	71	1,063	24	0	**1,162**	35	82	1,080	54	0	**1,251**	**2,413**
12:00 - 13:00	0	0	0	96	0	**96**	0	0	0	90	0	**90**	**186**	2	73	1,168	49	0	**1,292**	37	96	1,183	57	0	**1,373**	**2,665**
13:00 - 14:00	0	0	0	75	0	**75**	0	0	0	66	0	**66**	**141**	4	72	1,190	49	0	**1,315**	37	81	1,056	54	0	**1,228**	**2,543**
14:00 - 15:00	0	0	0	65	0	**65**	0	0	0	80	0	**80**	**145**	7	97	1,215	28	0	**1,347**	21	73	1,146	57	0	**1,297**	**2,644**
15:00 - 16:00	0	0	0	61	0	**61**	0	0	0	79	0	**79**	**140**	2	84	1,379	29	0	**1,494**	28	62	1,310	62	0	**1,462**	**2,956**
16:00 - 17:00	0	0	0	71	0	**71**	0	0	0	90	0	**90**	**161**	2	105	1,309	25	0	**1,441**	14	62	1,340	77	0	**1,493**	**2,934**
17:00 - 18:00	0	0	0	45	0	**45**	0	0	0	111	0	**111**	**156**	4	90	1,348	22	0	**1,464**	20	53	1,404	36	0	**1,513**	**2,977**
18:00 - 19:00	0	0	0	46	0	**46**	0	0	0	60	0	**60**	**106**	8	84	1,075	15	0	**1,182**	18	53	1,071	50	0	**1,192**	**2,374**
TOTAL	0	0	0	670	0	**670**	0	0	0	777	0	**777**	**1,447**	58	953	13,491	384	0	**14,886**	268	723	12,749	542	0	**14,282**	**29,168**

Percentage	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	N/A	0.4%	6.4%	90.6%	2.6%	0.0%	100.0%	1.9%	5.1%	89.3%	3.8%	0.0%	100.0%	N/A
Maximum	0	0	0	96	0	96	0	0	0	111	0	111	186	11	116	1,406	110	0	1,545	37	96	1,404	77	0	1,513	2,977
Minimum	0	0	0	39	0	39	0	0	0	42	0	42	89	2	71	1,063	15	0	1,162	11	41	1,033	17	0	1,137	2,374
Total Heavy Veh	0		0	31	0	31	0		0	36	0	36	67	32		667	19	0	718	15		571	17	0	603	1,321
% Heavy Veh	0.0%		0.0%	4.6%		4.6%	0.0%		0.0%	4.6%		4.6%	4.6%	3.2%		4.9%	4.9%		4.8%	1.5%		4.5%	3.1%		4.2%	4.5%

FLORIDA DEPARTMENT OF TRANSPORTATION

BICYCLE MOVEMENT SUMMARY

MAJOR ROUTE	SR 434	**CITY**	Orlando
OBSERVER	VHB	**INTERSECTING ROUTE**	St Laurent St/Savage Ct
COUNTY	Seminole	**DATE OF COUNT**	1/12/21
		WEATHER	Good
		COMPLETED BY	ME
COUNT HOURS	8:00 AM to 7:00 PM	**DATE**	1/25/21

12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Total
0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	**6**
0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	4	0	0	0	0	0	0	0	**6**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**6**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**12**

0-1	0	0	**0**
1-2	0	0	**0**
2-3	0	0	**0**
3-4	0	0	**0**
4-5	0	0	**0**
5-6	0	0	**0**
6-7	0	0	**0**
7-8	0	0	**0**
8-9	0	0	**0**
9-10	0	0	**0**
10-11	0	0	**0**
11-12	0	0	**0**
12-13	0	0	**0**
13-14	0	0	**0**
14-15	0	0	**0**
15-16	0	0	**0**
16-17	0	0	**0**
17-18	0	0	**0**
18-19	0	0	**0**
19-20	0	0	**0**
20-21	0	0	**0**
21-22	0	0	**0**
22-23	0	0	**0**
23-24	0	0	**0**
Total	**0**	**0**	**0**

NORTH APPROACH
St Laurent St

WEST APPROACH
SR 434

SR 434
EAST APPROACH

0-1	0	0	**0**
1-2	0	0	**0**
2-3	0	0	**0**
3-4	0	0	**0**
4-5	0	0	**0**
5-6	0	0	**0**
6-7	0	0	**0**
7-8	0	0	**0**
8-9	0	0	**0**
9-10	0	0	**0**
10-11	0	0	**0**
11-12	0	0	**0**
12-13	0	0	**0**
13-14	0	0	**0**
14-15	0	0	**0**
15-16	0	0	**0**
16-17	0	0	**0**
17-18	0	0	**0**
18-19	0	0	**0**
19-20	0	0	**0**
20-21	0	0	**0**
21-22	0	0	**0**
22-23	0	0	**0**
23-24	0	0	**0**
Total	**0**	**0**	**0**

Savage Ct
SOUTH APPROACH

12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Total
0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0	2	0	0	0	0	0	0	**8**
0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	0	0	0	**8**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**4**	**4**	**4**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**16**

FLORIDA DEPARTMENT OF TRANSPORTATION

PEDESTRIAN MOVEMENT SUMMARY

MAJOR ROUTE	SR 434	**CITY**	Orlando
OBSERVER	VHB	**INTERSECTING ROUTE**	St Laurent St/Savage Ct
COUNTY	Seminole	**DATE OF COUNT**	1/12/21
		WEATHER	Good
		COMPLETED BY	ME
COUNT HOURS	8:00 AM to 7:00 PM	**DATE**	1/25/21

0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Total
0	0	0	0	0	0	0	0	6	0	0	2	0	0	0	0	0	4	0	0	0	0	0	0	**12**
0	0	0	0	0	0	0	0	0	6	2	0	0	0	0	2	0	6	0	0	0	0	0	0	**16**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**6**	**2**	**2**	**0**	**0**	**0**	**2**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**28**

0-1	0	0	**0**
1-2	0	0	**0**
2-3	0	0	**0**
3-4	0	0	**0**
4-5	0	0	**0**
5-6	0	0	**0**
6-7	0	0	**0**
7-8	0	0	**0**
8-9	0	0	**0**
9-10	0	0	**0**
10-11	0	0	**0**
11-12	2	0	**2**
12-13	0	0	**0**
13-14	0	0	**0**
14-15	0	0	**0**
15-16	0	0	**0**
16-17	0	0	**0**
17-18	0	0	**0**
18-19	0	0	**0**
19-20	0	0	**0**
20-21	0	0	**0**
21-22	0	0	**0**
22-23	0	0	**0**
23-24	0	0	**0**
Total	**2**	**0**	**2**

NORTH APPROACH
St Laurent St

WEST APPROACH
SR 434

SR 434
EAST APPROACH

Savage Ct
SOUTH APPROACH

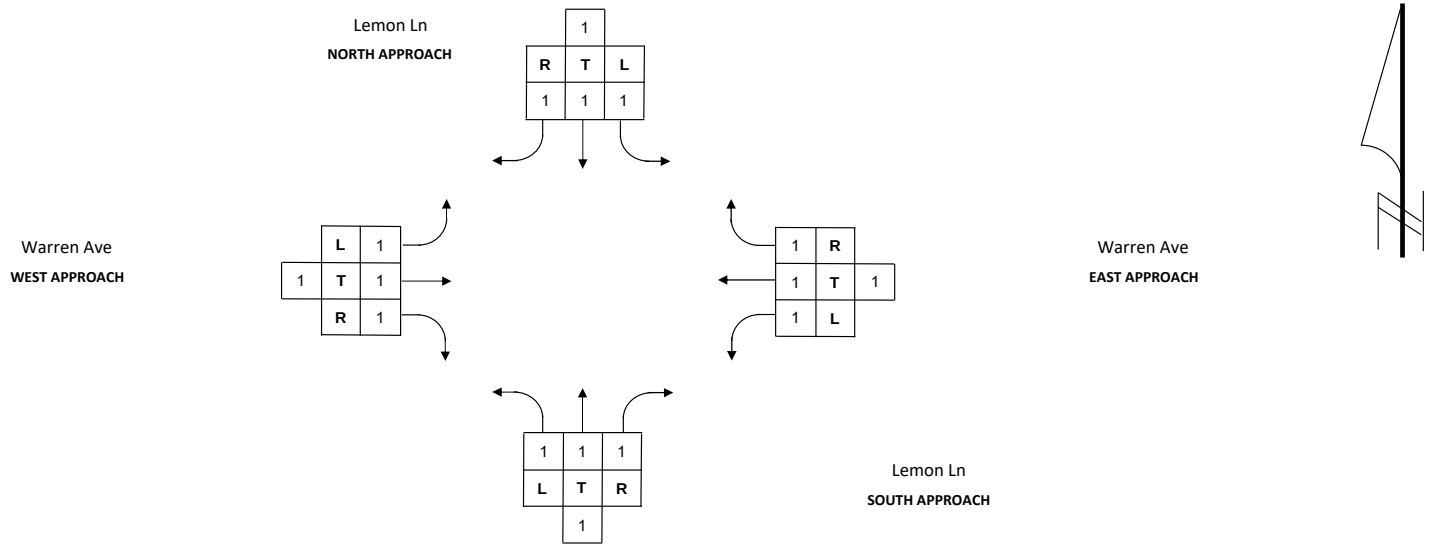
0-1	0	0	**0**
1-2	0	0	**0**
2-3	0	0	**0**
3-4	0	0	**0**
4-5	0	0	**0**
5-6	0	0	**0**
6-7	0	0	**0**
7-8	0	0	**0**
8-9	0	0	**0**
9-10	0	0	**0**
10-11	0	0	**0**
11-12	0	2	**2**
12-13	2	0	**2**
13-14	0	0	**0**
14-15	2	0	**2**
15-16	0	0	**0**
16-17	0	0	**0**
17-18	0	0	**0**
18-19	0	0	**0**
19-20	0	0	**0**
20-21	0	0	**0**
21-22	0	0	**0**
22-23	0	0	**0**
23-24	0	0	**0**
Total	**4**	**2**	**6**

0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Total
0	0	0	0	0	0	0	0	2	2	0	2	0	2	0	0	2	0	4	0	0	0	0	0	**14**
0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2	0	0	0	0	0	**6**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**2**	**4**	**0**	**2**	**0**	**0**	**2**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**20**

FLORIDA DEPARTMENT OF TRANSPORTATION

SUMMARY OF VEHICLE MOVEMENTS

		CITY:	Orlando	**COUNTY:**	Seminole
MAJOR ROUTE:	Lemon Ln	**INTERSECTING ROUTE:**	Warren Ave		
OBSERVER:	VHB	**DATE:**	1/12/21	**COMPLETED BY:**	ME
WEATHER:	Good	**ROAD CONDITION:**	Good	**DATE COMPLETED:**	1/26/21
REMARKS:					



TIME	NORTHBOUND						SOUTHBOUND						TOTAL	EASTBOUND						WESTBOUND						TOTAL
BEGIN/END	**U**	**L**	**T**	**R**	**RTOR**	**TOT**	**U**	**L**	**T**	**R**	**RTOR**	**TOT**	**N/S**	**U**	**L**	**T**	**R**	**RTOR**	**TOT**	**U**	**L**	**T**	**R**	**RTOR**	**TOT**	**E/W**
8:00 - 9:00	0	1	0	1	0	**2**	0	5	1	13	0	**19**	**21**	0	9	107	9	0	**125**	0	3	77	5	0	**85**	**210**
9:00 - 10:00	0	3	0	1	0	**4**	0	4	1	22	0	**27**	**31**	0	5	86	4	0	**95**	0	0	67	5	0	**72**	**167**
10:00 - 11:00	0	2	0	2	0	**4**	0	0	2	8	0	**10**	**14**	0	6	94	8	0	**108**	0	0	61	6	0	**67**	**175**
11:00 - 12:00	0	6	1	3	0	**10**	0	4	2	11	0	**17**	**27**	0	11	90	7	0	**108**	0	5	82	4	0	**91**	**199**
12:00 - 13:00	0	12	0	7	0	**19**	0	2	0	13	0	**15**	**34**	0	10	134	12	0	**156**	0	3	111	3	0	**117**	**273**
13:00 - 14:00	0	6	0	3	0	**9**	0	0	1	8	0	**9**	**18**	0	14	109	12	0	**135**	0	3	89	3	0	**95**	**230**
14:00 - 15:00	0	4	0	3	0	**7**	0	2	0	19	0	**21**	**28**	0	19	119	6	0	**144**	0	2	81	8	0	**91**	**235**
15:00 - 16:00	0	15	2	7	0	**24**	0	9	2	14	0	**25**	**49**	0	17	135	10	0	**162**	0	0	104	9	0	**113**	**275**
16:00 - 17:00	0	10	2	8	0	**20**	0	2	1	14	0	**17**	**37**	0	21	143	5	0	**169**	1	1	97	6	0	**105**	**274**
17:00 - 18:00	0	5	0	6	0	**11**	0	8	3	22	0	**33**	**44**	0	28	175	6	0	**209**	0	2	143	8	0	**153**	**362**
18:00 - 19:00	0	3	1	1	0	**5**	0	6	1	18	0	**25**	**30**	0	17	97	14	0	**128**	0	3	56	10	0	**69**	**197**
TOTAL	0	67	6	42	0	**115**	0	42	14	162	0	**218**	**333**	0	157	1,289	93	0	**1,539**	1	22	968	67	0	**1,058**	**2,597**

Percentage	0.0%	58.3%	5.2%	36.5%	0.0%	100.0%	0.0%	19.3%	6.4%	74.3%	0.0%	100.0%	N/A	0.0%	10.2%	83.8%	6.0%	0.0%	100.0%	0.1%	2.1%	91.5%	6.3%	0.0%	100.0%	N/A
Maximum	0	15	2	8	0	24	0	9	3	22	0	33	49	0	28	175	14	0	209	1	5	143	10	0	153	362
Minimum	0	1	1	1	0	2	0	2	1	8	0	9	14	0	5	86	4	0	95	1	1	56	3	0	67	167
Total Heavy Veh	3		0	4	0	7	1		0	3	0	4	11	1		20	6	0	27	0		29	2	0	31	58
% Heavy Veh	4.5%		0.0%	9.5%		6.1%	2.4%		0.0%	1.9%		1.8%	3.3%	0.6%		1.6%	6.5%		1.8%	0.0%		3.0%	3.0%		2.9%	2.2%

FLORIDA DEPARTMENT OF TRANSPORTATION

BICYCLE MOVEMENT SUMMARY

MAJOR ROUTE	Lemon Ln	**CITY**	Orlando
OBSERVER	VHB	**INTERSECTING ROUTE**	Warren Ave
COUNTY	Seminole	**DATE OF COUNT**	1/12/21
		WEATHER	Good
		COMPLETED BY	ME
COUNT HOURS	8:00 AM - 7:00 PM	**DATE**	1/26/21

12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Total
0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	2	1	2	1	0	0	0	0	0	**10**
0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	1	2	1	0	0	0	0	0	0	**8**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**2**	**3**	**3**	**3**	**3**	**1**	**0**	**0**	**0**	**0**	**0**	**18**

0-1	0	0	**0**
1-2	0	0	**0**
2-3	0	0	**0**
3-4	0	0	**0**
4-5	0	0	**0**
5-6	0	0	**0**
6-7	0	0	**0**
7-8	0	0	**0**
8-9	0	0	**0**
9-10	0	0	**0**
10-11	0	0	**0**
11-12	0	0	**0**
12-13	0	0	**0**
13-14	0	0	**0**
14-15	0	0	**0**
15-16	0	0	**0**
16-17	0	0	**0**
17-18	0	0	**0**
18-19	0	0	**0**
19-20	0	0	**0**
20-21	0	0	**0**
21-22	0	0	**0**
22-23	0	0	**0**
23-24	0	0	**0**
Total	**0**	**0**	**0**

NORTH APPROACH
Lemon Ln

WEST APPROACH
Warren Ave

Warren Ave
EAST APPROACH

0-1	0	0	**0**
1-2	0	0	**0**
2-3	0	0	**0**
3-4	0	0	**0**
4-5	0	0	**0**
5-6	0	0	**0**
6-7	0	0	**0**
7-8	0	0	**0**
8-9	0	0	**0**
9-10	0	0	**0**
10-11	0	0	**0**
11-12	0	0	**0**
12-13	0	0	**0**
13-14	0	0	**0**
14-15	0	0	**0**
15-16	0	1	**1**
16-17	0	0	**0**
17-18	0	0	**0**
18-19	0	0	**0**
19-20	0	0	**0**
20-21	0	0	**0**
21-22	0	0	**0**
22-23	0	0	**0**
23-24	0	0	**0**
Total	**0**	**1**	**1**

Lemon Ln
SOUTH APPROACH

12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Total
0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0	**4**
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	**4**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**2**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**8**

FLORIDA DEPARTMENT OF TRANSPORTATION

PEDESTRIAN MOVEMENT SUMMARY

MAJOR ROUTE	Lemon Ln	**CITY**	Orlando
OBSERVER	VHB	**INTERSECTING ROUTE**	Warren Ave
COUNTY	Seminole	**DATE OF COUNT**	1/12/21
		WEATHER	Good
		COMPLETED BY	ME
COUNT HOURS	8:00 AM - 7:00 PM	**DATE**	1/26/21

0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Total
0	0	0	0	0	0	0	0	4	0	0	2	0	4	1	1	2	2	1	0	0	0	0	0	**17**
0	0	0	0	0	0	0	0	4	4	1	1	3	2	3	3	0	3	1	0	0	0	0	0	**25**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**4**	**1**	**3**	**3**	**6**	**4**	**4**	**2**	**5**	**2**	**0**	**0**	**0**	**0**	**0**	**42**

0-1	0	0	**0**
1-2	0	0	**0**
2-3	0	0	**0**
3-4	0	0	**0**
4-5	0	0	**0**
5-6	0	0	**0**
6-7	0	0	**0**
7-8	0	0	**0**
8-9	0	0	**0**
9-10	0	0	**0**
10-11	0	0	**0**
11-12	1	0	**1**
12-13	0	0	**0**
13-14	0	0	**0**
14-15	0	0	**0**
15-16	0	0	**0**
16-17	0	0	**0**
17-18	0	0	**0**
18-19	0	0	**0**
19-20	0	0	**0**
20-21	0	0	**0**
21-22	0	0	**0**
22-23	0	0	**0**
23-24	0	0	**0**
Total	**1**	**0**	**1**

WEST APPROACH
Warren Ave

NORTH APPROACH
Lemon Ln

Warren Ave
EAST APPROACH

0-1	0	0	**0**
1-2	0	0	**0**
2-3	0	0	**0**
3-4	0	0	**0**
4-5	0	0	**0**
5-6	0	0	**0**
6-7	0	0	**0**
7-8	0	0	**0**
8-9	1	1	**2**
9-10	0	0	**0**
10-11	0	0	**0**
11-12	0	1	**1**
12-13	1	0	**1**
13-14	0	0	**0**
14-15	2	0	**2**
15-16	2	0	**2**
16-17	0	0	**0**
17-18	0	0	**0**
18-19	0	0	**0**
19-20	0	0	**0**
20-21	0	0	**0**
21-22	0	0	**0**
22-23	0	0	**0**
23-24	0	0	**0**
Total	**6**	**2**	**8**

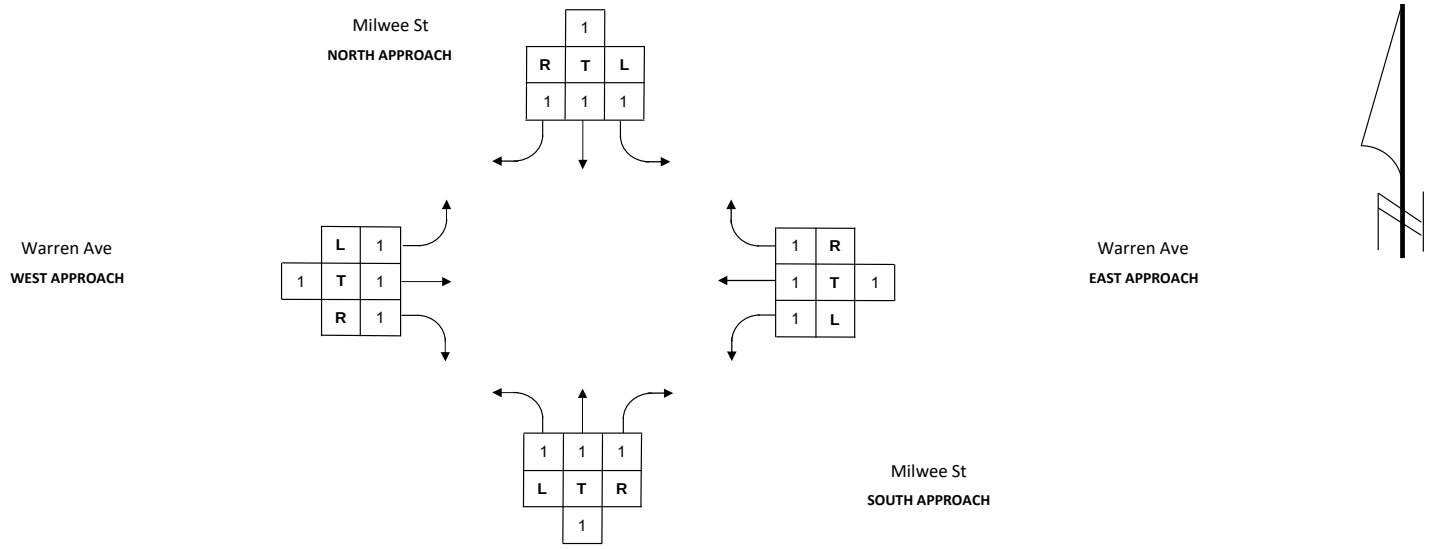
Lemon Ln
SOUTH APPROACH

0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Total
0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	1	0	2	0	0	0	0	0	**7**
0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	**3**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**2**	**0**	**1**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**10**

FLORIDA DEPARTMENT OF TRANSPORTATION

SUMMARY OF VEHICLE MOVEMENTS

		CITY:	Orlando	**COUNTY:**	Seminole
MAJOR ROUTE:	Milwee St	**INTERSECTING ROUTE:**	Warren Ave		
OBSERVER:	VHB	**DATE:**	1/12/21	**COMPLETED BY:**	ME
WEATHER:	Good	**ROAD CONDITION:**	Good	**DATE COMPLETED:**	1/26/21
REMARKS:					



TIME	NORTHBOUND						SOUTHBOUND						TOTAL	EASTBOUND						WESTBOUND						TOTAL
BEGIN/END	**U**	**L**	**T**	**R**	**RTOR**	**TOT**	**U**	**L**	**T**	**R**	**RTOR**	**TOT**	**N/S**	**U**	**L**	**T**	**R**	**RTOR**	**TOT**	**U**	**L**	**T**	**R**	**RTOR**	**TOT**	**E/W**
8:00 - 9:00	0	19	73	5	0	**97**	0	7	62	59	0	**128**	**225**	0	69	30	9	0	**108**	0	4	33	1	0	**38**	**146**
9:00 - 10:00	0	22	64	14	0	**100**	0	2	47	42	0	**91**	**191**	0	53	34	3	0	**90**	0	6	21	1	0	**28**	**118**
10:00 - 11:00	0	27	57	7	0	**91**	0	6	39	30	0	**75**	**166**	0	50	40	10	0	**100**	0	2	24	3	0	**29**	**129**
11:00 - 12:00	0	33	58	13	0	**104**	0	3	29	44	0	**76**	**180**	0	49	54	10	0	**113**	0	5	16	3	0	**24**	**137**
12:00 - 13:00	0	37	76	9	0	**122**	0	2	39	61	0	**102**	**224**	0	76	68	9	0	**153**	0	2	34	5	0	**41**	**194**
13:00 - 14:00	1	33	85	15	0	**134**	0	2	27	48	0	**77**	**211**	0	52	52	8	0	**112**	0	5	20	6	0	**31**	**143**
14:00 - 15:00	0	26	73	7	0	**106**	0	2	31	51	0	**84**	**190**	0	73	53	10	0	**136**	0	7	20	3	0	**30**	**166**
15:00 - 16:00	0	22	113	10	0	**145**	0	3	28	58	0	**89**	**234**	0	92	80	6	0	**178**	0	4	23	4	0	**31**	**209**
16:00 - 17:00	0	16	141	22	0	**179**	0	5	45	49	0	**99**	**278**	0	125	80	4	0	**209**	0	9	20	2	0	**31**	**240**
17:00 - 18:00	0	21	162	16	0	**199**	0	9	58	94	0	**161**	**360**	0	149	82	6	0	**237**	0	5	26	4	0	**35**	**272**
18:00 - 19:00	0	14	68	4	0	**86**	0	1	19	52	0	**72**	**158**	0	78	49	4	0	**131**	0	1	18	1	0	**20**	**151**
TOTAL	1	270	970	122	0	**1,363**	0	42	424	588	0	**1,054**	**2,417**	0	866	622	79	0	**1,567**	0	50	255	33	0	**338**	**1,905**

Percentage	0.1%	19.8%	71.2%	9.0%	0.0%	100.0%	0.0%	4.0%	40.2%	55.8%	0.0%	100.0%	N/A	0.0%	55.3%	39.7%	5.0%	0.0%	100.0%	0.0%	14.8%	75.4%	9.8%	0.0%	100.0%	N/A
Maximum	1	37	162	22	0	199	0	9	62	94	0	161	360	0	149	82	10	0	237	0	9	34	6	0	41	272
Minimum	1	14	57	4	0	86	0	1	19	30	0	72	158	0	49	30	3	0	90	0	1	16	1	0	20	118
Total Heavy Veh	22		27	4	0	53	1		13	4	0	18	71	19		18	2	0	39	0		8	0	0	8	47
% Heavy Veh	8.1%		2.8%	3.3%		3.9%	2.4%		3.1%	0.7%		1.7%	2.9%	2.2%		2.9%	2.5%		2.5%	0.0%		3.1%	0.0%		2.4%	2.5%

FLORIDA DEPARTMENT OF TRANSPORTATION

BICYCLE MOVEMENT SUMMARY

MAJOR ROUTE	Milwee St	**CITY**	Orlando
OBSERVER	VHB	**INTERSECTING ROUTE**	Warren Ave
COUNTY	Seminole	**DATE OF COUNT**	1/12/21
		WEATHER	Good
		COMPLETED BY	ME
COUNT HOURS	8:00 AM - 7:00 PM	**DATE**	1/26/21

12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Total
0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	1	0	1	0	0	0	0	0	**5**
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	**3**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**8**

0-1	0	0	**0**
1-2	0	0	**0**
2-3	0	0	**0**
3-4	0	0	**0**
4-5	0	0	**0**
5-6	0	0	**0**
6-7	0	0	**0**
7-8	0	0	**0**
8-9	0	0	**0**
9-10	0	0	**0**
10-11	0	0	**0**
11-12	0	0	**0**
12-13	0	0	**0**
13-14	0	0	**0**
14-15	0	0	**0**
15-16	1	0	**1**
16-17	0	0	**0**
17-18	0	0	**0**
18-19	0	1	**1**
19-20	0	0	**0**
20-21	0	0	**0**
21-22	0	0	**0**
22-23	0	0	**0**
23-24	0	0	**0**
Total	**1**	**1**	**2**

NORTH APPROACH
Milwee St

WEST APPROACH
Warren Ave

Warren Ave
EAST APPROACH

Milwee St
SOUTH APPROACH

0-1	0	0	**0**
1-2	0	0	**0**
2-3	0	0	**0**
3-4	0	0	**0**
4-5	0	0	**0**
5-6	0	0	**0**
6-7	0	0	**0**
7-8	0	0	**0**
8-9	0	0	**0**
9-10	0	0	**0**
10-11	0	0	**0**
11-12	0	0	**0**
12-13	0	0	**0**
13-14	0	0	**0**
14-15	0	1	**1**
15-16	0	0	**0**
16-17	1	0	**1**
17-18	0	0	**0**
18-19	0	0	**0**
19-20	0	0	**0**
20-21	0	0	**0**
21-22	0	0	**0**
22-23	0	0	**0**
23-24	0	0	**0**
Total	**1**	**1**	**2**

12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Total
0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0	**4**
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	0	0	0	0	0	0	0	**5**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**3**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**9**

FLORIDA DEPARTMENT OF TRANSPORTATION

PEDESTRIAN MOVEMENT SUMMARY

MAJOR ROUTE	Milwee St	**CITY**	Orlando
OBSERVER	VHB	**INTERSECTING ROUTE**	Warren Ave
COUNTY	Seminole	**DATE OF COUNT**	1/12/21
		WEATHER	Good
		COMPLETED BY	ME
COUNT HOURS	8:00 AM - 7:00 PM	**DATE**	1/26/21

0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Total
0	0	0	0	0	0	0	0	5	1	0	3	1	1	0	1	2	2	1	0	0	0	0	0	17
0	0	0	0	0	0	0	0	1	4	2	1	3	0	1	2	2	3	0	0	0	0	0	0	19
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**5**	**2**	**4**	**4**	**1**	**1**	**3**	**4**	**5**	**1**	**0**	**0**	**0**	**0**	**0**	**36**

0-1	0	0	**0**
1-2	0	0	**0**
2-3	0	0	**0**
3-4	0	0	**0**
4-5	0	0	**0**
5-6	0	0	**0**
6-7	0	0	**0**
7-8	0	0	**0**
8-9	0	1	**1**
9-10	0	0	**0**
10-11	0	0	**0**
11-12	1	0	**1**
12-13	0	0	**0**
13-14	1	0	**1**
14-15	1	0	**1**
15-16	0	0	**0**
16-17	0	1	**1**
17-18	1	0	**1**
18-19	0	0	**0**
19-20	0	0	**0**
20-21	0	0	**0**
21-22	0	0	**0**
22-23	0	0	**0**
23-24	0	0	**0**
Total	**4**	**2**	**6**

NORTH APPROACH
Milwee St

WEST APPROACH
Warren Ave

Warren Ave
EAST APPROACH

0-1	0	0	**0**
1-2	0	0	**0**
2-3	0	0	**0**
3-4	0	0	**0**
4-5	0	0	**0**
5-6	0	0	**0**
6-7	0	0	**0**
7-8	0	0	**0**
8-9	1	3	**4**
9-10	2	3	**5**
10-11	0	1	**1**
11-12	3	5	**8**
12-13	3	1	**4**
13-14	1	1	**2**
14-15	4	0	**4**
15-16	3	1	**4**
16-17	2	0	**2**
17-18	0	0	**0**
18-19	1	0	**1**
19-20	0	0	**0**
20-21	0	0	**0**
21-22	0	0	**0**
22-23	0	0	**0**
23-24	0	0	**0**
Total	**20**	**15**	**35**

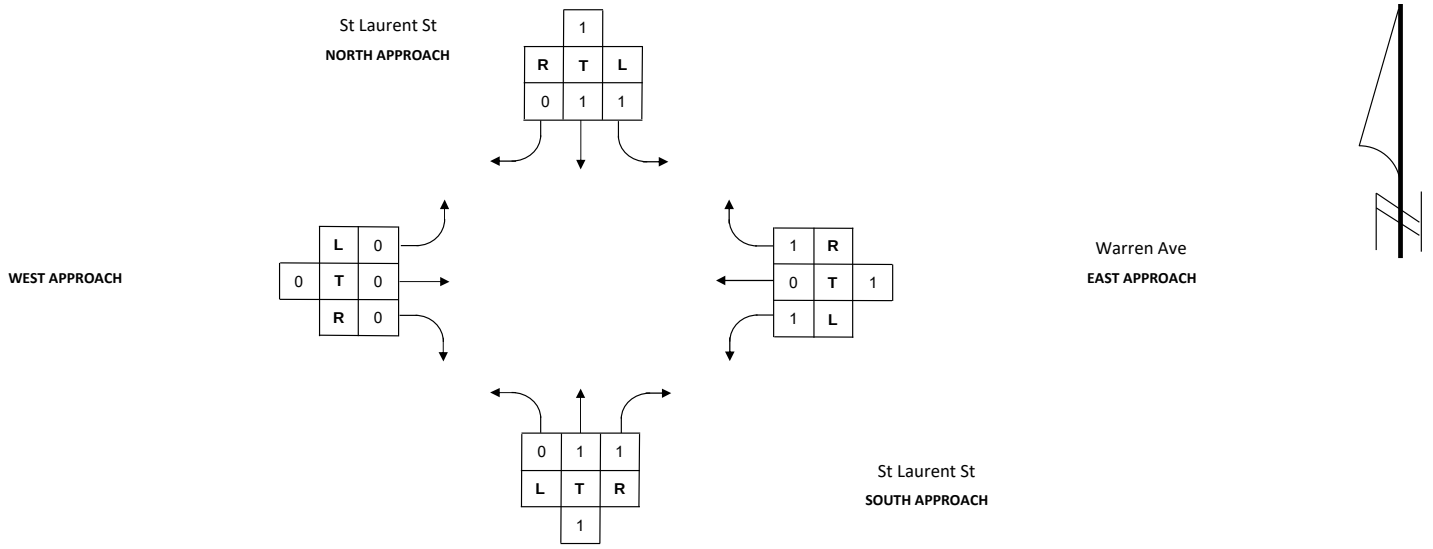
Milwee St
SOUTH APPROACH

0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Total
0	0	0	0	0	0	0	0	2	1	0	1	0	1	0	0	1	0	2	0	0	0	0	0	8
0	0	0	0	0	0	0	0	0	0	2	1	0	1	1	0	0	1	1	0	0	0	0	0	7
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**2**	**2**	**0**	**2**	**1**	**0**	**1**	**1**	**3**	**0**	**0**	**0**	**0**	**0**	**15**

FLORIDA DEPARTMENT OF TRANSPORTATION

SUMMARY OF VEHICLE MOVEMENTS

		CITY:	Orlando	**COUNTY:**	Seminole
MAJOR ROUTE:	St. Laurent St	**INTERSECTING ROUTE:**	Warren Ave		
OBSERVER:	VHB	**DATE:**	1/12/21	**COMPLETED BY:**	ME
WEATHER:	Good	**ROAD CONDITION:**	Good	**DATE COMPLETED:**	1/26/21
REMARKS:					



TIME	NORTHBOUND						SOUTHBOUND						TOTAL	EASTBOUND						WESTBOUND						TOTAL
BEGIN/END	**U**	**L**	**T**	**R**	**RTOR**	**TOT**	**U**	**L**	**T**	**R**	**RTOR**	**TOT**	**N/S**	**U**	**L**	**T**	**R**	**RTOR**	**TOT**	**U**	**L**	**T**	**R**	**RTOR**	**TOT**	**E/W**
8:00 - 9:00	0	0	25	107	0	**132**	0	49	6	0	0	**55**	**187**	0	0	0	0	0	**0**	1	47	0	25	0	**73**	**73**
9:00 - 10:00	0	0	48	68	0	**116**	0	40	5	0	0	**45**	**161**	0	0	0	0	0	**0**	1	48	0	24	0	**73**	**73**
10:00 - 11:00	1	0	54	52	0	**107**	0	43	11	0	0	**54**	**161**	0	0	0	0	0	**0**	0	35	0	29	0	**64**	**64**
11:00 - 12:00	0	0	71	51	0	**122**	0	57	16	0	0	**73**	**195**	0	0	0	0	0	**0**	2	44	0	57	0	**103**	**103**
12:00 - 13:00	0	0	78	53	0	**131**	0	105	18	0	0	**123**	**254**	0	0	0	0	0	**0**	0	74	0	68	0	**142**	**142**
13:00 - 14:00	1	0	71	49	0	**121**	0	71	10	0	0	**81**	**202**	0	0	0	0	0	**0**	0	57	0	40	0	**97**	**97**
14:00 - 15:00	0	0	73	70	0	**143**	0	70	17	0	0	**87**	**230**	0	0	0	0	0	**0**	2	60	0	42	0	**104**	**104**
15:00 - 16:00	0	0	77	68	0	**145**	0	76	13	0	0	**89**	**234**	0	0	0	0	0	**0**	2	78	0	63	0	**143**	**143**
16:00 - 17:00	1	0	92	72	0	**165**	0	68	22	0	0	**90**	**255**	0	0	0	0	0	**0**	2	75	0	56	0	**133**	**133**
17:00 - 18:00	0	0	57	72	0	**129**	0	70	15	0	0	**85**	**214**	0	0	0	0	0	**0**	1	96	0	79	0	**176**	**176**
18:00 - 19:00	0	0	75	49	0	**124**	0	63	18	0	0	**81**	**205**	0	0	0	0	0	**0**	0	41	0	44	0	**85**	**85**
TOTAL	3	0	721	711	0	**1,435**	0	712	151	0	0	**863**	**2,298**	0	0	0	0	0	**0**	11	655	0	527	0	**1,193**	**1,193**

Percentage	0.2%	0.0%	50.2%	49.5%	0.0%	100.0%	0.0%	82.5%	17.5%	0.0%	0.0%	100.0%	N/A	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	54.9%	0.0%	44.2%	0.0%	100.0%	N/A
Maximum	1	0	92	107	0	165	0	105	22	0	0	123	255	0	0	0	0	0	0	2	96	0	79	0	176	176
Minimum	1	0	25	49	0	107	0	40	5	0	0	45	161	0	0	0	0	0	0	1	35	0	24	0	64	64
Total Heavy Veh	0		13	25	0	38	3		9	0	0	12	50	0		0	0	0	0	27		0	3	0	30	30
% Heavy Veh	0.0%		1.8%	3.5%		2.6%	0.4%		6.0%	0.0%		1.4%	2.2%	0.0%		0.0%	0.0%		0.0%	4.1%		0.0%	0.6%		2.5%	2.5%

FLORIDA DEPARTMENT OF TRANSPORTATION

BICYCLE MOVEMENT SUMMARY

MAJOR ROUTE	St. Laurent St	**CITY**	Orlando
OBSERVER	VHB	**INTERSECTING ROUTE**	Warren Ave
COUNTY	Seminole	**DATE OF COUNT**	1/12/21
		WEATHER	Good
		COMPLETED BY	ME
COUNT HOURS	8:00 AM - 7:00 PM	**DATE**	1/26/21

12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Total
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

0-1	0	0	**0**
1-2	0	0	**0**
2-3	0	0	**0**
3-4	0	0	**0**
4-5	0	0	**0**
5-6	0	0	**0**
6-7	0	0	**0**
7-8	0	0	**0**
8-9	0	0	**0**
9-10	0	0	**0**
10-11	0	0	**0**
11-12	0	0	**0**
12-13	0	0	**0**
13-14	0	0	**0**
14-15	0	0	**0**
15-16	0	0	**0**
16-17	0	0	**0**
17-18	0	0	**0**
18-19	0	0	**0**
19-20	0	0	**0**
20-21	0	0	**0**
21-22	0	0	**0**
22-23	0	0	**0**
23-24	0	0	**0**
Total	**0**	**0**	**0**

NORTH APPROACH
St Laurent St

WEST APPROACH
0

Warren Ave
EAST APPROACH

0-1	0	0	**0**
1-2	0	0	**0**
2-3	0	0	**0**
3-4	0	0	**0**
4-5	0	0	**0**
5-6	0	0	**0**
6-7	0	0	**0**
7-8	0	0	**0**
8-9	0	0	**0**
9-10	0	0	**0**
10-11	0	0	**0**
11-12	0	0	**0**
12-13	0	0	**0**
13-14	0	0	**0**
14-15	0	0	**0**
15-16	0	0	**0**
16-17	0	0	**0**
17-18	0	0	**0**
18-19	0	0	**0**
19-20	0	0	**0**
20-21	0	0	**0**
21-22	0	0	**0**
22-23	0	0	**0**
23-24	0	0	**0**
Total	**0**	**0**	**0**

St Laurent St
SOUTH APPROACH

12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Total
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	**2**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**

FLORIDA DEPARTMENT OF TRANSPORTATION

PEDESTRIAN MOVEMENT SUMMARY

MAJOR ROUTE	St. Laurent St	**CITY**	Orlando
OBSERVER	VHB	**INTERSECTING ROUTE**	Warren Ave
COUNTY	Seminole	**DATE OF COUNT**	1/12/21
		WEATHER	Good
		COMPLETED BY	ME
COUNT HOURS	8:00 AM - 7:00 PM	**DATE**	1/26/21

0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Total
0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	**3**
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**

0-1	0	0	**0**
1-2	0	0	**0**
2-3	0	0	**0**
3-4	0	0	**0**
4-5	0	0	**0**
5-6	0	0	**0**
6-7	0	0	**0**
7-8	0	0	**0**
8-9	0	0	**0**
9-10	0	0	**0**
10-11	0	0	**0**
11-12	0	0	**0**
12-13	0	0	**0**
13-14	0	0	**0**
14-15	0	0	**0**
15-16	0	0	**0**
16-17	0	0	**0**
17-18	0	0	**0**
18-19	0	0	**0**
19-20	0	0	**0**
20-21	0	0	**0**
21-22	0	0	**0**
22-23	0	0	**0**
23-24	0	0	**0**
Total	**0**	**0**	**0**

WEST APPROACH
0

NORTH APPROACH
St Laurent St

Warren Ave
EAST APPROACH

0-1	0	0	**0**
1-2	0	0	**0**
2-3	0	0	**0**
3-4	0	0	**0**
4-5	0	0	**0**
5-6	0	0	**0**
6-7	0	0	**0**
7-8	0	0	**0**
8-9	1	2	**3**
9-10	1	0	**1**
10-11	0	0	**0**
11-12	0	0	**0**
12-13	6	5	**11**
13-14	0	0	**0**
14-15	1	2	**3**
15-16	0	0	**0**
16-17	0	0	**0**
17-18	0	0	**0**
18-19	0	0	**0**
19-20	0	0	**0**
20-21	0	0	**0**
21-22	0	0	**0**
22-23	0	0	**0**
23-24	0	0	**0**
Total	**9**	**9**	**18**

St Laurent St
SOUTH APPROACH

0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Total
0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	**2**
0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	**2**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**4**

Appendix E

Alta Longwood Traffic Impact Study

ALTA LONGWOOD APARTMENTS
Project № 18057 v2.0
November 2018

TRAFFIC IMPACT ANALYSIS
CITY OF LONGWOOD
FLORIDA

Prepared by:

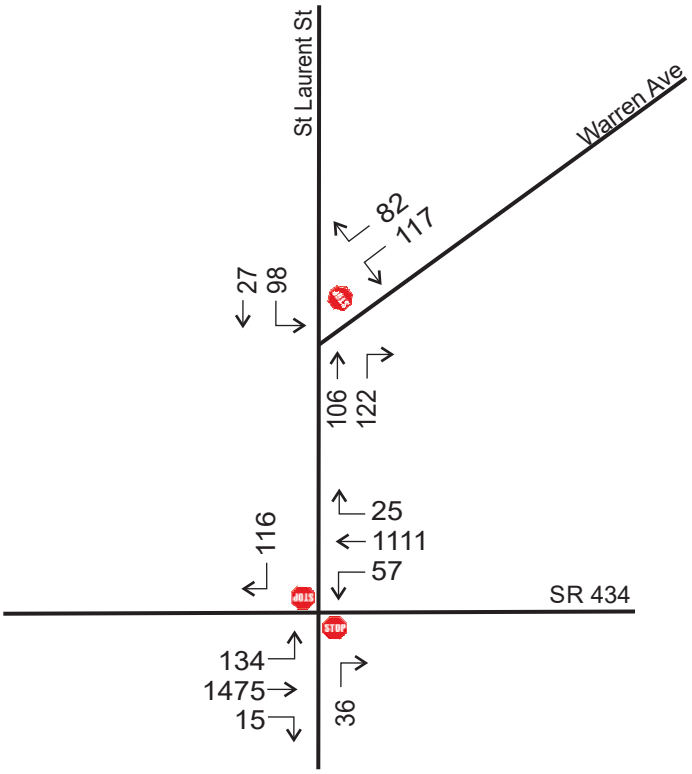
Traffic & Mobility Consultants
3101 Maguire Boulevard, Suite 265
Orlando, Florida 32803
www.trafficmobility.com
(407) 531-5332

Prepared for:

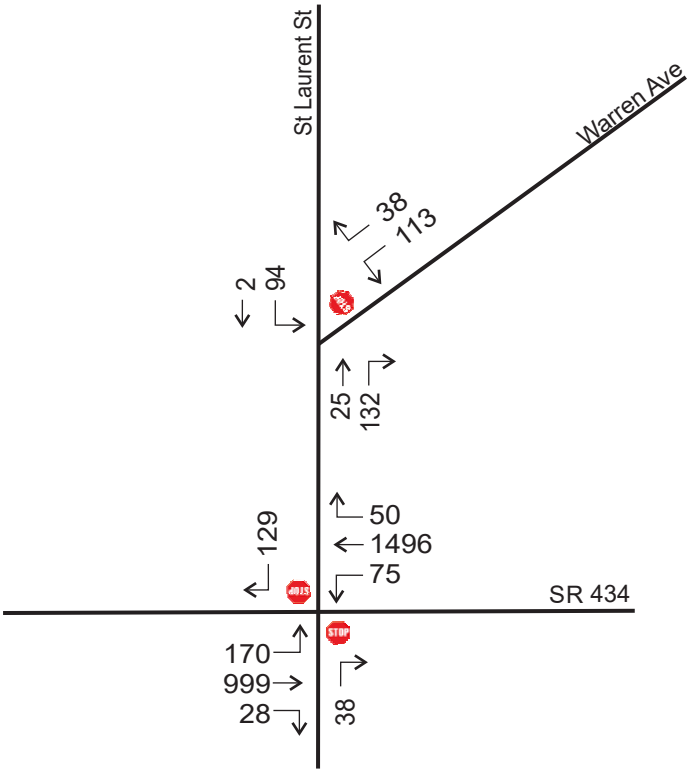
WP South Acquisitions, LLC
636 W Yale Street
Orlando, Florida 32804

N
Not to Scale

AM Peak

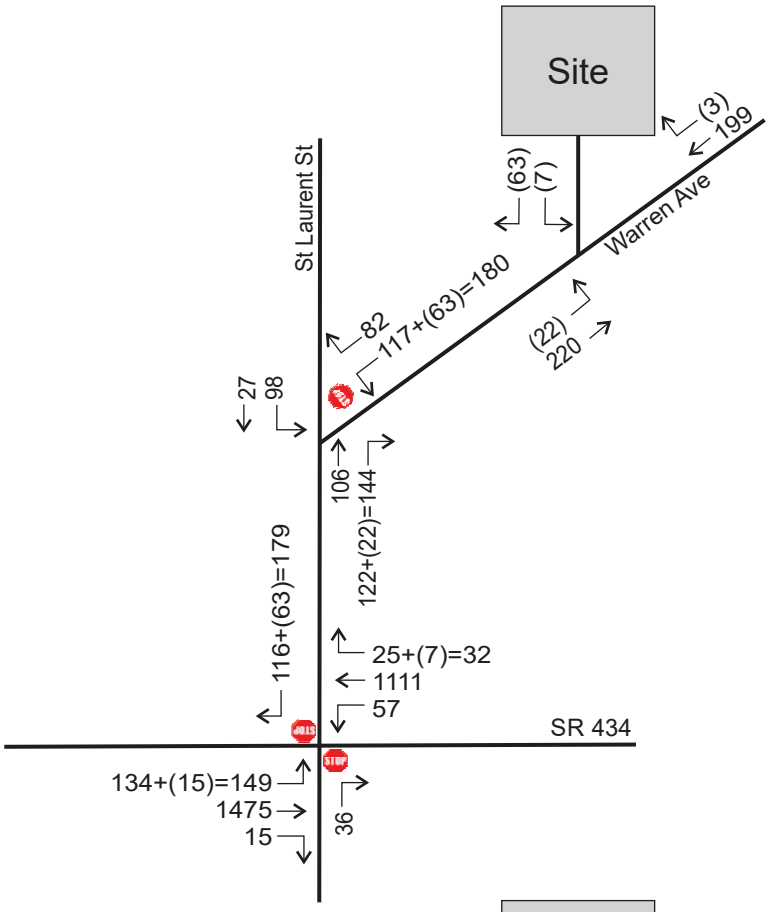


PM Peak

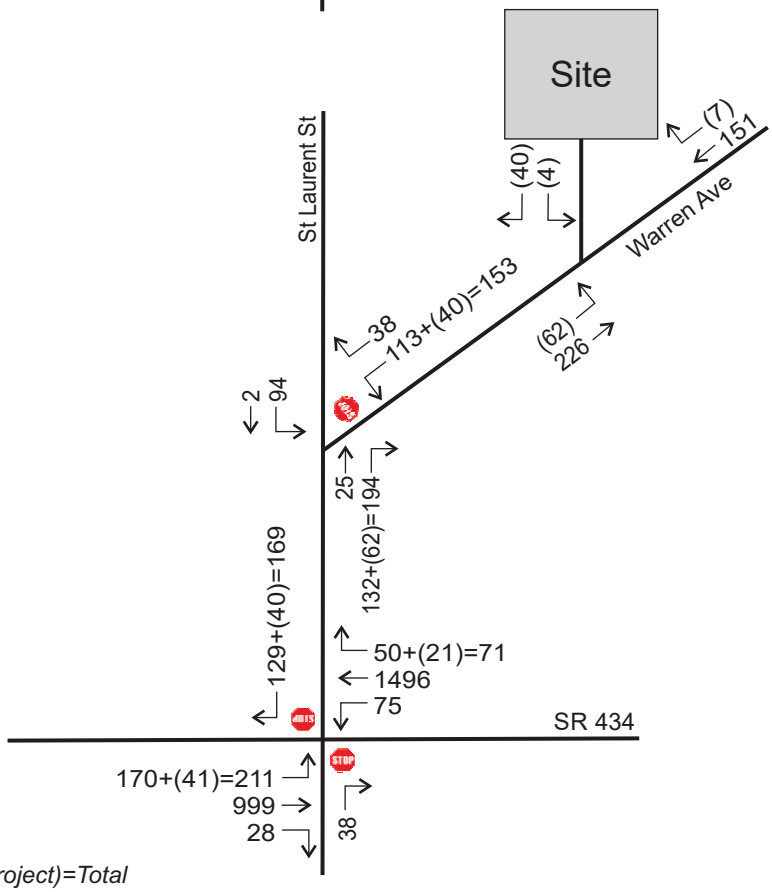


N
Not to Scale

AM Peak



PM Peak



Legend
Background+[Committed] + (Project)=Total

Appendix F

Existing Conditions Synchro Analysis

Intersection	
Int Delay, s/veh	1.9

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	7	123	1406	16	11	41	1068	24	0	0	39	0	0	113
Future Vol, veh/h	7	123	1406	16	11	41	1068	24	0	0	39	0	0	113
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	200	-	-	-	200	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	5	4	0	0	0	5	18	0	0	3	0	0	7
Mvmt Flow	8	135	1545	18	12	45	1174	26	0	0	43	0	0	124

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1200	1200	0	0	1563	1563	0	0	-	-	782	-	-	600
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	4.2	-	-	6.4	4.1	-	-	-	-	6.96	-	-	7.04
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.5	2.25	-	-	2.5	2.2	-	-	-	-	3.33	-	-	3.37
Pot Cap-1 Maneuver	251	561	-	-	147	428	-	-	0	0	335	0	0	432
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	506	506	-	-	288	288	-	-	-	-	335	-	-	432
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.9	17.3	16.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	335	506	-	-	288	-	-	432
HCM Lane V/C Ratio	0.128	0.282	-	-	0.198	-	-	0.287
HCM Control Delay (s)	17.3	14.9	-	-	20.6	-	-	16.7
HCM Lane LOS	C	B	-	-	C	-	-	C
HCM 95th %tile Q(veh)	0.4	1.2	-	-	0.7	-	-	1.2

Intersection	
Int Delay, s/veh	5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	107	37	25	0	0	97
Future Vol, veh/h	107	37	25	0	0	97
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	6	16	0	0	17
Mvmt Flow	123	43	29	0	0	111

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	85	29	0	-	-	-
Stage 1	29	-	-	-	-	-
Stage 2	56	-	-	-	-	-
Critical Hdwy	6.69	6.29	-	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.89	-	-	-	-	-
Follow-up Hdwy	3.557	3.357	-	-	-	-
Pot Cap-1 Maneuver	901	1033	-	0	0	-
Stage 1	982	-	-	0	0	-
Stage 2	949	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	901	1033	-	-	-	-
Mov Cap-2 Maneuver	901	-	-	-	-	-
Stage 1	982	-	-	-	-	-
Stage 2	949	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBT
Capacity (veh/h)	-	901	1033	-
HCM Lane V/C Ratio	-	0.137	0.041	-
HCM Control Delay (s)	-	9.6	8.6	-
HCM Lane LOS	-	A	A	-
HCM 95th %tile Q(veh)	-	0.5	0.1	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	167	9	5	107	3	1	0	1	5	1	13
Future Vol, veh/h	9	167	9	5	107	3	1	0	1	5	1	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	11	2	0	0	4	0	0	0	0	0	0	0
Mvmt Flow	11	201	11	6	129	4	1	0	1	6	1	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	133	0	0	212	0	0	381	374	207	372	377	131
Stage 1	-	-	-	-	-	-	229	229	-	143	143	-
Stage 2	-	-	-	-	-	-	152	145	-	229	234	-
Critical Hdwy	4.21	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.299	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1398	-	-	1370	-	-	581	560	839	589	558	924
Stage 1	-	-	-	-	-	-	778	718	-	865	782	-
Stage 2	-	-	-	-	-	-	855	781	-	778	715	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1398	-	-	1370	-	-	564	552	839	582	550	924
Mov Cap-2 Maneuver	-	-	-	-	-	-	564	552	-	582	550	-
Stage 1	-	-	-	-	-	-	771	712	-	857	778	-
Stage 2	-	-	-	-	-	-	835	777	-	770	709	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.3	10.4	9.8
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	675	1398	-	-	1370	-	-	776
HCM Lane V/C Ratio	0.004	0.008	-	-	0.004	-	-	0.029
HCM Control Delay (s)	10.4	7.6	0	-	7.6	0	-	9.8
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	83	64	3	4	48	1	19	73	5	7	62	74
Future Vol, veh/h	83	64	3	4	48	1	19	73	5	7	62	74
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	3	3	0	0	0	0	16	0	0	0	2	0
Mvmt Flow	98	75	4	5	56	1	22	86	6	8	73	87
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.3	8.3	8.9	8.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	55%	8%	5%
Vol Thru, %	75%	43%	91%	43%
Vol Right, %	5%	2%	2%	52%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	97	150	53	143
LT Vol	19	83	4	7
Through Vol	73	64	48	62
RT Vol	5	3	1	74
Lane Flow Rate	114	176	62	168
Geometry Grp	1	1	1	1
Degree of Util (X)	0.157	0.234	0.083	0.202
Departure Headway (Hd)	4.954	4.781	4.781	4.328
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	724	750	747	828
Service Time	2.99	2.817	2.824	2.36
HCM Lane V/C Ratio	0.157	0.235	0.083	0.203
HCM Control Delay	8.9	9.3	8.3	8.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.9	0.3	0.8

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑	↱	↰	↑
Traffic Vol, veh/h	0	0	25	122	91	6
Future Vol, veh/h	0	0	25	122	91	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	16	3	0	17
Mvmt Flow	0	0	29	140	105	7

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	99	169
Stage 1	-	-	0	0
Stage 2	-	-	99	169
Critical Hdwy	-	-	6.4	6.67
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.4	5.67
Follow-up Hdwy	-	-	3.5	4.153
Pot Cap-1 Maneuver	-	-	905	698
Stage 1	-	-	-	-
Stage 2	-	-	930	731
Platoon blocked, %	-	-		
Mov Cap-1 Maneuver	-	-	905	0
Mov Cap-2 Maneuver	-	-	905	0
Stage 1	-	-	-	0
Stage 2	-	-	930	0

Approach	NB	SB
HCM Control Delay, s	0	
HCM LOS		-

Minor Lane/Major Mvmt	NBT	NBR	SBLn1	SBLn2
Capacity (veh/h)	-	-	905	-
HCM Lane V/C Ratio	-	-	0.116	-
HCM Control Delay (s)	-	-	9.5	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.4	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	4	161	1348	22	20	53	1404	49	0	0	45	0	0	111
Future Vol, veh/h	4	161	1348	22	20	53	1404	49	0	0	45	0	0	111
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	200	-	-	-	200	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	2	3	0	0	1	1	0	0	0	4	0	0	3
Mvmt Flow	4	168	1404	23	21	55	1463	51	0	0	47	0	0	116

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1514	1514	0	0	1427	1427	0	0	-	-	714	-	-	757
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	4.14	-	-	6.4	4.12	-	-	-	-	6.98	-	-	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.5	2.22	-	-	2.5	2.21	-	-	-	-	3.34	-	-	3.33
Pot Cap-1 Maneuver	158	437	-	-	180	478	-	-	0	0	369	0	0	348
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	407	407	-	-	307	307	-	-	-	-	369	-	-	348
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	1	16.2	20.4
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	369	407	-	-	307	-	-	348
HCM Lane V/C Ratio	0.127	0.422	-	-	0.248	-	-	0.332
HCM Control Delay (s)	16.2	20.2	-	-	20.5	-	-	20.4
HCM Lane LOS	C	C	-	-	C	-	-	C
HCM 95th %tile Q(veh)	0.4	2	-	-	1	-	-	1.4

Intersection	
Int Delay, s/veh	4.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	101	80	92	0	0	121
Future Vol, veh/h	101	80	92	0	0	121
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	0	1	1	0	0
Mvmt Flow	117	93	107	0	0	141

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	178	107	0	-	-	-
Stage 1	107	-	-	-	-	-
Stage 2	71	-	-	-	-	-
Critical Hdwy	6.645	6.2	-	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3	-	-	-	-
Pot Cap-1 Maneuver	800	953	-	0	0	-
Stage 1	914	-	-	0	0	-
Stage 2	941	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	800	953	-	-	-	-
Mov Cap-2 Maneuver	800	-	-	-	-	-
Stage 1	914	-	-	-	-	-
Stage 2	941	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBT
Capacity (veh/h)	-	800	953	-
HCM Lane V/C Ratio	-	0.147	0.098	-
HCM Control Delay (s)	-	10.3	9.2	-
HCM Lane LOS	-	B	A	-
HCM 95th %tile Q(veh)	-	0.5	0.3	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	28	175	6	8	143	2	5	0	6	8	3	22
Future Vol, veh/h	28	175	6	8	143	2	5	0	6	8	3	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	0	0	14	0	1	13	0	0	20	0	0	5
Mvmt Flow	35	219	8	10	179	3	6	0	8	10	4	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	182	0	0	227	0	0	510	495	223	498	498	181
Stage 1	-	-	-	-	-	-	293	293	-	201	201	-
Stage 2	-	-	-	-	-	-	217	202	-	297	297	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.4	7.1	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.48	3.5	4	3.345
Pot Cap-1 Maneuver	1405	-	-	1353	-	-	477	479	774	486	477	854
Stage 1	-	-	-	-	-	-	719	674	-	805	739	-
Stage 2	-	-	-	-	-	-	790	738	-	716	671	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1405	-	-	1353	-	-	446	461	774	468	459	854
Mov Cap-2 Maneuver	-	-	-	-	-	-	446	461	-	468	459	-
Stage 1	-	-	-	-	-	-	698	654	-	782	733	-
Stage 2	-	-	-	-	-	-	755	732	-	688	652	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.4	11.4	10.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	580	1405	-	-	1353	-	-	668
HCM Lane V/C Ratio	0.024	0.025	-	-	0.007	-	-	0.062
HCM Control Delay (s)	11.4	7.6	0	-	7.7	0	-	10.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.2

Intersection	
Intersection Delay, s/veh	11.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	149	82	6	5	26	4	21	162	16	9	58	94
Future Vol, veh/h	149	82	6	5	26	4	21	162	16	9	58	94
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles, %	0	2	0	0	0	0	8	1	0	0	3	0
Mvmt Flow	199	109	8	7	35	5	28	216	21	12	77	125
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.1	9.2	11.8	10.2
HCM LOS	B	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	63%	14%	6%
Vol Thru, %	81%	35%	74%	36%
Vol Right, %	8%	3%	11%	58%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	199	237	35	161
LT Vol	21	149	5	9
Through Vol	162	82	26	58
RT Vol	16	6	4	94
Lane Flow Rate	265	316	47	215
Geometry Grp	1	1	1	1
Degree of Util (X)	0.394	0.47	0.074	0.298
Departure Headway (Hd)	5.347	5.349	5.677	4.997
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	674	673	630	719
Service Time	3.381	3.38	3.721	3.033
HCM Lane V/C Ratio	0.393	0.47	0.075	0.299
HCM Control Delay	11.8	13.1	9.2	10.2
HCM Lane LOS	B	B	A	B
HCM 95th-tile Q	1.9	2.5	0.2	1.2

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑	↱	↰	↑
Traffic Vol, veh/h	0	0	92	118	95	26
Future Vol, veh/h	0	0	92	118	95	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	1	1	0	0
Mvmt Flow	0	0	107	137	110	30

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	176	244
Stage 1	-	-	0	0
Stage 2	-	-	176	244
Critical Hdwy	-	-	6.4	6.5
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.4	5.5
Follow-up Hdwy	-	-	3.5	4
Pot Cap-1 Maneuver	-	-	818	661
Stage 1	-	-	-	-
Stage 2	-	-	859	708
Platoon blocked, %	-	-		
Mov Cap-1 Maneuver	-	-	818	0
Mov Cap-2 Maneuver	-	-	818	0
Stage 1	-	-	-	0
Stage 2	-	-	859	0

Approach	NB	SB
HCM Control Delay, s	0	
HCM LOS		-

Minor Lane/Major Mvmt	NBT	NBR	SBLn1	SBLn2
Capacity (veh/h)	-	-	818	-
HCM Lane V/C Ratio	-	-	0.135	-
HCM Control Delay (s)	-	-	10.1	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.5	-

TABLE 1 Generalized **Annual Average Daily** Volumes for Florida's Urbanized Areas

05/01/19

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	16,800	17,700	**
4	Divided	*	37,900	39,800	**
6	Divided	*	58,400	59,900	**
8	Divided	*	78,800	80,100	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	7,300	14,800	15,600
4	Divided	*	14,500	32,400	33,800
6	Divided	*	23,300	50,000	50,900
8	Divided	*	32,000	67,300	68,100

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	2,900	7,600	19,700
50-84%	2,100	6,700	19,700	>19,700
85-100%	9,300	19,700	>19,700	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	2,800	9,500
50-84%	*	1,600	8,700	15,800
85-100%	3,800	10,700	17,400	>19,700

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Core Urbanized

Lanes	B	C	D	E
4	47,600	66,400	83,200	87,300
6	70,100	97,800	123,600	131,200
8	92,200	128,900	164,200	174,700
10	112,900	158,900	203,600	218,600
12	133,500	188,200	240,500	262,200

Urbanized

Lanes	B	C	D	E
4	45,900	62,700	75,600	85,400
6	68,900	93,900	113,600	128,100
8	91,900	125,200	151,300	170,900
10	115,000	156,800	189,300	213,600

Freeway Adjustments

Auxiliary Lanes Present in Both Directions	Ramp Metering
+ 20,000	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
2	Undivided	11,700	18,000	24,200	32,600
4	Divided	36,300	52,600	66,200	75,300
6	Divided	54,600	78,800	99,400	113,100

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1]Values shown are presented as two-way annual average daily volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the HCM and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

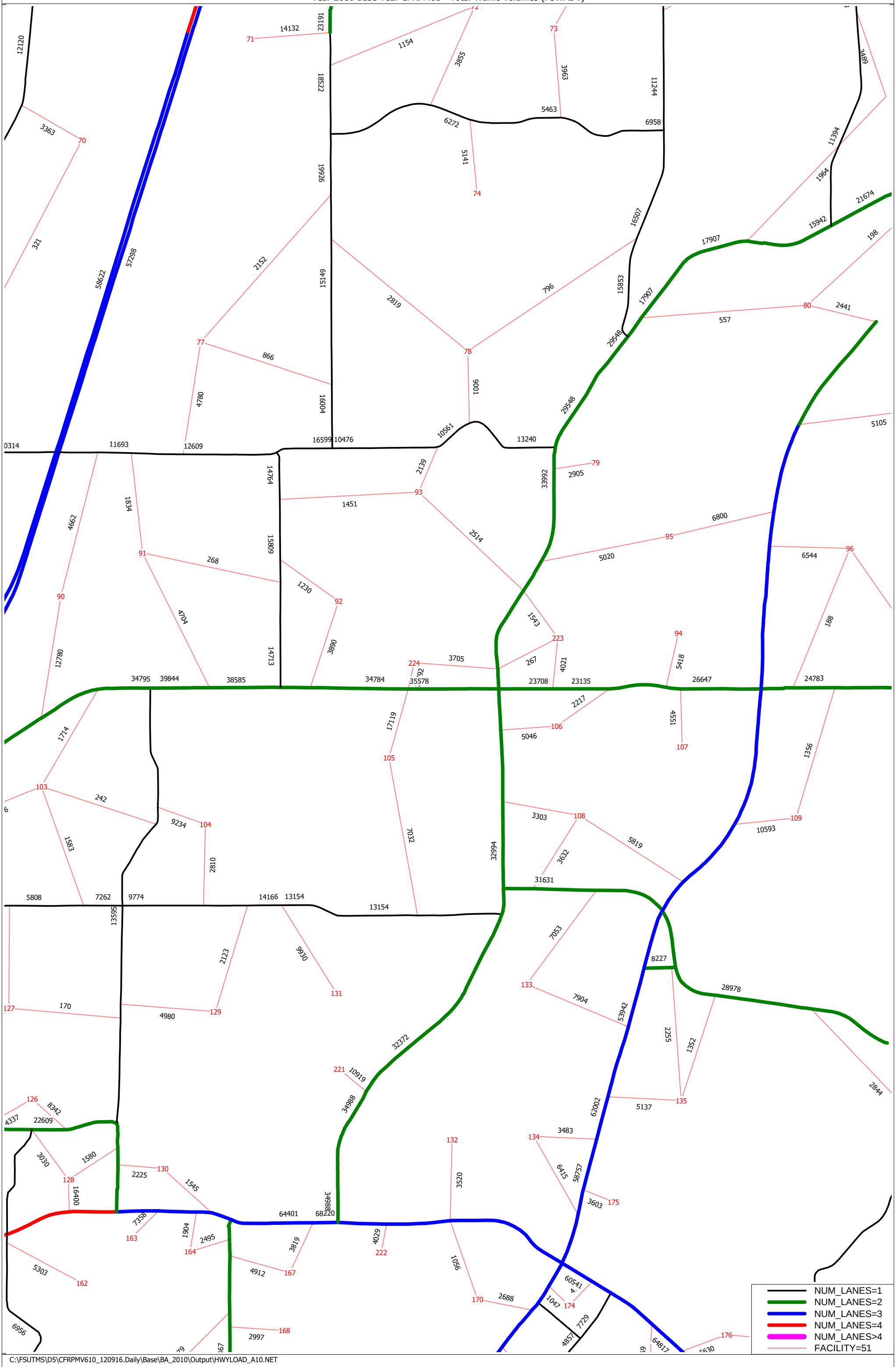
** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Implementation Office
https://www.fdot.gov/planning/systems/

Appendix G

CFRPM Year 2040 Model Plots

Year 2010 Base Year CFRPM61 - Total Traffic Volumes (PSWADT)



C:\FSUTMS\D5\CFRPMV610_120916.Daily\Base\BA_2010\Output\HWYLOAD_A10.NET

cube

CFRPM61 CF 2040 - Total Traffic Volumes PSWADT

NUM_LANES=1
NUM_LANES=2
NUM_LANES=3
NUM_LANES=4
NUM_LANES>4
FACILITY=51

C:\FSUTMS\D5\CFRPMV610_120916.Daily\Base\CF_2040\Output\HWYLOAD_C40.NET

cube

Appendix H

BEBR Estimates

Projections of Florida Population by County, 2020–2045, with Estimates for 2019 (continued)

County and State	Estimates April 1, 2019	Projections, April 1 2020	2025	2030	2035	2040	2045
SANTA ROSA	179,054						
Low		171,600	179,700	184,800	188,000	189,300	189,500
Medium		182,800	199,600	213,400	225,100	235,100	244,200
High		193,600	217,400	240,100	262,100	282,500	303,400
SARASOTA	426,275						
Low		415,600	433,000	444,200	452,400	459,000	463,900
Medium		433,300	464,900	489,600	510,500	529,400	546,500
High		450,200	494,300	534,600	570,400	605,400	639,200
SEMINOLE	471,735						
Low		459,300	475,700	485,800	493,100	496,900	498,500
Medium		478,800	510,700	535,600	556,900	574,700	590,400
High		497,600	543,100	584,700	621,800	655,400	686,900
SUMTER	128,633						
Low		122,800	134,700	144,600	151,000	155,700	158,800
Medium		132,300	152,300	170,800	185,700	199,100	211,500
High		141,300	167,400	194,500	219,800	245,000	270,800
SUWANNEE	45,423						
Low		44,000	45,100	45,900	46,400	46,500	46,500
Medium		45,900	48,300	50,400	52,100	53,500	54,700
High		47,700	51,700	55,600	59,300	62,500	65,700
TAYLOR	22,458						
Low		21,500	21,300	21,000	20,700	20,300	19,900
Medium		22,600	23,200	23,600	24,000	24,300	24,700
High		23,800	25,100	26,500	27,800	29,200	30,600
UNION	15,505						
Low		14,700	14,300	13,900	13,400	12,900	12,400
Medium		15,500	15,600	15,600	15,700	15,700	15,700
High		16,300	16,900	17,500	18,100	18,600	19,100
VOLUSIA	538,763						
Low		523,000	534,500	540,000	541,900	542,700	542,400
Medium		545,200	573,800	595,800	613,600	629,700	644,700
High		566,600	610,200	650,000	683,300	715,800	747,400
WAKULLA	32,976						
Low		31,600	32,400	33,000	33,100	33,000	32,700
Medium		33,300	35,400	37,200	38,500	39,600	40,600
High		34,900	38,200	41,400	44,300	46,800	49,300
WALTON	70,071						
Low		67,600	73,400	77,700	80,800	83,000	84,800
Medium		72,100	81,500	89,600	96,200	102,200	107,700
High		76,300	88,800	101,000	112,600	123,900	135,700
WASHINGTON	25,387						
Low		23,900	23,800	23,600	23,200	22,800	22,300
Medium		25,200	25,900	26,500	27,000	27,300	27,700
High		26,500	28,100	29,700	31,300	32,700	34,200
FLORIDA	21,208,589						
Low		20,926,300	22,105,500	22,970,200	23,580,900	24,020,900	24,340,400
Medium		21,556,000	23,130,900	24,426,200	25,498,000	26,428,700	27,266,900
High		22,173,900	24,133,900	25,847,700	27,370,100	28,783,400	30,135,700

UF UNIVERSITY of FLORIDA
Bureau of Economic and Business Research
College of Liberal Arts and Sciences
720 SW 2nd Avenue, Suite 150, P.O. Box 117148
Gainesville, Florida 32611-7148
Phone (352) 392-0171
www.bebr.ufl.edu

Appendix I

Historical Trends Analyses

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2019 HISTORICAL AADT REPORT

COUNTY: 77 - SEMINOLE

SITE: 0063 - ON SR-434, 0.176 MI W OF CR-427 (UVL) NW

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2019	33500 C	E 16500	W 17000	9.00	51.90	6.60
2018	38500 C	E 19000	W 19500	9.00	52.60	5.20
2017	37500 C	E 18000	W 19500	9.00	52.60	7.50
2016	38000 C	E 18500	W 19500	9.00	53.30	6.40
2015	37000 C	E 18500	W 18500	9.00	54.50	7.00
2014	38000 C	E 19000	W 19000	9.00	54.20	4.10
2013	37000 C	E 18000	W 19000	9.00	53.90	4.20
2012	40000 C	E 19500	W 20500	9.00	52.80	5.20
2011	39000 C	E 19000	W 20000	9.00	52.60	5.20
2010	41000 C	E 20000	W 21000	8.82	51.95	5.00
2009	39000 C	E 19000	W 20000	8.69	51.56	4.70
2008	40000 C	E 21000	W 19000	8.73	52.75	5.30
2007	40500 C	E 20000	W 20500	9.09	52.41	5.30
2006	41500 C	E 20500	W 21000	9.00	52.16	5.60
2005	44500 C	E 22000	W 22500	9.10	52.10	4.30
2004	45500 C	E 23000	W 22500	9.00	52.50	6.20

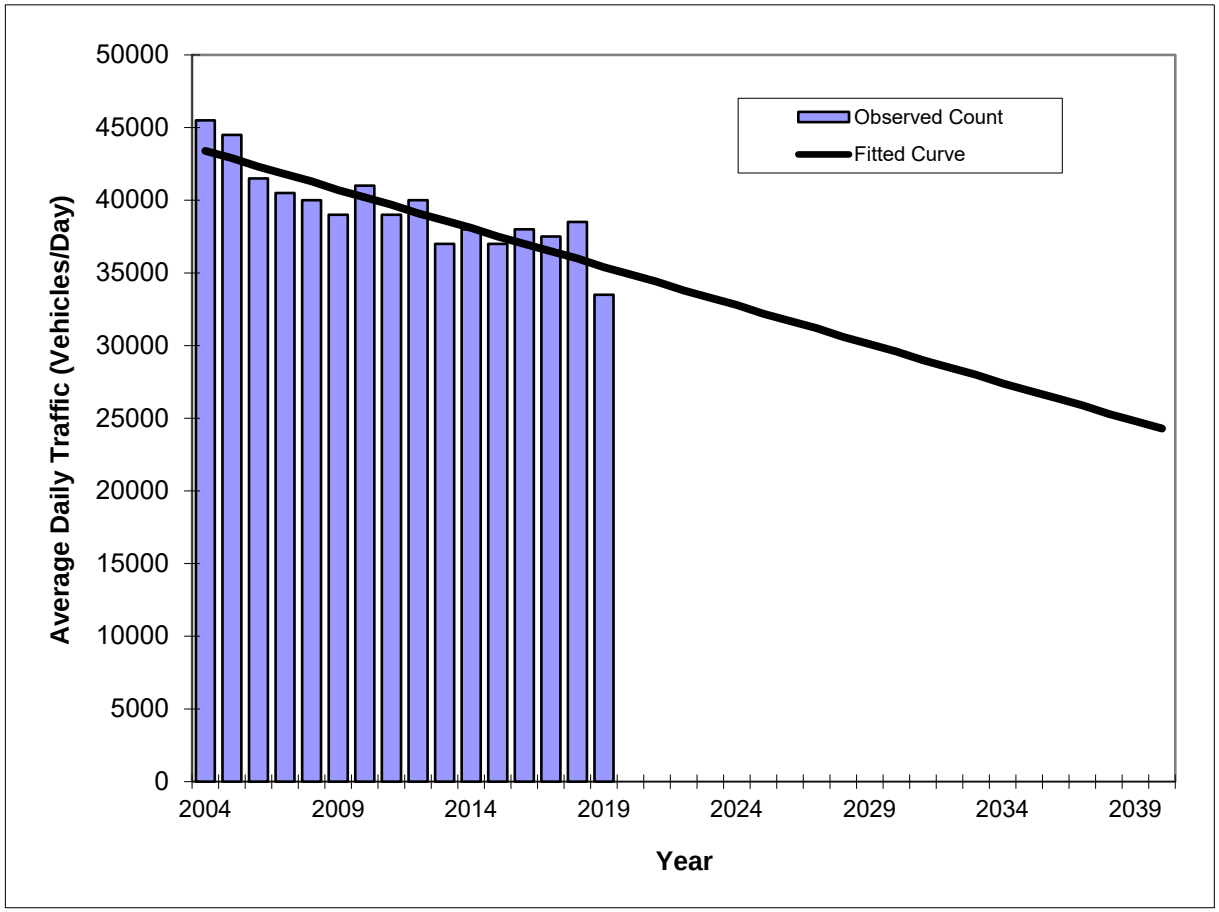
AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

Traffic Trends - V03.a

SR 434 -- E of St Laurent St

FIN#	1234
Location	1

County:	Seminole (77)
Station #:	0063
Highway:	SR 434



Year	Traffic (ADT/AADT) Count*	Trend**
2004	45500	43400
2005	44500	42900
2006	41500	42300
2007	40500	41800
2008	40000	41300
2009	39000	40700
2010	41000	40200
2011	39000	39700
2012	40000	39100
2013	37000	38600
2014	38000	38100
2015	37000	37500
2016	38000	37000
2017	37500	36500
2018	38500	36000
2019	33500	35400
2025 Opening Year Trend		
2025	N/A	32200
2030 Mid-Year Trend		
2030	N/A	29600
2040 Design Year Trend		
2040	N/A	24300
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	-532
Trend R-squared:	75.60%
Trend Annual Historic Growth Rate:	-1.23%
Trend Growth Rate (2019 to Design Year):	-1.49%
Printed:	22-Feb-21

Straight Line Growth Option

*Axle-Adjusted

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2019 HISTORICAL AADT REPORT

COUNTY: 77 - SEMINOLE

SITE: 0197 - SR-434,1.6 MI E OF I-4,SEMINOLE CO.

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2019	41025 C	E 21560	W 19465	9.00	51.80	4.80
2018	41737 C	E 21678	W 20059	9.00	52.10	5.00
2017	41489 C	E 21216	W 20273	9.00	51.70	4.50
2016	42247 C	E 21618	W 20629	9.00	51.40	4.50
2015	41325 C	E 21249	W 20076	9.00	51.00	4.50
2014	42000 S			9.00	51.40	4.60
2013	41500 F	0	0	9.00	51.40	3.80
2012	41402 C	E 21067	W 20335	9.00	51.40	3.80
2011	39483 C	E 19979	W 19504	9.00	51.20	3.80
2010	39157 C	E 19811	W 19346	8.48	51.69	3.90
2009	39251 C	E 19835	W 19416	8.35	50.85	3.90
2008	38992 C	E 19795	W 19197	8.28	51.09	4.20
2007	40784 C	E 20621	W 20163	8.01	51.87	4.30
2006	42459 C	E 21591	W 20868	7.98	51.54	4.40
2005	43128 C	E 21916	W 21212	8.00	52.20	4.30
2004	43453 C	E 22429	W 21024	8.00	52.10	1.80

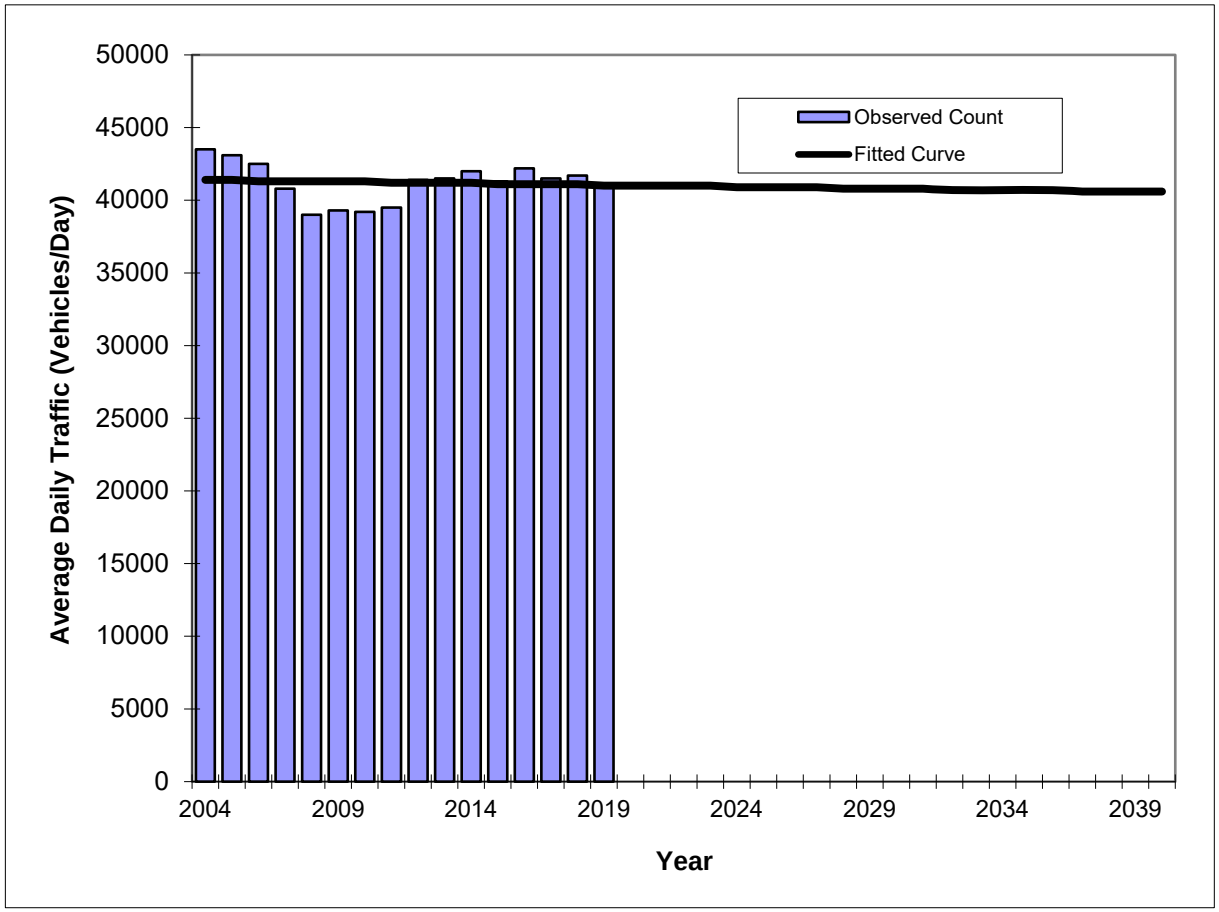
AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

Traffic Trends - V03.a

SR 434 -- W of St Laurent St

FIN#	1234
Location	1

County:	Seminole (77)
Station #:	0197
Highway:	SR 434



Year	Traffic (ADT/AADT) Count*	Trend**
2004	43500	41400
2005	43100	41400
2006	42500	41300
2007	40800	41300
2008	39000	41300
2009	39300	41300
2010	39200	41300
2011	39500	41200
2012	41400	41200
2013	41500	41200
2014	42000	41200
2015	41300	41100
2016	42200	41100
2017	41500	41100
2018	41700	41100
2019	41000	41000
2025 Opening Year Trend		
2025	N/A	40900
2030 Mid-Year Trend		
2030	N/A	40800
2040 Design Year Trend		
2040	N/A	40600
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	-23
Trend R-squared:	0.64%
Trend Annual Historic Growth Rate:	-0.06%
Trend Growth Rate (2019 to Design Year):	-0.05%
Printed:	22-Feb-21

Straight Line Growth Option

*Axle-Adjusted

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2019 HISTORICAL AADT REPORT

COUNTY: 77 - SEMINOLE

SITE: 8106 - MUNICIPAL MILWWE ST/W CHURCH ST, 50 ' N OF BAY ST - OFFSYSTEM

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2019	2750 S	N 1800	S 950	9.00	51.90	3.70
2018	2750 F	N 1800	S 950	9.00	52.60	12.30
2017	2750 C	N 1800	S 950	9.00	52.60	9.40
2016	2900 S	N 1900	S 1000	9.00	53.30	10.50
2015	2750 F	N 1800	S 950	9.00	54.50	7.50
2014	2750 C	N 1800	S 950	9.00	54.20	8.60

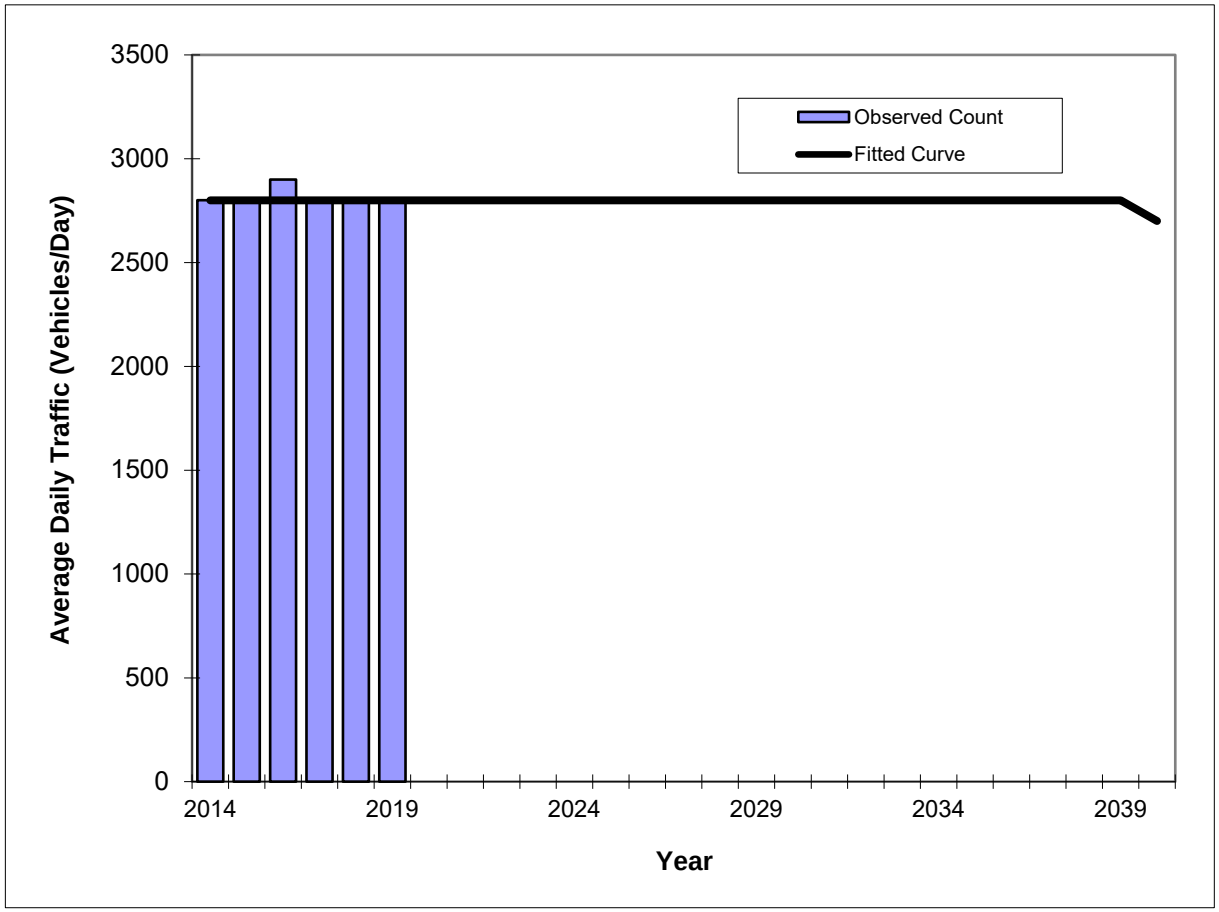
AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

Traffic Trends - V03.a

S Milwee St -- S of Warren Ave

FIN#	1234
Location	1

County:	Seminole (77)
Station #:	8106
Highway:	S Milwee St



Year	Traffic (ADT/AADT) Count*	Trend**
2014	2800	2800
2015	2800	2800
2016	2900	2800
2017	2800	2800
2018	2800	2800
2019	2800	2800
2025 Opening Year Trend		
2025	N/A	2800
2030 Mid-Year Trend		
2030	N/A	2800
2040 Design Year Trend		
2040	N/A	2700
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	-3
Trend R-squared:	1.71%
Trend Annual Historic Growth Rate:	0.00%
Trend Growth Rate (2019 to Design Year):	-0.17%
Printed:	8-Mar-21

Straight Line Growth Option

*Axle-Adjusted

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2019 HISTORICAL AADT REPORT

COUNTY: 77 - SEMINOLE

SITE: 8107 - ST LAURENT ST/WARREN AVE, 125' W OF W MILWEE ST - OFF SYSTEM

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2019	4300 S	E 2300	W 2000	9.00	51.90	7.90
2018	4300 F	E 2300	W 2000	9.00	52.60	13.00
2017	4200 C	E 2200	W 2000	9.00	52.60	20.30
2016	3300 S	E 1500	W 1800	9.00	53.30	7.80
2015	3200 F	E 1500	W 1700	9.00	54.50	11.80
2014	3200 C	E 1500	W 1700	9.00	54.20	9.50

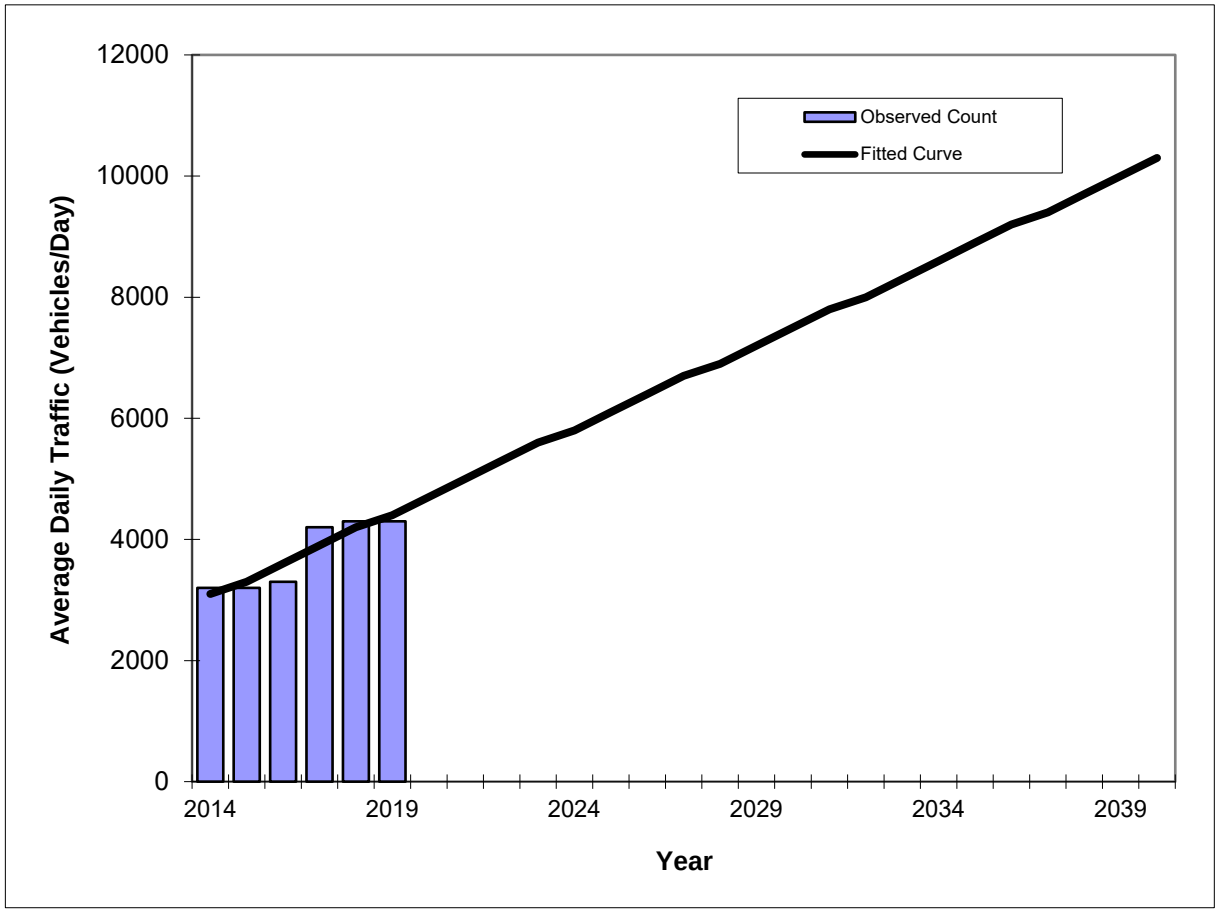
AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

Traffic Trends - V03.a

Warren Ave -- W of Milwee St

FIN#	1234
Location	1

County:	Seminole (77)
Station #:	8107
Highway:	Warren Ave



Year	Traffic (ADT/AADT) Count*	Trend**
2014	3200	3100
2015	3200	3300
2016	3300	3600
2017	4200	3900
2018	4300	4200
2019	4300	4400
2025 Opening Year Trend		
2025	N/A	6100
2030 Mid-Year Trend		
2030	N/A	7500
2040 Design Year Trend		
2040	N/A	10300
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	277
Trend R-squared:	83.23%
Trend Annual Historic Growth Rate:	8.39%
Trend Growth Rate (2019 to Design Year):	6.39%
Printed:	8-Mar-21

Straight Line Growth Option

*Axle-Adjusted

Appendix J

Year 2040 No Build / Build Synchro Analysis

Intersection	
Int Delay, s/veh	3

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	8	150	1538	17	12	45	1168	33	0	0	43	0	0	187
Future Vol, veh/h	8	150	1538	17	12	45	1168	33	0	0	43	0	0	187
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	200	-	-	-	200	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	5	4	0	0	0	5	18	0	0	3	0	0	7
Mvmt Flow	9	165	1690	19	13	49	1284	36	0	0	47	0	0	205

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1320	1320	0	0	1709	1709	0	0	-	-	855	-	-	660
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	4.2	-	-	6.4	4.1	-	-	-	-	6.96	-	-	7.04
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.5	2.25	-	-	2.5	2.2	-	-	-	-	3.33	-	-	3.37
Pot Cap-1 Maneuver	210	504	-	-	118	377	-	-	0	0	300	0	0	394
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	427	427	-	-	239	239	-	-	-	-	300	-	-	394
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	1.1	19.2	23.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	300	427	-	-	239	-	-	394
HCM Lane V/C Ratio	0.158	0.407	-	-	0.262	-	-	0.522
HCM Control Delay (s)	19.2	19.1	-	-	25.3	-	-	23.7
HCM Lane LOS	C	C	-	-	D	-	-	C
HCM 95th %tile Q(veh)	0.6	1.9	-	-	1	-	-	2.9

Intersection	
Int Delay, s/veh	6.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	180	40	27	0	0	107
Future Vol, veh/h	180	40	27	0	0	107
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	6	16	0	0	17
Mvmt Flow	207	46	31	0	0	123

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	93	31	0	-	-	-
Stage 1	31	-	-	-	-	-
Stage 2	62	-	-	-	-	-
Critical Hdwy	6.69	6.29	-	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.89	-	-	-	-	-
Follow-up Hdwy	3.557	3.357	-	-	-	-
Pot Cap-1 Maneuver	891	1031	-	0	0	-
Stage 1	980	-	-	0	0	-
Stage 2	943	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	891	1031	-	-	-	-
Mov Cap-2 Maneuver	891	-	-	-	-	-
Stage 1	980	-	-	-	-	-
Stage 2	943	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBT
Capacity (veh/h)	-	891	1031	-
HCM Lane V/C Ratio	-	0.232	0.045	-
HCM Control Delay (s)	-	10.3	8.7	-
HCM Lane LOS	-	B	A	-
HCM 95th %tile Q(veh)	-	0.9	0.1	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	10	190	10	5	121	3	1	0	1	5	1	14
Future Vol, veh/h	10	190	10	5	121	3	1	0	1	5	1	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	11	2	0	0	4	0	0	0	0	0	0	0
Mvmt Flow	12	229	12	6	146	4	1	0	1	6	1	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	150	0	0	241	0	0	428	421	235	420	425	148
Stage 1	-	-	-	-	-	-	259	259	-	160	160	-
Stage 2	-	-	-	-	-	-	169	162	-	260	265	-
Critical Hdwy	4.21	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.299	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1378	-	-	1337	-	-	541	527	809	547	524	904
Stage 1	-	-	-	-	-	-	750	697	-	847	769	-
Stage 2	-	-	-	-	-	-	838	768	-	749	693	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1378	-	-	1337	-	-	524	519	809	540	516	904
Mov Cap-2 Maneuver	-	-	-	-	-	-	524	519	-	540	516	-
Stage 1	-	-	-	-	-	-	743	690	-	839	765	-
Stage 2	-	-	-	-	-	-	817	764	-	740	686	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.3	10.7	10
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	636	1378	-	-	1337	-	-	750
HCM Lane V/C Ratio	0.004	0.009	-	-	0.005	-	-	0.032
HCM Control Delay (s)	10.7	7.6	0	-	7.7	0	-	10
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	91	70	3	4	52	1	21	80	5	8	68	81
Future Vol, veh/h	91	70	3	4	52	1	21	80	5	8	68	81
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	3	3	0	0	0	0	16	0	0	0	2	0
Mvmt Flow	107	82	4	5	61	1	25	94	6	9	80	95
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.6	8.4	9.2	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	55%	7%	5%
Vol Thru, %	75%	43%	91%	43%
Vol Right, %	5%	2%	2%	52%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	106	164	57	157
LT Vol	21	91	4	8
Through Vol	80	70	52	68
RT Vol	5	3	1	81
Lane Flow Rate	125	193	67	185
Geometry Grp	1	1	1	1
Degree of Util (X)	0.175	0.26	0.091	0.226
Departure Headway (Hd)	5.038	4.859	4.878	4.404
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	710	737	731	813
Service Time	3.085	2.906	2.934	2.446
HCM Lane V/C Ratio	0.176	0.262	0.092	0.228
HCM Control Delay	9.2	9.6	8.4	8.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	1	0.3	0.9

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑	↱	↰	↑
Traffic Vol, veh/h	0	0	27	155	100	187
Future Vol, veh/h	0	0	27	155	100	187
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	16	3	0	17
Mvmt Flow	0	0	31	178	115	215

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	120	209
Stage 1	-	-	0	0
Stage 2	-	-	120	209
Critical Hdwy	-	-	6.4	6.67
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.4	5.67
Follow-up Hdwy	-	-	3.5	4.153
Pot Cap-1 Maneuver	-	-	880	662
Stage 1	-	-	-	-
Stage 2	-	-	910	702
Platoon blocked, %	-	-		
Mov Cap-1 Maneuver	-	-	880	0
Mov Cap-2 Maneuver	-	-	880	0
Stage 1	-	-	-	0
Stage 2	-	-	910	0

Approach	NB	SB
HCM Control Delay, s	0	
HCM LOS		-

Minor Lane/Major Mvmt	NBT	NBR	SBLn1	SBLn2
Capacity (veh/h)	-	-	880	-
HCM Lane V/C Ratio	-	-	0.131	-
HCM Control Delay (s)	-	-	9.7	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.4	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	4	217	1474	24	22	58	1535	75	0	0	49	0	0	177
Future Vol, veh/h	4	217	1474	24	22	58	1535	75	0	0	49	0	0	177
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	200	-	-	-	200	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	2	3	0	0	1	1	0	0	0	4	0	0	3
Mvmt Flow	4	226	1535	25	23	60	1599	78	0	0	51	0	0	184

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1677	1677	0	0	1560	1560	0	0	-	-	780	-	-	839
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	4.14	-	-	6.4	4.12	-	-	-	-	6.98	-	-	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.5	2.22	-	-	2.5	2.21	-	-	-	-	3.34	-	-	3.33
Pot Cap-1 Maneuver	124	378	-	-	147	425	-	-	0	0	334	0	0	307
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	340	340	-	-	256	256	-	-	-	-	334	-	-	307
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.5	1.2	17.7	32.9
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	334	340	-	-	256	-	-	307
HCM Lane V/C Ratio	0.153	0.677	-	-	0.326	-	-	0.601
HCM Control Delay (s)	17.7	35.1	-	-	25.7	-	-	32.9
HCM Lane LOS	C	E	-	-	D	-	-	D
HCM 95th %tile Q(veh)	0.5	4.7	-	-	1.4	-	-	3.6

Intersection	
Int Delay, s/veh	5.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	150	87	101	0	0	132
Future Vol, veh/h	150	87	101	0	0	132
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	0	1	1	0	0
Mvmt Flow	174	101	117	0	0	153

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	194	117	0	-	-	-
Stage 1	117	-	-	-	-	-
Stage 2	77	-	-	-	-	-
Critical Hdwy	6.645	6.2	-	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3	-	-	-	-
Pot Cap-1 Maneuver	783	941	-	0	0	-
Stage 1	905	-	-	0	0	-
Stage 2	935	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	783	941	-	-	-	-
Mov Cap-2 Maneuver	783	-	-	-	-	-
Stage 1	905	-	-	-	-	-
Stage 2	935	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBT
Capacity (veh/h)	-	783	941	-
HCM Lane V/C Ratio	-	0.223	0.108	-
HCM Control Delay (s)	-	10.9	9.3	-
HCM Lane LOS	-	B	A	-
HCM 95th %tile Q(veh)	-	0.8	0.4	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	31	195	7	9	163	2	5	0	7	9	3	24
Future Vol, veh/h	31	195	7	9	163	2	5	0	7	9	3	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	0	0	14	0	1	13	0	0	20	0	0	5
Mvmt Flow	39	244	9	11	204	3	6	0	9	11	4	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	207	0	0	253	0	0	572	556	249	559	559	206
Stage 1	-	-	-	-	-	-	327	327	-	228	228	-
Stage 2	-	-	-	-	-	-	245	229	-	331	331	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.4	7.1	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.48	3.5	4	3.345
Pot Cap-1 Maneuver	1376	-	-	1324	-	-	434	442	748	443	440	827
Stage 1	-	-	-	-	-	-	690	651	-	779	719	-
Stage 2	-	-	-	-	-	-	763	718	-	687	649	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1376	-	-	1324	-	-	402	423	748	424	422	827
Mov Cap-2 Maneuver	-	-	-	-	-	-	402	423	-	424	422	-
Stage 1	-	-	-	-	-	-	667	630	-	753	713	-
Stage 2	-	-	-	-	-	-	725	712	-	657	628	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.4	11.7	11.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	551	1376	-	-	1324	-	-	628
HCM Lane V/C Ratio	0.027	0.028	-	-	0.008	-	-	0.072
HCM Control Delay (s)	11.7	7.7	0	-	7.7	0	-	11.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.2

Intersection	
Intersection Delay, s/veh	12.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	163	90	7	5	28	4	23	177	17	10	63	103
Future Vol, veh/h	163	90	7	5	28	4	23	177	17	10	63	103
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles, %	0	2	0	0	0	0	8	1	0	0	3	0
Mvmt Flow	217	120	9	7	37	5	31	236	23	13	84	137
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	14.6	9.5	12.9	10.9
HCM LOS	B	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	63%	14%	6%
Vol Thru, %	82%	35%	76%	36%
Vol Right, %	8%	3%	11%	59%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	217	260	37	176
LT Vol	23	163	5	10
Through Vol	177	90	28	63
RT Vol	17	7	4	103
Lane Flow Rate	289	347	49	235
Geometry Grp	1	1	1	1
Degree of Util (X)	0.444	0.53	0.081	0.338
Departure Headway (Hd)	5.521	5.504	5.925	5.182
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	651	655	602	692
Service Time	3.565	3.547	3.989	3.229
HCM Lane V/C Ratio	0.444	0.53	0.081	0.34
HCM Control Delay	12.9	14.6	9.5	10.9
HCM Lane LOS	B	B	A	B
HCM 95th-tile Q	2.3	3.1	0.3	1.5

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑	↱	↰	↑
Traffic Vol, veh/h	0	0	101	191	104	178
Future Vol, veh/h	0	0	101	191	104	178
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	1	1	0	0
Mvmt Flow	0	0	117	222	121	207

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	228	339
Stage 1	-	-	0	0
Stage 2	-	-	228	339
Critical Hdwy	-	-	6.4	6.5
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.4	5.5
Follow-up Hdwy	-	-	3.5	4
Pot Cap-1 Maneuver	-	-	765	586
Stage 1	-	-	-	-
Stage 2	-	-	815	643
Platoon blocked, %	-	-		
Mov Cap-1 Maneuver	-	-	765	0
Mov Cap-2 Maneuver	-	-	765	0
Stage 1	-	-	-	0
Stage 2	-	-	815	0

Approach	NB	SB
HCM Control Delay, s	0	
HCM LOS		-

Minor Lane/Major Mvmt	NBT	NBR	SBLn1	SBLn2
Capacity (veh/h)	-	-	765	-
HCM Lane V/C Ratio	-	-	0.158	-
HCM Control Delay (s)	-	-	10.6	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.6	-

Intersection	
Int Delay, s/veh	3

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	8	150	1538	17	12	45	1168	33	0	0	43	0	0	187
Future Vol, veh/h	8	150	1538	17	12	45	1168	33	0	0	43	0	0	187
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	200	-	-	-	200	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	5	4	0	0	0	5	18	0	0	3	0	0	7
Mvmt Flow	9	165	1690	19	13	49	1284	36	0	0	47	0	0	205

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1320	1320	0	0	1709	1709	0	0	-	-	855	-	-	660
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	4.2	-	-	6.4	4.1	-	-	-	-	6.96	-	-	7.04
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.5	2.25	-	-	2.5	2.2	-	-	-	-	3.33	-	-	3.37
Pot Cap-1 Maneuver	210	504	-	-	118	377	-	-	0	0	300	0	0	394
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	427	427	-	-	239	239	-	-	-	-	300	-	-	394
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	1.1	19.2	23.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	300	427	-	-	239	-	-	394
HCM Lane V/C Ratio	0.158	0.407	-	-	0.262	-	-	0.522
HCM Control Delay (s)	19.2	19.1	-	-	25.3	-	-	23.7
HCM Lane LOS	C	C	-	-	D	-	-	C
HCM 95th %tile Q(veh)	0.6	1.9	-	-	1	-	-	2.9

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	155	180	40	100	7
Future Vol, veh/h	27	155	180	40	100	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	16	3	6	6	0	17
Mvmt Flow	31	178	207	46	115	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	253	0	-	0	470	230
Stage 1	-	-	-	-	230	-
Stage 2	-	-	-	-	240	-
Critical Hdwy	4.26	-	-	-	6.4	6.37
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.344	-	-	-	3.5	3.453
Pot Cap-1 Maneuver	1235	-	-	-	556	773
Stage 1	-	-	-	-	813	-
Stage 2	-	-	-	-	805	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1235	-	-	-	542	773
Mov Cap-2 Maneuver	-	-	-	-	542	-
Stage 1	-	-	-	-	793	-
Stage 2	-	-	-	-	805	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1235	-	-	-	553
HCM Lane V/C Ratio	0.025	-	-	-	0.222
HCM Control Delay (s)	8	-	-	-	13.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	10	190	10	5	121	3	1	0	1	5	1	14
Future Vol, veh/h	10	190	10	5	121	3	1	0	1	5	1	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	11	2	0	0	4	0	0	0	0	0	0	0
Mvmt Flow	12	229	12	6	146	4	1	0	1	6	1	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	150	0	0	241	0	0	428	421	235	420	425	148
Stage 1	-	-	-	-	-	-	259	259	-	160	160	-
Stage 2	-	-	-	-	-	-	169	162	-	260	265	-
Critical Hdwy	4.21	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.299	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1378	-	-	1337	-	-	541	527	809	547	524	904
Stage 1	-	-	-	-	-	-	750	697	-	847	769	-
Stage 2	-	-	-	-	-	-	838	768	-	749	693	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1378	-	-	1337	-	-	524	519	809	540	516	904
Mov Cap-2 Maneuver	-	-	-	-	-	-	524	519	-	540	516	-
Stage 1	-	-	-	-	-	-	743	690	-	839	765	-
Stage 2	-	-	-	-	-	-	817	764	-	740	686	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.3	10.7	10
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	636	1378	-	-	1337	-	-	750
HCM Lane V/C Ratio	0.004	0.009	-	-	0.005	-	-	0.032
HCM Control Delay (s)	10.7	7.6	0	-	7.7	0	-	10
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	91	70	3	4	52	1	21	80	5	8	68	81
Future Vol, veh/h	91	70	3	4	52	1	21	80	5	8	68	81
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	3	3	0	0	0	0	16	0	0	0	2	0
Mvmt Flow	107	82	4	5	61	1	25	94	6	9	80	95
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.6	8.4	9.2	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	55%	7%	5%
Vol Thru, %	75%	43%	91%	43%
Vol Right, %	5%	2%	2%	52%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	106	164	57	157
LT Vol	21	91	4	8
Through Vol	80	70	52	68
RT Vol	5	3	1	81
Lane Flow Rate	125	193	67	185
Geometry Grp	1	1	1	1
Degree of Util (X)	0.175	0.26	0.091	0.226
Departure Headway (Hd)	5.038	4.859	4.878	4.404
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	710	737	731	813
Service Time	3.085	2.906	2.934	2.446
HCM Lane V/C Ratio	0.176	0.262	0.092	0.228
HCM Control Delay	9.2	9.6	8.4	8.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	1	0.3	0.9

Intersection	
Int Delay, s/veh	4.5

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	4	217	1474	24	22	58	1535	75	0	0	49	0	0	177
Future Vol, veh/h	4	217	1474	24	22	58	1535	75	0	0	49	0	0	177
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	200	-	-	-	200	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	2	3	0	0	1	1	0	0	0	4	0	0	3
Mvmt Flow	4	226	1535	25	23	60	1599	78	0	0	51	0	0	184

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1677	1677	0	0	1560	1560	0	0	-	-	780	-	-	839
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	4.14	-	-	6.4	4.12	-	-	-	-	6.98	-	-	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.5	2.22	-	-	2.5	2.21	-	-	-	-	3.34	-	-	3.33
Pot Cap-1 Maneuver	124	378	-	-	147	425	-	-	0	0	334	0	0	307
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	340	340	-	-	256	256	-	-	-	-	334	-	-	307
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.5	1.2	17.7	32.9
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	334	340	-	-	256	-	-	307
HCM Lane V/C Ratio	0.153	0.677	-	-	0.326	-	-	0.601
HCM Control Delay (s)	17.7	35.1	-	-	25.7	-	-	32.9
HCM Lane LOS	C	E	-	-	D	-	-	D
HCM 95th %tile Q(veh)	0.5	4.7	-	-	1.4	-	-	3.6

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	101	191	150	87	104	28
Future Vol, veh/h	101	191	150	87	104	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	3	0	0	0
Mvmt Flow	116	220	172	100	120	32

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	272	0	-	0	674	222
Stage 1	-	-	-	-	222	-
Stage 2	-	-	-	-	452	-
Critical Hdwy	4.11	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.209	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1297	-	-	-	423	823
Stage 1	-	-	-	-	820	-
Stage 2	-	-	-	-	645	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1297	-	-	-	385	823
Mov Cap-2 Maneuver	-	-	-	-	385	-
Stage 1	-	-	-	-	747	-
Stage 2	-	-	-	-	645	-

Approach	EB	WB	SB
HCM Control Delay, s	2.8	0	17.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1297	-	-	-	434
HCM Lane V/C Ratio	0.09	-	-	-	0.35
HCM Control Delay (s)	8	-	-	-	17.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	1.5

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	31	195	7	9	163	2	5	0	7	9	3	24
Future Vol, veh/h	31	195	7	9	163	2	5	0	7	9	3	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	0	0	14	0	1	13	0	0	20	0	0	5
Mvmt Flow	39	244	9	11	204	3	6	0	9	11	4	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	207	0	0	253	0	0	572	556	249	559	559	206
Stage 1	-	-	-	-	-	-	327	327	-	228	228	-
Stage 2	-	-	-	-	-	-	245	229	-	331	331	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.4	7.1	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.48	3.5	4	3.345
Pot Cap-1 Maneuver	1376	-	-	1324	-	-	434	442	748	443	440	827
Stage 1	-	-	-	-	-	-	690	651	-	779	719	-
Stage 2	-	-	-	-	-	-	763	718	-	687	649	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1376	-	-	1324	-	-	402	423	748	424	422	827
Mov Cap-2 Maneuver	-	-	-	-	-	-	402	423	-	424	422	-
Stage 1	-	-	-	-	-	-	667	630	-	753	713	-
Stage 2	-	-	-	-	-	-	725	712	-	657	628	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.4	11.7	11.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	551	1376	-	-	1324	-	-	628
HCM Lane V/C Ratio	0.027	0.028	-	-	0.008	-	-	0.072
HCM Control Delay (s)	11.7	7.7	0	-	7.7	0	-	11.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.2

Intersection	
Intersection Delay, s/veh	12.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	163	90	7	5	28	4	23	177	17	10	63	103
Future Vol, veh/h	163	90	7	5	28	4	23	177	17	10	63	103
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles, %	0	2	0	0	0	0	8	1	0	0	3	0
Mvmt Flow	217	120	9	7	37	5	31	236	23	13	84	137
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

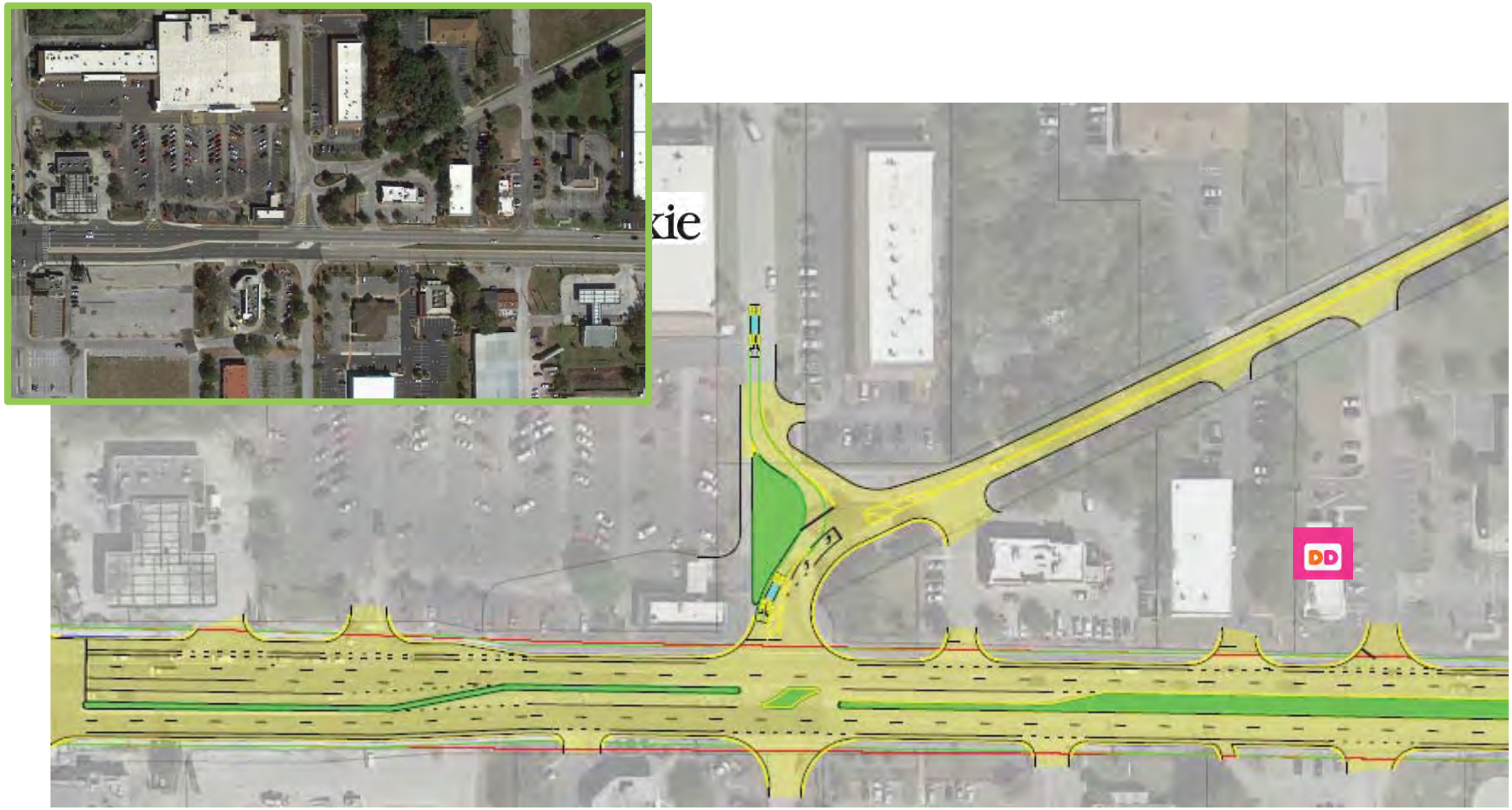
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	14.6	9.5	12.9	10.9
HCM LOS	B	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	63%	14%	6%
Vol Thru, %	82%	35%	76%	36%
Vol Right, %	8%	3%	11%	59%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	217	260	37	176
LT Vol	23	163	5	10
Through Vol	177	90	28	63
RT Vol	17	7	4	103
Lane Flow Rate	289	347	49	235
Geometry Grp	1	1	1	1
Degree of Util (X)	0.444	0.53	0.081	0.338
Departure Headway (Hd)	5.521	5.504	5.925	5.182
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	651	655	602	692
Service Time	3.565	3.547	3.989	3.229
HCM Lane V/C Ratio	0.444	0.53	0.081	0.34
HCM Control Delay	12.9	14.6	9.5	10.9
HCM Lane LOS	B	B	A	B
HCM 95th-tile Q	2.3	3.1	0.3	1.5

Appendix K

SR 434 Corridor Study Realignment Plans

Warren Avenue Realignment



Appendix L

Raw Crash Data

Crash Data Summary - Warren Ave All Crashes

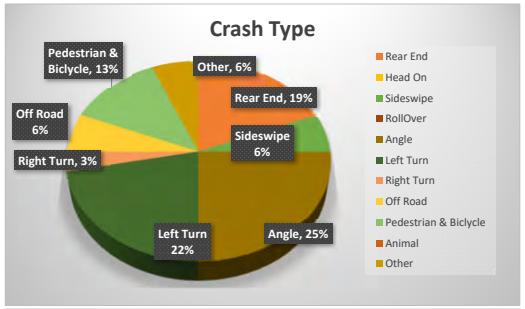
Crash Type	2016	2017	2018	2019	2020	Total	Proportion
Rear End	2	1	2	1	0	**6**	19%
Head On	0	0	0	0	0	**0**	0%
Sideswipe	0	1	0	1	0	**2**	6%
RollOver	0	0	0	0	0	**0**	0%
Angle	2	1	2	1	2	**8**	25%
Left Turn	2	2	0	2	1	**7**	22%
Right Turn	0	1	0	0	0	**1**	3%
Off Road	1	0	0	1	0	**2**	6%
Pedestrian & Biclycle	0	0	1	2	1	**4**	13%
Animal	0	0	0	0	0	**0**	0%
Other	0	0	0	1	1	**2**	6%
Total	**7**	**6**	**5**	**9**	**5**	**32**	100%

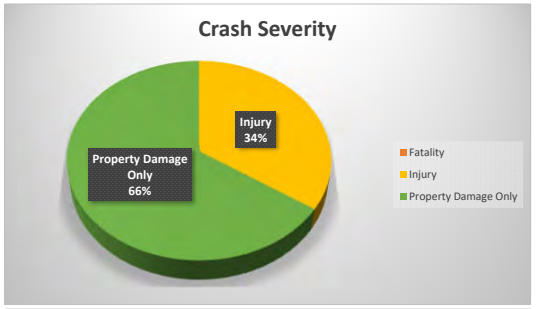
Crash Severity	2016	2017	2018	2019	2020	Total	Proportion
Fatality	0	0	0	0	0	**0**	0%
Injury	1	4	0	5	1	**11**	34%
Property Damage Only	6	2	5	4	4	**21**	66%
Total	**7**	**6**	**5**	**9**	**5**	**32**	100%

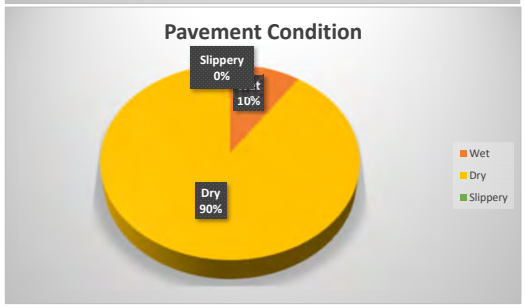
Pavement Condition	2016	2017	2018	2019	2020	Total	Proportion
Wet	1	0	1	0	1	**3**	9%
Dry	6	5	4	9	4	**28**	88%
Slippery	0	0	0	0	0	**0**	0%
Total	**7**	**5**	**5**	**9**	**5**	**31**	97%

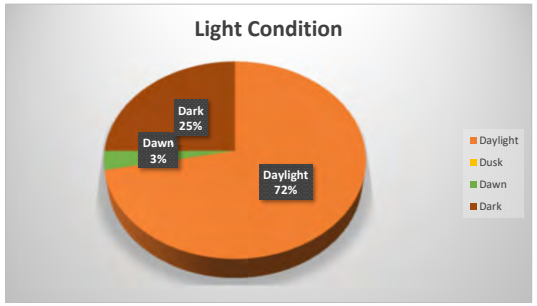
Light Condition	2016	2017	2018	2019	2020	Total	Proportion
Daylight	3	4	4	8	4	**23**	72%
Dusk	0	0	0	0	0	**0**	0%
Dawn	0	0	0	0	1	**1**	3%
Dark	4	2	1	1	0	**8**	25%
Total	**7**	**6**	**5**	**9**	**5**	**32**	100%

Under the Influence	2016	2017	2018	2019	2020	Total	Proportion
Alcohol	1	2	0	0	0	**3**	9%
Drugs	0	0	0	0	0	**0**	0%
Total	**1**	**2**	**0**	**0**	**0**	**3**	9%









Crash Data Summary - SR 434 and St. Laurent Street

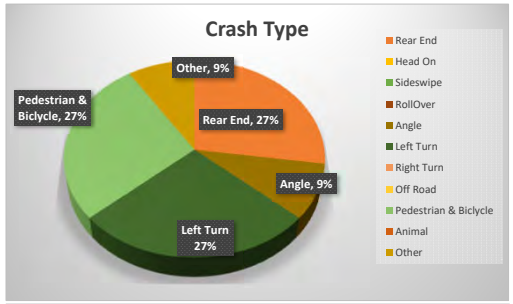
Crash Type	2016	2017	2018	2019	2020	Total	Proportion
Rear End	0	0	2	1	0	**3**	27%
Head On	0	0	0	0	0	**0**	0%
Sideswipe	0	0	0	0	0	**0**	0%
RollOver	0	0	0	0	0	**0**	0%
Angle	0	0	0	0	1	**1**	9%
Left Turn	0	0	0	2	1	**3**	27%
Right Turn	0	0	0	0	0	**0**	0%
Off Road	0	0	0	0	0	**0**	0%
Pedestrian & Biclycle	0	0	1	1	1	**3**	27%
Animal	0	0	0	0	0	**0**	0%
Other	0	0	0	0	1	**1**	9%
Total	**0**	**0**	**3**	**4**	**4**	**11**	100%

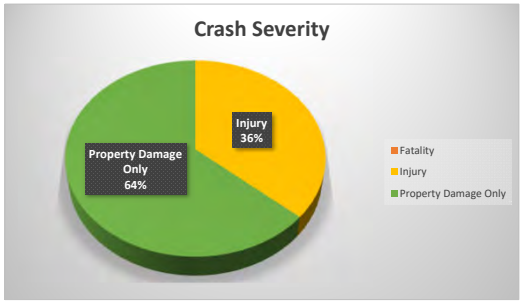
Crash Severity	2016	2017	2018	2019	2020	Total	Proportion
Fatality	0	0	0	0	0	**0**	0%
Injury	0	0	0	3	1	**4**	36%
Property Damage Only	0	0	3	1	3	**7**	64%
Total	**0**	**0**	**3**	**4**	**4**	**11**	100%

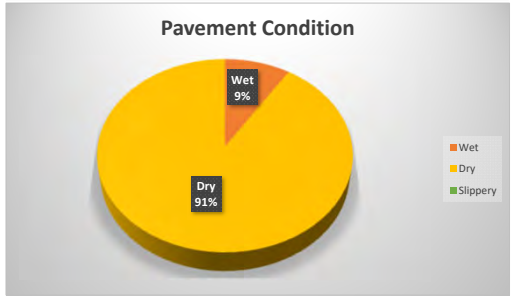
Pavement Condition	2016	2017	2018	2019	2020	Total	Proportion
Wet	0	0	0	0	1	**1**	9%
Dry	0	0	3	4	3	**10**	91%
Slippery	0	0	0	0	0	**0**	0%
Total	**0**	**0**	**3**	**4**	**4**	**11**	100%

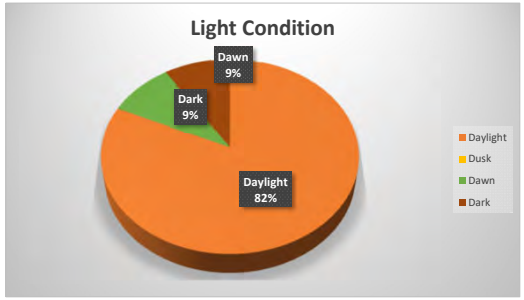
Light Condition	2016	2017	2018	2019	2020	Total	Proportion
Daylight	0	0	3	3	3	**9**	82%
Dusk	0	0	0	0	0	**0**	0%
Dawn	0	0	0	0	1	**1**	9%
Dark	0	0	0	1	0	**1**	9%
Total	**0**	**0**	**3**	**4**	**4**	**11**	100%

Under the Influence	2016	2017	2018	2019	2020	Total	Proportion
Alcohol	0	0	0	0	0	**0**	0%
Drugs	0	0	0	0	0	**0**	0%
Total	**0**	**0**	**0**	**0**	**0**	**0**	0%









Crash Data Summary - Warren Ave and St. Laurent Street

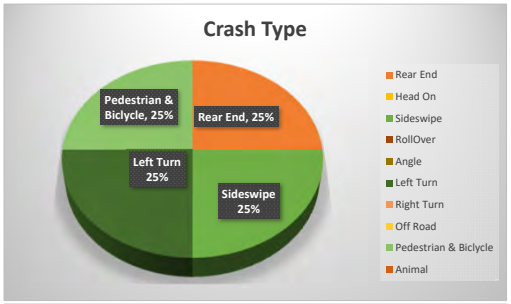
Crash Type	2016	2017	2018	2019	2020	Total	Proportion
Rear End	0	1	0	0	0	**1**	25%
Head On	0	0	0	0	0	**0**	0%
Sideswipe	0	1	0	0	0	**1**	25%
RollOver	0	0	0	0	0	**0**	0%
Angle	0	0	0	0	0	**0**	0%
Left Turn	0	1	0	0	0	**1**	25%
Right Turn	0	0	0	0	0	**0**	0%
Off Road	0	0	0	0	0	**0**	0%
Pedestrian & Biclycle	0	0	0	1	0	**1**	25%
Animal	0	0	0	0	0	**0**	0%
Other	0	0	0	0	0	**0**	0%
Total	**0**	**3**	**0**	**1**	**0**	**4**	100%

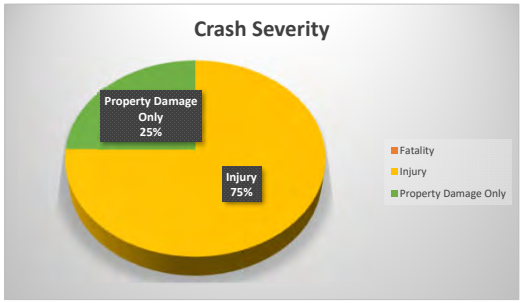
Crash Severity	2016	2017	2018	2019	2020	Total	Proportion
Fatality	0	0	0	0	0	**0**	0%
Injury	0	2	0	1	0	**3**	75%
Property Damage Only	0	1	0	0	0	**1**	25%
Total	**0**	**3**	**0**	**1**	**0**	**4**	100%

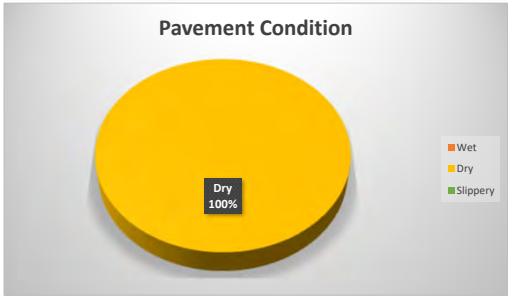
Pavement Condition	2016	2017	2018	2019	2020	Total	Proportion
Wet	0	0	0	0	0	**0**	0%
Dry	0	3	0	1	0	**4**	100%
Slippery	0	0	0	0	0	**0**	0%
Total	**0**	**3**	**0**	**1**	**0**	**4**	100%

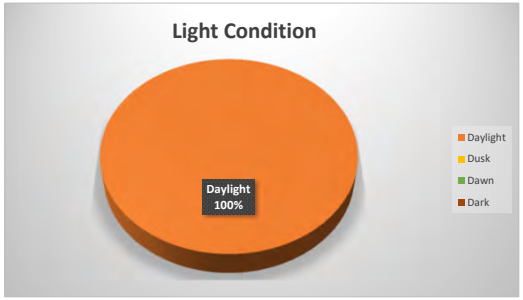
Light Condition	2016	2017	2018	2019	2020	Total	Proportion
Daylight	0	3	0	1	0	**4**	100%
Dusk	0	0	0	0	0	**0**	0%
Dawn	0	0	0	0	0	**0**	0%
Dark	0	0	0	0	0	**0**	0%
Total	**0**	**3**	**0**	**1**	**0**	**4**	100%

Under the Influence	2016	2017	2018	2019	2020	Total	Proportion
Alcohol	0	2	0	0	0	**2**	50%
Drugs	0	0	0	0	0	**0**	0%
Total	**0**	**2**	**0**	**0**	**0**	**2**	50%









Crash Data Summary - Warren Ave and Lemon Ln

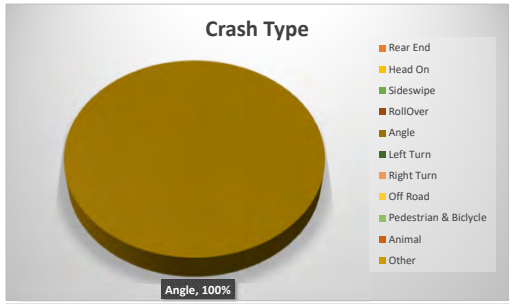
Crash Type	2016	2017	2018	2019	2020	Total	Proportion
Rear End	0	0	0	0	0	**0**	0%
Head On	0	0	0	0	0	**0**	0%
Sideswipe	0	0	0	0	0	**0**	0%
RollOver	0	0	0	0	0	**0**	0%
Angle	0	1	1	1	0	**3**	100%
Left Turn	0	0	0	0	0	**0**	0%
Right Turn	0	0	0	0	0	**0**	0%
Off Road	0	0	0	0	0	**0**	0%
Pedestrian & Biclycle	0	0	0	0	0	**0**	0%
Animal	0	0	0	0	0	**0**	0%
Other	0	0	0	0	0	**0**	0%
Total	**0**	**1**	**1**	**1**	**0**	3	100%

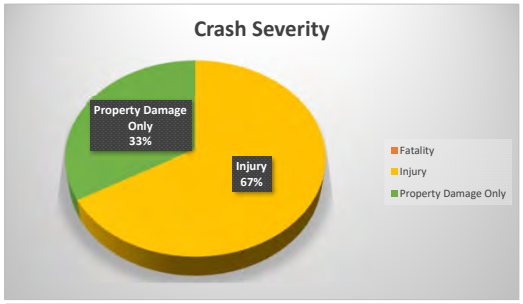
Crash Severity	2016	2017	2018	2019	2020	Total	Proportion
Fatality	0	0	0	0	0	**0**	0%
Injury	0	1	0	1	0	**2**	67%
Property Damage Only	0	0	1	0	0	**1**	33%
Total	**0**	**1**	**1**	**1**	**0**	3	100%

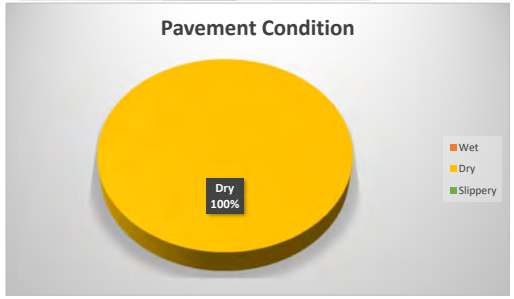
Pavement Condition	2016	2017	2018	2019	2020	Total	Proportion
Wet	0	0	0	0	0	**0**	0%
Dry	0	1	1	1	0	**3**	100%
Slippery	0	0	0	0	0	**0**	0%
Total	**0**	**1**	**1**	**1**	**0**	3	100%

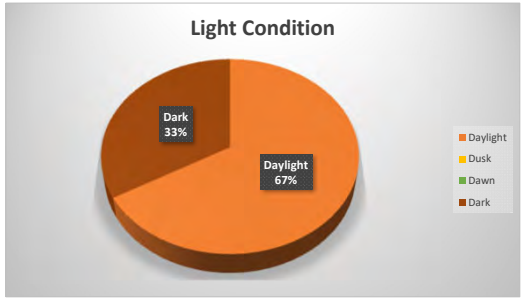
Light Condition	2016	2017	2018	2019	2020	Total	Proportion
Daylight	0	0	1	1	0	**2**	67%
Dusk	0	0	0	0	0	**0**	0%
Dawn	0	0	0	0	0	**0**	0%
Dark	0	1	0	0	0	**1**	33%
Total	**0**	**1**	**1**	**1**	**0**	3	100%

Under the Influence	2016	2017	2018	2019	2020	Total	Proportion
Alcohol	0	0	0	0	0	**0**	0%
Drugs	0	0	0	0	0	**0**	0%
Total	**0**	**0**	**0**	**0**	**0**	0	0%









Crash Data Summary - Warren Ave and Milwee St

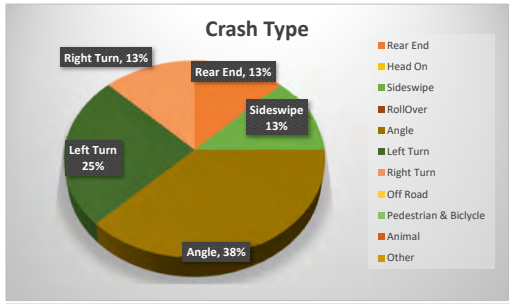
Crash Type	2016	2017	2018	2019	2020	Total	Proportion
Rear End	1	0	0	0	0	**1**	13%
Head On	0	0	0	0	0	**0**	0%
Sideswipe	0	0	0	1	0	**1**	13%
RollOver	0	0	0	0	0	**0**	0%
Angle	2	0	1	0	0	**3**	38%
Left Turn	2	0	0	0	0	**2**	25%
Right Turn	0	1	0	0	0	**1**	13%
Off Road	0	0	0	0	0	**0**	0%
Pedestrian & Biclycle	0	0	0	0	0	**0**	0%
Animal	0	0	0	0	0	**0**	0%
Other	0	0	0	0	0	**0**	0%
Total	**5**	**1**	**1**	**1**	**0**	8	100%

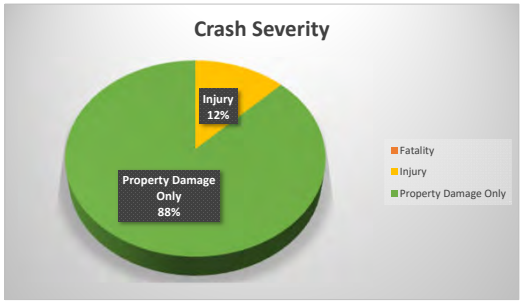
Crash Severity	2016	2017	2018	2019	2020	Total	Proportion
Fatality	0	0	0	0	0	**0**	0%
Injury	1	0	0	0	0	**1**	13%
Property Damage Only	4	1	1	1	0	**7**	88%
Total	**5**	**1**	**1**	**1**	**0**	8	100%

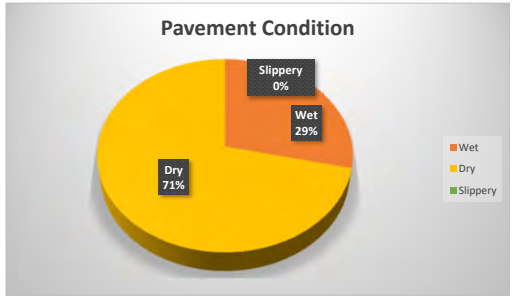
Pavement Condition	2016	2017	2018	2019	2020	Total	Proportion
Wet	1	0	1	0	0	**2**	25%
Dry	4	0	0	1	0	**5**	63%
Slippery	0	0	0	0	0	**0**	0%
Total	**5**	**0**	**1**	**1**	**0**	7	88%

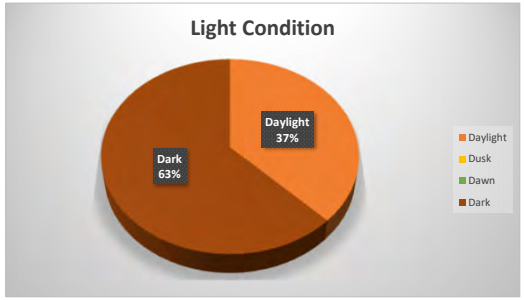
Light Condition	2016	2017	2018	2019	2020	Total	Proportion
Daylight	2	0	0	1	0	**3**	38%
Dusk	0	0	0	0	0	**0**	0%
Dawn	0	0	0	0	0	**0**	0%
Dark	3	1	1	0	0	**5**	63%
Total	**5**	**1**	**1**	**1**	**0**	8	100%

Under the Influence	2016	2017	2018	2019	2020	Total	Proportion
Alcohol	0	0	0	0	0	**0**	0%
Drugs	0	0	0	0	0	**0**	0%
Total	**0**	**0**	**0**	**0**	**0**	0	0%









Crash Data Summary - Warren Ave Segment

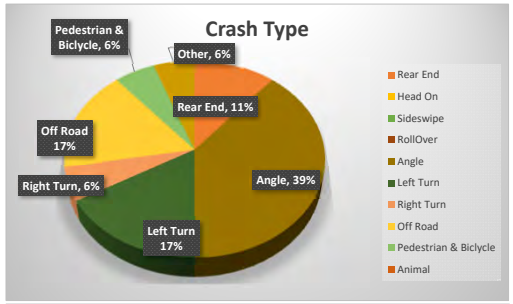
Crash Type	2016	2017	2018	2019	2020	Total	Proportion
Rear End	1	1	0	0	0	**2**	11%
Head On	0	0	0	0	0	**0**	0%
Sideswipe	0	0	0	0	0	**0**	0%
RollOver	0	0	0	0	0	**0**	0%
Angle	2	1	2	1	1	**7**	39%
Left Turn	2	1	0	0	0	**3**	17%
Right Turn	0	1	0	0	0	**1**	6%
Off Road	1	0	0	2	0	**3**	17%
Pedestrian & Bicycle	0	0	0	1	0	**1**	6%
Animal	0	0	0	0	0	**0**	0%
Other	0	0	0	1	0	**1**	6%
Total	**6**	**4**	**2**	**5**	**1**	**18**	100%

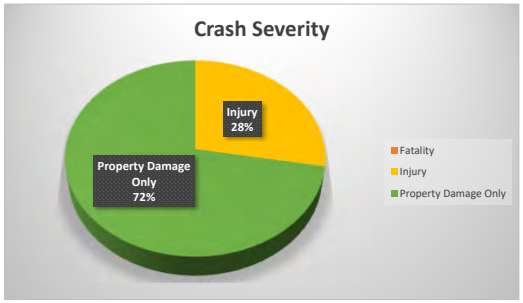
Crash Severity	2016	2017	2018	2019	2020	Total	Proportion
Fatality	0	0	0	0	0	**0**	0%
Injury	0	3	0	2	0	**5**	28%
Property Damage Only	6	1	2	3	1	**13**	72%
Total	**6**	**4**	**2**	**5**	**1**	**18**	100%

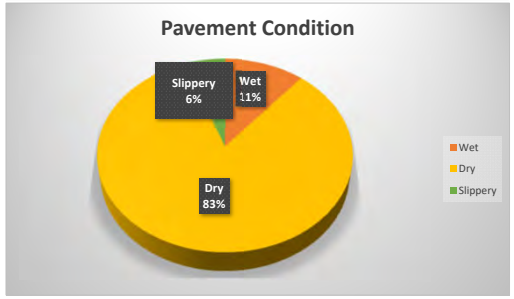
Pavement Condition	2016	2017	2018	2019	2020	Total	Proportion
Wet	1	0	1	0	0	**2**	11%
Dry	5	3	1	5	1	**15**	83%
Mud, Dirt, Gravel	0	1	0	0	0	**1**	6%
Total	**6**	**4**	**2**	**5**	**1**	**18**	100%

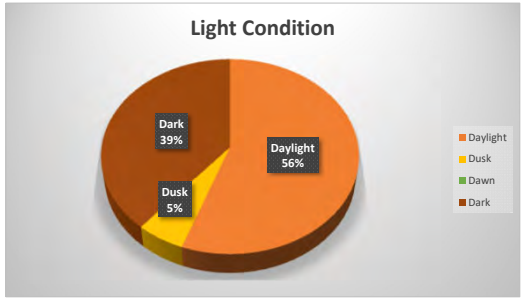
Light Condition	2016	2017	2018	2019	2020	Total	Proportion
Daylight	2	2	1	4	1	**10**	56%
Unknown	0	0	0	1	0	**1**	6%
Dawn	0	0	0	0	0	**0**	0%
Dark	4	2	1	0	0	**7**	39%
Total	**6**	**4**	**2**	**5**	**1**	**18**	100%

Under the Influence	2016	2017	2018	2019	2020	Total	Proportion
Alcohol	1	1	0	0	0	**2**	11%
Drugs	0	0	0	0	0	**0**	0%
Total	**1**	**1**	**0**	**0**	**0**	**2**	11%



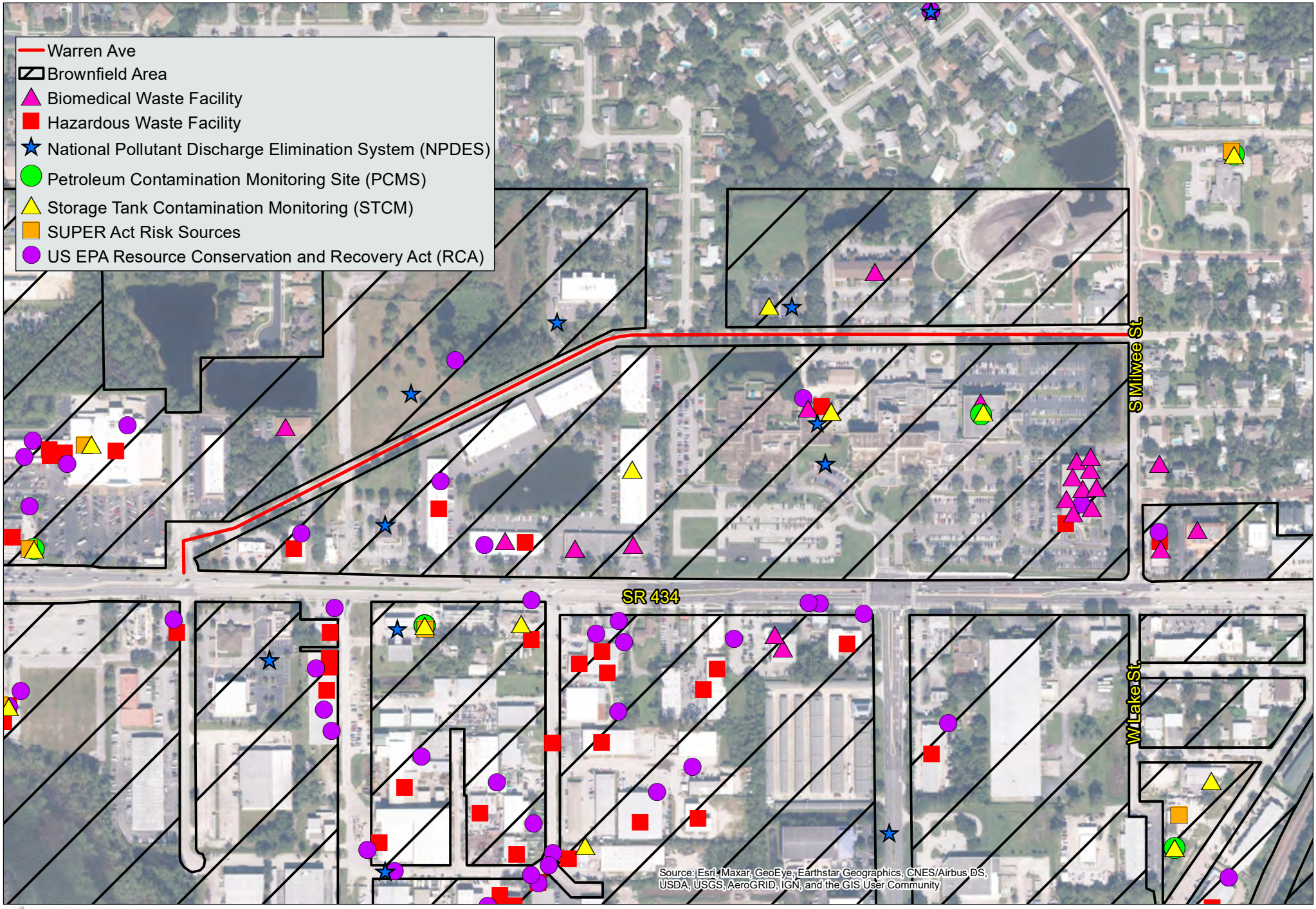






Appendix M

Environmental Assessment Maps



225 East Robinson Street, Suite 300
Orlando, Florida 32801 | 407.839.4006

Note: GIS data downloaded from FGDL Dec. 2020 and sourced to FDOH (Boimedical, SUPER Act), FDEP (PCMS, STCM, Hazardous Waste), FDEP/DWM/BWC (Brownfield), USEPA (NPDES).

Warren Avenue
Longwood, FL

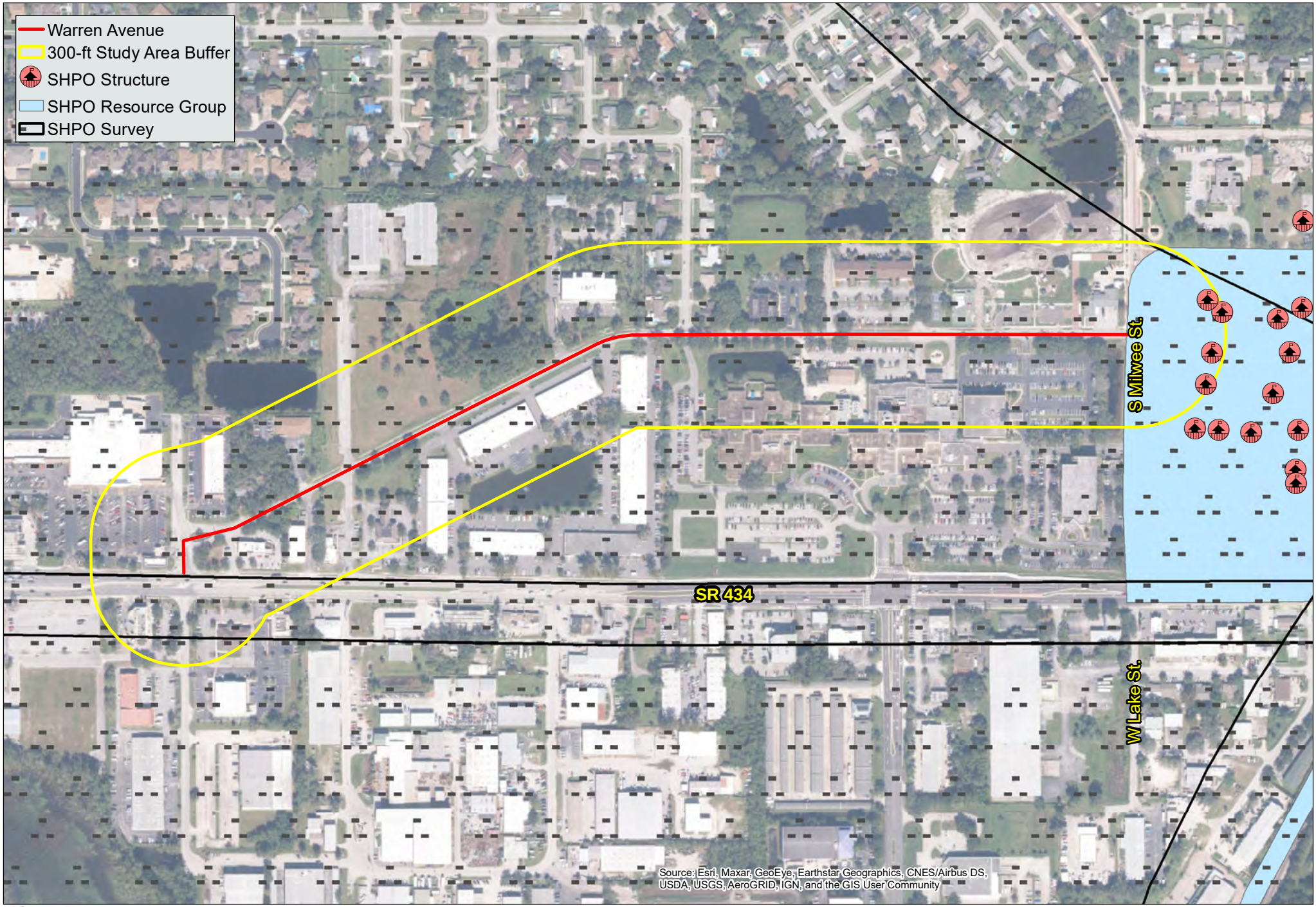
Contamination Map

December 2020

Exhibit 1

0 200 400 Feet

N



225 East Robinson Street, Suite 300
Orlando, Florida 32801 | 407.839.4006

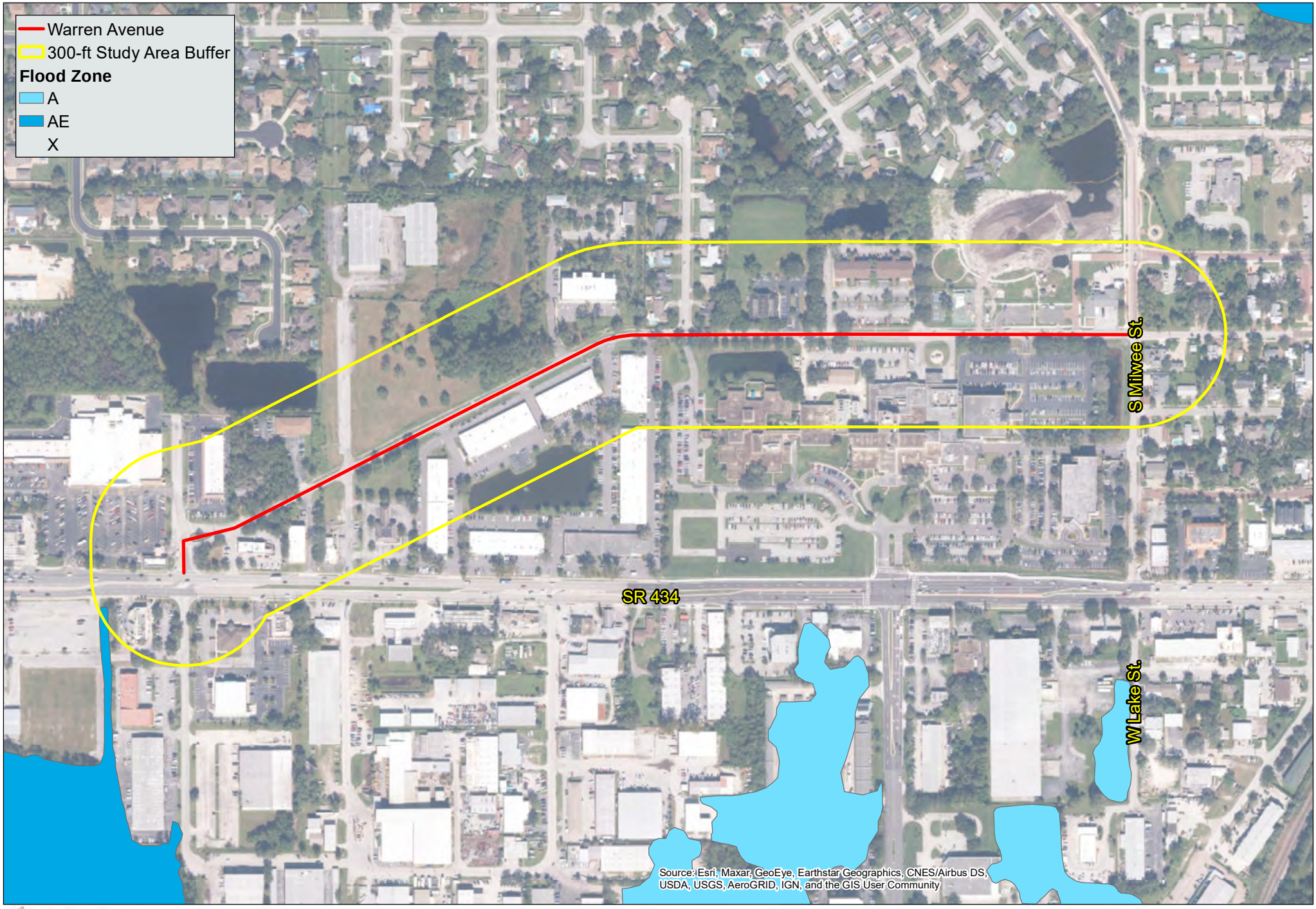
Warren Avenue
Longwood, FL
Cultural Resources Map
December 2020

Exhibit 2

0 200 400 Feet

N

Note: GIS data downloaded from FGDL Dec. 2020.



vhb
225 East Robinson Street, Suite 300
Orlando, Florida 32801 | 407.839.4006

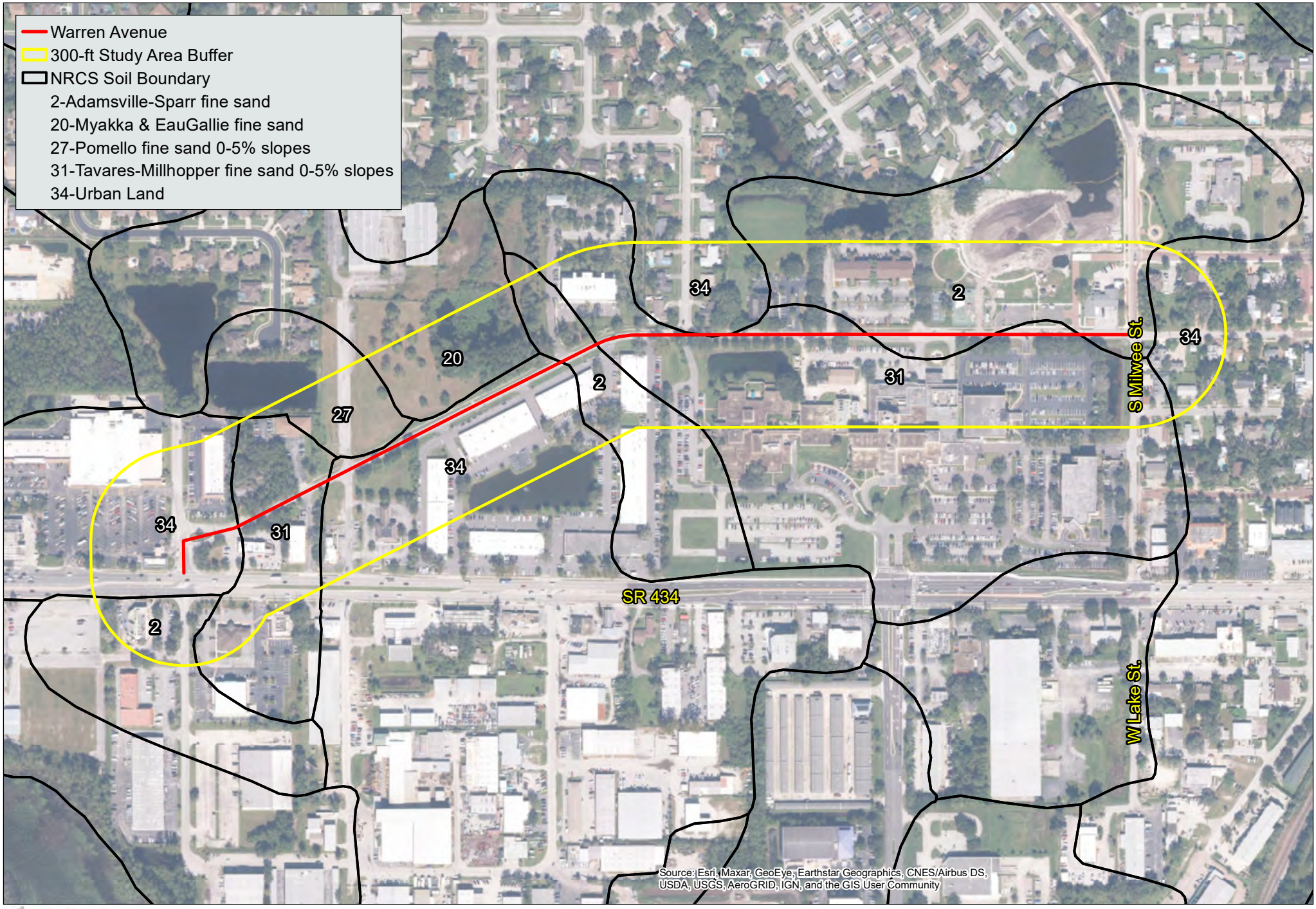
Warren Avenue
Longwood, FL
Floodplain Map
December 2020

Exhibit 3

0 200 400 Feet

N

Note: GIS data downloaded from FGDL Dec. 2020 and sourced to FEMA (DFIRM).



225 East Robinson Street, Suite 300
Orlando, Florida 32801 | 407.839.4006

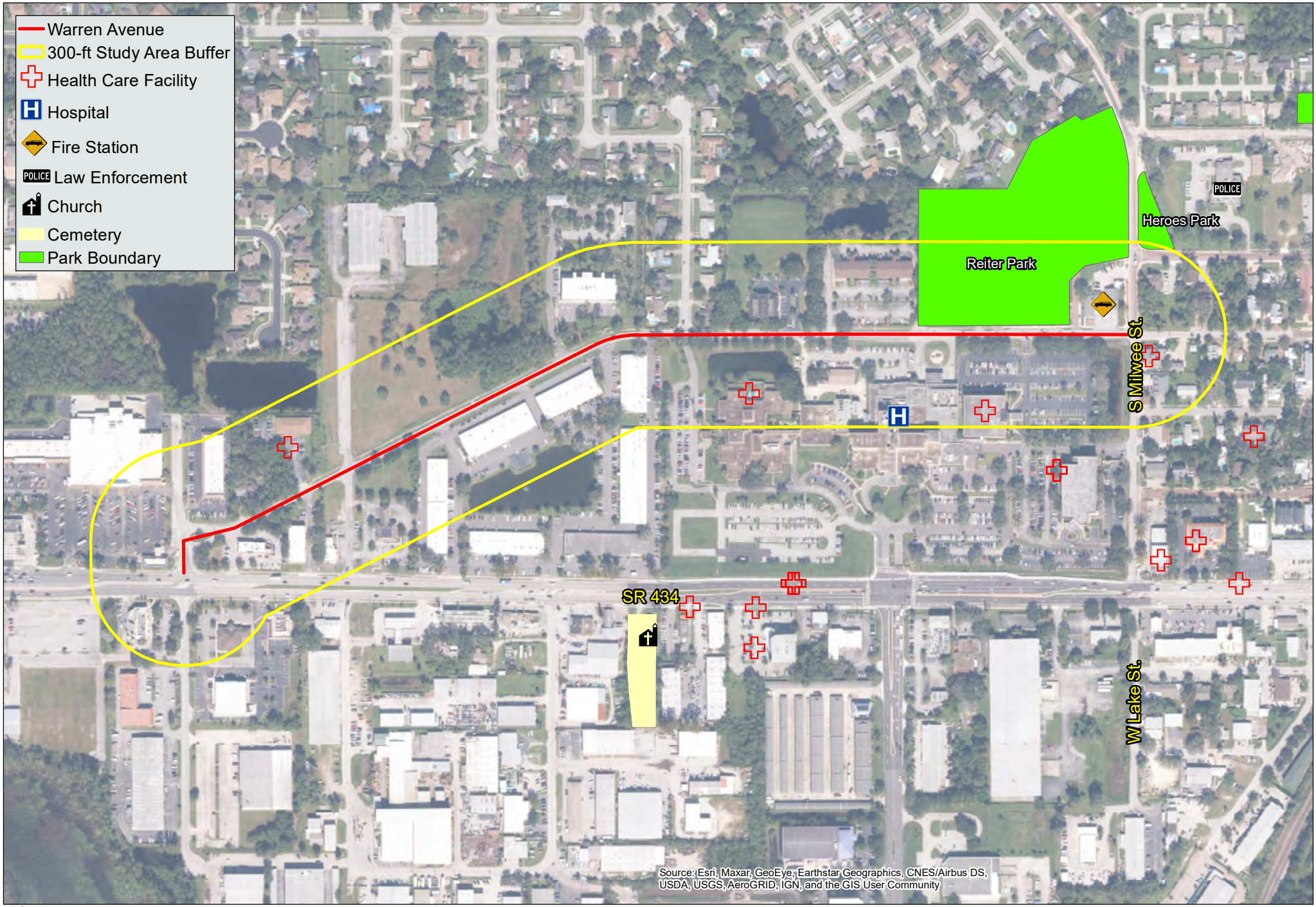
Warren Avenue
Longwood, FL
NRCS Soil Map
December 2020

Exhibit 4

0 195 390 Feet

N

Note: U.S. Department of Agriculture, Natural Resources Conservation Service.



225 East Robinson Street, Suite 300
Orlando, Florida 32801 | 407.839.4006

Warren Avenue
Longwood, FL
Social Resources Map
December 2020

Exhibit 5

0 200 400 Feet

N

Note: GIS data downloaded from FGDL Dec. 2020.

225 East Robinson Street, Suite 300
Orlando, Florida 32801 | 407.839.4006

Warren Avenue
Longwood, FL

Wetland and Surface Water Map

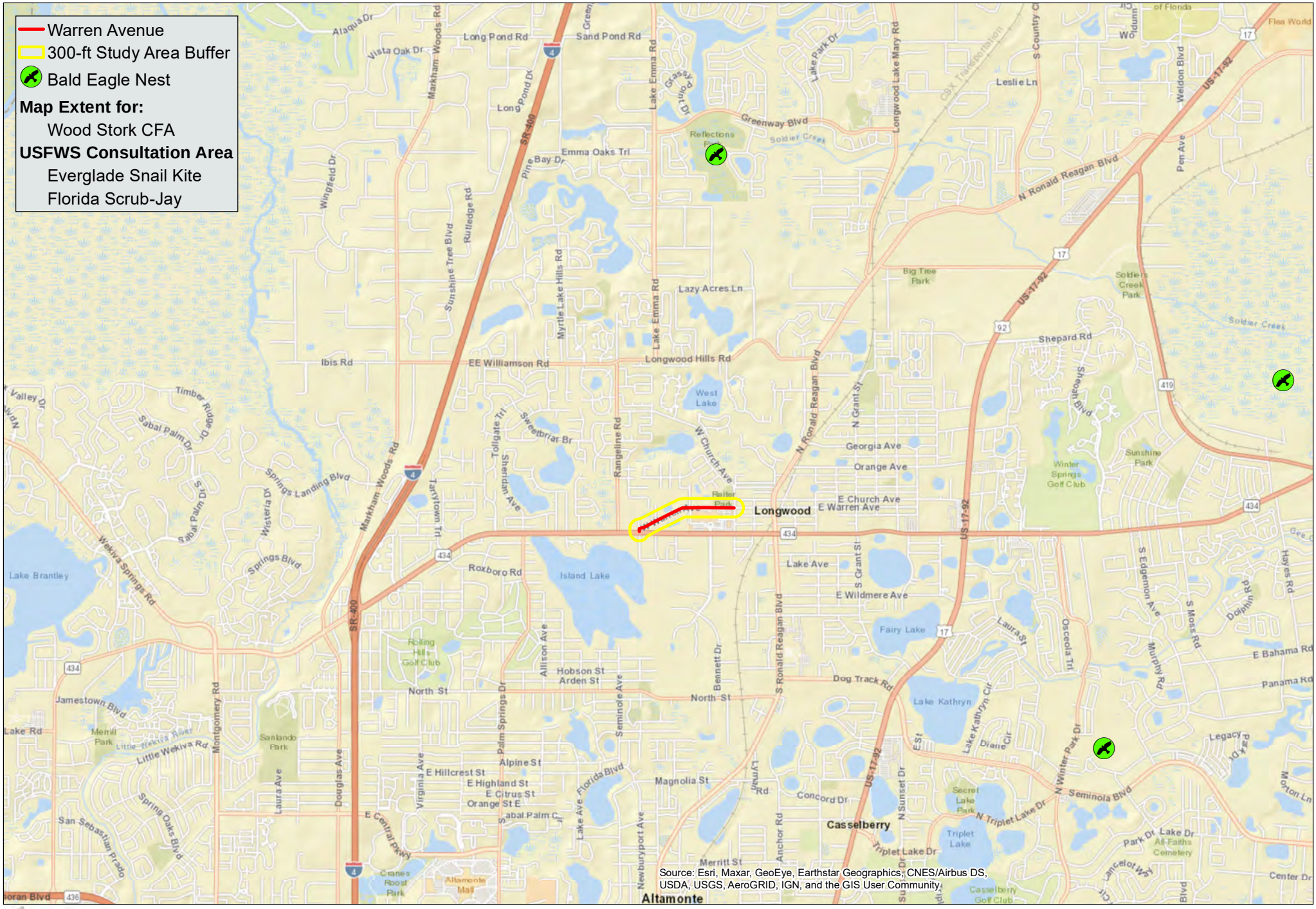
December 2020

Exhibit 6

0 200 400 Feet

N

Note: Wetland and suface water habitats from SJRWMD Land Use and Cover-2014 and based on aerial interpretation.



225 East Robinson Street, Suite 300
Orlando, Florida 32801 | 407.839.4006

Warren Avenue
Longwood, FL

Protected Species Map

December 2020

Exhibit 7

0 2,000 4,000 Feet

N

Note: U.S. Fish and Wildlife Service GIS data (Wood Stork CFA, Consultation Areas). FWC GIS data (Eagle Nesting 2016)).