

RESOLUTION NO. 19-23

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF LAKE ALFRED, FLORIDA; APPROVING AND ADOPTING THE CITY OF LAKE ALFRED TRANSPORTATION PLAN, JUNE 2023; PROVIDING FOR THE INCORPORATION OF RECITALS; PROVIDING FOR THE ADMINISTRATIVE CORRECTION OF SCRIVENERS ERRORS; PROVIDING FOR CONFLICTS; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Lake Alfred is a Florida municipal corporation vested with home rule authority pursuant to the Municipal Home Rule Powers Act (F.S. Chapter 166) and Article VIII, §2 of the Florida Constitution; and

WHEREAS, pursuant to Section 2(b), Article VIII of the Florida Constitution and Chapter 166, Florida Statutes, the City is vested with governmental, corporate and proprietary powers to enable it to conduct municipal government, perform municipal functions and render municipal services, including the general exercise of any power for municipal purposes; and

WHEREAS, the City of Lake Alfred (“City”) has experienced an increase in population of sixty-four percent (64%) from 2000 to 2020; and

WHEREAS, based on the population projections for the City from 2022 to 2032, the City anticipates gaining more than 6,500 residential households which represents a 270% increase in residential households over a ten (10) year period of time; and

WHEREAS, on June 6, 2022, in an effort to improve and strengthen the City’s transportation network for both residential and commercial development, the City entered into an agreement with Kittelson & Associates, Inc. (“Kittelson”) to perform a comprehensive transportation study and create the City of Lake Alfred Transportation Plan in order to identify and plan for transportation improvements necessitated by new growth within the corporate limits of the City of Lake Alfred; and

WHEREAS, the City of Lake Alfred Transportation Plan, June 2023 (“Master Plan”), identifies and prioritizes necessary improvements to the City’s existing transportation system infrastructure in order to meet current and projected transportation needs through the year 2045; and

WHEREAS, a copy of the Master Plan is attached hereto as **Exhibit “A”** and made a part hereof by reference; and

WHEREAS, the Master Plan is intended to provide a guide for the orderly expansion, operation and maintenance of the City’s transportation facilities and to prepare annual budgets for capital improvements; and

WHEREAS, the City of Lake Alfred Planning and Zoning Board (“Board”), serving as the Local Planning Agency designated by the City, held a duly advertised public meeting on June 13, 2023, in order to obtain public comment on and/or for the Master Plan; and

WHEREAS, on April 13, 2023, the Board reviewed and discussed the Master Plan without any proposed amendments; and

WHEREAS, in the exercise of its authority, the City Commission approves and adopts the City of Lake Alfred Transportation Plan, April 2023, incorporated herein as **Exhibit "A"**, to be known as the City of Lake Alfred Transportation Master Plan and included as data and analysis to support the unprecedented residential and commercial growth within the corporate limits of the City of Lake Alfred, Florida.

NOW, THEREFORE BE IT RESOLVED by the City Commission of the City of Lake Alfred, Florida, as follows:

Section 1. INCORPORATION OF RECITALS. The above factual recitals are hereby incorporated herein and serve as a factual and material basis for the passage of this Resolution.

Section 2. APPROVAL AND ADOPTION. The City Commission of the City of Lake Alfred, Florida, hereby approves and adopts the City of Lake Alfred Transportation Plan, April 2023, as attached hereto and made a part hereof as **Exhibit "A"**.

Section 3. ADMINISTRATIVE CORRECTION OF SCRIVENER'S ERRORS. Any provision in this Resolution may be renumbered or re-lettered and the correction of typographical and/or scrivener's errors which do not affect the intent may be authorized by the City Manager or his/her designee, without the need of consideration by the Commission, by filing a corrected or recodified copy of same with the City Clerk.

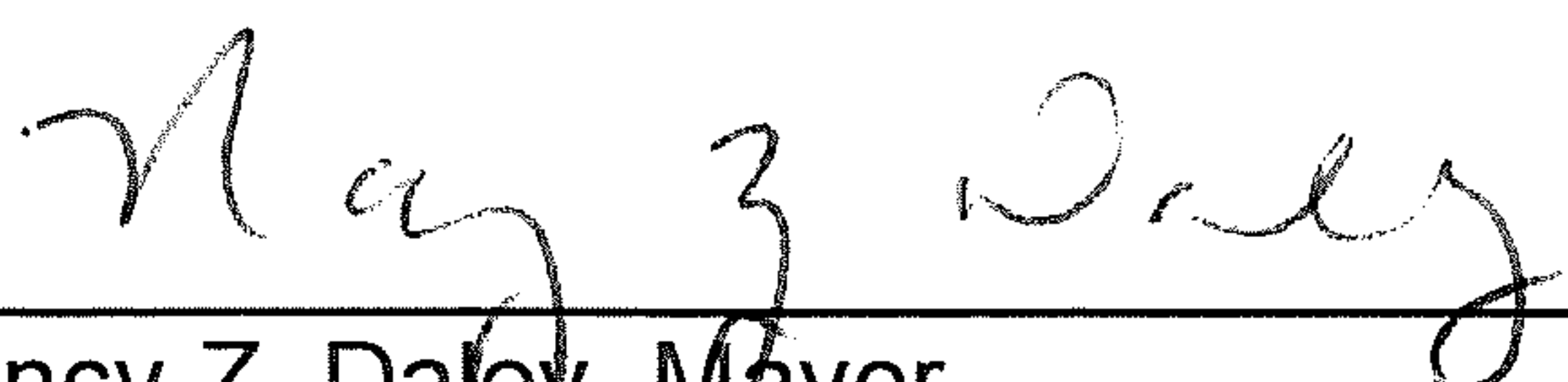
Section 4. CONFLICTS. All Resolutions in conflict with this Resolution are repealed to the extent necessary to give this Resolution full force and effect.

Section 5. SEVERABILITY. If any section, subsection, sentence, clause, phrase of this Resolution, or the application thereof shall be held invalid by any court, administrative agency, or other body with appropriate jurisdiction, the remaining section, subsection, sentences, clauses, or phrases under application shall not be affected thereby. The Commission hereby declares that it would have passed this Resolution, and each section, subsection, clause, or phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, and phrases be declared unconstitutional.

Section 6. EFFECTIVE DATE. This Resolution shall take effect immediately upon passage.

INTRODUCED AND PASSED by the City Commission of the City of Lake Alfred, Florida, in a regular session, on the 20th day of June 2023.

CITY OF LAKE ALFRED, FLORIDA
CITY COMMISSION



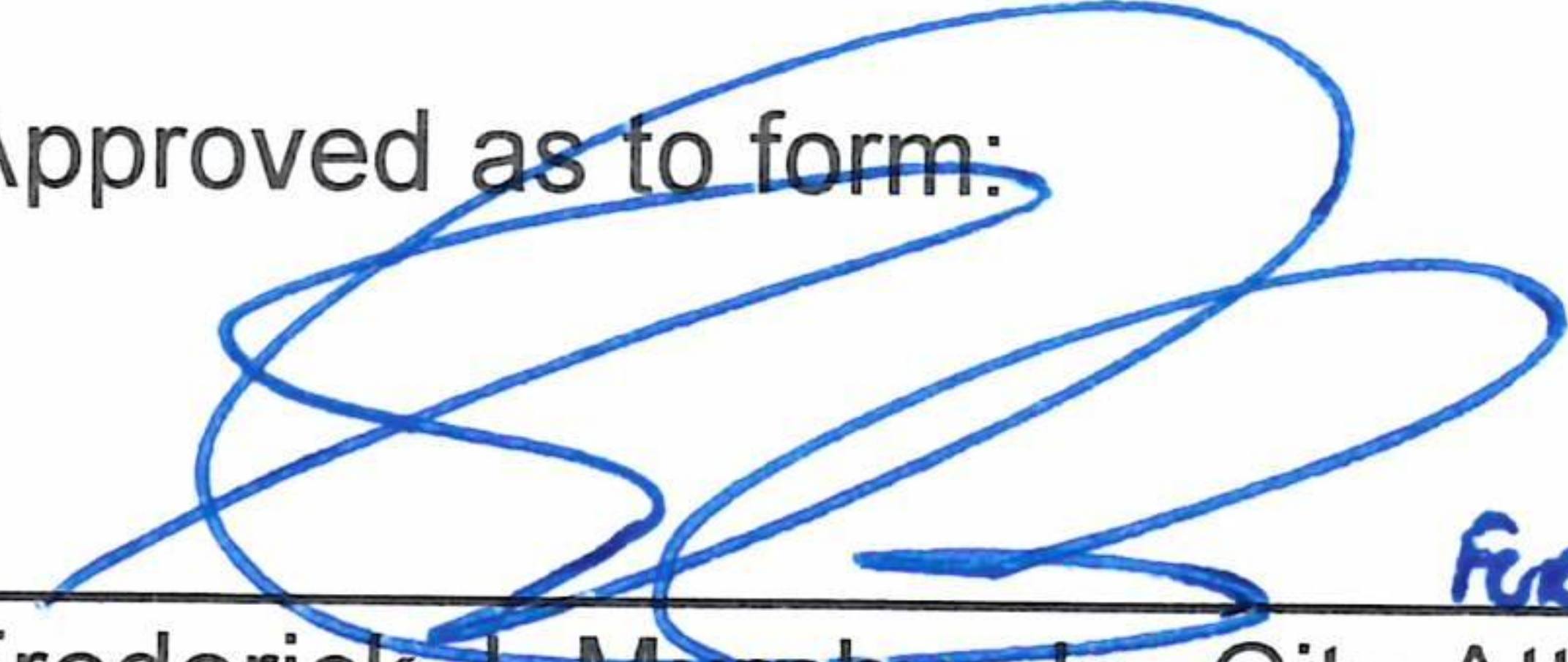
Nancy Z. Daley, Mayor

ATTEST:

Linda Bourgeois

Linda Bourgeois, BAS, MMC, City Clerk

Approved as to form:



Frederick J. Murphy, Jr., City Attorney



Exhibit "A"
Resolution 19-23

Transportation Master Plan

TRANSPORTATION PLAN

CITY OF LAKE ALFRED

June 2023

Transportation Plan

City of Lake Alfred

Prepared for:
City of Lake Alfred

Prepared by:
Kittelson & Associates, Inc.

Project Manager:
Stephanie Shealey, PE, PTOE, PTP

Project Principal:
Patty Hurd, PE, AICP

June 2023

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INTRODUCTION AND TRANSPORTATION VISION

Founded in 1883 after the South Florida Railroad reached the area and incorporated in 1915, Lake Alfred is a dynamic small-town community whose character is reflected and preserved in its many community events, exceptional schools, park, lakes, and neighborhoods.

The city has grown steadily since its founding, with a population increase of 64% from 2000 to 2020 (from 3,890 to 6,374)¹. But now the city is facing unprecedented growth. From 2022 to 2032, the city is anticipated to gain over 6,500 households, from an estimated 2,218 in 2020², an increase in households of 270% over 10 years. The City is also poised for annexation of land to the north of the existing City limits, which could more than double the land area covered by the City. The projected growth in residents and commercial development will increase demand for local and regional travel.

The City of Lake Alfred Transportation Plan seeks to improve and strengthen the City's transportation network for all modes of transportation. This plan builds on previous planning efforts and initiatives for transportation and land use. It outlines specific transportation improvements within the city to support economic growth, expand mobility options, create safer streets designed for everyone, and preserve the historic character of this community.

CITY TRANSPORTATION GOAL

As stated in the 2030 Comprehensive Plan, it is the goal of the City of Lake Alfred to provide and maintain a safe and efficient multimodal transportation system that is financially feasible, consistent with community needs, and environmentally sound.

SUPPORTING PLANS AND POLICIES

As the city grows, it intends to preserve its historic small-town character, and develop a sustainable multimodal transportation network. The city identified its transportation goals as well as short- and long-term projects to support these goals through several planning efforts.

THE CITY OF LAKE ALFRED 2030 COMPREHENSIVE PLAN

This plan identifies policies to promote an orderly and compact urban growth pattern that is compatible with the existing land uses and character of the city. Lake Alfred encourages development techniques such as on-site traffic control, limitation of driveway and road access to arterial and collector highways, and encouraging shared and cross-access between developments. In conformance with the concurrency provisions of this comprehensive plan, the City of Lake Alfred shall ensure the availability of suitable land for utility facilities necessary to support proposed development, including level of service standards for peak hour traffic for all roads (Transportation Element, Goal 1, Objective 5) and provide for the needs of bicyclists and pedestrians (Transportation Element, Goal 1, Objective 6). The city will consider the needs of bicyclists and pedestrians in conjunction with all road construction or maintenance projects.

THE CITY OF LAKE ALFRED DOWNTOWN MASTER PLAN

To preserve and grow this unique community, the city has invested in an economic development plan focused on its core area, where the city will create a pedestrian-friendly destination, centered on a sustainable and prosperous urban downtown core. The city defined the vision for the downtown core to be a pedestrian-friendly destination for residents and visitors providing a variety of opportunities to live, work, shop and play in a community with small town charm. The Downtown Master Development Plan depicts

¹ U.S. Decennial Census

² U.S. Census 2016-2020 ACE 5-year estimate

the existing and planned pedestrian facilities within the heart of the District. The community priorities as they relate to transportation include:

- improve and expand landscaping, streetscaping, crosswalks and street improvements in the Downtown Core
- increase walkability in the Downtown Core through a new internal pedestrian boulevard

The plan identifies crosswalk improvements and streetscaping, including the portion of the multi-use trail running from Haines Boulevard south to U.S. 17/92.

LAKE ALFRED COMMUNITY REDEVELOPMENT PLAN (CRA)

The Community Redevelopment Plan addresses the unique needs of the targeted area and includes the overall goals for redevelopment in the area, as well as identifies the types of projects planned for the area. Transportation related goals include:

- improve infrastructure within the district including roadway paving, sidewalks, crosswalks, street lighting, and drainage
- increase walkability in the Downtown Core through a new internal pedestrian boulevard

U.S. 17/92 CORRIDOR PLANNING STUDY

The study defined a vision and system of investments for U.S. 17/92 from U.S. 17 to Rochelle Avenue that support the City of Lake Alfred's economic development plan and the Florida Department of Transportations' (FDOT) Complete Streets Policy. FDOT worked alongside local partners to outline recommendations that will ensure U.S. 17/92 through Lake Alfred supports the growth of a pedestrian friendly, sustainable, and prosperous urban downtown while providing for safe local and regional travel. Short-term recommendations included pavement repurposing of continuous turn lanes on Lake Shore Way from E. Echo Street to W. Cummings Street, and modifications at the intersections of C.R. 557 and Lake Shore Way and Shinn Boulevard. Long-term recommendations include a lane repurposing along U.S. 17/92.

PLAN OVERVIEW

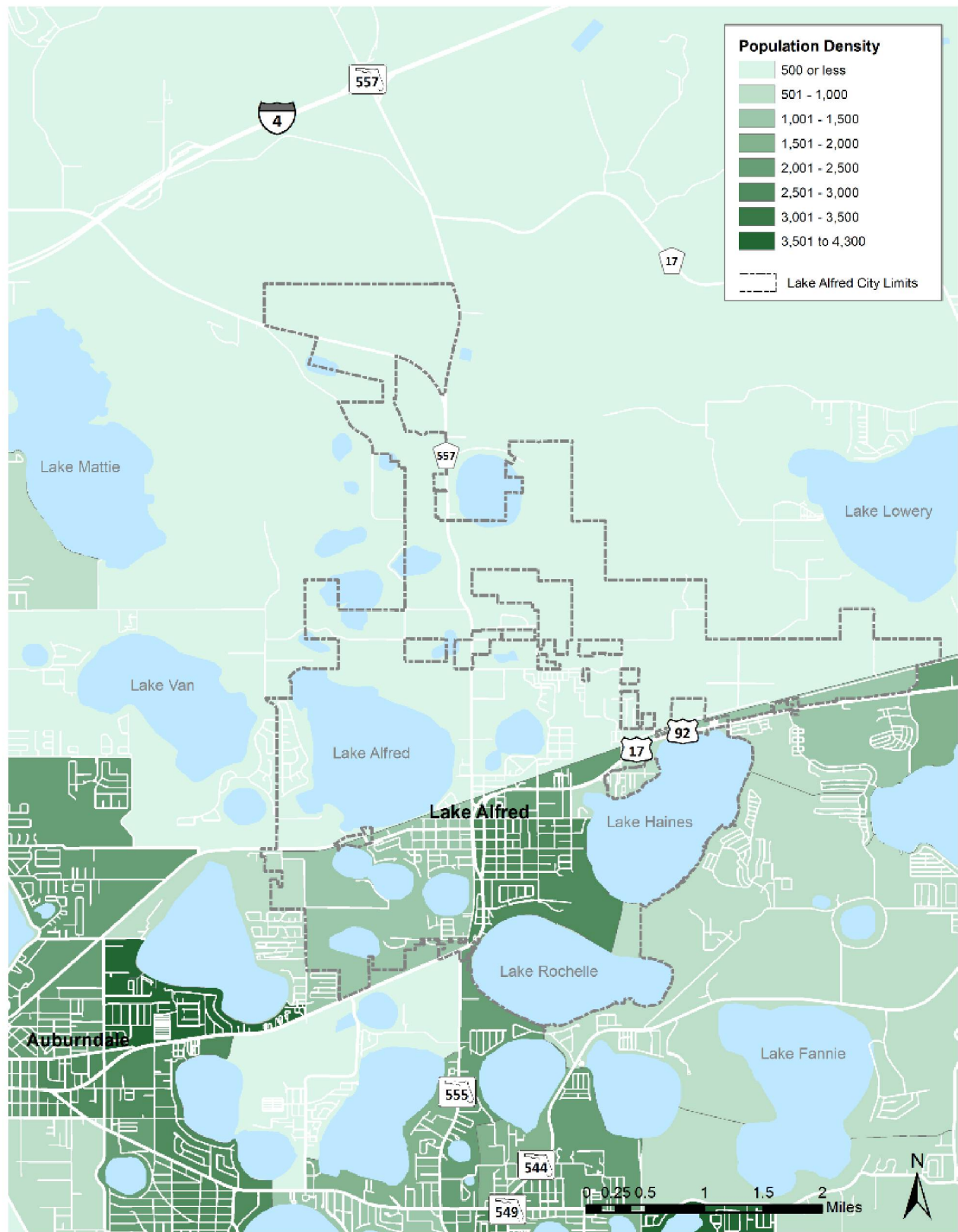
The City of Lake Alfred Transportation Plan begins with an overview of the City today and in the future. The plan projects future travel demand and recommends investments to ensure a safe and reliable transportation system that meets the City's adopted level of service standards. The plan estimates the cost of these improvements.

EXISTING COMMUNITY

POPULATION

In 2020, the population in Lake Alfred was 6,374. The population in Lake Alfred is concentrated in the downtown area south and east of U.S. 17/92 where most of the commercial and residential uses are located, as shown in **Figure 1**. This is especially apparent on the east side of the city center, where the population density is between 2,501 and 3,000 people per square mile. The population characteristics are presented in **Table 1**.

Figure 1. 2020 Population Density



Source: U.S. 2020 Census

Table 1. Population Characteristics

Category	Lake Alfred	Florida
Percent low income	19%	13.3%
Percent minority	37%	23%
Median age	43	39
Percent over 65 years old	18.4%	17.6%
Percent under 18 years old	23.4%	19.7%
Percent Black	24.6%	17.0%
Percent Asian	8.7%	3.0%
Percent Latino	13.7%	26.8%

Source: U.S. 2020 Census

LOW-INCOME

The percent of population living in poverty in Lake Alfred was 19% and 4.4% of the total households do not own a vehicle. This poverty rate is highest in the southwest and northeast portions which are also the more densely populated areas, as shown in **Figure 2**. The portion of Lake Alfred in the southeast and the north have the lowest poverty percentages, below 10%. The number of households at or below poverty level was 421 of 2,218 households. The percent of population living in poverty in Lake Alfred was 19% and 4.4% of the total households do not own a vehicle.

MEDIAN HOUSEHOLD INCOME

Lake Alfred's highest 2020 median household income areas are mainly concentrated in the north and east of C.R. 557, just below Haines Boulevard, as shown in **Figure 3**. The lowest 2020 median household income is located along U.S. 17/92 going east, where there is a higher number of mobile home neighborhoods. Lake Alfred's 2020 Median Household Income was \$40,039, roughly \$11,000 lower than the median household income in Polk County (\$51,353), \$17,000 lower than the median household income in the State of Florida (\$57,703), and roughly \$27,000 lower than the median household income nationally (\$67,521).

LAND USE

The downtown core of Lake Alfred consists of commercial and institutional uses along the main corridor where U.S. 17/92 and C.R. 557 intersect, with residential uses along the minor roadways branching off from the main corridor, as shown in **Figure 4**. To the east of C.R. 557, north of U.S. 17/92, is a concentration of schools and residential neighborhoods. Further north, much of the land consists of natural conservation, and recreational spaces. Within the current City of Lake Alfred city limits, the highest land use is residential (46.7%), as shown in **Table 2**.

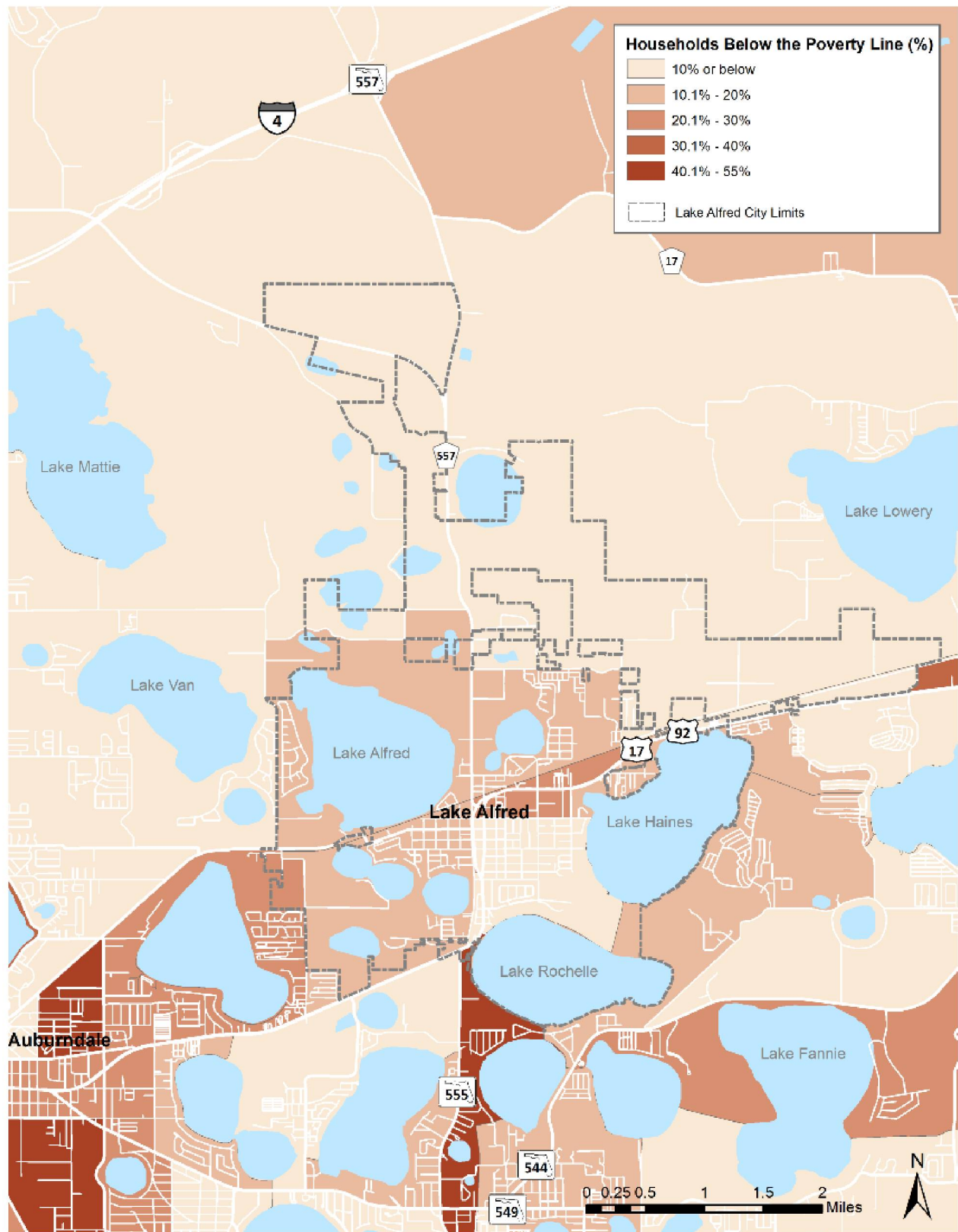
Table 2. Lake Alfred Land Use Profile

Land Use Type	Percentage of Land ³
Conservation and Recreational Space	31 %
Residential	46.7 %
Business & Office	4.8 %
Institutional	11%
Industrial	5.5 %
Other	1 %

Source: Lake Alfred Community Development Department

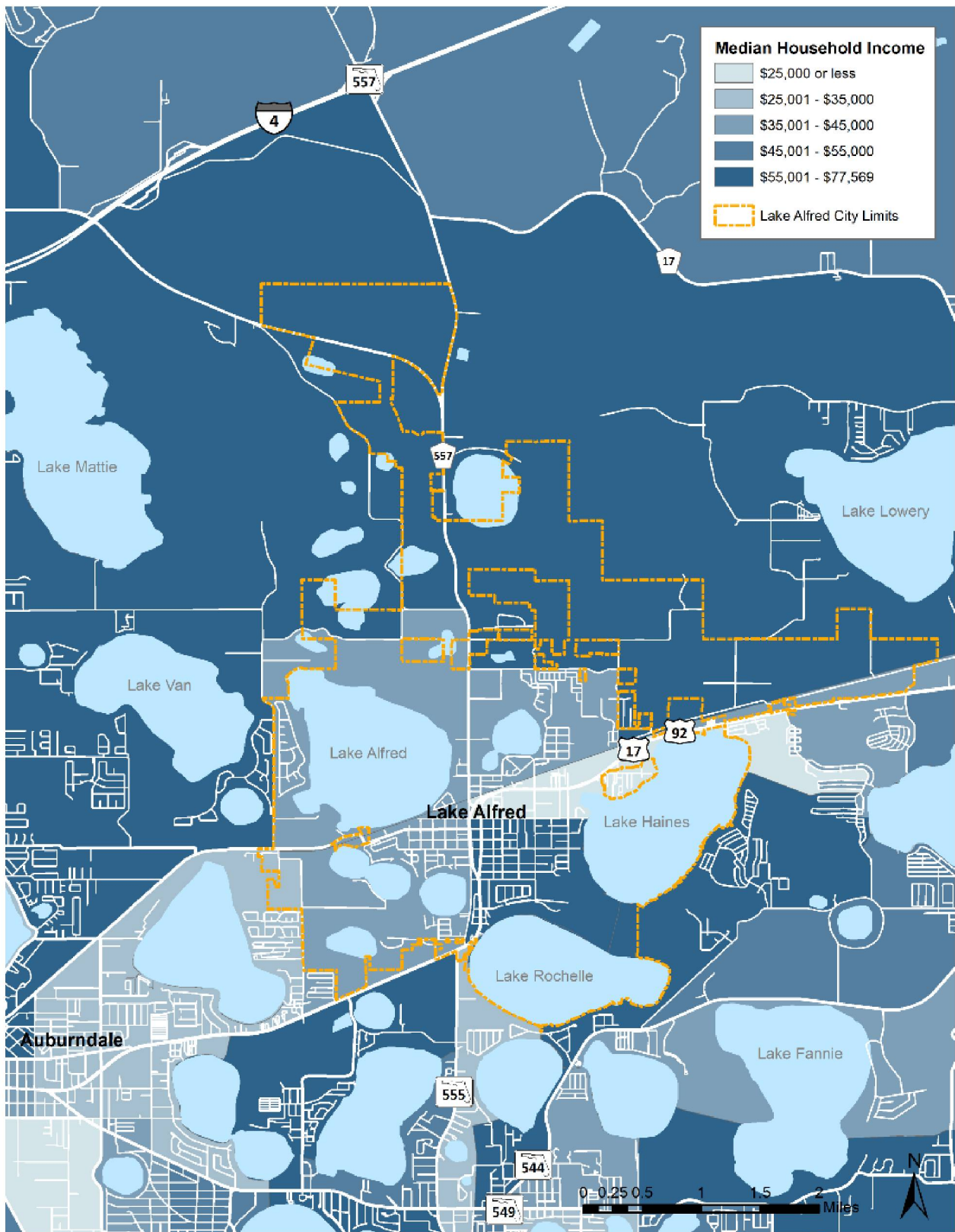
³ Land use percentages calculated from Lake Alfred GIS file

Figure 2. 2020 Poverty Percentage



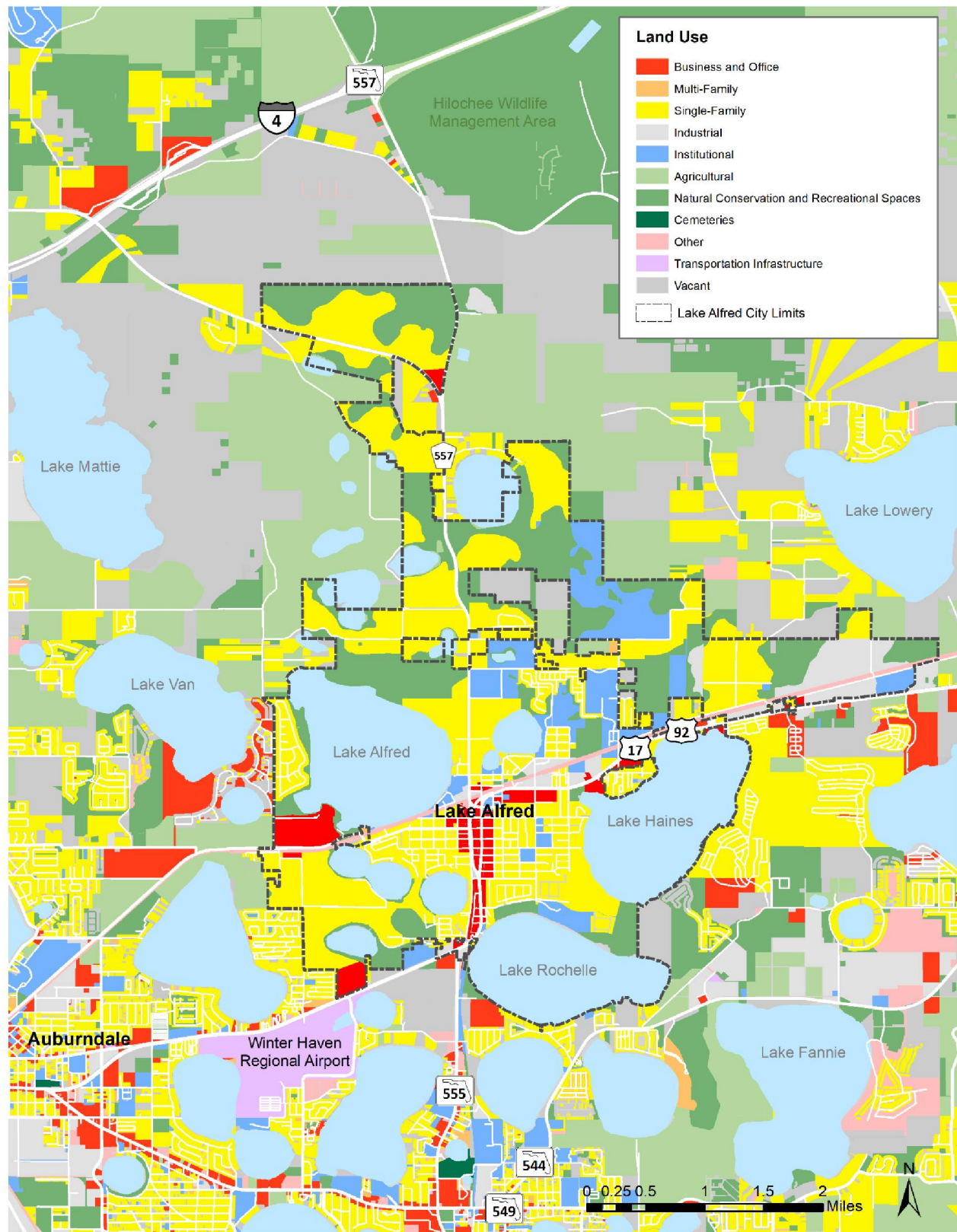
Source: U.S. 2020 Census

Figure 3. 2020 Median Household Income



Source: U.S. 2020 Census

Figure 4. Current Development



Source: Lake Alfred GIS Department (within City of Lake Alfred Boundary) & Urban Footprint 2020 Parcel Data (outside City of Lake Alfred Boundary)

EXISTING TRANSPORTATION SYSTEM

Downtown Lake Alfred is defined by a grid network of streets bisected by U.S. 17/92. The connectivity of the regional roadway network is limited by the surrounding lakes and the alignment of U.S. 17/92 through Lake Alfred, which serves as the north/south and east/west regional connection. The intersections of U.S. 17/92 and C.R. 557 and U.S. 17 and U.S. 92 constrain the regional capacity that can be carried through the existing regional roads.

EXISTING ROAD NETWORK

The U.S. 17/92 and C.R. 557 corridors provide the main connections between the City of Lake Alfred and the surrounding communities and regional roadway network, as shown in **Figure 5**. Other than the US 17/92 corridor, all roadways within the City of Lake Alfred are currently two-lane facilities. Mackey Boulevard is the only divided two-lane facility in the city.

Per the 2022 Polk Transportation Organization Roadway Network Database (April 8, 2022), U.S. 17/92 is the only principal arterial within the City of Lake Alfred. County urban collectors, such as C.R. 557, Pierce Street, Old Lake Alfred Road, Old Haines City Lake Alfred Road, South Buena Vista Drive, Lake Lowery Road and CR 557A are classified as urban collectors, as shown in **Figure 6**. All other roadways are considered local roadways by County standards.

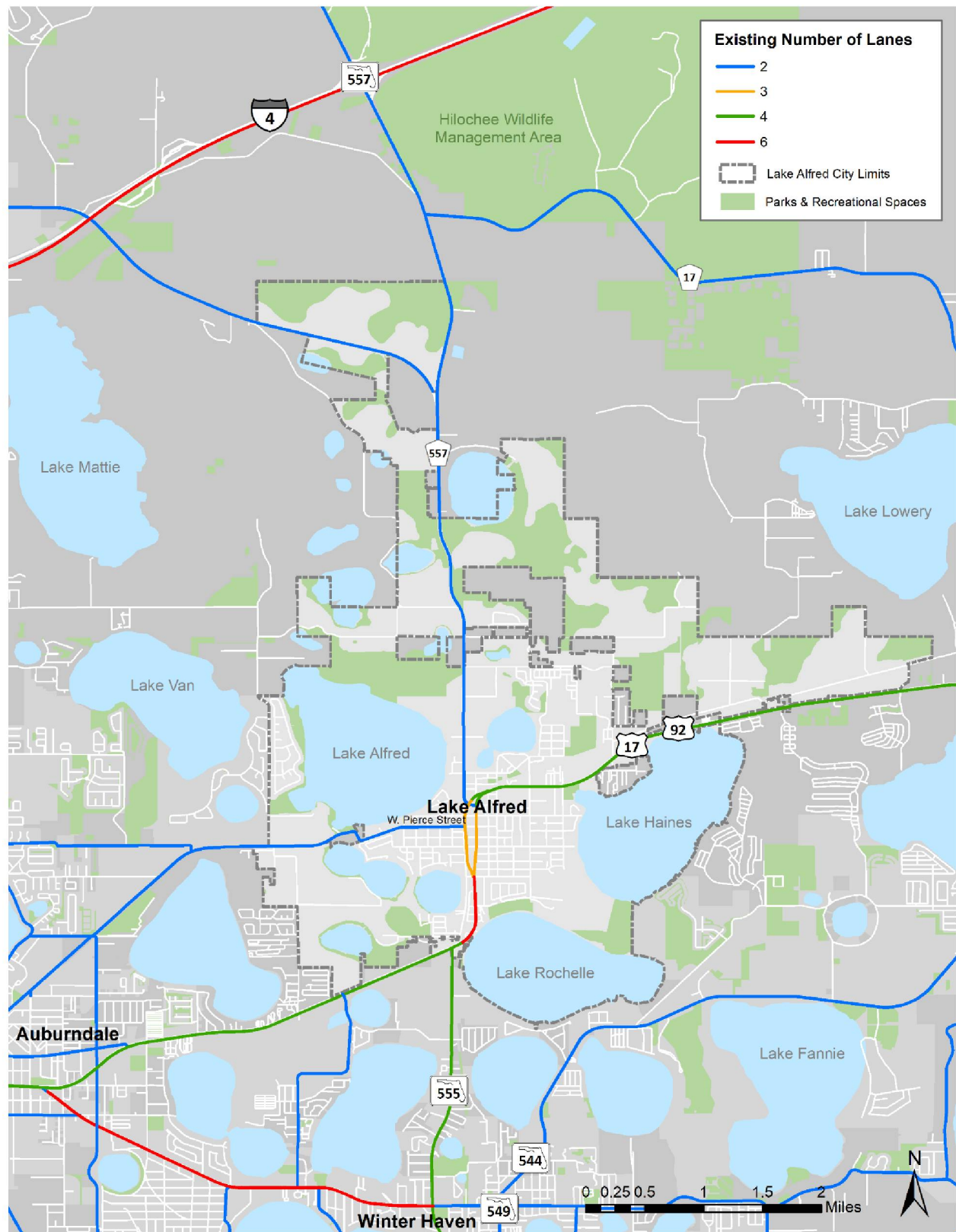
The City of Lake Alfred Unified Land Development Code (ULDC) establishes regulations, standards, and review procedures for the “use” of land and the “development” of land within the city-limits of the City of Lake Alfred. The ULDC identifies four new street type titles. These titles are intended for the regulatory purposes of the ULDC only and are not synonymous with words or terms used elsewhere to describe the functional classification, maintenance classification or other classification of streets or roadways.

1. **Accessways.** Accessways may be located in residential or commercial areas and are designed at slow speeds for pedestrians, bicyclists and automobiles to mix on the same surface. They generally provide a secondary access to properties used by residents rather than visitors.
2. **Local streets.** Local streets are residential in character and intend to connect driveways/alleyways to the roadway network. Local streets should be designed to encourage slow speeds that allow for bicyclists and automobiles to mix.
3. **Collector streets.** Collector streets are designed to carry and distribute traffic between local streets, downtown, and arterial roadways. Collector streets should be designed to separate automobile traffic from bicyclists. Collector streets are further categorized based on their general use as a residential, mixed use, and industrial street.
4. **Arterial streets.** Arterial streets are routes that generally serve to interconnect activity centers and/or provide connections between cities. Arterial streets should be designed to allow for multiple modes of mobility including bicycle and bus transport.

The initial street classification for new streets will be determined by the City at the time of site plan approval.

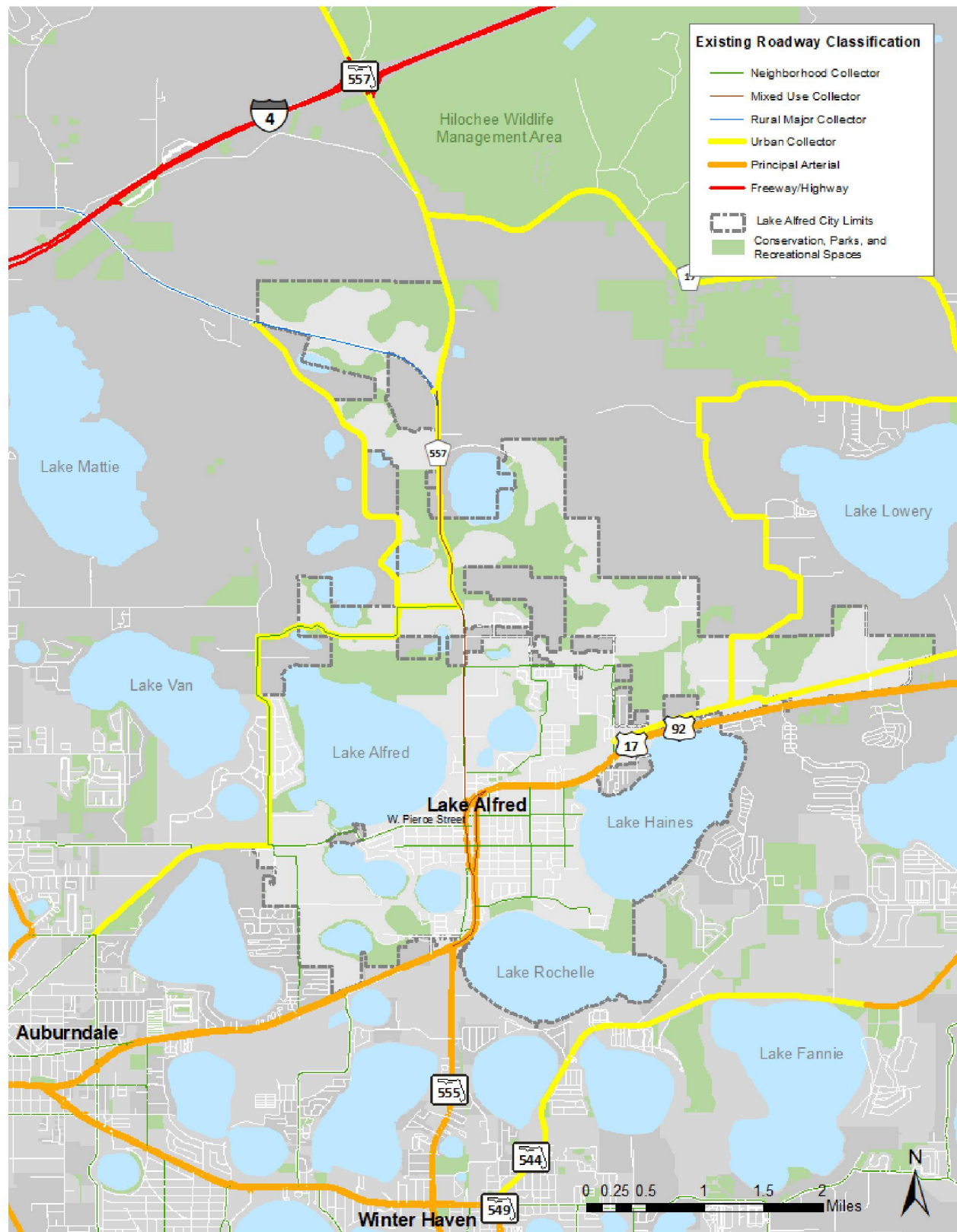
The ULDC further identifies streets as a primary street or side street. This designation determines design criteria for the buildings on the lot. The Planning Official will determine which streets are primary streets for each lot.

Figure 5. Major Roadway Network



Source: FDOT Traffic Online

Figure 6. Existing Roadway Classification



Source: Lake Alfred

ANNUAL AVERAGE DAILY TRAFFIC

FDOT provides statistical traffic information for Florida's State Highway System and many highways not on the State Highway System through a network of continuous traffic monitoring sites and the collection of short-duration traffic studies. Traffic data is collected from January through December of each year, and then converted into annual statistics during the 1st quarter of the next year. This information was used to document the current Annual Average Daily Traffic (AADT) on the major roadways in Lake Alfred. The historic AADT for each road provided by FDOT is included in **Table 3** and **Figure 7**, and in **Appendix A**.

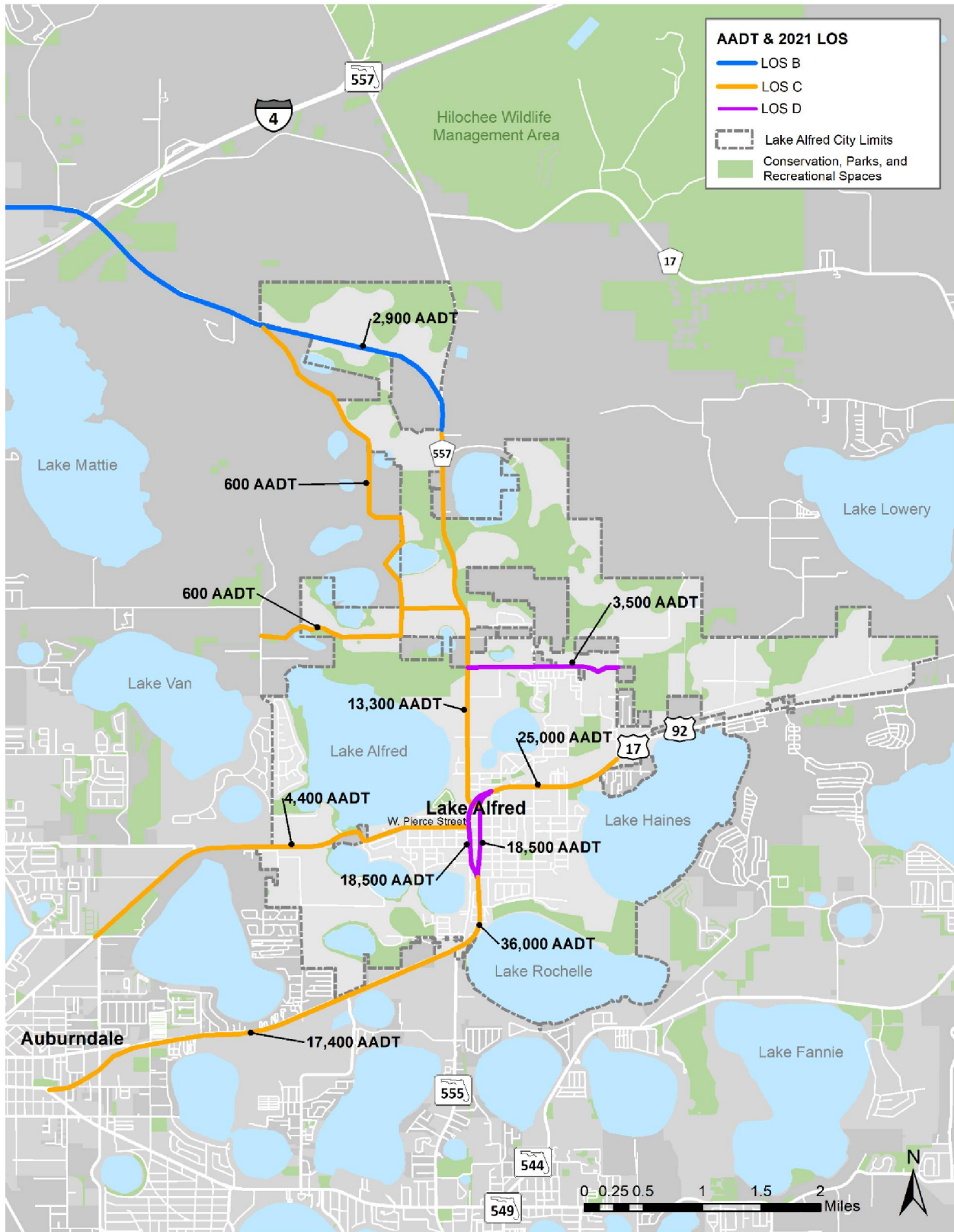
Table 3. 2021 Average Annual Daily Traffic and Level of Service

Road	2021 AADT	Number of Lanes	Posted Speed (MPH)	Generalized Annual Average Daily Svc Vol		2021 LOS
				LOS C	LOS D	
C.R. 557 from Lake Shore Way to south of C.R. 557A	13,300	2-lane undivided	55	17,300	23,400	C
C.R. 557A from S.R. 559 to C.R. 557	2,900	2-lane undivided	45	12,900	14,500	B
U.S. 17/92 southbound (S. Lake Shore Way) from intersection of U.S. 17 and U.S. 92 to E. Echo Street	36,000	6-lane divided	45	52,100	53,500	C
U.S. 17/92 southbound (Shinn Boulevard) from E. Echo Street to N. Seminole Avenue	18,500	3 lanes one-way	35	9,600	26,940	D
U.S. 17/92 northbound (S. Lake Shore Way) from E. Echo Street to N. Seminole Avenue	18,500	3 lanes one-way	35	9,600	26,940	D
U.S. 17/92 from N. Seminole Avenue to Lee Jackson Road	25,000	4-lane divided	55	35,700	37,275	C
U.S. 92 from S.R. 544 to U.S. 17	17,400	4-lane divided	55	14,500	32,400	C
Old Lake Alfred Road from C.R. 557 to C.R. 557A	600	2-lane undivided	30	15,100	15,900	C
Evenhouse Road from C.R. 557 to Experiment Station Road	3,500	2-lane undivided	35	15,100	15,900	C
W. Pierce Street from Dairy Road to Shinn Boulevard	4,400	2-lane undivided	30	5,200	10,640	C
Cass Road from Adams Barn Road to CR 557A	600	2-lane undivided	30	12,900	14,500	C

Note: Generalized Annual Average Daily Volumes obtained by applying FDOT Generalized Annual Average Daily Volumes for Florida's Transitioning Areas and Areas Over 5,000 Not in Urbanized Areas. CR 557 was classified as an uninterrupted flow highway. FDOT Quality/Level of Service Handbook.

Source: FDOT Traffic Online

Figure 7. Average Annual Daily Traffic (AADT) and 2021 LOS



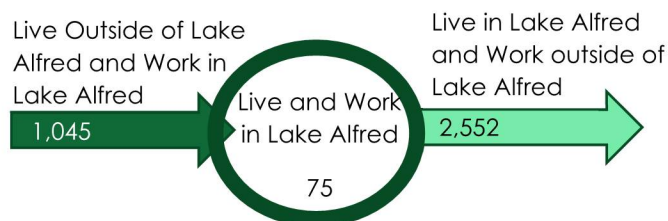
Source: FDOT Traffic Online

VEHICULAR TRAVEL PATTERNS

Most Lake Alfred residents that are employed work outside of the city (97.1%), per Longitudinal Employer – Household Dynamics OnTheMap 2019⁴, as shown in **Table 4**. Approximately 50% of Lake Alfred residents that are employed work in Polk County. Many of the employees that live in Lake Alfred and work in Polk County work in Winter Haven/Auburndale area (19%), Lakeland (14%) and Bartow (8.4%). 20% of residents of Lake Alfred work in south Orange County or in Orlando.

Table 4. Inflow/Outflow Job Counts (2019)

	Number of Employees
Employed in Lake Alfred but live outside of Lake Alfred	1,045
Live in Lake Alfred but employed outside of Lake Alfred	2,552
Live and Work in Lake Alfred	75



Source: 2020 U.S. Census

An origin and destination study was conducted as part of the City of Lake Alfred Lake Shore Way/Shinn Boulevard (U.S. 17/92) Corridor Study based on 2018 data collected by Streetlights Data. StreetLight Data collects data from smart phones and navigation devices. The analysis found that 90% of all trips on U.S. 17/92 in Lake Alfred are longer than 10 miles. Of the trips on U.S. 17/92, twice as many trips are eastbound/westbound towards Haines City and Lakeland along U.S. 17/92 as southbound/northbound towards Winter Haven and I-4 along C.R. 557. Of the trips that travel to I-4 from U.S. 17/92 in Lake Alfred, 95% of those trips travel northbound/eastbound toward Orlando. This data suggests that many of the trips on C.R. 557 and U.S. 17/92 are regional trips with destinations outside of Lake Alfred.

BICYCLE AND PEDESTRIAN FACILITIES

The northern terminus of the Chain of Lakes Trail is located at the pedestrian bridge that crosses U.S. 17/92. The trail continues 3 miles south following U.S. 17/92 and U.S. 17 connecting to the City of Winter Haven, as shown in **Figure 8**. The Veterans Trail extends from the northern terminus of the Chain of Lakes Trail along Shinn Boulevard to the planned Old Dixie Trail. There is also a multi-use trail along Mackey Boulevard from US 1 to Yellow Perch Lane. There are no other dedicated bicycle facilities in the city.

Sidewalks are provided along both sides of U.S. 17/92 and on many of the roadways that connect to U.S. 17/92, with 80% of roadways within the city center having sidewalks, as shown in **Table 5**. However, the further removed the roadway is from U.S. 17/92, there is a lesser chance of sidewalks being provided.

Table 5. Lane Miles of Sidewalk

Sidewalk Location	Lane Miles	Percent of roads with sidewalks
City Center	3.07	80%
Outside the City Center	1.01	20%

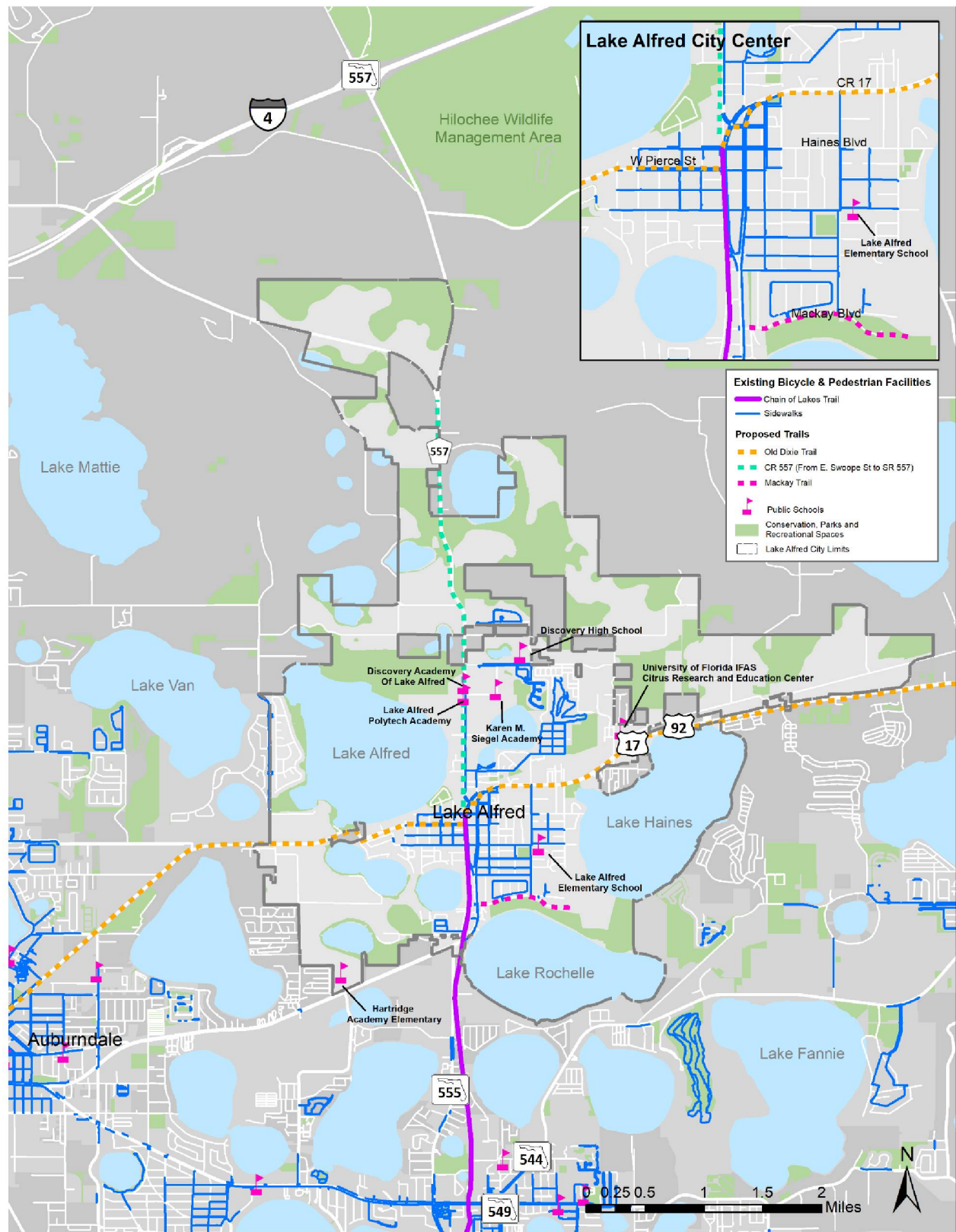
Source: Lake Alfred Downtown Master Plan

TRANSIT FACILITIES

Citrus Connection provides transit service in the City of Lake Alfred. Route 15 follows U.S. 17/92 through Lake Alfred providing connections between Winter Haven and Haines City on 1.5-hour headways on weekdays, as shown in **Figure 9**. Service is also provided three times on Saturday from early morning to early afternoon. Transfers to other routes are provided in Winter Haven and Haines City, as shown in **Figure 10**.

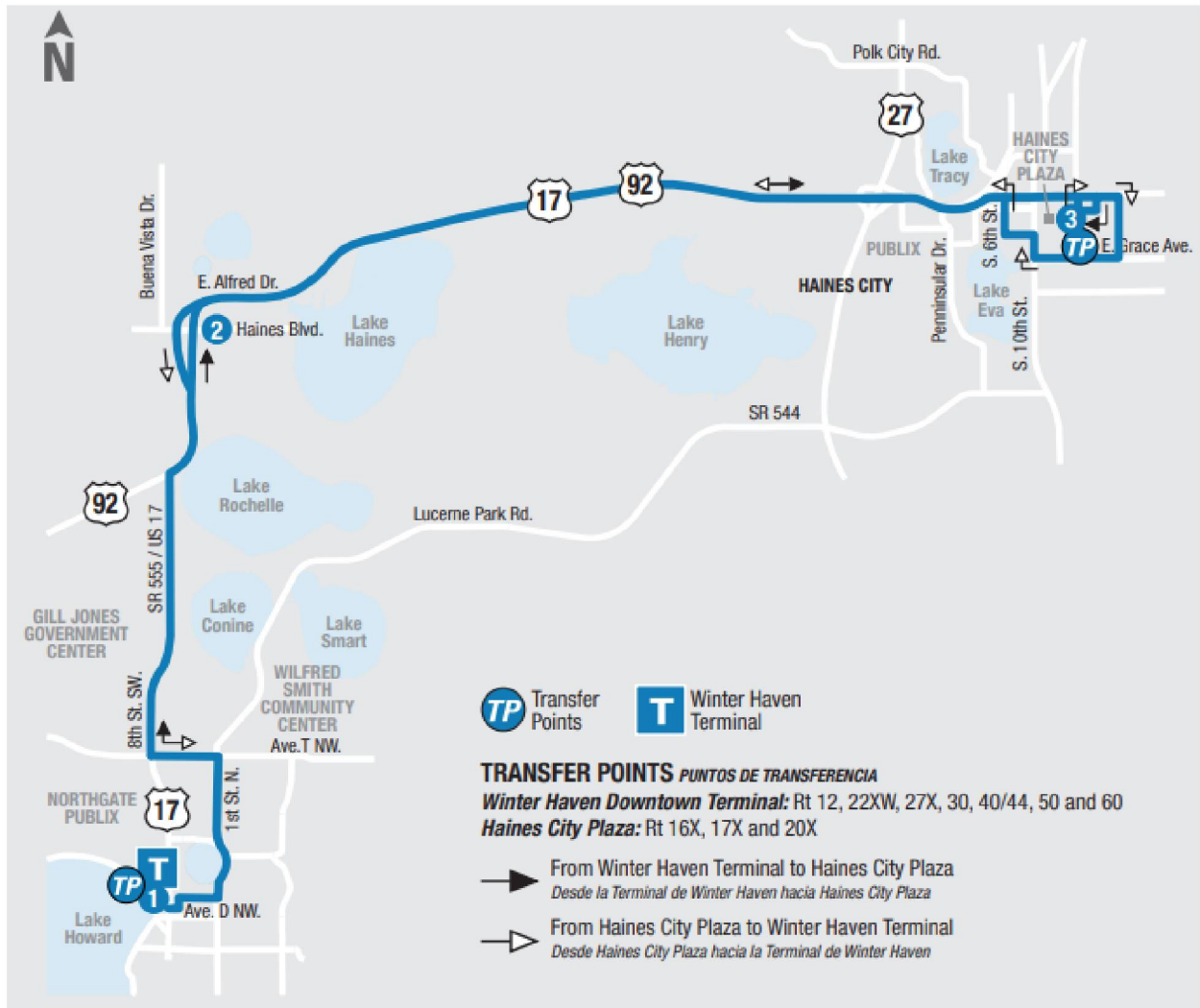
⁴ <https://onthemap.ces.census.gov/>

Figure 8. Bicycle & Pedestrian Facilities



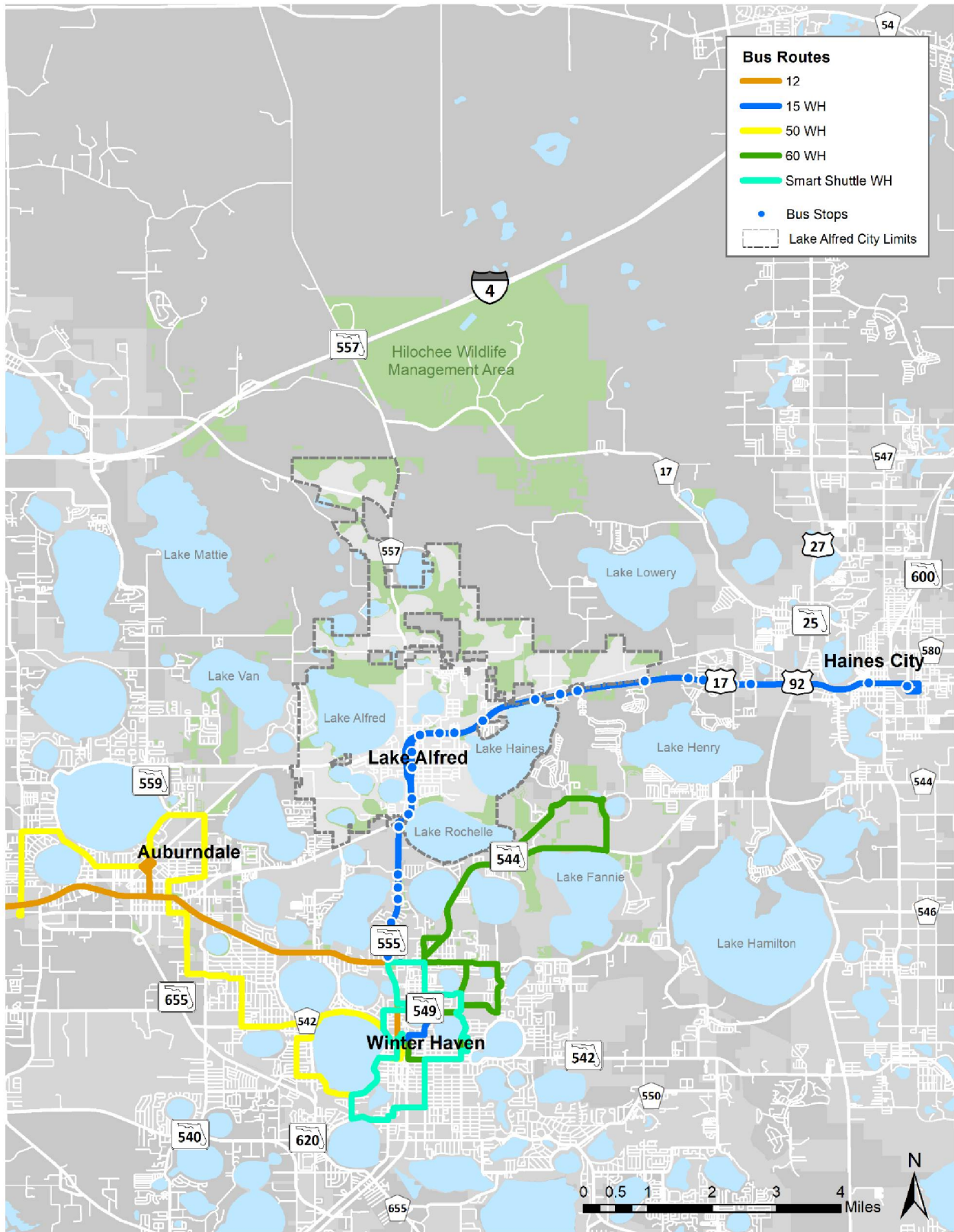
Source: Lake Alfred GIS Department & Urban Footprint

Figure 9. Bus Route 15



Source: Citrus Connection

Figure 10. Regional Transit Connections



Source: Polk TPO & Urban Footprint

CRASH ANALYSIS

Crash data for the City of Lake Alfred was analyzed over a five-year period (2017-2021). A total of 1,182 crashes occurred within the City of Lake Alfred during this time period, with 211 crashes occurring on roadways controlled by the City. A summary of the crashes is shown in **Table 6**. Over 80% of the crashes within the City of Lake Alfred occurred on State or County controlled roadways. The most prevalent crash type within the City of Lake Alfred is rear-end crashes, with 31.6% of the crashes. However, when only looking at roadways controlled by the City of Lake Alfred, fixed object/run-off road crashes are most prevalent (36.5% of crashes).

Table 6. Crash Type by Location

Crash Type	Within City Boundary		On City Controlled Roadway	
	Number	Percent	Number	Percent
Rear End	373*	31.6%	31	14.7%
Angle	124**	10.5%	16	7.6%
Left Turn	100	8.5%	10	4.7%
Right Turn	7	0.6%	0	0.0%
Sideswipe	204	17.3%	15	7.1%
Head On	27	2.3%	5	2.4%
Fixed Object/Run-Off Road	181*	15.3%	77*	36.5%
Pedestrian	13	1.1%	5	2.4%
Bicycle	5	0.4%	2	0.9%
Other	148*	12.5%	50	23.7%
Total Crashes	1,182	100.0%	211	100.0%

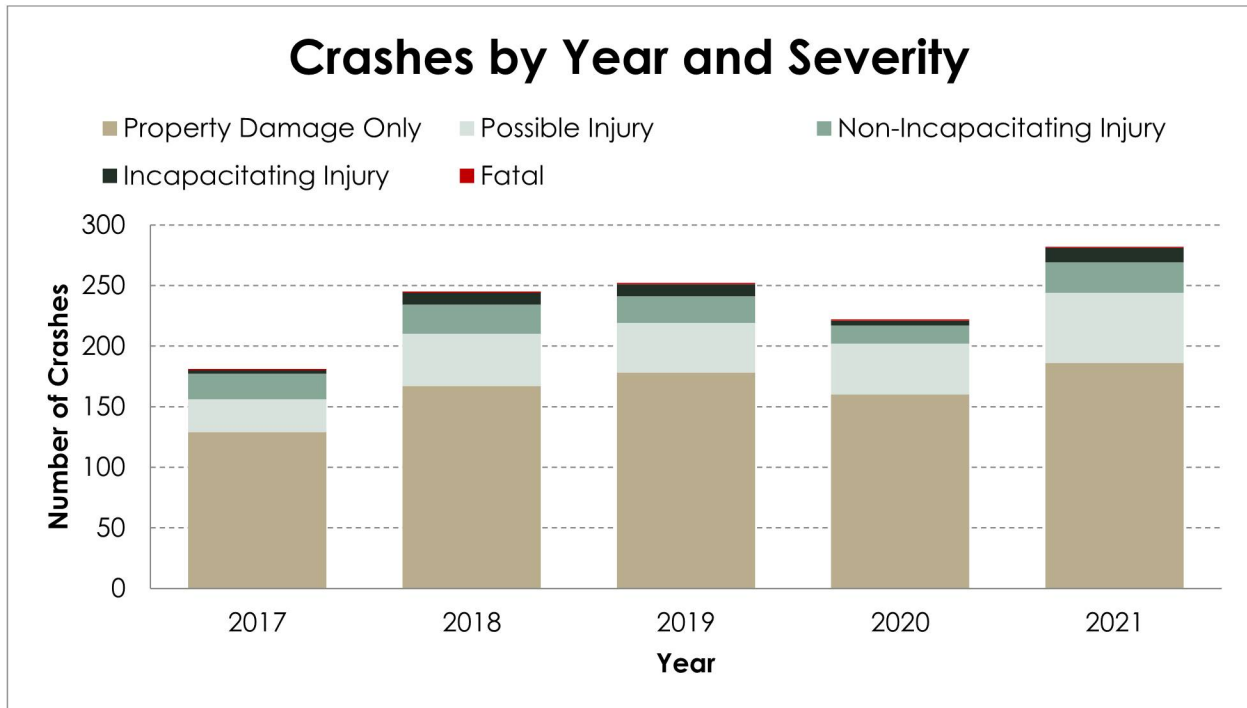
Each * indicates a fatality attributed to the crash type

Source: FDOT Crash Data Management

Five fatal crashes were reported during the 5-year study period, as shown in **Figure 11** through **Figure 13**. The fatalities were spread over three roadways (U.S. 17/92, C.R. 557, and Pierce Street) and between four crash types (rear end, angle, fixed object/run-off-road, and miscellaneous). The most incapacitating injuries happened due to fixed object/run-off road crashes, which is also the most prevalent type of crash for those crashes on City controlled roadways. This may be due to narrow roadway right-of-way on these facilities.

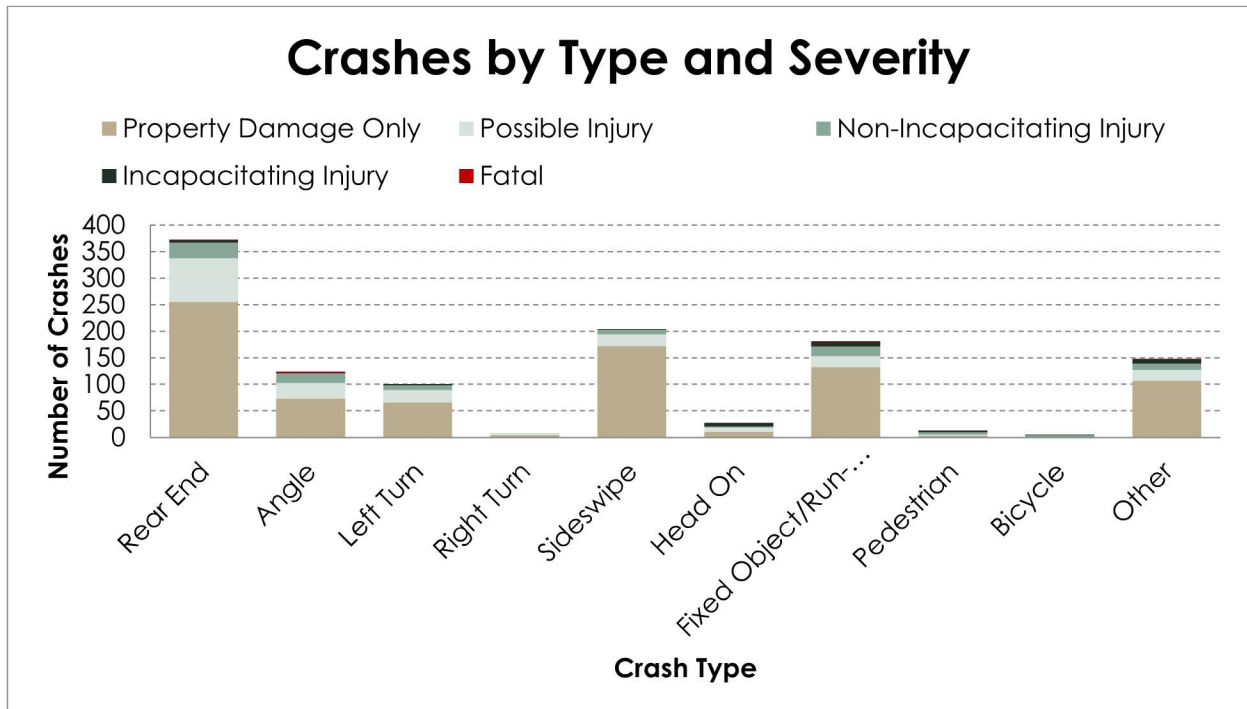
Crashes on city-controlled roadways are shown in **Figure 14** and **Figure 15**. The largest concentration of crashes on city-controlled roadways was located at or near the intersection of Pierce Street and Adams Barn Road/Lynchburg Road, which is also the location of the fatality on a city-controlled roadway.

Figure 11. Crashes by Year and Severity



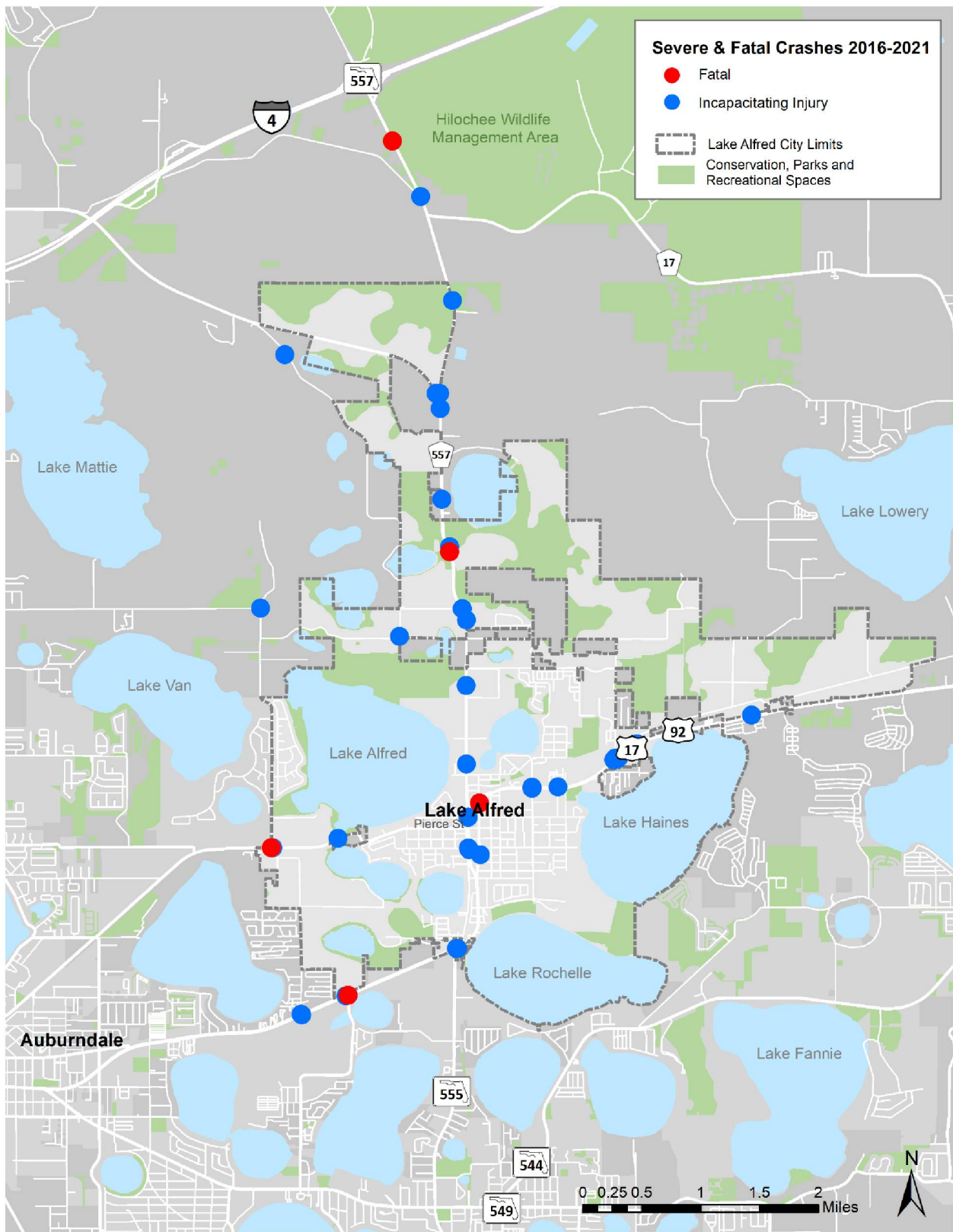
Source: CAR, SSOGis, and Signal 4 Analytics

Figure 12. Crashes by Type and Severity



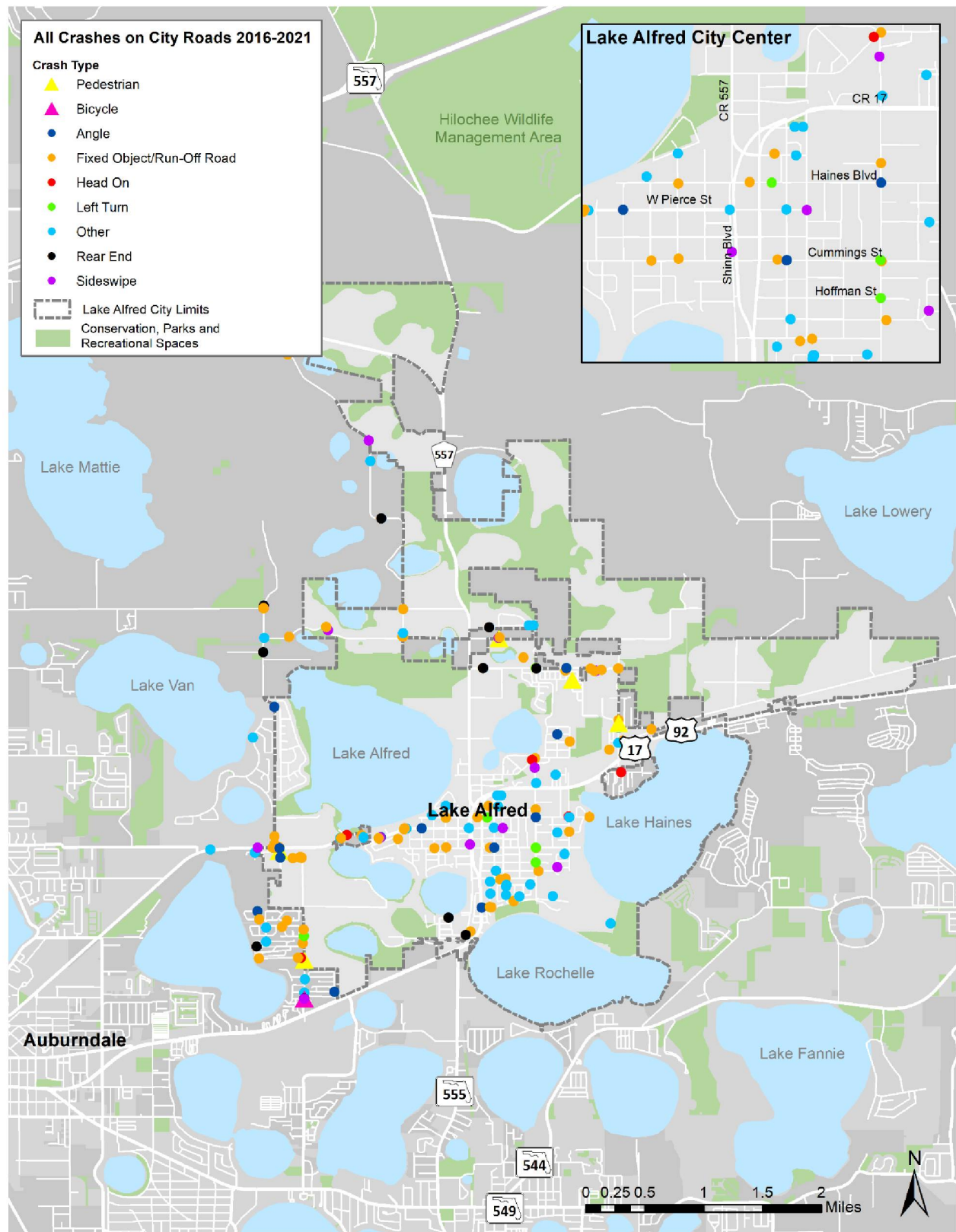
Source: CAR, SSOGis, and Signal 4 Analytics

Figure 13. Severe and Fatal Crashes (2016-2021)



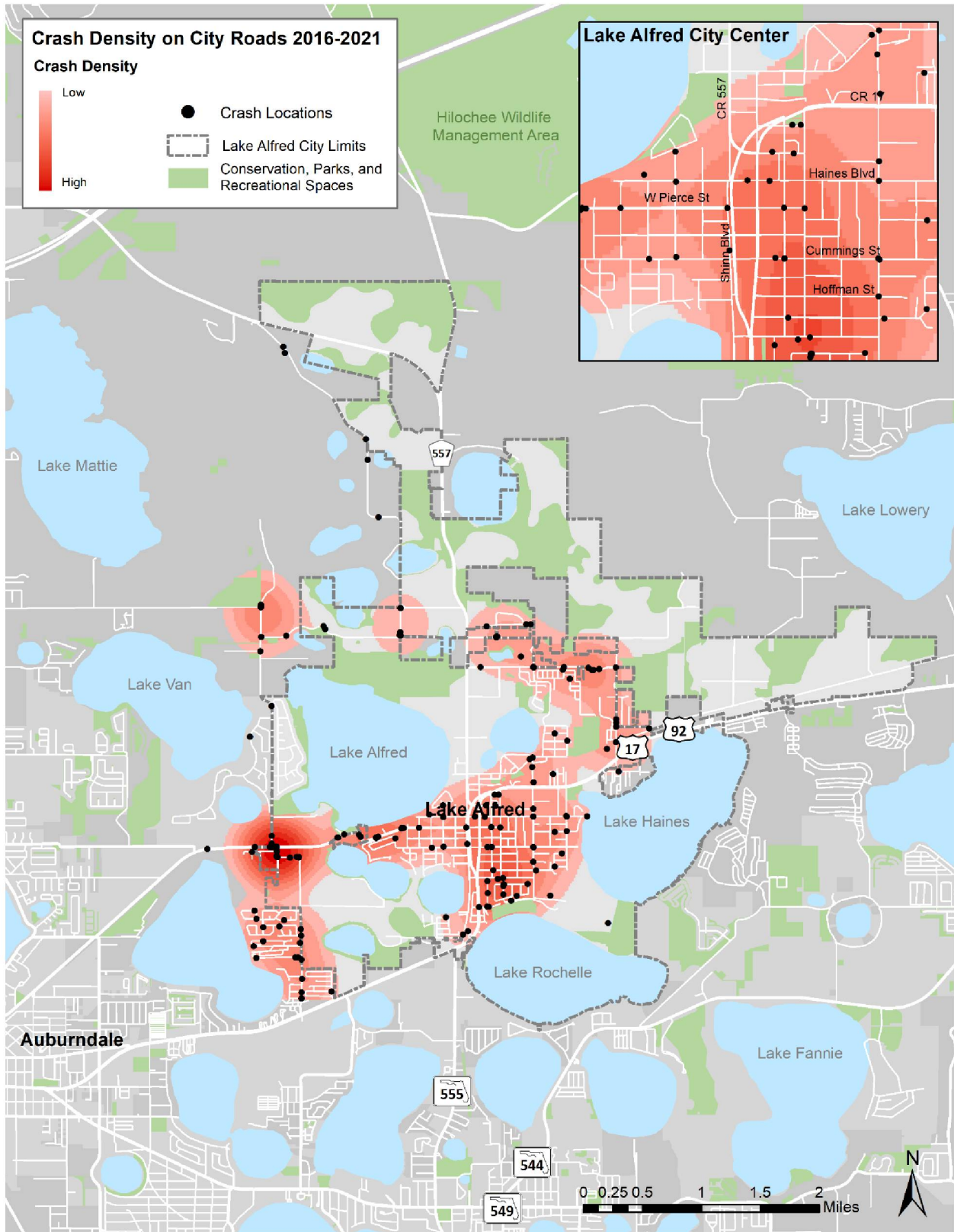
Source: Signal 4 Analytics

Figure 14. All Crashes on City-Controlled Roads (2016-2021)



Source: Signal 4 Analytics

Figure 15. Crash Density on City-Controlled Roads (2016-2021)



Source: Signal 4 Analytics

PLANNED AND PROGRAMMED ROADWAY IMPROVEMENTS

INTERSTATE 4 (I-4) AT S.R. 557 INTERCHANGE IMPROVEMENTS

The Florida Department of Transportation (FDOT) is in the process of replacing the existing partial cloverleaf interchange with a new diamond configuration. The new interchange is designed to improve traffic circulation and enhance safety, emergency access, and truck access in Polk County. S.R. 557 will be widened to 4-travel lanes, two in each direction within the limits of the state's limited access right-of-way, transitioning to the existing two-lane County Road (C.R. 557) north and south of the interchange.

Dual teardrop shaped roundabouts will be provided access to and from C.R. 557 at the I-4 on and off-ramps. The existing two-lane bridge over I-4 will be demolished and replaced with a new four lane bridge over the I-4 Ultimate corridor.

Construction is scheduled to be completed in mid-2023.

C.R. 557

Polk County plans to widen C.R. 557 from U.S. 17/92 at C.R. 557 to south of the I-4 interchange from a two-lane undivided road to a four-lane divided road and will include intersection and multimodal improvements. The widening of C.R. 557 was identified in the 2018 to 2022 Adopted Polk County Community Investment Program (CIP) as a necessary improvement based on projected level of service and to provide parallel capacity to relieve U.S. 27. C.R. 557 serves as an interstate connector and is important to the efficient and reliable mobility of people and freight, both locally and regionally. The project is currently at 60% design, with 90% plans to be completed by December 2022.

CITY OF LAKE ALFRED LAKE SHORE WAY/SHINN BOULEVARD (U.S. 17/92) CORRIDOR PLANNING STUDY

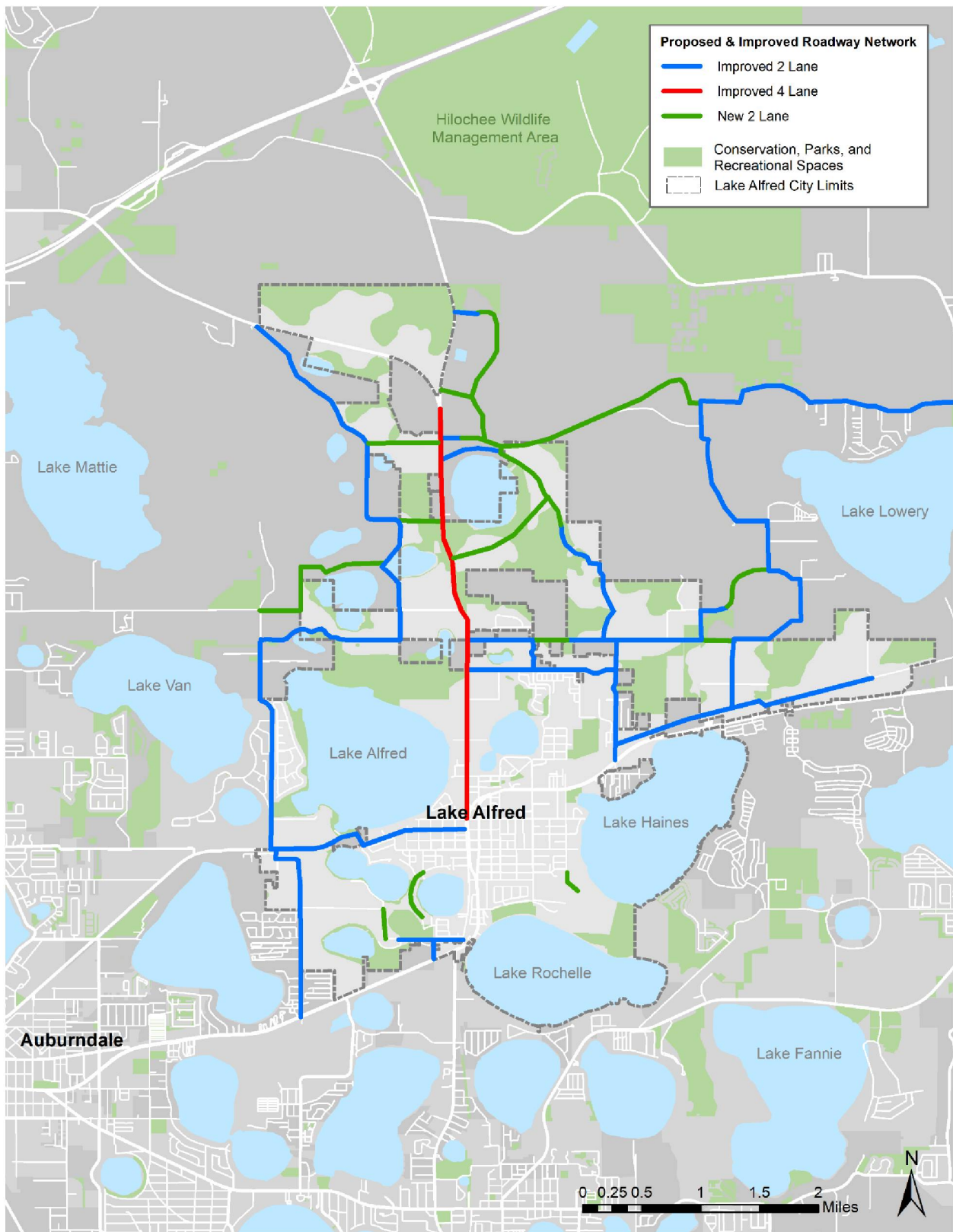
The purpose of this study was to define a vision and system of investments for U.S. 17/92 that support the City of Lake Alfred's economic development plan and the FDOT Complete Streets Policy. The study included the following recommendations:

- Short-term
 - Remove the continuous turn lanes along Lake Shore Way from E. Echo Street to W. Cummings Street and introduce deflection in the road for traffic calming
 - Add westbound left-turn lane at Shinn Boulevard and C.R. 557
 - Introduce rubble strips to southbound approach of C.R. 557 and Shinn Boulevard
- Long-term
 - Construct a displaced left-turn lane at the intersection of U.S. 17 and U.S. 92
 - Lane repurposing on U.S. 17/92 from the intersection of U.S. 17 and U.S. 92 to E. Echo Street
 - Improvements at the intersection of U.S. 17/92 and Shinn Boulevard

NORTH LAKE ALFRED ROAD NETWORK PLAN

The City adopted the North Lake Alfred Road Network Plan in 2006 to serve new and future growth in the northern portion of Lake Alfred. These roads will help form a grid network north of U.S 17/92 that will result in more efficient travel patterns, as shown in **Figure 16**.

Figure 16. Lake Alfred Roadway Network Plan



Source: City of Lake Alfred

U.S. 17/92 AT EXPERIMENT STATION ROAD

FDOT is proposing safety improvements at this location that include conversion of the full median opening to a two-way directional median opening due to high crash volumes. Temporary curbing was installed in December 2022, with FDOT evaluating operations and safety improvements to determine a long-term improvement at this intersection.

DOWNTOWN MASTER PLAN

The Downtown Master Development Plan depicts the existing and planned pedestrian facilities in the heart of the Downtown Core, including a multi-use trail intended to connect with the Chain of Lakes Trail, as shown in **Figure 17**.

The community priorities as they relate to transportation include:

- crosswalk improvements at Shinn Boulevard and Haines Boulevard West, Lake Shore Way and Cummings Street East, Shinn Boulevard and Cummings Street East, North Buena Vista Drive and the railroad tracks, Lake Shore Way and Pierce Street East, Shinn Boulevard and Pierce Street East, Lake Shore Way and Orange Street, and Shinn Boulevard and Orange Street
- improved pedestrian connectivity along Cummings Street, Hanes Boulevard, Pierce Street, and S. Seminole Avenue
- increased walkability in the Downtown Core through a new internal pedestrian boulevard

OLD DIXIE TRAIL

FDOT is conducting a Project Development and Environment (PD&E) study for the Old Dixie Trail, which will connect the City of Auburndale and City of Haines City through the City of Lake Alfred and connect to the TECO Auburndale Trail. The trail will extend approximately 12 miles, providing regional connectivity and recreational and economic development benefits. The PD&E is scheduled for completion by the summer of 2023. Currently no construction funds are programmed. In the City of Lake Alfred, the current preferred alternative extends along W Pierce Street, connects to the existing trail on Shinn Boulevards to continue north and crosses U.S. 17/92 at the intersection of Shinn Boulevard and C.R. 557. Old Dixie Trail will then continue northeast along U.S. 17/92 (see **Figure 18**).

CITY OF LAKE ALFRED PARK MASTER PLAN

The purpose of the City of Lake Alfred Parks and Recreation Master Plan ("Master Plan") is to guide the City of Lake Alfred in making decisions regarding its Parks and Recreation System as well as the future parks and recreation needs of the City as it continues to attract new residents and businesses. The plan includes improvements to sidewalk and trail connectivity throughout the City to make it safer and more appealing for pedestrians to walk from their house to a park. Recommendations include:

- a trailhead on S. Buena Vista Drive
- a safe pedestrian connection across U.S. 17/92
- per the Parks and Recreation Master Plan, improve sidewalks along Glencruiten Avenue, Cummings Street, and Haines Boulevard within neighborhood areas to establish continuous pedestrian connectivity and formalized bicycle routes. In addition to filling sidewalk gaps, each route should also include shared-lane markings ("sharrows") to alert vehicular traffic to the presence of a bicycle route and guide cyclists along the route.

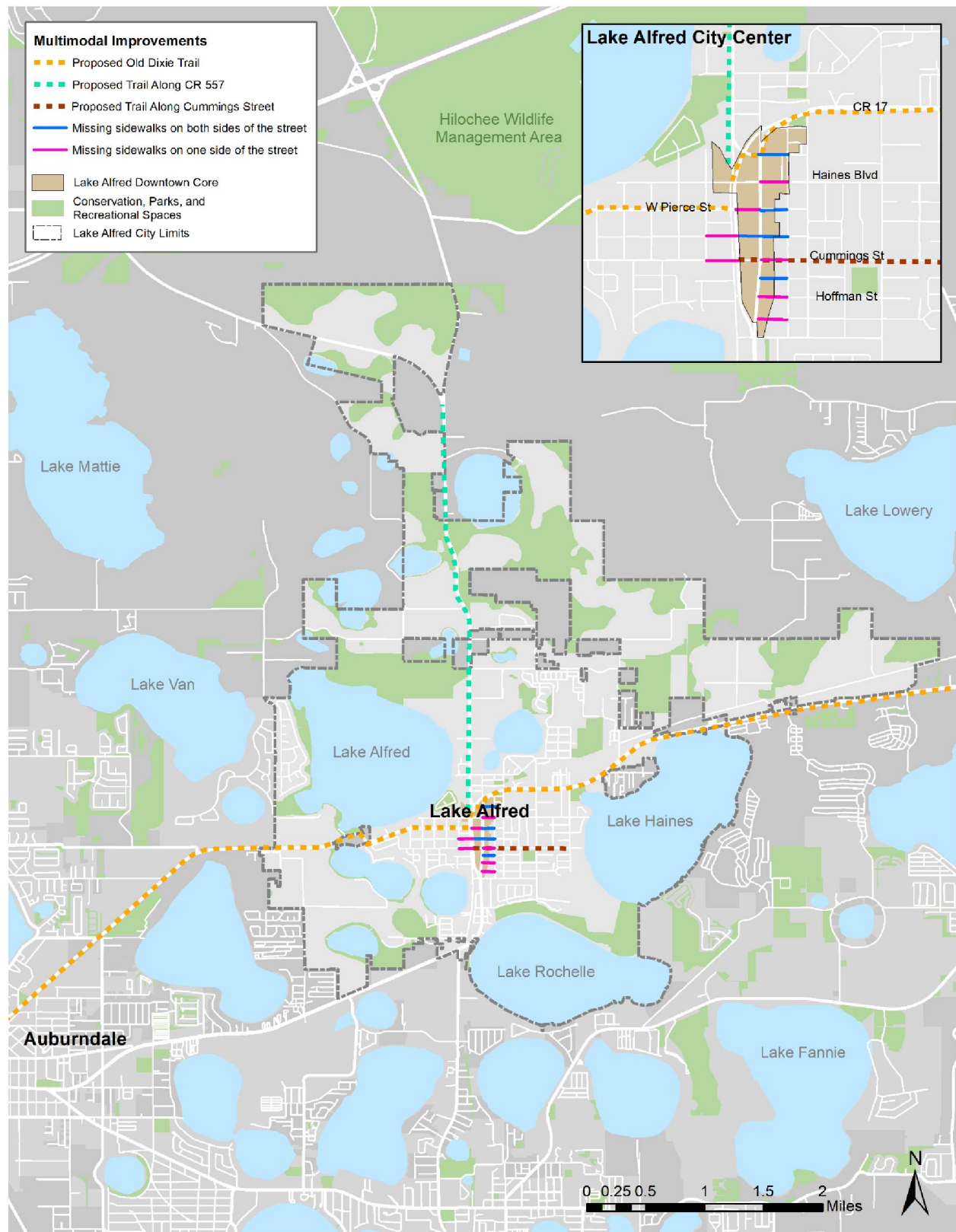
The Parks and Recreation Master Plan also recommends the City adopt a Level of Service (LOS) standard in the Comprehensive Plan that requires a publicly-accessible neighborhood park within a 15-minute walk of all new residences within the City Limits. All new development should include Americans with Disabilities Act (ADA) compliant sidewalk access to parks within a 15-minute walk of the development.

Figure 17. Downtown Master Plan Pedestrian Circulation



Source: Lake Alfred Downtown Master Plan

Figure 18. Multimodal Programmed Improvements Included in the Downtown Master Development Plan



Source: City of Lake Alfred & Lake Alfred Downtown Master Plan

FUTURE TRAVEL DEMANDS

PROJECTED GROWTH

There are 36 known development projects within Lake Alfred as of July 2022, covering almost 2,500 acres. The proposed developments would potentially add approximately 6,500 residential units, 285,000 square feet of commercial land uses, and over 1.7 million square feet of industrial land uses, as shown in **Table 7**. Using the ITE Trip Generation Manual, 11th Edition, the proposed developments within Lake Alfred are expected to add approximately 62,000 daily trips to the network, including 6,400 PM peak hour trips.

Table 7. Known Development Projects

Development Phase	# of Projects	Total Acres	Single Family DU	Multi-Family DU	Commercial KSF	Industrial KSF
Under Construction	7	447	567	721	-	-
Construction Plan Review	5	841	-	-	15	1,437
Site Plan Review	15	662	3,906	501	-	15
Future Phase	3	423	-	814	270	-
Expired Site Plan	2	110	-	-	-	287
Inquiry	4	TBD	TBD	TBD	TBD	TBD
Total	36	2,483	4,473	2,036	285	1,739
Daily Trips	-	61,983	33,301	9,665	10,548	8,469
PM Peak Hour Trips	-	6,432	3,539	794	969	1,130

Source: City of Lake Alfred

Table 7 includes the proposed developments identified as of July 2022, but this number is assumed to continue to grow in the near future. **Figure 19** identifies the current future land uses within the City of Lake Alfred.

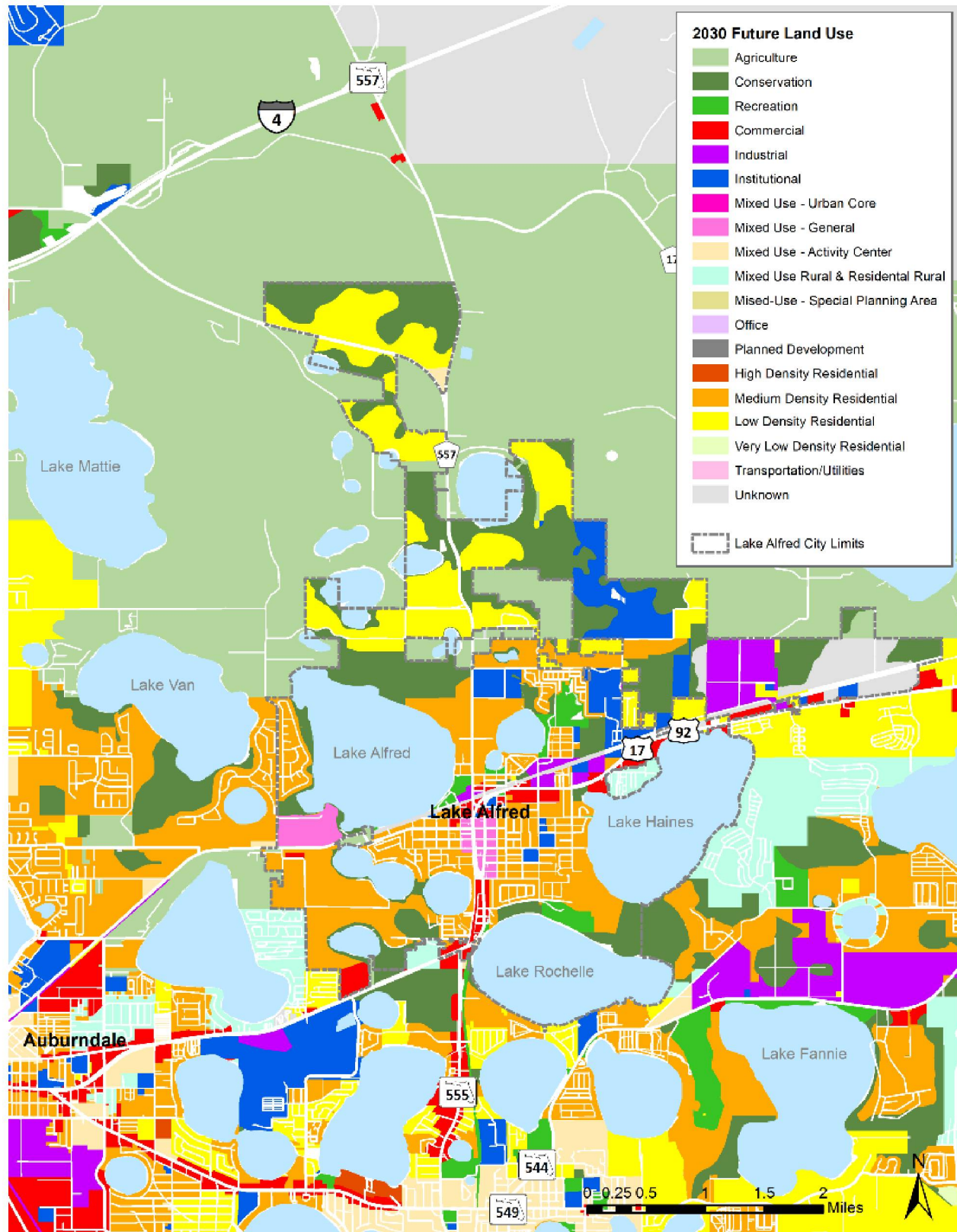
FUTURE VOLUMES

The FDOT District One Regional Planning Model Version 2.0 was utilized to determine the number of trips projected to travel throughout downtown Lake Alfred in the future year 2045. The model was updated to include anticipated development provided by the City of Lake Alfred. Proposed development provided by the City of Lake Alfred and model adjustments are documented in **Appendix B** and **Appendix C**. A few different scenarios were analyzed to evaluate the effect of the new development and proposed network changes on the number of trips projected to travel through the City of Lake Alfred in 2045. The scenarios are listed in **Table 8**.

Table 8. Model Scenarios

Scenario	Development	Network
1 – Off the shelf model	Base loading	Base network
2 – Planned development (PD)	Additional development listed in Table 7 .	Base network
3 – PD + U.S. 17/92 Lane Repurposing	Additional development listed in Table 7 .	Reduced the one-way pair along U.S. 17/92 from three lanes to two lanes in each direction through downtown Lake Alfred and North Lake Alfred Road Network Plan

Figure 19. 2030 Future Land Use



Source: Lake Alfred Community Development Department (within City of Lake Alfred Boundary) & Urban Footprint 2020 Parcel Data (outside City of Lake Alfred Boundary)

The model volumes from the model scenarios are summarized in **Table 9** through **Table 11**.

Table 9. 2045 AADT and LOS – Scenario 1 Off the Shelf Model

Road	2045 AADT	Number of Lanes	Posted Speed (MPH)	Generalized Annual Average Daily Volumes			2045 LOS
				LOS C	LOS D	LOS E	
C.R. 557 from Lake Shore Way to south of C.R. 557A	36,000	4-lane divided	55	49,900	63,000	71,700	C
U.S. 17/92 southbound (S. Lake Shore Way) from intersection of U.S. 17 and U.S. 92 to E. Echo Street	40,000	6-lane divided	45	34,000	35,500	35,500	F
U.S. 17/92 southbound (Shinn Boulevard) from E. Echo Street to N. Seminole Avenue	23,000	3 lanes one-way	35	9,600	26,940	28,560	D
U.S. 17/92 northbound (S. Lake Shore Way) from E. Echo Street to N. Seminole Avenue	23,000	3 lanes one-way	35	9,600	26,940	28,560	D
U.S. 17/92 from N. Seminole Avenue to Lee Jackson Road	42,000	4-lane divided	55	34,000	35,500	35,500	F
W. Pierce Street from Dairy Road to Shinn Boulevard	12,000	2-lane undivided	30	5,200	10,640	11,360	F
Old Lake Alfred Road from C.R. 557 to C.R. 557A	990	2-lane divided	30	5,200	10,640	11,360	C

Note: Generalized Annual Average Daily Volumes obtained by applying FDOT Generalized Annual Average Daily Volumes for Florida's Transitioning Areas and Areas Over 5,000 Not in Urbanized Areas. CR 557 was classified as an uninterrupted flow highway. FDOT Quality/Level of Service Handbook.

Table 10. 2045 AADT and LOS – Scenario 2 Planned Development

Road	2045 AADT	Number of Lanes	Posted Speed (MPH)	Generalized Annual Average Daily Volumes			2045 LOS
				LOS C	LOS D	LOS E	
C.R. 557 from Lake Shore Way to south of C.R. 557A	42,000	4-lane divided	55	49,900	63,000	71,700	C
U.S. 17/92 southbound (S. Lake Shore Way) from intersection of U.S. 17 and U.S. 92 to E. Echo Street	47,000	6-lane divided	45	34,000	35,500	35,500	F
U.S. 17/92 southbound (Shinn Boulevard) from E. Echo Street to N. Seminole Avenue	29,000	3 lanes one-way	35	9,600	26,940	28,560	F
U.S. 17/92 northbound (S. Lake Shore Way) from E. Echo Street to N. Seminole Avenue	26,000	3 lanes one-way	35	9,600	26,940	28,560	D
U.S. 17/92 from N. Seminole Avenue to Lee Jackson Road	46,000	4-lane divided	55	34,000	35,500	35,500	F
W. Pierce Street from Dairy Road to Shinn Boulevard	14,000	2-lane undivided	30	5,200	10,640	11,360	F
Old Lake Alfred Road from C.R. 557 to C.R. 557A	7,800	2-lane divided	30	5,200	10,640	11,360	D

Note: Generalized Annual Average Daily Volumes obtained by applying FDOT Generalized Annual Average Daily Volumes for Florida's Transitioning Areas and Areas Over 5,000 Not in Urbanized Areas. CR 557 was classified as an uninterrupted flow highway. FDOT Quality/Level of Service Handbook.

Table 11. 2045 AADT and LOS – Scenario 3 Planned Development & Lane Repurposing

Road	2045 AADT	Number of Lanes	Posted Speed (MPH)	Generalized Annual Average Daily Volumes			2045 LOS
				LOS C	LOS D	LOS E	
C.R. 557 from Lake Shore Way to south of C.R. 557A	42,000	4-lane divided	55	49,900	63,000	71,700	C
U.S. 17/92 southbound (S. Lake Shore Way) from intersection of U.S. 17 and U.S. 92 to E. Echo Street	43,000	4-lane divided	45	34,000	35,500	35,500	F
U.S. 17/92 southbound (Shinn Boulevard) from E. Echo Street to N. Seminole Avenue	25,000	2 lanes one-way	25	5,940	17,280	18,960	F
U.S. 17/92 northbound (S. Lake Shore Way) from E. Echo Street to N. Seminole Avenue	23,000	2 lanes one-way	25	5,940	17,280	18,960	F
U.S. 17/92 from N. Seminole Avenue to Lee Jackson Road	38,000	4-lane divided	55	34,000	35,500	35,500	F
W. Pierce Street from Dairy Road to Shinn Boulevard	13,000	2-lane undivided	30	5,200	10,640	11,360	F
Old Lake Alfred Road from C.R. 557 to C.R. 557A	1,600	2-lane divided	30	5,200	10,640	11,360	C

Note: Generalized Annual Average Daily Volumes obtained by applying FDOT Generalized Annual Average Daily Volumes for Florida’s Transitioning Areas and Areas Over 5,000 Not in Urbanized Areas. CR 557 was classified as an uninterrupted flow highway. FDOT Quality/Level of Service Handbook.

MULTIMODAL TRAVEL DEMANDS

As shown by census data, almost all Lake Alfred residents own a car and choose to drive to work either in their own vehicle or as part of a carpool, as shown in **Table 12** and **Table 13**. This could be due to the limited transit service.

Table 12. Vehicles Available

No vehicle available	5.73%
1 vehicle available	46.96%
2 vehicles available	38.63%
3 or more vehicles available	8.68%

Source: 2020 ACS 5-Year Estimates

Table 13. Means of Transportation to Work

Means of Transportation to Work	Lake Alfred	Florida	United States
Car, truck, or van- drove alone	82.0%	77.7%	74.9%
Car, truck, or van- carpooled alone	11.1%	9.2%	8.9%
Public transportation	0%	1.6%	4.6%
Taxicab, motorcycle, bicycled, or other means	1.7%	1.7%	1.3%
Walked	0%	1.4%	2.6%
Biked	0%	0.6%	0.5%
Worked from home	5.1%	7.8%	7.3%

Source: 2020 ACS 5-Year Estimates

According to the Bureau of Transportation Statistics, households spent an average of \$9,826 on transportation in 2020—the second largest household expenditure category after housing and an

approximately 16% of the household expenditures when spending on behalf of households, such as healthcare benefits, is excluded. Rural households spent more on transportation than urban households (20.0% and 15.7% of total expenditures, respectively) and households in the bottom fifth spent more of their after-tax income on transportation than those in the top fifth (28.8% and 9.5% of total expenditures, respectively)⁵. These findings are especially significant in Lake Alfred, where 19% of the population is low-income. There may be an unmet demand for alternative modes of transportation.

There is demand for multimodal travel to the schools and parks in Lake Alfred. Many children walk to Lake Alfred Elementary School, some cross U.S. 17/92 to access the school. Providing safe options for walking and biking to school will reduce congestion on U.S. 17/92 and C.R. 577, support parents, and improve health outcomes for students.

The City of Lake Alfred Parks Master Plan identified the need to improve pedestrian connectivity to make it safer and more appealing for pedestrians to walk from their home to the parks. Specific recommendations included:

- safe pedestrian connections across U.S. 17/92
- improved pedestrian and bicyclist connectivity between neighborhoods and the major parks implementing key north/south and east/west routes within neighborhood areas to establish continuous pedestrian connectivity and formalized bicycle routes, including shared-lane markings ("sharrows"). Key routes included:
 - Glencruiten Avenue from U.S. 17/92 to Mackey Boulevard
 - Cummings Street from Ilakee Avenue to Ramona Avenue
 - Haines Boulevard from Winona Avenue to Ramona Avenue
- Addition of neighborhood parks to allow all residents a 15-minute walk to a local park without having to cross any arterial and connected to the trail and greenway network (per 3.3.5.E of the Unified Land Development Code)

New residents will increase the demand for recreational travel by walking and biking. It is important to design new local and collector roads to support safe and comfortable bicycle and pedestrian travel, as supported by the Unified Land Development Code.

ROAD STANDARDS

Transportation professionals use quality of service measures (QOS) to quantify a traveler-based perception of how well a transportation service or facility operates. For vehicular travel, Level of Service (LOS) as defined by the Highway Capacity Manual (HCM) is considered the industry standard for measuring QOS. LOS is a quantitative stratification of a performance measure or measures that represent quality of service, measured on an A-F scale, with LOS A representing the best operating conditions from the traveler's perspective and LOS F the worst (HCM Sixth Edition), as shown in **Table 14**. For arterials, LOS thresholds are based on the comparison of average travel speed (including stops at intersections) to the base free-flow speed. For arterials, the LOS D threshold range is between 40% and 50% of the base free-flow speed and the LOS E threshold range is between 30% and 40% of the base free-flow speed.

⁵ Bureau of Transportation Statistics. Household Spending on Transportation: Average Household Spending. <https://data.bts.gov/stories/s/Transportation-Economic-Trends-Transportation-Spen/ida7-k95k/>

Table 14. Definition of Level of Service Measures

Level of Service		Average Travel Speed for Arterials Class III (Typical FFS of 35 mph)
	Characteristics	
LOS A	Free-flow operations; almost completely unimpeded maneuvering	Greater than 30
LOS B	Free-flow speed (FFS) is maintained	➤ 24 to 30
LOS C	Flow with speeds near ffs; maneuvering within the traffic stream is noticeably restricted	➤ 18 to 24
LOS D	Level at which speeds begin to decline	➤ 14 to 18
LOS E	Operation at capacity; there are virtually no gaps in the traffic stream	➤ 10 to 14
LOS F	Unstable flow; queues forming behind bottlenecks	Less than or equal to 10

Free-flow speed is the average speed under low-volume conditions and is not delayed by traffic controls, such as signalized intersections.

The Transportation Element of the Comprehensive Plan, Objective 1, Policy 1.2 identifies peak season/peak hour LOS standards for roadways. **Table 15** to **Table 17** provide the level of service standards for Lake Alfred, Polk County, and FDOT.

Table 15. Existing Level of Service Standards for Lake Alfred

Facility Type	Lake Alfred Level of Service Standard
Principal Arterials	
Strategic Intermodal System (SIS) Facilities	C*
Non-SIS Facilities	D
Minor Arterial	D
Collector and local roadways	D

*(or standard set by the Florida Department of Transportation) Source: Lake Alfred Comprehensive Plan
 Note: There is no SIS road facility in Lake Alfred

Table 16. Existing Level of Service Standards for Polk County

Facility Type	Polk County Level of Service Standard
Transit Supportive Development Areas (TSDA)	
Multi-Modal (MM)	D
Transit Corridors and Centers Overlay	E
Transitioning Urbanized Area Outside the TSDA	D
Other	C

Source: Polk County Comprehensive Plan, Policy 3.202-C1. Standards apply to arterial and collector roads for county roads and roadway segments on the State Highway System that are not part of the Florida Interstate Highway System. LOS is measured for the peak hour/peak direction using the average of the two highest peak hours.

Table 17. Existing Level of Service Targets for FDOT

Facility Type	FDOT Vehicular Level of Service Targets
In urbanized areas	D
Outside urbanized areas	C

Source: Policy 000-525-006. Policy applies to state highway system during peak travel hours.

Lake Alfred Policy 1.3 states that the City shall ensure through the adoption of Land Development Regulations and a concurrency management system that new development permitted by the City shall not cause the level of service to fall below that established in Policy 1.2 for that facility type. The City should consider changing the level of service standards in the comprehensive plan to LOS E for non-SIS principal arterials, which allows for some congestion on the major roadways. The resulting increase in capacity would allow for priority for non-motorized improvements without the need to widen the principal arterial. The City should monitor the level of service of roadways within the City through traffic impact studies when new development is proposed within the City.

FUTURE MULTIMODAL TRANSPORTATION DEFICIENCIES

PROJECTED ROAD DEFICIENCIES

Based on the LOS standards adopted by the City and the projected traffic based on the FDOT District One Regional Planning Model Version 2.0 and the traffic generated by the approved development, the projected road deficiencies in 2045 are presented in **Table 18**.

Table 18. 2045 Projected Road Deficiencies

Scenario 1: Base Model	Scenario 2: Planned Development	Scenario 3: Planned Development and Lane Repurposing
U.S. 17/92 from N. Seminole Avenue to Lee Jackson Road	U.S. 17/92 from N. Seminole Avenue to Lee Jackson Road	U.S. 17/92 from intersection of U.S. 17 and U.S. 92 to Lee Jackson Road
W. Pierce Street from Dairy Road to Shinn Boulevard	W. Pierce Street from Dairy Road to Shinn Boulevard	W. Pierce Street from Dairy Road to Shinn Boulevard

In addition to the road segments listed above, the following intersections are anticipated to operate over capacity in all three scenarios:

- U.S. 17 and U.S. 92
- U.S. 17/92 and Shinn Boulevard

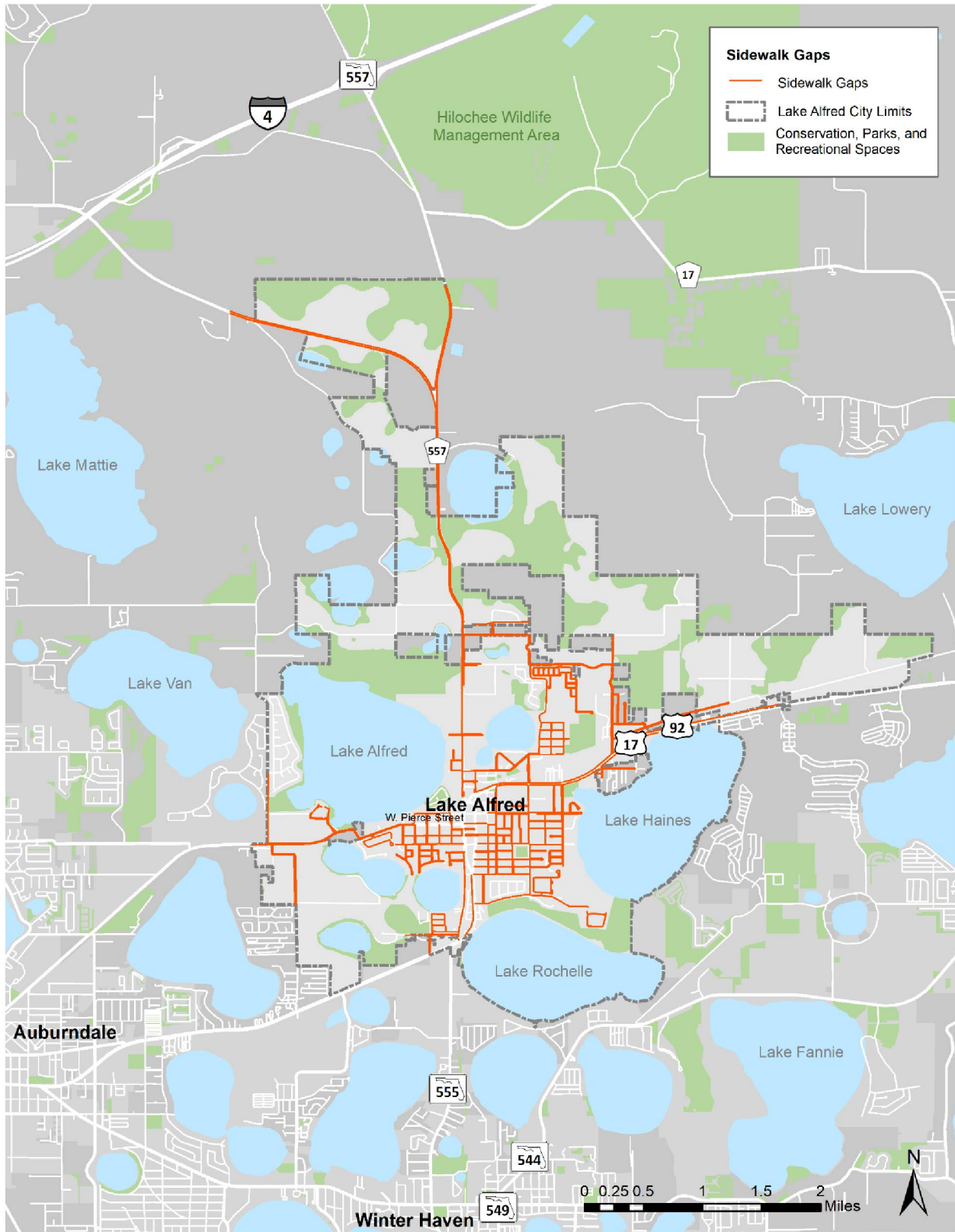
BICYCLE AND PEDESTRIAN INFRASTRUCTURE GAPS

Based on the existing planning documents, including the Downtown Master Plan, U.S. 17/92 Corridor Planning Study, the Parks and Recreation Master Plan, and the multimodal level of service standards, the following multimodal deficiencies exist:

- 3.3 miles of sidewalk in the Downtown Core, as identified in the Parks and Recreation Master Plan
- improved bicycle and pedestrian circulation across U.S. 17/92
- multimodal access to Lake Alfred Elementary School
- multimodal access along C.R. 557 to Discovery Academy of Lake Alfred and Discovery High School
- multimodal access to downtown core and support redevelopment in downtown core
- landscaping enhancements along U.S. 17/92 (Shinn Boulevard and Lake Shore Way) and streets in the downtown core
- bicycle and pedestrian connectivity along Pierce Street

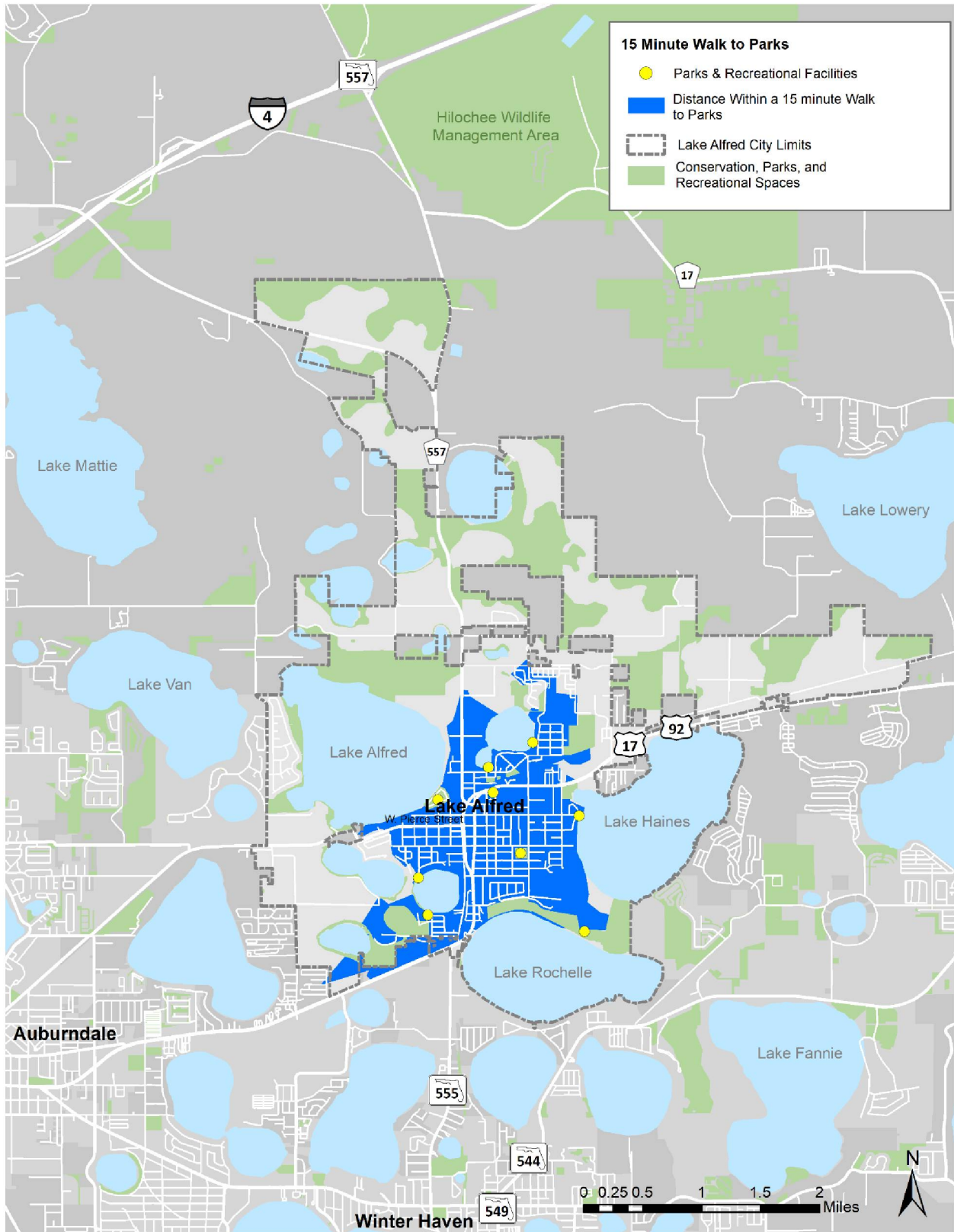
Sidewalk gaps within the city boundary are represented in **Figure 20**. Although a portion of the downtown core has partial or complete sidewalk coverage on the roadways, most of the residential neighborhoods in the area do not have sidewalks. Including future sidewalk coverage to parks and other destinations would be beneficial for improving the walkability and safety of pedestrians in Lake Alfred. **Figure 21** identifies which roadways are within a 15-minute walk to the parks.

Figure 20. Sidewalk Gaps



Source: Internal GIS Analysis

Figure 21. 15 Minute Walk to Parks



Source: Internal GIS Analysis

FUTURE TRANSPORTATION NETWORK PLAN

Programmed development and regional travel demands will require significant investment in roadway infrastructure. The proposed transportation infrastructure were selected to maintain the small-town character of the community, improve existing facilities, mitigate negative impacts from new travel demands, and maintain the level of service established by the City.

CAPACITY IMPROVEMENTS

Table 19 presents the needed roadway capacity improvements to support the proposed development and regional growth patterns. **Table 20** presents intersections with needed capacity improvements to support the proposed development and regional growth patterns. The capacity improvements are shown on **Figure 22**.

MULTIMODAL IMPROVEMENTS

When new roads are constructed by the City or private developers, the City should ensure that the roadways are built with the proper cross-section, per the roadway classifications in the Land Development Code. As existing City roadways are resurfaced, the City of Lake Alfred should consider reviewing the roadway classification for the existing roadways and add missing elements to the roadway when right-of-way is available.

Table 19. Roadway Capacity Improvements

Number ID	Road Name	From	To	Current Maintaining Jurisdiction	City Roadway Classification	Improvement Type	Length
1	North Experiment Station Road	White Rd (#4)	North Experiment Station Road #32	Polk County	Neighborhood Collector	Improve to local 2L std.	1.2
2	Old Lake Alfred Road	C.R. 557A	Cass Road	Polk County	Neighborhood Collector	Improve to local 2L std.	3.0
3	White Road	North Experiment Station Road (#1)	White Road Connector (#28)	Polk County	Neighborhood Local	Improve to local 2L std.	0.9
4	White Road	White Road (#29)	North Experiment Station Road (#1)	Polk County	Neighborhood Local	Improve to local 2L std.	0.2
5	Gum Road	C.R. 557	Gum Road Extension (#33)	Polk County	Neighborhood Collector	Improve to local 2L std.	0.1
6	Waylanco Road	C.R. 557	North Experiment Station Road #35	Lake Alfred	Industrial	Improve to local 2L std.	0.2
7	Pierce Street	Adams Barn Road	Shinn Boulevard	Lake Alfred	Neighborhood Collector	Improve to local 2L std.	1.5
8	Lynchburg Road	U.S. 92	Lake Alfred Road	Lake Alfred	Neighborhood Collector	Improve to local 2L std.	1.6
9	Evenhouse Road	C.R.557	Old Lee Jackson Road	Polk County	Neighborhood Local	Improve to local 2L std.	1.1
10	Creek Road	C.R. 557	Evenhouse Road	Polk County	Neighborhood Local	Improve to local 2L std.	0.7
11	Cass Road	Adams Barn Road	Old Lake Alfred Road	Polk County	Neighborhood Collector	Improve to local 2L std.	1.4
12	Adams Barn Road	Lake Alfred Road	Cass Road	Polk County	Neighborhood Collector	Improve to local 2L std.	1.8
13	Lock Street	Lake George Road	U.S. 92	Lake Alfred	Neighborhood Local	Improve to local 2L std.	0.2
14	Lake George Road	George Road	S. Buena Vista Drive	Lake Alfred	Neighborhood Local	Improve to local 2L std.	0.5
15	Lake Lowery Road	Old Haines City/Lake Alfred Road	Old Polk City Road	Polk County	Neighborhood Collector	Improve to local 2L std.	5.9
16	Experiment Station Road	U.S. 17/92	White Road #3	Polk County	Neighborhood Collector	Improve to local 2L std.	1.0
17	Old Haines City/Lake Alfred Road	Experiment Station Road #16	Government Center Road	Polk County	Neighborhood Local	Improve to local 2L std.	2.0

Table 19. Roadway Capacity Improvements cont.

Number ID	Road Name	From	To	Current Maintaining Jurisdiction	Roadway Classification	Improvement Type	Length
18	WGTO Tower Road	C.R. 557	North Experiment Station Road #32	Polk County	Neighborhood Local	Improved 2 Lane	0.6
19	C.R. 557	Shinn Boulevard	C.R. 557A	Polk County	Neighborhood Collector	Improved 4 Lane	3.4
20	Orange Street	Lake Shore Boulevard	Shinn Boulevard	Lake Alfred	Neighborhood Local	Network Connectivity Improvement	0.1
21	Alley	Hoffman Street	Cummings Street	Lake Alfred	Alley	Network Connectivity Improvement	0.2
22	Maintain Alley/Circulation	Haines Boulevard	Cummings Street	Lake Alfred	Alley	Network Connectivity Improvement	0.3
23	S. Nekoma Avenue	S. Echo Drive	Lake George Road	Lake Alfred	Neighborhood Local	Improved 2 Lane	0.17
24	West Gum Lane	C.R. 557	Old Lake Alfred Road	Lake Alfred	Neighborhood Collector	New 2 Lane	0.5
25	Unnamed Road	Old Lake Alfred Road	Adams Barn Road / Lake Mattie Road	Lake Alfred	Neighborhood Local	New 2 Lane	1.4
26	C.R. 557 Connector	C.R. 557	Old Lake Alfred Road	Lake Alfred	Neighborhood Local	New 2 Lane	0.3
27	White Road Connector	White Road #3	Lake Lowery Road	Lake Alfred	Neighborhood Collector	New 2 Lane	0.3
28	White Road	White Road #3	Lake Lowery Road	Lake Alfred	Neighborhood Local	New 2 Lane	0.6
29	White Road	Creek Road	White Road #4	Lake Alfred	Neighborhood Collector	New 2 Lane	0.3
30	Lake Lowery Road - C.R. 557 Connector	Gum Road Extension #33	Lake Lowery Road	Lake Alfred	Neighborhood Collector	New 2 Lane	1.5
31	C.R. 557 - Experiment Station Connector	C.R. 557	Experiment Station Road Extension #32	Lake Alfred	Neighborhood Collector	New 2 Lane	1.2
32	North Experiment Station Road	North Experiment Station Road #1	Gum Road Extension #33	Lake Alfred	Neighborhood Collector	New 2 Lane	0.9

Table 19. Roadway Capacity Improvements cont.

Number ID	Road Name	From	To	Current Maintaining Jurisdiction	Roadway Classification	Improvement Type	Length
33	Gum Road Extension	Gum Road #5	North Experiment Station Road #32	Lake Alfred	Neighborhood Collector	New 2 Lane	0.3
34	Unnamed Road	C.R. 557	North Experiment Station Road #35	Lake Alfred	Neighborhood Local	New 2 Lane	0.3
35	North Experiment Station Road	Waylanco Rd	Gum Road Extension #33	Lake Alfred	Neighborhood Local	New 2 Lane	1.2
36	Ramona Avenue *	South Ramona Avenue	New Developments South	Lake Alfred	Neighborhood Local	New 2 Lane	0.2
37	Echo Drive	South Winona Avenue	South Echo Drive	Lake Alfred	Neighborhood Local	New 2 Lane	0.4
38	Lake Cumming Road	Lake Cumming Road	Lake George Road	Lake Alfred	Neighborhood Local	New 2 Lane	0.3

Source: City of Lake Alfred

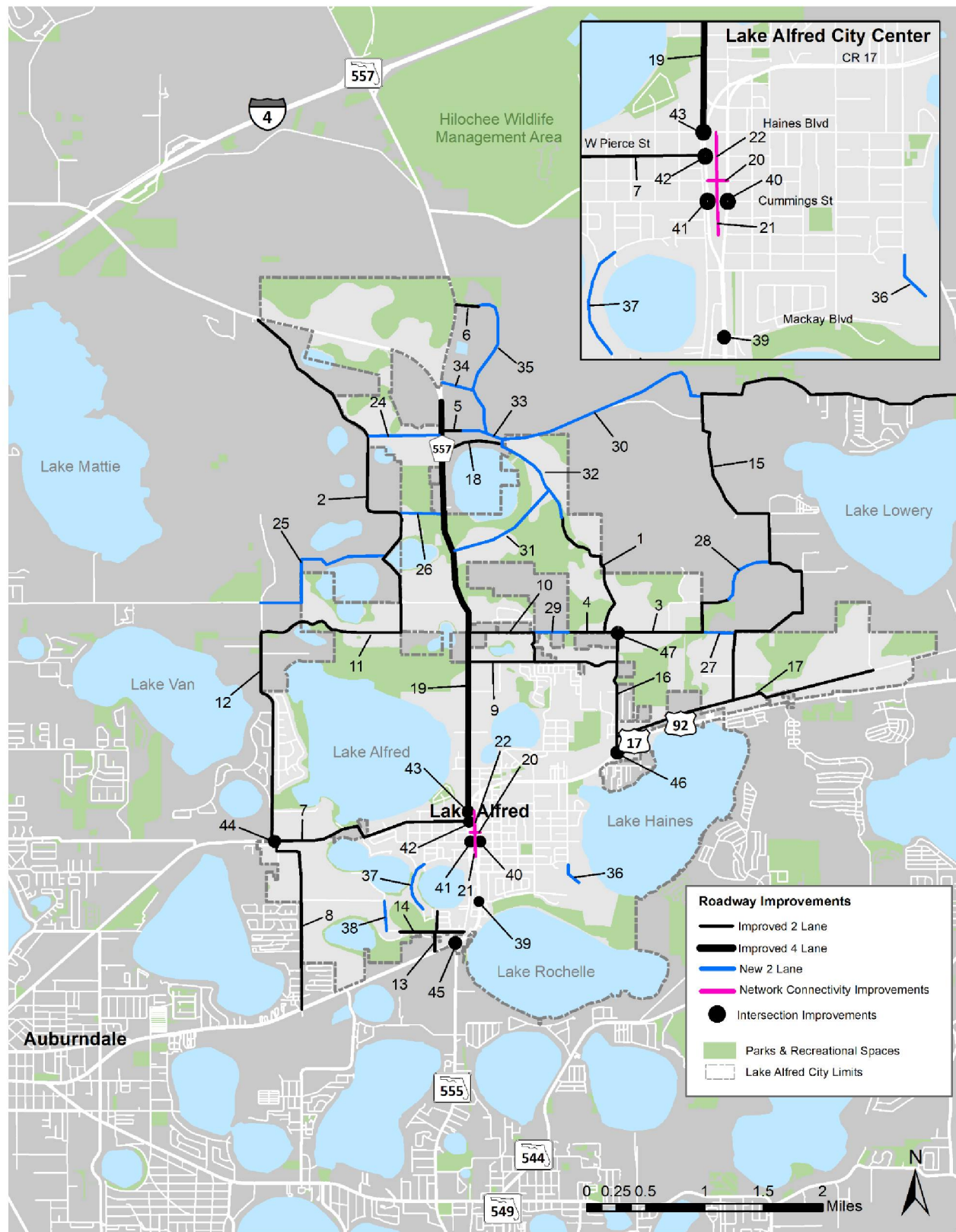
* Evaluate project for pedestrian only connection at time of implementation by staff and City Commission.

Table 20. Intersection Improvements

Number ID	Road Name	Road Name	Maintaining Jurisdiction
39	U.S. 17/92	Mackey Boulevard	FDOT
40	Lake Shore Way	Cummings Street	FDOT
41	Shinn Blvd	Cummings Street	FDOT
42	Shinn Blvd	Pierce Street	FDOT
43	C.R. 557	Shinn Boulevard	FDOT
44	Adams Barn Road	Old Lake Alfred Road	Polk County
45	U.S. 17	U.S. 92	FDOT
46	U.S. 17/92	Experiment Station Road	FDOT
47	Old Lee Jackson Road	White Road	Polk County

Source: City of Lake Alfred

Figure 22. Capacity Roadway Improvements



Source: City of Lake Alfred

UPDATE DEFICIENT ROADS

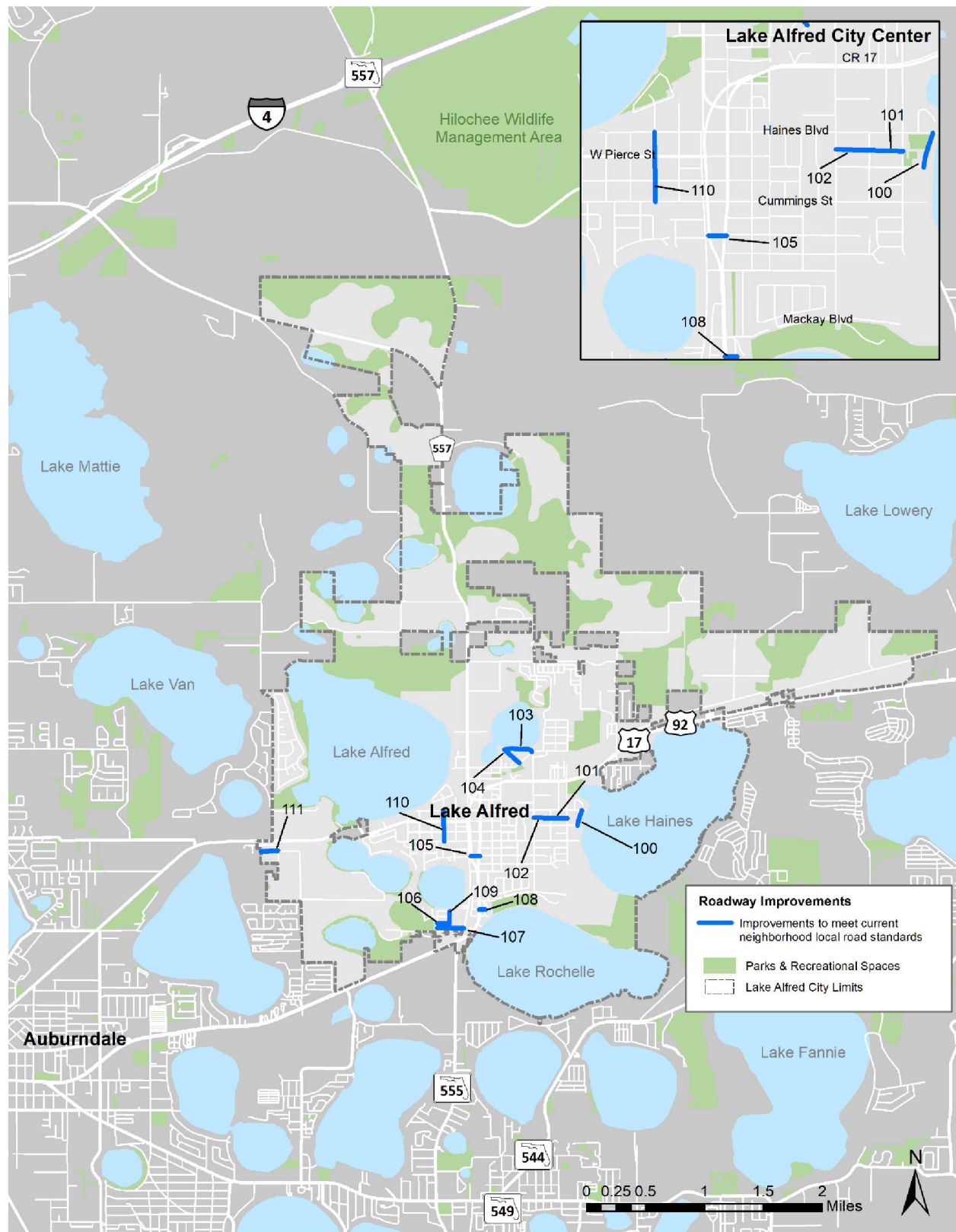
Table 21 and **Figure 23** identify existing roads or rights-of-way that do not currently meet City standards. These improvements would address health and safety concerns for existing residents.

Table 21. Improvements to Meet Current Neighborhood Local Road Standards

Number ID	Road Name	From	To	Length (miles)
100	Lakeview Boulevard S.	Stanford Street	E. Haines Boulevard	0.13
101	E. Pierce Street	Ramona Avenue	Lakeview Boulevard	0.08
102	E. Pierce Street	S. Glencruiten Avenue	S. Towner Avenue	0.12
103	Twin Lake Road	N Ridge Avenue	E. Oak Street	0.22
104	N. Ridge Avenue	Twin Lake Road	E. Oak Street	0.16
105	E. Columbia Street	Shinn Boulevard	Lake Shore Way	0.06
106	Davis Avenue	S. Nekoma Avenue	S. Cross Ave	0.05
107	Terrace Avenue	S. Nekoma Avenue	S. Buena Vista Drive	0.2
108	W. Necho Avenue	U.S. 17/92	E. Davis Ave	0.04
109	S. Cross Avenue	S. Echo Dr	W. Terrace Ave	0.14
110	N. Nekoma Avenue	W. Haines Boulevard	W. Cummings St	0.26
111	Myers Lane	Lynchburg Road	Fannies Path	0.1

The City is also evaluating which County or private roads (such as within Lake Alfred Estates) the City should accept and maintain in the future. The main qualifications are that the road or road segment is within the city-limits and the road meets City standards. County roads may be updated as development occurs. Once the County roads are updated, they could be accepted and maintained in the future. Potential County roads that could be transferred are shown in **Table 22**.

Figure 23. Improvements to Meet Current Neighborhood Local Road Standards



Source: City of Lake Alfred

Table 22. County Collector Roads Under Consideration for Jurisdictional Transfer

Road Name	Road Length (Miles)
Experiment Station Road	5.5
White Road	2.3
Gum Lane	1.0
Evenhouse Road	1.1
Creek Road	0.7
Cass Road	1.4
Lake Lowery Road	7.4
WGTO Tower Road	0.6
Old Lee Jackson Road	0.8
Old Lake Alfred Road	3.0
Mosley Road	0.4

C.R. 557, C.R. 557A, Old Haines City/Lake Alfred Road, Adams Barn Road and Clark Road will remain County roads. Other County roads not identified in **Table 22** may be considered for discussion, including areas identified for future annexation and enclaves such as Lee Jackson Road, Heurman Road, and Mallard Road.

LAND DEVELOPMENT AND THE TRANSPORTATION NETWORK

The North Lake Alfred Road Network Plan is intended to ensure sufficient road capacity is provided where future development is anticipated to occur. The proposed roads presented are a conceptual representation of the network of collector roads. These roads will provide vehicular connection to the regional road network and reduce demand on C.R. 557. These roads will also serve as the spine for bicycle and pedestrian circulation, connecting to local destinations and the existing and future regional trail network. Therefore, these roads should be designed to provide a low-stress environment for people walking and biking and serve the needs of all uses and users of the roadway.

As identified in Figure 5.2.2 Street Type Characteristics in the Unified Land Development Code, neighborhood and mixed-use collector roadways have a design speed of 20 to 35 mph. Tools to promote speed management that can be used in the design of the collector roads include:

- narrow travel lanes (10 to 11 feet wide as required in Figure 5.2.4E Street Types Table in the Unified Land Development Code)
- landscaped median
- curvilinear horizontal alignment
- chicanes or along straight segments that extend beyond 1,320 feet
- roundabouts as the primary traffic control device at intersections requiring traffic control on all four legs, or along straight segments that extend beyond 2,640 feet
- street trees
- raised pedestrian crossings at marked designed mid-block crossings
- on-street parking where there are fronting uses with demand for parking along the street. The on-street parking should include bulbouts as required in Figure 5.2.4E Street Types Table in the Unified Land Development Code

- terminating vistas

Separated bicycle facilities should be provided along the collector roads. This could include separated bicycle lanes or shared use paths on both sides of the collector road. On roads where there are numerous curb cuts or high volumes of pedestrians are expected, separated bicycle lanes are preferred.

Refer to the Unified Land Development Code for more information on road design requirements and sample cross-sections. Refer to the *Florida Department of Transportation Design Manual (FDM)* Chapter 202 for more information or the *National Association of City Transportation Officials (NACT) Urban Street Design Guide* on speed management tools on collector roadways.

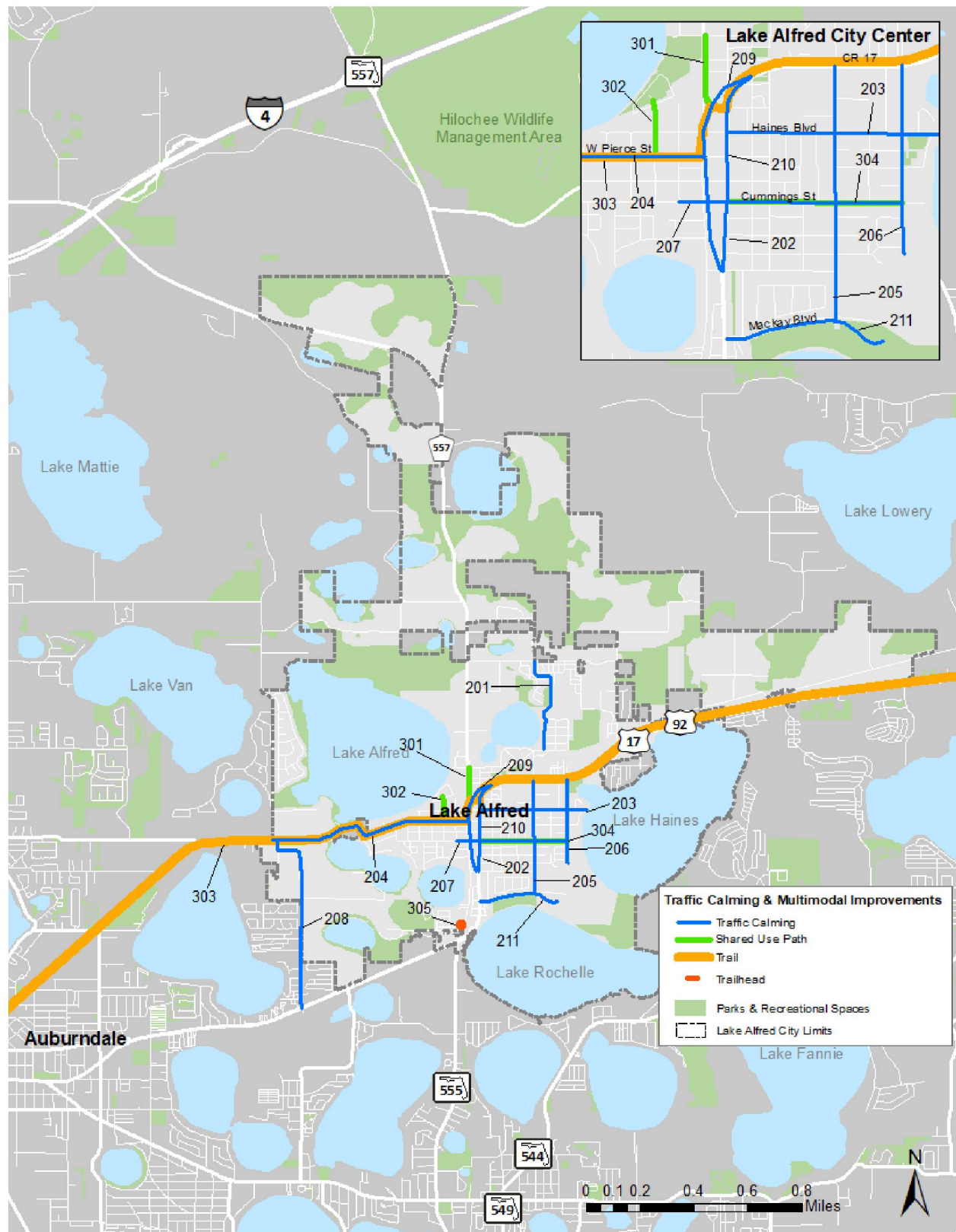
TRAFFIC CALMING

Crash rates and the severity of crashes can be reduced by slowing drivers down and bring greater attention to their environment. Slower speeds also increase comfort and safety for people walking and biking. Design features, enforcement efforts and education all play a role in reducing vehicle speeds and improving safety. **Table 23** presents roads for which traffic calming investments could improve safety and multimodal mobility and reduce the negative impacts of existing or future vehicular trips. This information is also presented in **Figure 24**. The table only identifies the roads to be considered for future traffic calming but does not identify the type of traffic calming tools appropriate for the corridor. Since traffic calming projects can vary significantly by scope, the traffic calming projects are not included in the Transportation Plan cost estimates. The City currently has a Traffic Calming Study underway evaluating types of calming measures, design guidelines, appropriate locations, and areas for immediate consideration within the City. The City will develop plans and cost estimates for traffic calming through this study.

Table 23. Traffic Calming

Number ID	Road Name	From	To	Current Maintaining Jurisdiction	Roadway Classification	Length
201	Lake Swoope Drive	Evenhouse Road	E. Tangerine Avenue	Lake Alfred	Neighborhood Collector	0.9
202	Lake Shore Way	E. Echo Street	Cummings Street	FDOT	Principal Arterial	0.3
203	E. Haines Boulevard	Lake Shore Way	Lake Haines Boat Ramp	Lake Alfred	Neighborhood Collector	0.8
204	Pierce Street	Adams Barn Road	Shinn Boulevard	Lake Alfred	Neighborhood Collector	1.5
205	Glencruiten Avenue	Mackey Boulevard	U.S. 17/92	Lake Alfred	Neighborhood Local	0.9
206	Ramona Avenue	Echo Street	U.S.17/92	Lake Alfred	Neighborhood Local	0.7
207	Cumming Street	Pennsylvania Avenue	Ramona Avenue	Lake Alfred	Neighborhood Local	0.8
208	Lynchburg Road	Lake Alfred Road	U.S. 92	Lake Alfred	Neighborhood Collector	1.6
209	Shinn Boulevard	Echo Street	N Seminole Avenue	FDOT	Principal Arterial	0.9
210	Lake Shore Way	Cummings Street	N Seminole Avenue	FDOT	Principal Arterial	0.6
211	Mackey Boulevard	U.S. 17/92	Yellow Perch Lane	Lake Alfred	Neighborhood Collector	0.9

Figure 24. Traffic Calming & Multimodal Improvements



Source: City of Lake Alfred

MULTIMODAL NETWORK

The proposed multimodal network supports the needs of existing and future residents to access parks, schools, trails, community amenities, and commercial uses.

The trails and shared use path investments planned in and around Lake Alfred will make the City a destination for cyclists and provide residents access to recreational opportunities within the region and across the state. These plans include:

- Old Dixie Trail extension along a reconstructed W Pierce Street, consistent with current alternative alignment of Old Dixie Trail.
- a multiuse trail connection along C.R. 557 from U.S. 17/92 to Evenhouse Road
- a multiuse trail connection on Cummings Street between Lake Shore Way and S. Ramona Avenue
- a multiuse trail connection on Nekoma Avenue from Pierce Street to Lions Park
- Buena Vista trailhead

In addition to the trail connections, improved sidewalk connectivity will increase safety, comfort and mobility. Sidewalks should be constructed along both sides of the road on:

- all roads in the Downtown Core
- within a 15-minute walk (.75 miles) of all parks
- within .25 miles of Lake Alfred Elementary School

Intersection improvements will improve local circulation, multimodal mobility, and safety. Intersection improvement recommendations include:

- improvements at the intersection of C.R. 557 and Shinn Boulevard
- roundabout or signal on Shinn Boulevard and Pierce Street and Lake Shore Way and Pierce Street
- traffic signals on Shinn Boulevard and Cummings Street and Lake Shore Way and Cummings Street
- intersection improvements at U.S. 17/92 and Mackey Boulevard
- signalized intersection with high emphasis crossing/traffic calming at Cummings Street and S. Glencruiten Avenue
- intersection improvements at U.S. 17 and U.S. 92

Five FDOT/County projects, as shown in **Table 24**, were identified within the City of Lake Alfred.

Table 24. Multimodal Improvements

Number ID	Road Name	From	To	Improvement	Length
301*	C.R. 557	Shinn Blvd	E. Swoope St	Shared Use Path	0.27
302	Nekoma Ave	Pierce St	Lions Park	Shared Use Path	0.2
303	Old Dixie Trail	Auburndale	Haines City	Trail	4.2
304	Cummings Street	Lake Shore Way	S.Ramona Avenue	Shared Use Path	0.65
305	Buena Vista Trailhead	At Terrace Avenue	-	Trailhead	-

*Extension of multi-use trail from FDOT C.R. 557 widening

POLICY RECOMMENDATIONS

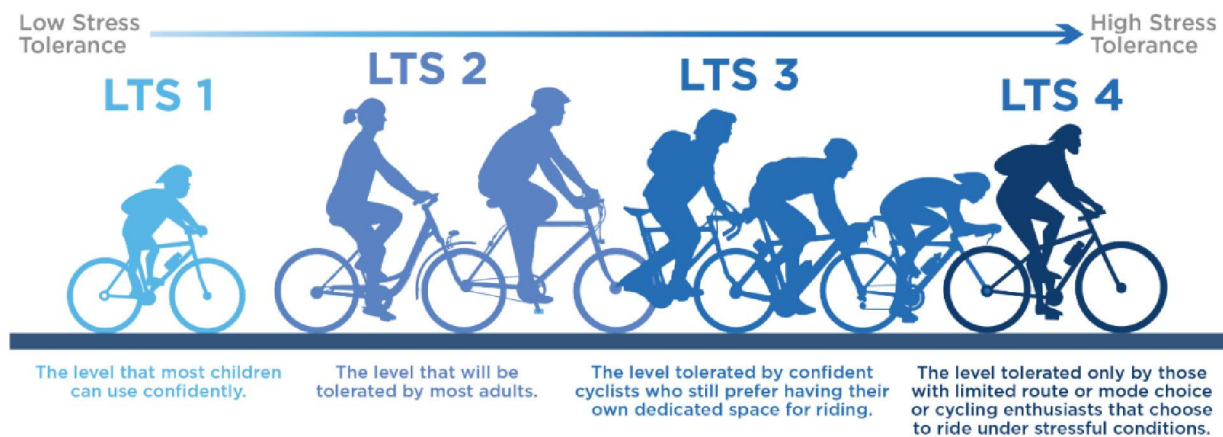
QUALITY OF SERVICE (QOS) STANDARDS

Performance measures, such as level of service standards and level of traffic stress, help guide the implementation of a safe, connected, and equitable transportation network. The City should consider extending bicycle and pedestrian QOS standards throughout the city, to include requirements for marked pedestrian crossing spacing.

For motorized vehicles, the *Highway Capacity Manual (HCM)* and the associated A-F Level of Service (LOS) measure is the most widely recognized and accepted analysis tool. In an urban area, intersections are generally the primary cause of congestion, while in more rural areas, the roadway level of service provides a better tool for measuring roadway congestion. LOS should be measured based on the latest edition of the *Highway Capacity Manual*. The LOS analysis should apply to the peak period. Peak period means the average of the two highest consecutive hours of traffic volume during a weekday.

There are several ways to evaluate bicycle and pedestrian quality of travel. The state of the practice for bicycle and pedestrian planning and design is evolving quickly as the transportation industry focuses more resources on economic development, sustainability, safety, and public health. Level of Traffic Stress (LTS) is gaining acceptance as a leading quality of service measure for bicyclists. Bicycle level of traffic stress (BLTS) is a performance measure that quantifies the amount of discomfort that people feel when they bicycle close to traffic. BLTS designates the quality of service in to four categories, as shown in **Figure 25**. The bicycle level of traffic stress is based off of the posted speed of the roadway, type of bicycle facility present, roadway cross-section, number of travel lanes, adjacent land uses, and AADT of the roadway.

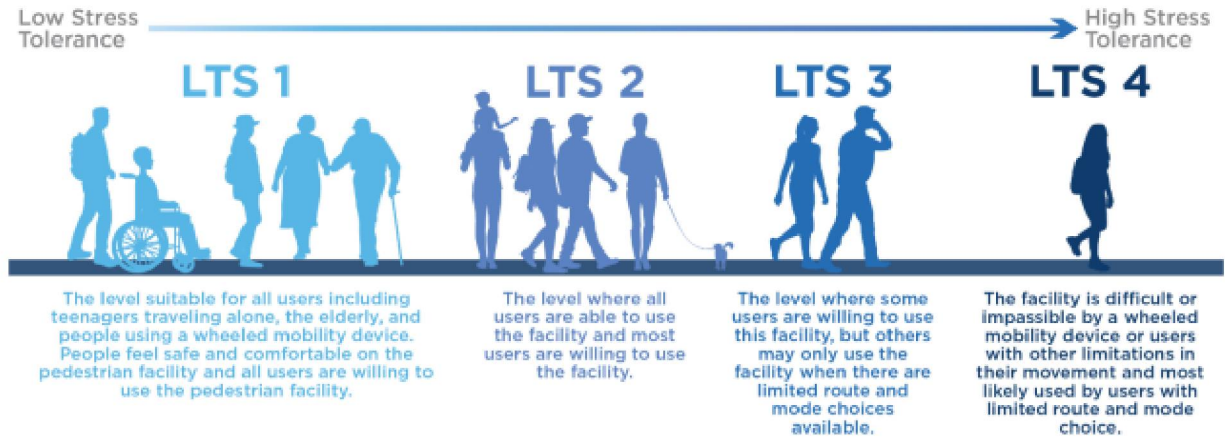
Figure 25. Bicycle Level of Traffic Stress



Source: FDOT Multimodal Quality/Level of Service Handbook, January 2023

Pedestrian level of traffic stress (PLTS) is a performance measure that quantifies the amount of discomfort that people feel when they walk along a road within the roadway right of way. PLTS designates the quality of service in to four categories, as shown in **Figure 26**.

Figure 26. Pedestrian Level of Traffic Stress



Source: FDOT Multimodal Quality/Level of Service Handbook, January 2023

The Florida Department of Transportation published the *Multimodal Quality/Level of Service (MQ/LOS) Handbook* in January 2023 to incorporate LTS. To calculate bicycle and pedestrian level of traffic stress the City of Lake Alfred policy should reference the methodology presented in the pedestrian and bicycle level of stress flow-charts in the most recent edition of the FDOT Multimodal Quality/Level of Service Handbook for pedestrian and bicycle analysis for state and county roadways. The pedestrian and bicycle flow charts from the January 2023 MQ/LOS handbook are found in **Appendix D**.

The City should consider updating the Transportation Element of the Comprehensive Plan to reflect the recommended bicycle and pedestrian LTS and vehicular LOS standards presented in **Table 25**. To be consistent with the multimodal quality of service standards, the City should update the following portions of the Transportation Element of the Comprehensive Plan:

- Objective 1, Policy 1.2
- Objective 1, Policy 1.1

The proposed multimodal quality of service standards promote multimodal travel and support the compact urban development pattern promoted in the Downtown Master Plan. The update to the Comprehensive Plan should include removal of the currently defined multimodal service areas (M1 and M2) in Policy 1.1 of the Transportation Element of the Comprehensive Plan.

The City should monitor the level of service of roadways within the City through traffic impact studies when new development is proposed within the City.

BICYCLE AND PEDESTRIAN IMPROVEMENTS

To support the recommendations to develop a multimodal network presented in this plan, the City should update policy 6.4 of the Transportation Element of the Comprehensive Plan to include annually in the Capital Improvements Program those bicycle and pedestrian facility improvements that are identified in this report (as opposed to the current Policy 6.2) and meet the City's definition of a capital improvement.

Table 25. Recommendations for Multimodal Quality of Service Measures

Facility Type	Vehicular Level of Service			Marked Pedestrian Crossing Spacing
	Target	PLTS Target	BLTS Target	
Principal Arterials	C3C: D C2T: E	LTS 2	LTS 2	C3C: 1,320 feet C2T: 660 feet
Urban Collector	D	LTS 2	LTS 2	660 feet
Rural Major Collectors	C	LTS 2	LTS 2	N/A
Mixed Use Collector	D	LTS 1	LTS 2	660 feet
Neighborhood Collector	C	LTS 2	LTS 2	660 feet
Industrial Collector	C	LTS 2	LTS 2	N/A
Local/Neighborhood Roads	N/A	LTS 1	LTS 1	N/A

Note: suburban commercial (C3C) and rural town (C2T) refer to FDOT Context Classification for state non-limited access roadways. Vehicular LOS should be calculated using the Highway Capacity Manual.

ROAD DESIGN STANDARDS

The Land Development Code, ordinance 1440-20, includes design standards for all roads in the City. The current design standards provide a foundation for developing a cohesive multimodal transportation network. Updates could be made to reflect the recommendations from the U.S. 17/92 Corridor Planning Study, The Downtown Master Plan, and current bicycle facility design. Recommendations include:

- reduce design speed for Lake Shore Way and Shinn Boulevard to match recommendations from the U.S. 17/92 Corridor Planning Study and/or the upcoming FDOT U.S. 17/92 Project Development and Environment Study (PD&E)
- reduce maximum design speed for collector roads to 30 mph
- reduce minimum lane widths for wide neighborhood local streets to 10-11 ft.
- consider allowing for separated bicycle lanes on collector roads
- develop intersection and mid-block crossing standards for pedestrian crossing spacing

Speed management plays an important role in road safety and the comfort of people walking and biking along roads. It is recommended that the City adopt the policies and projects to be recommended through the ongoing traffic calming study.

RESURFACING PROGRAM

Road resurfacing programs maintain streets through various curb to curb street treatment types, such as grinding and paving and pavement preservation. Street surfaces must be routinely maintained, renewed and resurfaced to extend the service life of the pavement by applying the proper treatment type at different stages of the pavement life. The City should consider developing a road resurfacing program that takes in to account pavement condition, roadway priority as part of the multimodal transportation network, geographic equity, coordination with other city projects, and funding. The program should include inspection of road pavement conditions every 2 to 3 years.

TARGET ZERO

Target Zero is FDOT's traffic safety initiative that prioritizes achieving safety for all users by setting a goal of zero traffic fatalities and serious injuries. Target Zero holds that traffic fatalities and serious injuries are preventable and focuses attention on making the roadway and surrounding environment as safe as

possible, including the built environment, policies, and technologies that mitigate serious consequences of mistakes made by road users. The Polk Transportation Planning Organization has adopted a target of zero traffic fatalities on Polk County roads by the year 2040. Lake Alfred should consider adopting a target zero or vision zero policy with the goal of zero serious injury or fatal crashes within the City. The City could apply for a Safe Streets and Roads for All (SS4A) Grant established by the Bipartisan Infrastructure Law, which funds local initiatives to prevent roadway deaths and serious injuries. The following activities are eligible for the SS4A program:

- Develop or update a comprehensive safety action plan (Action Plan).
- Conduct planning, design, and development activities in support of an Action Plan.
- Carry out projects and strategies identified in an Action Plan.

More information on the SS4A grant program can be found at [Safe Streets and Roads for All \(SS4A\) Grant Program | US Department of Transportation](#).

IMPLEMENTATION

COST ESTIMATES

A total of 73 improvements were identified within the City of Lake Alfred (as shown in **Table 19** through **Table 23**). Costs for each roadway improvement were based on the FDOT LRE cost-per-mile models multiplied by the length of the improvement. These provide planning level numbers for average costs across the state for different types of urban and rural typical section improvements. Right-of-way costs can vary significantly from one road to the next or even on different sections of the same road, and thus were not included in the cost estimates for each project. However, existing right-of-way widths were listed when available for informational purposes.

Construction costs for this list of improvements total approximately \$76.9M. A table showing the list of improvements and the estimated costs is found in **Appendix E**.

FUNDING SOURCES AND PARTNERS

The City of Lake Alfred should work closely with FDOT, Polk County, and the Polk County TPO, as many of the roadways within the City are not operated and maintained by the City.

TRANSPORTATION IMPROVEMENT PLAN

The Polk County TPO designates federal funding for transportation projects within Polk County. In the approved 2022 Transportation Improvement Plan (TIP), the following Lake Alfred projects have been designated priority projects for funding:

- US 17/92 Complete Street Improvements (Lakeland and Winter Haven TMA SU Funds)
 - \$400,000 in FY 2023/24 for design
 - \$1,500,000 in FY 2025/26 for construction
- US 17/92 and CR 577 Intersection Improvements (STP/other state funds)
 - \$3,000,000 in FY 2021/22-2024/25 for expansion of PD&E and design
- Old Dixie Trail (TMA SU/TAP/Sun Trail)
 - \$2,000,000 in FY 2022/23-2025/26 for Design

The City of Lake Alfred should continue to pursue federal funding through the Polk County TPO in future TIP updates.

FDOT LOCAL PROGRAMS

FDOT provides a local assistance program (LAP) to assist local governments with the funding of transportation projects. The City can coordinate directly with FDOT for projects under local control or encourage Polk County to submit projects within the City of Lake Alfred. Some of the grant programs available include:

- County Incentive Grant Funding
 - Provides grants to counties to improve a transportation facility which is located on the State Highway System (SHS) or relieves traffic congestion on the SHS
- Transportation Regional Incentive Program
 - FDOT funding for up to 50% of non-federal share of project costs for public transportation facility projects

FEDERAL GRANTS

The US Department of Transportation provides grants for transportation projects, through laws such as the recent Bipartisan Infrastructure Law (BIL). Potential grant opportunities include:

- Safe Streets and Roads for All (SS4A) - Funds initiatives to prevent roadway deaths and serious injuries, including
 - Developing or updating a comprehensive safety action plan
 - Conduct planning, design, and development activities in support of an action plan
 - Carry out projects and strategies identified in an action plan
- Better Utilizing Investments to Leverage Development (BUILD) – funds investments in transportation infrastructure

IMPACT FEES

The City of Lake Alfred may choose to implement a transportation impact fee to provide funding for capacity improvements on City facilities that are needed to serve new development. Potential transportation impact fees for the City are calculated below based on the projected development within the City of Lake Alfred and the projects identified within the transportation plan that provide capacity enhancements. The implementation of impact fees would need to be incorporated by ordinance to go into effect.

DEMAND VARIABLES

The impact of new development on the roadway network, or demand for facility capacity, is defined and measured in terms of the number of estimated vehicle-miles-traveled for each unit of new development. The demand is calculated based on the following demand variables:

- trip generation by land use
- percentage of new trips
- average trip length/assessed trip length

TRIP GENERATION & NEW TRIP PERCENTAGE

Trip generation rates for the proposed local road impact fees are based on the ITE Trip Generation Manual, 11th Edition. While the ITE Trip Generation Manual contains over 170 individual land uses, some of the most common land uses were selected for inclusion in the impact fee calculation and the closest ITE land use was used to calculate the daily trip generation rate. A summary of the land uses and resulting trip generation rates is shown in **Table 26**.

Commercial and retail land uses generally attract a portion of their trips from vehicles already on the roadway network. Pass-by trips are defined as trips that are already existing on the roadway network which visit the land use as part of a larger trip, rather than the land use being the origin or destination. As pass-by trips are already on the roadway network, they are excluded from the calculation of impact fees. The new trip percentage is the percentage of those trips that are not pass-by trips. The ITE Trip Generation Handbook, 3rd Edition, was used to determine the pass-by rate, and by extension, the new trip percentage for each land use, as shown in **Table 27**.

Table 26. Trip Generation by Land Use

Land Use for Ordinance	ITE Code	ITE Land Use	Units	Daily Trip Generation Rate
Single Family	210	Single Family Detached	DU	9.43
Multi Family	220	Multifamily Housing (Low-Rise)	DU	6.74
Hotel	310	Hotel	Room	7.99
Office	710	General Office Building	KSF	10.84
Medical/Dental Office	720	Medical/Dental Office	KSF	36.00
Hospital	610	Hospital	KSF	10.77
Nursing Home	620	Nursing Home	KSF	3.06
Industrial	110	Light Industrial	KSF	4.87
Warehouse	150	Warehouse	KSF	1.71
Shopping Center (>150 KSF)	820	Shopping Center (>150k)	KSF	37.01
Shopping Center (40-150 KSF)	821	Shopping Center (40-150k) w/o supermarket	KSF	67.52
Commercial (<40 KSF)	822	Strip Retail Plaza (<40K)	KSF	54.45
Fast-Food Restaurant	934	Fast Food Restaurant with Drive-Through	KSF	467.48
Restaurant	932	High Turn-Over (Sit-Down) Restaurant	KSF	107.20
Charter/Private School	537	Charter Elementary School	Students	1.85
Church	560	Church	KSF	7.60
Daycare	565	Daycare	KSF	47.62
Gas Station	945	Convenience Store/Gas Station (GFA 2-4K)	Fueling Positions	265.12
Bank	912	Drive-In Bank	KSF	100.35

Table 27. New Trip Percentage

Land Use (in Ordinance)	Pass-By Rate	New Trip Factor
Commercial	0.34	0.66
Restaurant	0.44	0.56
Bank	0.35	0.65

COST VARIABLES

Implementation of impact fees is based on a dual rational nexus test. More specifically, the City of Lake Alfred is required to demonstrate a rational nexus between the need for the roadway improvement and the increase in traffic generated by the development/project, and the expenditures of funds collected from the development and the benefits to the development. Additionally, the impact fees collected may not exceed the infrastructure cost which are reasonably attributed to the development (proportionate share), and the new development required to pay impact fees must directly benefit from the expenditure of those fees. Out of the 74 identified projects in the transportation plan, there were 14 projects that were assumed to meet the dual rational nexus test (needed for traffic generated by new development) that are also on roadways that are or will be maintained by the City of Lake Alfred. As impact fee credits are generally only given for the construction costs of improvements, these projects are expected to cost approximately \$20M, as shown in **Table 28**.

Table 28. Impact Fee Creditable Projects

Roadway	Segment	Description	Impact Fee Creditable Cost
Waylanco Rd	CR 577 to North Experiment Station Rd	Improved 2 Lane	\$509,399
Pierce St	Adams Barn Rd to Shinn Blvd	Improved 2 Lane	\$1,586,700
Lynchburg Rd	US 92 to Lake Alfred Road	Improved 2 Lane	\$1,617,410
Lock St	Lake George Rd to US 92	Improved 2 Lane	\$382,049
Lake George Rd	George Rd to S. Buena Vista Dr	Improved 2 Lane	\$1,171,617
West Gum Ln	CR 557 to Old Lake Alfred Rd	New 2 Lane	\$1,545,847
Unnamed Rd	Old Lake Alfred Rd to Adams Barn Rd	New 2 Lane	\$4,173,787
White Rd Conn.	White Rd to Lake Lowery Rd	New 2 Lane	\$764,098
Gum Rd Ext.	Gum Rd to North Experiment Station Rd	New 2 Lane	\$989,342
Unnamed Rd	CR 557 to North Experiment Station Rd	New 2 Lane	\$772,923
North Experiment Station Rd	North Experiment Station Rd to Gum Rd Ext.	New 2 Lane	\$3,710,033
Ramona Ave *	S Ramona Ave to New Developments South	New 2 Lane	\$382,049
Echo Dr	S Winona Ave to S Echo Dr	New 2 Lane	\$1,146,147
Lake Cumming Rd	Lake Cumming Rd to Lake George Rd	New 2 Lane	\$772,923
US 17/92	At Mackey Boulevard	Turn Lanes	\$300,000
US 17	At US 92	Turn Lanes	\$300,000
Total Cost			\$20,124,325

* Evaluate project for pedestrian only connection at time of implementation by staff and City Commission.

An impact fee based on a cost per trip is proposed for each new development. As was shown in **Table 7**, a total of 61,983 new daily trips are expected due to new development within the City of Lake Alfred. When combined with the \$20,124,325 total project costs, the overall cost per trip is \$325.

Although the impact fees are based on a specific list of development projects and roadway improvements that will be required to serve those developments, all new development projects in the City will be subjected to impact fees. Likewise, impact fees can be used for any roadway project which increases capacity, whether or not it is included within the calculation as a roadway needed to serve the identified new developments.

CREDITS

The City of Lake Alfred collects taxes on properties within the City and receives gas tax funds which can be used for transportation projects. As the trips generated by new developments will pay these taxes, credit for future taxes may be given as part of the impact fee calculation if they are spent on new capacity projects.

An analysis was completed to determine the current transportation funding sources for the City of Lake Alfred, based on the FY 2022/2023 – FY 2026/2027 Capital Improvement Plan (CIP). The CIP has funding for sidewalk projects (\$250,000), complete streets projects (\$1,000,000) and street resurfacing projects (\$940,000), but no funding for transportation projects, as shown in **Figure 27**. The CIP indicates that the gas tax is used for street resurfacing, which is not impact fee creditable, and thus no impact fee credits will be given for the gas tax. As there are also no ad valorem taxes being spent on capacity-related transportation projects, no ad valorem credit will be given.

Figure 27. City of Lake Alfred Public Works Funding

CITY OF LAKE ALFRED
 CAPITAL IMPROVEMENTS PROGRAM (CIP)
 FY 2022/2023 - FY 2026/2027

	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027	Funding
	1st Year	2nd Year				
Public Works						
Replacement Service Vehicles		\$35,000		\$35,000		
New Service Vehicles						
PW Barn Upgrade/Reno			\$500,000			Gen. Impact
Lightning Loader Replacement		\$175,000				Sanitation R.
Garbage Truck Replacement			\$275,000			Sanitation R.
New Sanitation Vehicles				\$300,000		
Sidewalk Projects	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	
Complete Streets Projects			\$500,000		\$500,000	
Transportation Projects						
Street Resurfacing	\$220,000	\$120,000	\$240,000	\$120,000	\$240,000	Local Gas Tax
Total:	\$270,000	\$380,000	\$1,565,000	\$505,000	\$790,000	

Funding Reserves

External Funding

Restricted Funding

LOCAL ROAD IMPACT FEE CALCULATION

The local road impact fee was calculated based on the following formulas:

$$Total\ Impact\ Cost = \frac{(Daily\ Trips * Assessed\ Trip\ Length * \% \text{ New Trips})}{2} * \frac{Total\ Project\ Costs}{Total\ Trips}$$

The total impact cost uses the total project costs for impact fee creditable projects on City facilities and the total projected trips. The detailed calculations are shown in **Appendix E**. A summary of the proposed local road impact fees by land use is shown in **Table 29**.

Within Polk County, roadway impact fees are charged to all developments whether or not they are located within a City. Other cities in Polk County may charge impact fees separate of the County. A comparison of the calculated impact fees for Lake Alfred with the existing Polk County, City of Lakeland, and City of Davenport impact fees is shown in **Table 30**. In most cases, the calculated impact fee for the City of Lake Alfred is lower than the Polk County and City of Lakeland rates, but higher than the City of Davenport rates, although there are a few exceptions.

Table 29. Calculated Local Road Impact Fees by Land Use

Land Use	Unit	Proposed Fee
Single Family	DU	\$1,531
Multi-Family	DU	\$1,094
Hotel	Rooms	\$1,297
General Office	KSF	\$1,760
Medical Office	KSF	\$5,844
Hospital	KSF	\$1,748
Nursing Home	Beds	\$497
Industrial	KSF	\$791
Warehouse	KSF	\$278
General Commercial (<40)	KSF	\$5,834
General Commercial (40-150)	KSF	\$7,234
General Commercial (>150)	KSF	\$3,965
Fast-Food	KSF	\$37,945
Restaurant	KSF	\$9,745
Charter/Private School	Students	\$300
Church	KSF	\$1,234
Day Care	KSF	\$7,731
Gas Station	Fueling Positions	\$14,633
Bank	KSF	\$10,589

Table 30. Comparison of Transportation Impact Fees

Land Use	Unit	Lake Alfred	Polk County	Lakeland	Davenport	Haines City
Single Family	DU	\$1,531	\$2,380	\$4,316	\$462	\$1,339
Multi-Family	DU	\$1,094	\$1,564	\$1,837	\$318	\$922
Mobile/Manufactured Home	DU		\$877	\$1,579	\$241	\$698
ACLF (congregate care facility)	DU				\$98	
Retirement Home	DU				\$169	
Hotel (Motel)	Rooms	\$1,297		\$1,671	\$149 (\$85)	\$1,248
General Office	KSF	\$1,760	\$2,356	\$2,516	\$335	\$2,190 (<100KSF) \$1,700 (100-200KSF) \$1,591 (>200KSF)
Medical Office	KSF	\$5,844		\$6,916	\$682	\$5,055
Business Park	KSF					\$1,785
Hospital	KSF	\$1,748		\$3,669	\$399	\$2,458
Nursing Home	Beds	\$497		\$383	\$48	
High Tech Assembly & Distribution	KSF			\$776		
Industrial	KSF	\$791	\$855	\$604	\$119	\$534
Warehouse	KSF	\$278	\$796	\$841	\$155	\$694
Mini-Warehouse	KSF			\$455	\$78	\$350
General Commercial (<40 KSF)	KSF	\$5,834	\$3,536	\$6,096	\$713	\$7,564 (<50KSF)
General Commercial (40-150 KSF)	KSF	\$7,234	\$3,536	\$6,096	\$713	\$5,044 (50-100KSF)
General Commercial (>150 KSF)	KSF	\$3,965	\$3,536	\$6,096	\$713	\$4,547 (100-300KSF) \$4,328 (300-500KSF) \$3,802 (500-1,000KSF) \$3,437 (>1,000KSF)
Supermarket (Stand-Alone)	KSF				\$919	\$9,155
Auto-Repair or Body Shop	KSF				\$193	\$1,132 (Bay)
Quick Lube Center	Bay					\$2,854
Car Wash	Stall			\$5,333	\$1,228	
Fast-Food	KSF	\$37,945		\$46,934	\$2,777	\$34,708
Restaurant	KSF	\$9,745			\$1,661	\$10,141
General Recreation	KSF		\$707			
Arena	Emp				\$214	
Golf Course	Holes			\$14,574	\$764	
Health/Fitness Club	KSF				\$704	
Racquet Club	KSF					\$2,257
Bowling Alley	KSF					\$2,285
Charter/Private Schools	Students	\$300		\$262 (Elem.) \$300 (Mid.) \$322 (High) \$658 (<7,500 Univ.) \$489 (>7,500 Univ.)		\$1,803 (in KSF)
Church	KSF	\$1,234			\$207	
Adult Day Care	Bed			\$246		
Day Care	KSF	\$7,731			\$171	\$3,105

Land Use	Unit	Lake Alfred	Polk County	Lakeland	Davenport	Haines City
Gasoline/Service Station	Fuel Position	\$14,633		\$8,191 (<2 KSF) \$7,702 (2-3 KSF) \$8,245 (>3 KSF)	\$377	\$6,603
Gas Station/Convenience Store	KSF				\$1,391	\$28,913
Bank	KSF	\$10,589			\$2,204 (drive in) \$1,399 (walk in)	\$18,279
Pharmacy with Drive-Thru	KSF				\$1,092	\$6,301
Movie Theater	Screen			\$18,318	\$2,949	\$10,922

Appendix A. Existing Traffic Counts

FLORIDA DEPARTMENT OF TRANSPORTATION
 TRANSPORTATION STATISTICS OFFICE
 2021 HISTORICAL AADT REPORT

COUNTY: 16 - POLK

SITE: 4148 - CR 557, SOUTH OF CR 557A

<u>YEAR</u>	<u>AADT</u>	<u>DIRECTION 1</u>	<u>DIRECTION 2</u>	<u>*K FACTOR</u>	<u>D FACTOR</u>	<u>T FACTOR</u>
2021	17500 C	N 8300	S 9200	9.00	55.30	12.80

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

FLORIDA DEPARTMENT OF TRANSPORTATION
 TRANSPORTATION STATISTICS OFFICE
 2021 HISTORICAL AADT REPORT

COUNTY: 16 - POLK

SITE: 4923 - LAKE ALFRED ROAD, W OF ADAMS BARN RD

YEAR	AADT		DIRECTION 1		DIRECTION 2		*K FACTOR	D FACTOR	T FACTOR
2021	4400	F	E	2300	W	2100	9.00	55.30	11.90
2020	4200	C	E	2200	W	2000	9.00	53.40	13.20
2019	4600	F	E	2400	W	2200	9.00	56.00	13.30
2018	4400	C	E	2300	W	2100	9.00	54.50	12.80
2017	4300	S	E	2200	W	2100	9.00	54.50	12.90
2016	4100	F	E	2100	W	2000	9.00	53.30	12.80
2015	3900	C	E	2000	W	1900	9.00	55.70	10.30
2014	3500	S					9.00	55.60	11.00
2013	3400	F		0		0	9.00	55.90	11.30
2012	3400	C	E	0	W	0	9.00	55.80	10.40

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

FLORIDA DEPARTMENT OF TRANSPORTATION
 TRANSPORTATION STATISTICS OFFICE
 2021 HISTORICAL AADT REPORT

COUNTY: 16 - POLK

SITE: 4939 - CR557A/POLK CITY RD, E OF I-4

YEAR	AADT		DIRECTION 1		DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR	
2021	3200	F	E	1600	W	1600	9.50	55.30	12.60
2020	3000	C	E	1500	W	1500	9.50	53.40	12.60
2019	2400	F	E	1200	W	1200	9.50	56.00	13.30
2018	2400	C	E	1200	W	1200	9.50	54.50	12.80
2017	2700	S	E	1300	W	1400	9.50	54.50	12.90
2016	2500	F	E	1200	W	1300	9.50	53.30	12.80
2015	2300	C	E	1100	W	1200	9.50	55.70	10.30
2014	2100	S	E	1100	W	1000	9.50	55.60	11.00
2013	2100	F	E	1100	W	1000	9.50	55.90	11.30
2012	2100	C	E	1100	W	1000	9.50	55.80	10.40

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

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2021 HISTORICAL AADT REPORT

COUNTY: 16 - POLK

SITE: 5263 - SR600/US17/92, N OF PIERCE ST - LK ALFRED

YEAR	AADT		DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2021	18500	C	N 18500	0	9.00	99.90	9.60
2020	16500	C	N 16500	0	9.00	99.90	10.40
2019	18000	C	N 18000	0	9.00	99.90	8.80
2018	17000	C	N 17000	0	9.00	99.90	8.80
2017	17000	C	N 17000	0	9.00	99.90	9.20
2016	16000	C	N 16000	0	9.00	99.90	9.20
2015	15000	C	N 15000	0	9.00	99.90	9.20
2014	13000	F			9.00	99.90	9.30
2013	13000	C	N 13000	0	9.00	99.90	9.30
2012	13000	C	N 13000	0	9.00	99.90	8.30
2011	13000	C	N 13000	0	9.00	99.90	10.50
2010	11000	C	N 11000	0	9.55	99.99	9.00

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

FLORIDA DEPARTMENT OF TRANSPORTATION
 TRANSPORTATION STATISTICS OFFICE
 2021 HISTORICAL AADT REPORT

COUNTY: 16 - POLK

SITE: 5264 - SR600/US17/92, S OF HAINES BLVD - LK ALFRED

YEAR	AADT		DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2021	18500	C	S 18500	0	9.00	99.90	9.60
2020	17500	C	S 17500	0	9.00	99.90	10.40
2019	18500	C	S 18500	0	9.00	99.90	8.80
2018	17000	C	S 17000	0	9.00	99.90	8.80
2017	16500	C	S 16500	0	9.00	99.90	9.50
2016	15500	C	S 15500	0	9.50	99.90	9.50
2015	15000	C	S 15000	0	9.50	99.90	9.50
2014	13000	F			9.50	99.90	8.50
2013	13000	C	S 13000	0	9.50	99.90	8.50
2012	13000	C	S 13000	0	9.50	99.90	8.40
2011	13000	C	S 13000	0	9.50	99.90	10.90
2010	11000	C	S 11000	0	9.55	99.99	9.80

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

FLORIDA DEPARTMENT OF TRANSPORTATION
 TRANSPORTATION STATISTICS OFFICE
 2021 HISTORICAL AADT REPORT

COUNTY: 16 - POLK

SITE: 5062 - SR 600/US 17/92, N OF CR 557/HAINES BLVD LK ALFRED

YEAR	AADT		DIRECTION 1		DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR	
2021	25000	C	N	12500	S	12500	9.00	55.30	9.10
2020	21500	C	N	11000	S	10500	9.00	53.40	11.00
2019	21500	C	N	11000	S	10500	9.00	56.00	8.30
2018	21000	C	N	10500	S	10500	9.00	54.50	9.00
2017	20000	C	N	10000	S	10000	9.00	54.50	9.00
2016	19000	C	N	9500	S	9500	9.00	53.30	9.70
2015	18800	C	N	9400	S	9400	9.00	55.70	7.40
2014	16700	C	N	8400	S	8300	9.00	55.60	7.40
2013	16300	F	N	8300	S	8000	9.00	55.90	9.20
2012	16300	C	N	8300	S	8000	9.00	55.80	9.20
2011	14600	S	N	7400	S	7200	9.00	55.70	8.30
2010	14600	F	N	7400	S	7200	9.55	56.07	8.30
2009	14800	C	N	7500	S	7300	9.36	56.35	8.30
2008	15800	C	N	8000	S	7800	9.78	55.29	9.60
2007	18500	C	N	9700	S	8800	9.66	55.30	9.20
2006	17500	C	N	9000	S	8500	9.62	55.83	10.30

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

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2021 HISTORICAL AADT REPORT

COUNTY: 16 - POLK

SITE: 0008 - SR 555/US 17 SOUTH OF SR 600/US 92, LAKE ALFRED

YEAR	AADT		DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2021	28000	C	N 14000	S 14000	9.00	55.30	7.60
2020	24000	C	N 12000	S 12000	9.00	53.40	8.20
2019	25000	C	N 13000	S 12000	9.00	56.00	5.70
2018	25000	C	N 12500	S 12500	9.00	54.50	6.50
2017	24000	C	N 12000	S 12000	9.00	54.50	8.30
2016	24000	C	N 12000	S 12000	9.00	53.30	7.30
2015	21000	C	N 10500	S 10500	9.00	55.70	7.70
2014	20000	S	N 10000	S 10000	9.00	55.60	7.70
2013	19800	F	N 9800	S 10000	9.00	55.90	7.70
2012	19800	C	N 9800	S 10000	9.00	55.80	7.70
2011	18400	S	N 9100	S 9300	9.00	55.70	6.60
2010	18600	F	N 9200	S 9400	9.55	56.07	6.60
2009	18800	C	N 9300	S 9500	9.36	56.35	6.60
2008	18700	C	N 9100	S 9600	9.78	55.29	6.80
2007	22500	C	N 11000	S 11500	9.66	55.30	7.80
2006	21500	C	N 10500	S 11000	9.62	55.83	8.10

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

FLORIDA DEPARTMENT OF TRANSPORTATION
 TRANSPORTATION STATISTICS OFFICE
 2021 HISTORICAL AADT REPORT

COUNTY: 16 - POLK

SITE: 0010 - SR 600/US 17, 92 EAST OF EXPERIMENT STATION ROAD

YEAR	AADT		DIRECTION 1		DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2021	25500	C	E 13000		W 12500	9.00	55.30	9.70
2020	21000	C	E 10500		W 10500	9.00	53.40	10.30
2019	21500	C	E 11000		W 10500	9.00	56.00	8.00
2018	20500	C	E 10500		W 10000	9.00	54.50	8.40
2017	19700	C	E 10000		W 9700	9.00	54.50	8.80
2016	18900	C	E 9600		W 9300	9.00	53.30	9.90
2015	17700	C	E 9000		W 8700	9.00	55.70	8.80
2014	15800	F	E 8100		W 7700	9.00	55.60	8.80
2013	15600	C	E 8000		W 7600	9.00	55.90	8.80
2012	15100	C	E 7700		W 7400	9.00	55.80	8.80
2011	15200	F	E 7700		W 7500	9.00	55.70	9.10
2010	15200	C	E 7700		W 7500	9.55	56.07	9.20
2009	15600	C	E 7800		W 7800	9.36	56.35	8.50
2008	15600	C	E 7900		W 7700	9.78	55.29	10.90
2007	18400	C	E 9200		W 9200	9.66	55.30	11.70
2006	17600	C	E 9000		W 8600	9.62	55.83	10.80

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

FLORIDA DEPARTMENT OF TRANSPORTATION
 TRANSPORTATION STATISTICS OFFICE
 2021 HISTORICAL AADT REPORT

COUNTY: 16 - POLK

SITE: 0026 - SR 600/US 17/92, E OF RR & E OF CR 555 LK ALFRED

YEAR	AADT		DIRECTION 1		DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2021	36000	C	E 17500		W 18500	9.00	55.30	9.00
2020	32000	C	E 16000		W 16000	9.00	53.40	9.40
2019	36000	C	E 18000		W 18000	9.00	56.00	9.00
2018	34500	C	E 17000		W 17500	9.00	54.50	8.10
2017	32500	C	E 16000		W 16500	9.00	54.50	7.80
2016	33000	C	E 16000		W 17000	9.00	53.30	8.90
2015	30000	C	E 15000		W 15000	9.00	55.70	8.10
2014	28500	C	E 14000		W 14500	9.00	55.60	8.60
2013	28000	F	E 14000		W 14000	9.00	55.90	7.20
2012	28000	C	E 14000		W 14000	9.00	55.80	7.20
2011	21800	S	E 12000		W 9800	9.00	55.70	8.70
2010	21900	F	E 12000		W 9900	9.55	56.07	8.70
2009	22000	C	E 12000		W 10000	9.36	56.35	8.70
2008	23000	C	E 12500		W 10500	9.78	55.29	8.90
2007	24000	C	E 12500		W 11500	9.66	55.30	9.60
2006	23500	C	E 11500		W 12000	9.62	55.83	9.70

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

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

FLORIDA DEPARTMENT OF TRANSPORTATION
 TRANSPORTATION STATISTICS OFFICE
 2021 HISTORICAL AADT REPORT

COUNTY: 16 - POLK

SITE: 0139 - SR 600/US 92, EAST OF E BRIDGERS AVE, AUBURNDALE

YEAR	AADT		DIRECTION 1		DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2021	25000	C	E 12500		W 12500	9.00	55.30	11.00
2020	21500	C	E 10500		W 11000	9.00	53.40	9.70
2019	20000	C	E 10000		W 10000	9.00	56.00	8.10
2018	19700	C	E 9700		W 10000	9.00	54.50	8.60
2017	18100	C	E 8800		W 9300	9.00	54.50	9.40
2016	18900	C	E 9300		W 9600	9.00	53.30	8.80
2015	18400	C	E 9000		W 9400	9.00	55.70	8.80
2014	16700	F	E 8300		W 8400	9.00	55.60	8.00
2013	16500	C	E 8200		W 8300	9.00	55.90	8.00
2012	16300	C	E 8300		W 8000	9.00	55.80	8.80
2011	16200	F	E 8200		W 8000	9.00	55.70	7.90
2010	16400	C	E 8300		W 8100	9.55	56.07	7.90
2009	16500	C	E 8400		W 8100	9.36	56.35	8.80
2008	16700	C	E 8400		W 8300	9.78	55.29	9.90
2007	19200	C	E 9500		W 9700	9.66	55.30	10.20
2006	14800	C	E 7500		W 7300	9.62	55.83	13.90

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

FLORIDA DEPARTMENT OF TRANSPORTATION
 TRANSPORTATION STATISTICS OFFICE
 2021 HISTORICAL AADT REPORT

COUNTY: 16 - POLK

SITE: 4147 - CR 557, SOUTH OF CR 17/POLK CITY ROAD PC 147

YEAR	AADT		DIRECTION 1		DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2021	13300	S	N 6400		S 6900	9.50	55.30	14.00
2020	12900	F	N 6200		S 6700	9.50	53.40	14.00
2019	12900	C	N 6200		S 6700	9.50	56.00	14.00
2018	12700	C	N 6400		S 6300	9.50	54.50	13.50
2017	12300	C	N 6000		S 6300	9.50	54.50	13.50
2016	10000	S	N 5000		S 5000	9.50	53.30	14.20
2015	9400	F	N 4700		S 4700	9.50	55.70	14.20
2014	9000	C	N 4500		S 4500	9.50	55.60	14.20
2013	8600	S	N 4200		S 4400	9.50	55.90	12.90
2012	8600	F	N 4200		S 4400	9.50	55.80	12.90
2011	8600	C	N 4200		S 4400	9.50	55.70	12.90
2010	6800	S	N 3400		S 3400	9.55	56.07	13.20
2009	6800	F	N 3400		S 3400	9.36	56.35	13.20
2008	7000	C	N 3500		S 3500	9.78	55.29	13.20

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

Appendix B. Planned Developments

Projects Summary - February 2022

	Project_ID	Name	Phase	Acres	Zoning			
Commercial	11	Polk NE Govt Center	Under Construction	29.5	P-B			
	26	Pharmacy	Site Plan Review	0.53	C-2			
	34	The Landings	Site Plan Review	1.5	C-2			
	30	7-Eleven	Annex	10	C-2, C-3			
Industrial	9	CSI Cargo	Site Plan Review	10	I-1			
	10	Gapway Industrial Park	Site Plan Review	40	I-1			
	39	Gapway Industrial Park - IAA	Site Plan Review	115	I-1			
	25	Gapway Cold Storage	Site Plan Review	13	I-1			
	27	N40 Warehouse	Site Plan Review	20	I-1			
	28	US 17/92 Manufacturing	Site Plan Review	1.7	I-1	Zoning max	Approved Units	
Mixed Use	1	Adams Estate	Under Construction	27	C-2	324	26 cottages	
	2	Adams Estate	Site Plan Review	64	C-2	768	576	
	19	The Florida Club Phase 1	Construction Plan Review	138.7	RN-2 / C-2	1212	212	
	35	I-4 Development	Inquiry	118	-	-	-	
	36	Old Polk City Road	Inquiry	-	-	-	-	
	37	Gum Road	Inquiry	-	-	-	-	
Residential	15	LA Pines	Under Construction	30.5	VRN	83	79	
	22	Water Ridge	Under Construction	113.5	R-1A-C	400	255	Misc
	4	Eden Hills Phase 1	Under Construction	33.5	R-1	189	142	Richmond
	5	Eden Hills Phase 2	Under Construction	177.5	VRN	445	402	
	21	The Lakes Tract 6	Under Construction	35.6	VRN	141	101	Highland Homes
	8	Eden Hills Addition	Construction Plan Review	25.7	VRN	76	70	
	14	Hammock Preserve	Construction Plan Review	45	Haines City		209	
	12	Gum Lake Phase 1-2	Construction Plan Review	148	VRN	296	274	LGI
	18	Springs of Lake Alfred	Construction Plan Review	483.7	VRN	1048	960	Pulte
	3	Caribbean Lakes /Lake Lowery	Site Plan Review	175	RN-1	1050	644	Kolter
	23	Waterford Cove	Site Plan Review	24	UR	312	120	Benge
	29	Fanks 40	Site Plan Review	40	VRN	160	124	
	33	Tiny Homes	Site Plan Review	2	C-2	24	30	
	17	Silver Lake	Site Plan Review	145.5	VRN	442	318	Meritage
	20	The Florida Club	Future Phase	268	RN-2	2544	758	TBD
	6	Eden Hills Phase 3	Future Phase	44	VRN	146	551	
	7	Eden Hills Phase 4	Future Phase	104	VRN	328		
	13	Gum Lake Phase 3-4	Future Phase	111	VRN	226	173	
	31	Polk Training Ceter	FLU	10	RN-2	120	100	
	24	Marianna Pointe	Annex	13	RN-2	156	70	
32	Lake Swoope Heights	Expired Site Plan	25	VRN	80	77		
16	Markham Hills	Expired Site Plan	84.5	VRN	231	193	Pulte	
38	Old Lake Alfred Rd	Inquiry	40	VRN	160	124		

10637

6562

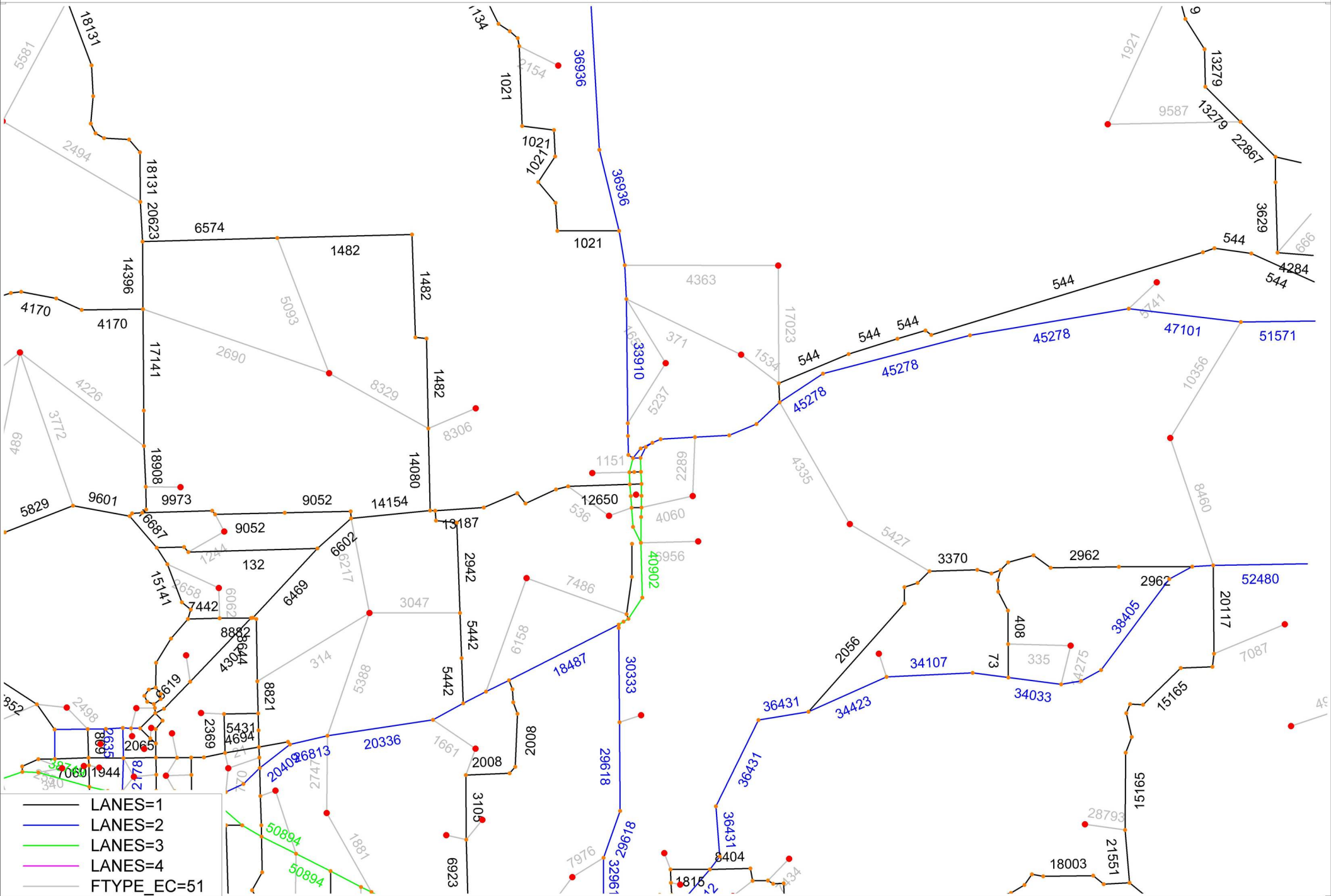
Total

Requested

TAZ	Off-the shelf model								Updated model									
	SFDU	SFPOP	MFDU	MFPOP	COMEMP	INDEMP	SEREMP	WRKRPHLD	SFDU	SFPOP	MFDU	MFPOP	RESDHLD	RESDPOP	WORKERS	INDEMP	COMEMP	TOT_EMP
375	909	1933	853	1625	72	29	311	1.06	909	1933	853	1625	1762	3558	1868	29	72	383
392	709	1458	939	1759	140	8	279	1.05	1113	3003	939	1759	2052	4762	2155	8	404	691
395	648	1504	76	172	127	45	351	1.23	973	2479	602	1204	1575	3683	1937	45	140	536
417	326	762	43	89	143	10	447	1.18	326	762	43	89	369	851	435	10	153	610
418	681	1733	135	311	13	3	56	1.27	782	2036	135	311	917	2347	1165	3	13	72
432	893	2347	266	642	6	3000	623	1.34	2256	6436	266	642	2522	7078	3379	3000	6	3629
438	1034	1781	142	224	156	5	349	0.87	1034	1781	292	524	1326	2305	1154	5	182	536
453	195	462	28	59	6	5	18	1.18	1155	3342	28	59	1183	3401	1396	5	6	29
680	958	2502	206	485	5	181	477	1.33	958	2502	206	485	1164	2987	1548	2700	5	3182
681	433	899	123	231	112	76	232	1.04	433	899	332	649	765	1548	796	76	112	420
737	169	522	17	50	0	2	0	1.52	1137	3426	710	1436	1847	4862	2807	2	0	2
742	298	710	31	66	21	151	433	1.20	375	941	131	266	506	1207	607	181	21	635

Appendix C. Model Plots

Lake Alfred Transportation Master Plan

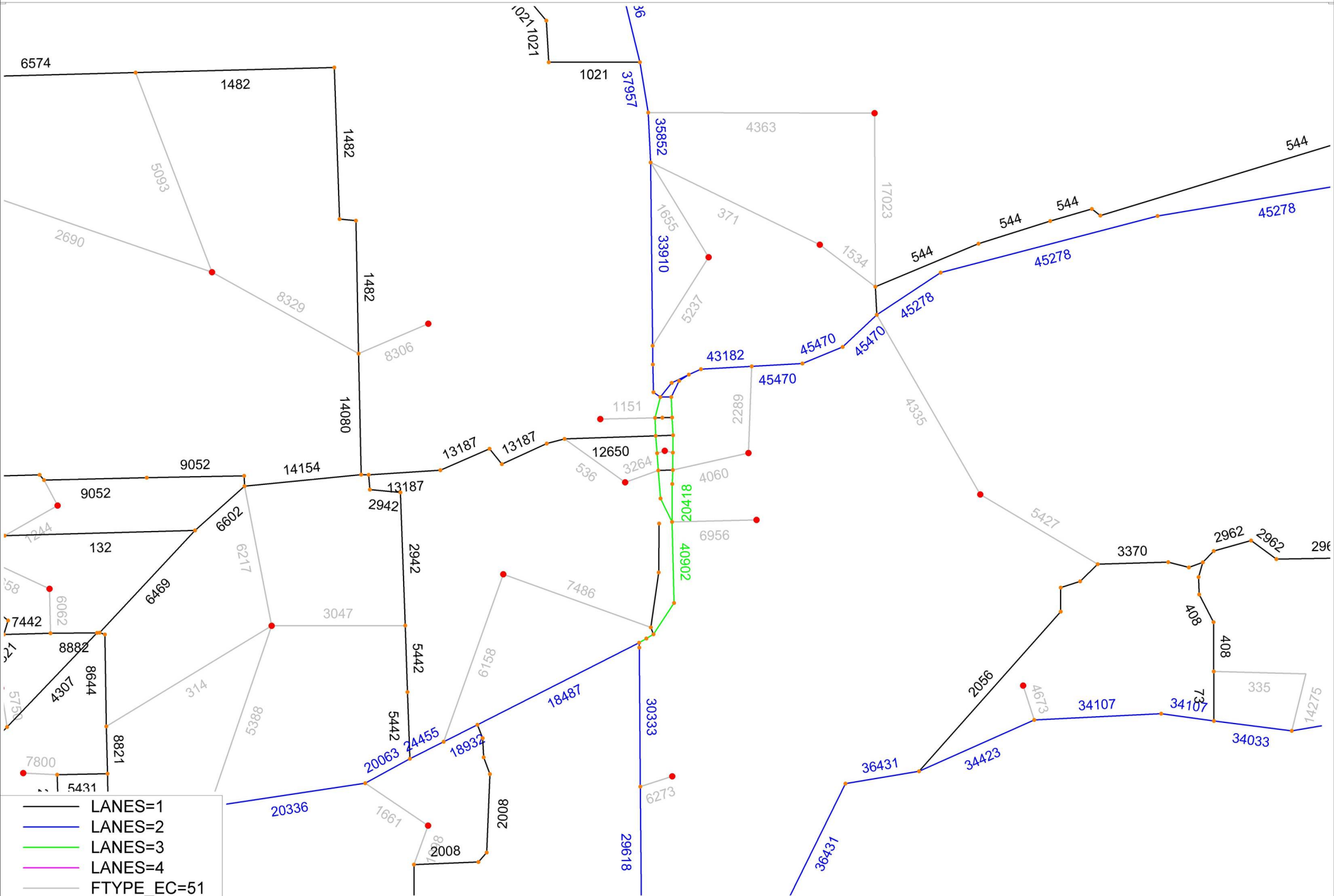


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2045 BASE MODEL

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Lake Alfred Transportation Master Plan

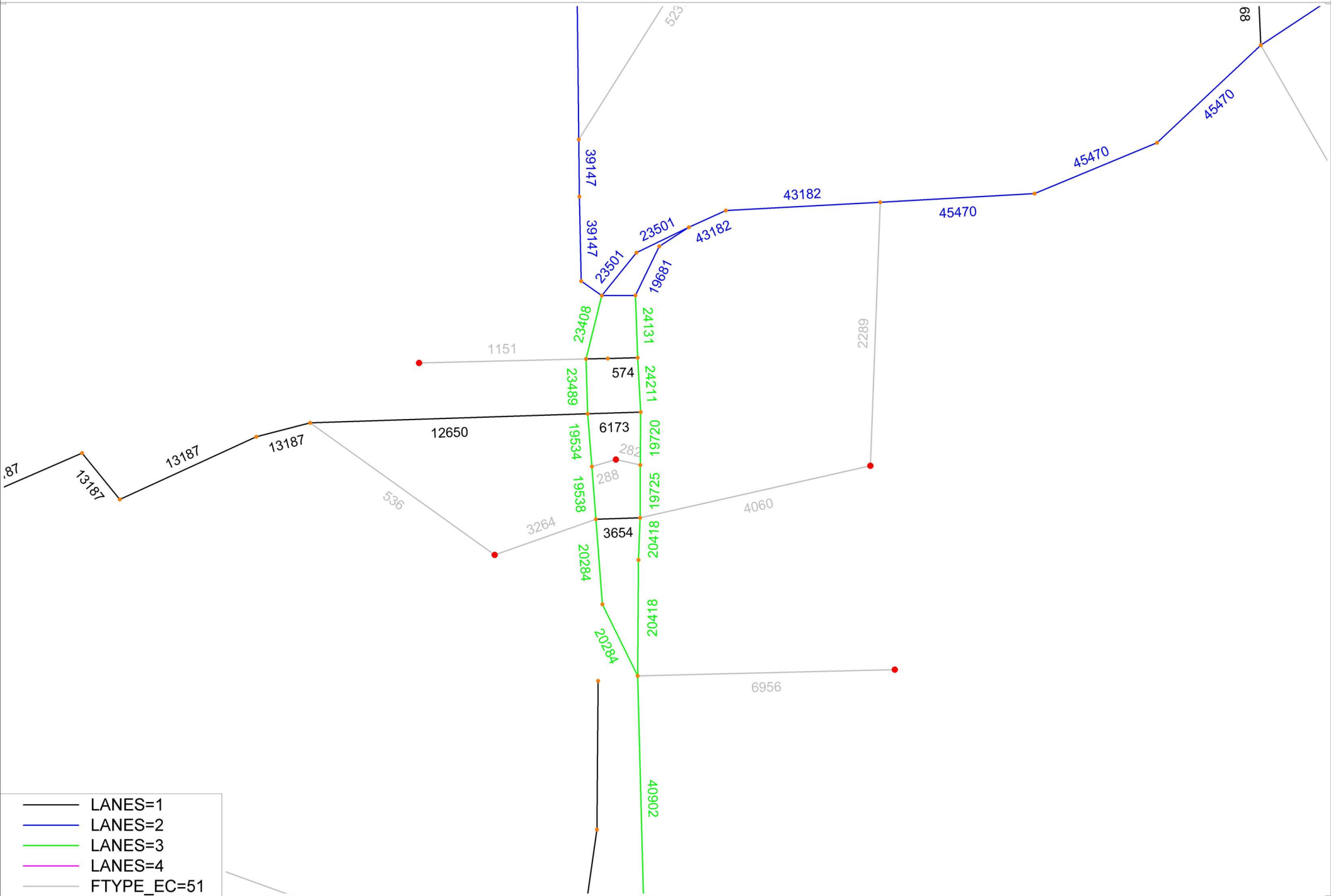


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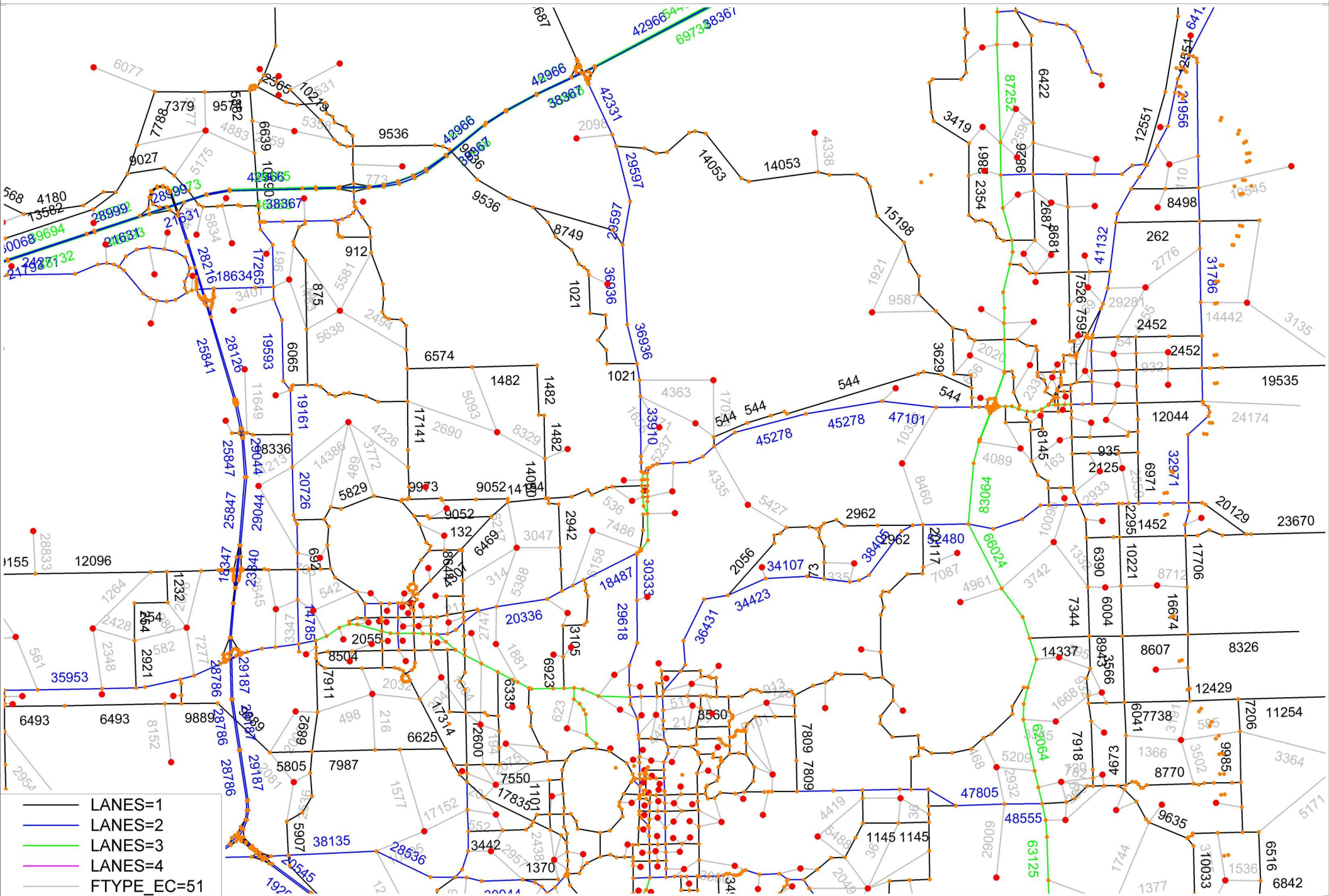


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2045 BASE MODEL

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Lake Alfred Transportation Master Plan

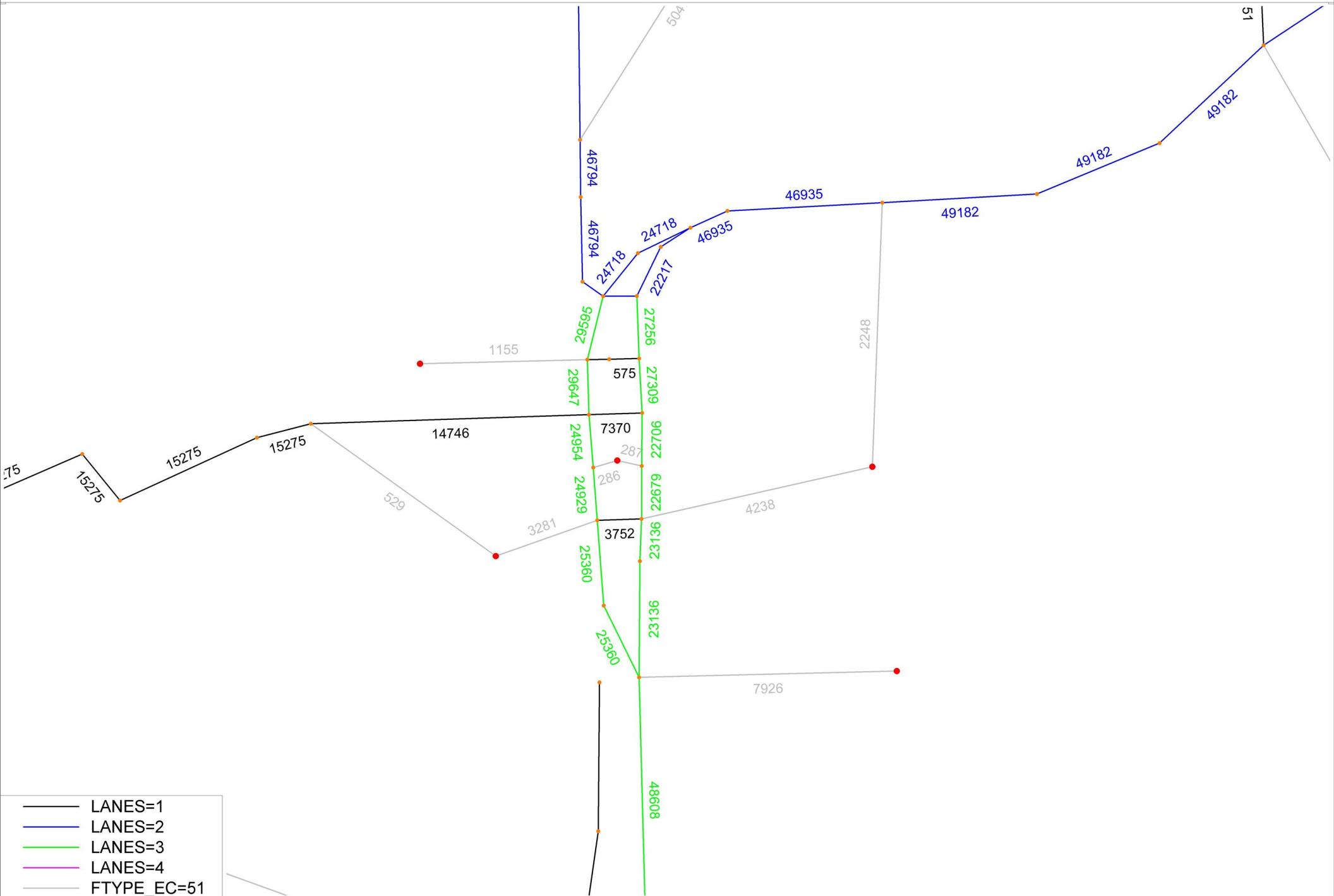


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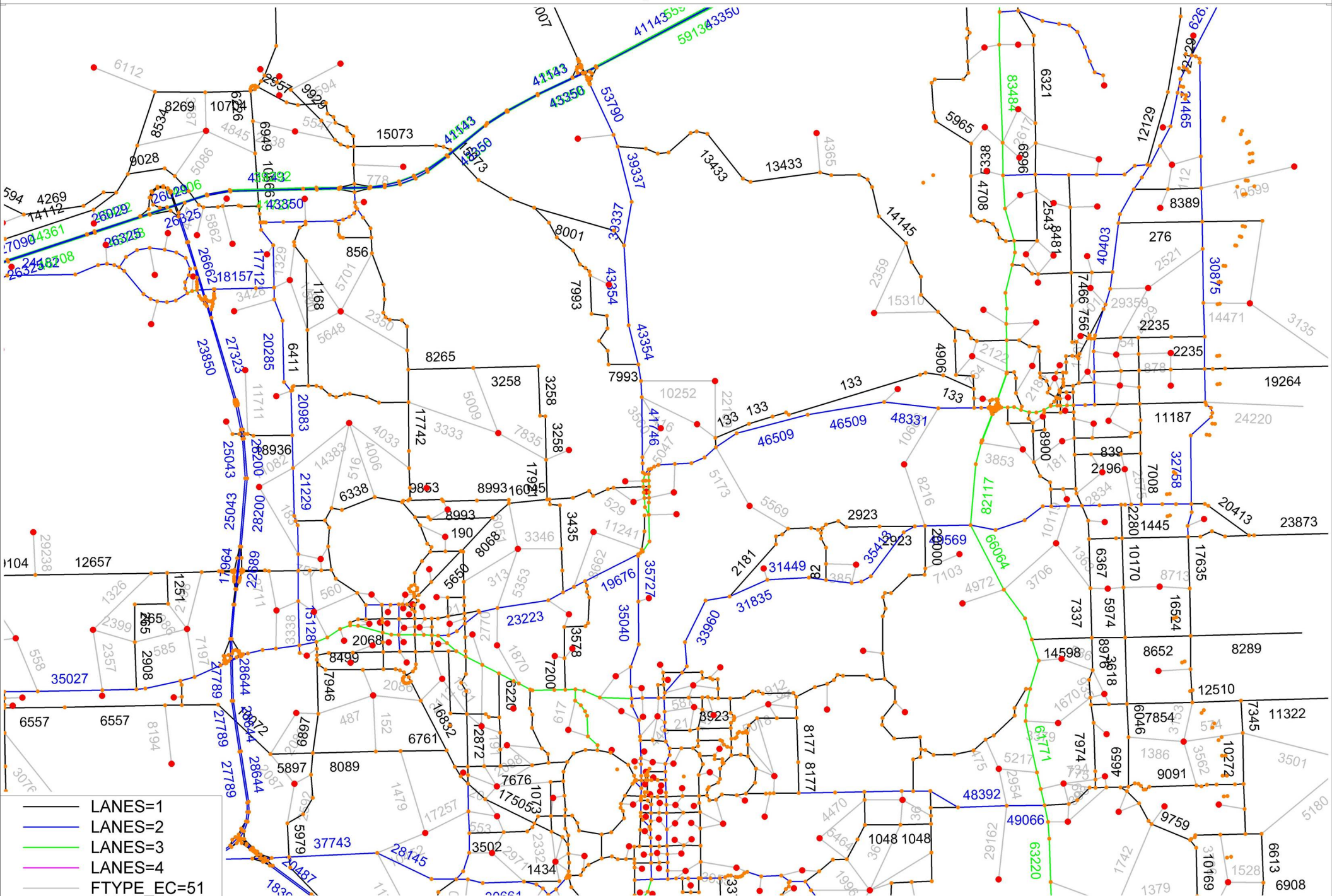


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2045 BASE MODEL + ADDITIONAL DEVELOPMENT

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Lake Alfred Transportation Master Plan

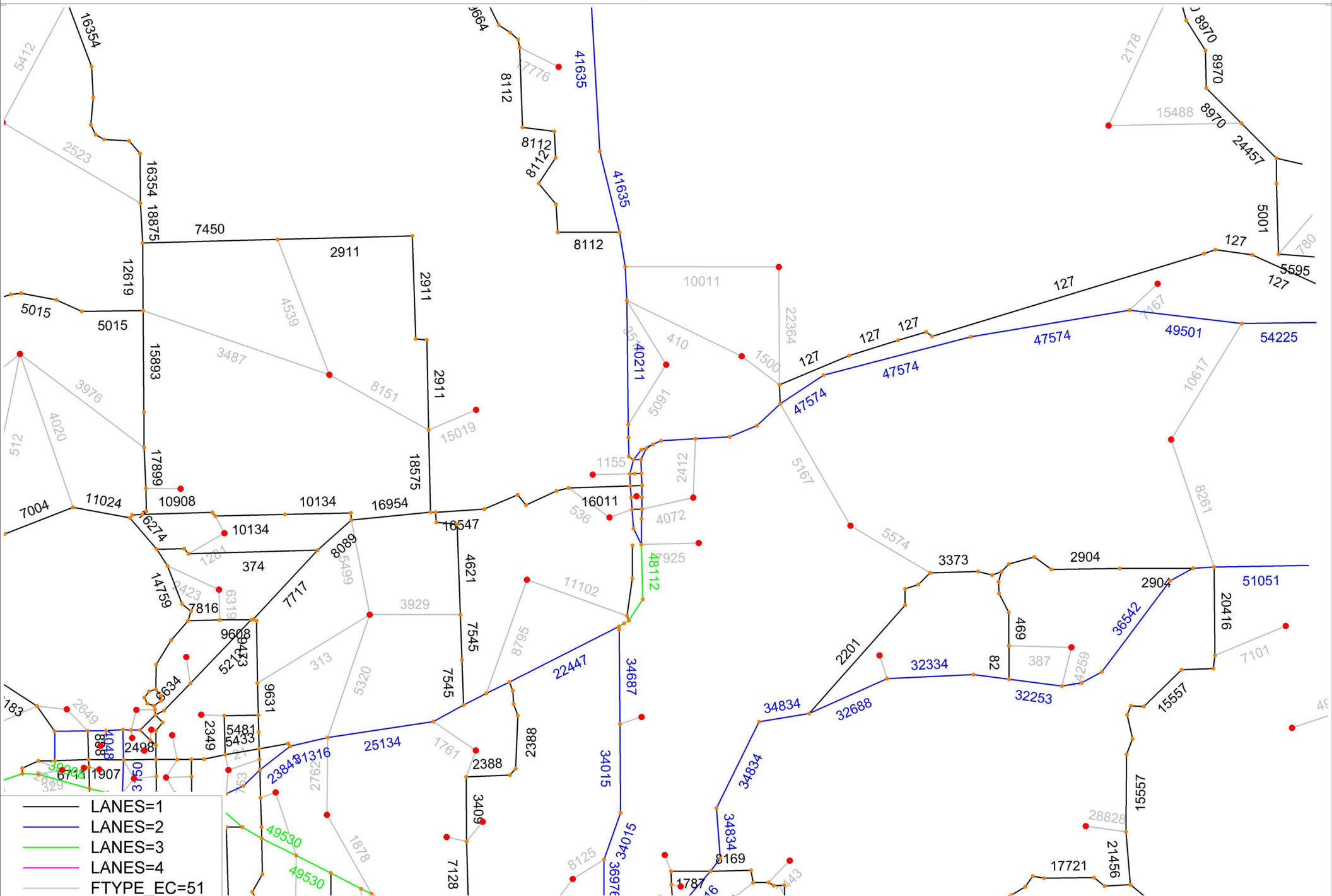


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2045 BASE MODEL + ADDITIONAL DEVELOPMENT

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Lake Alfred Transportation Master Plan

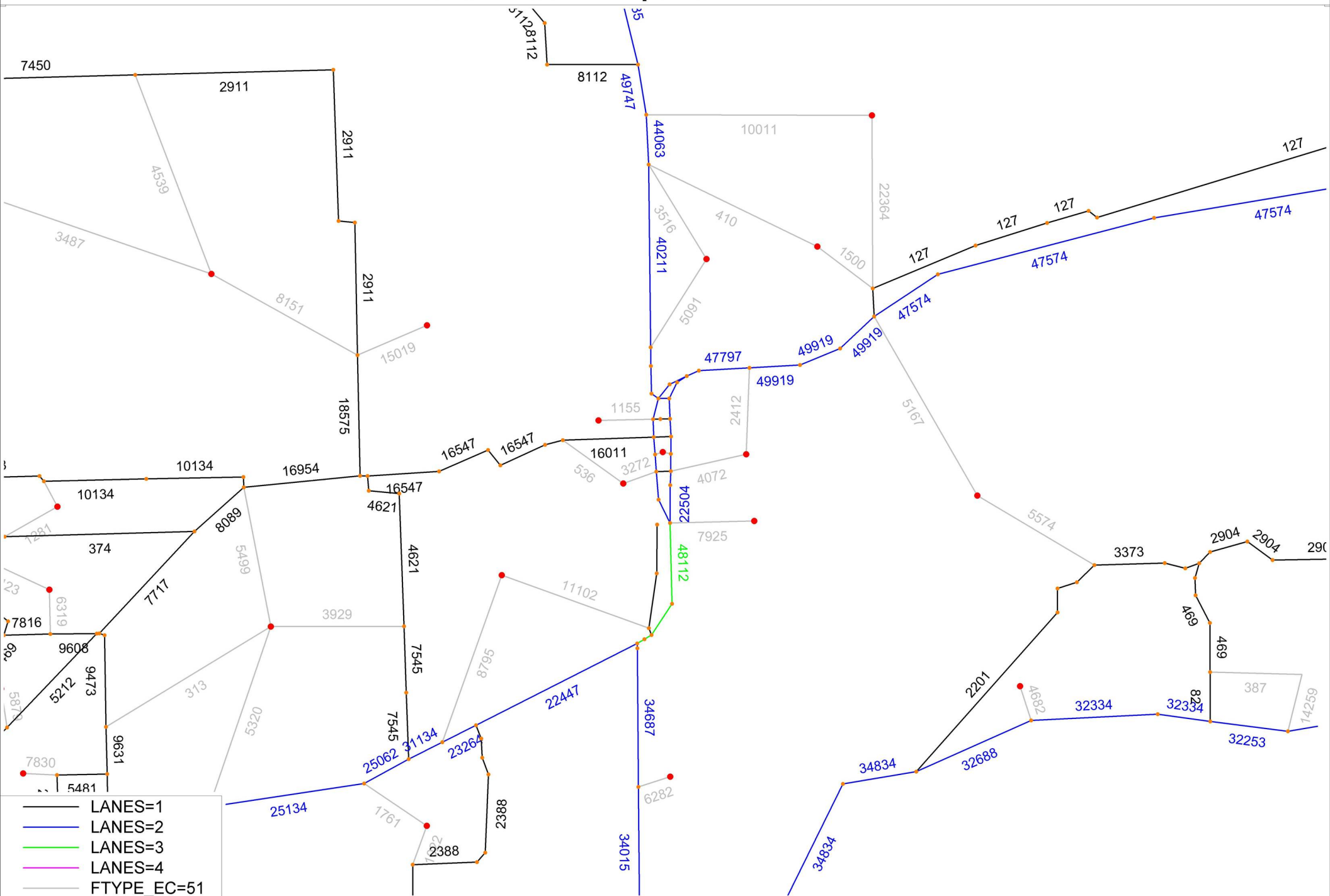


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2045 BASE MODEL + ADDITIONAL DEVELOPMENT + 2 LANES THROUGH DOWNTOWN LAKE ALFRED

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Lake Alfred Transportation Master Plan

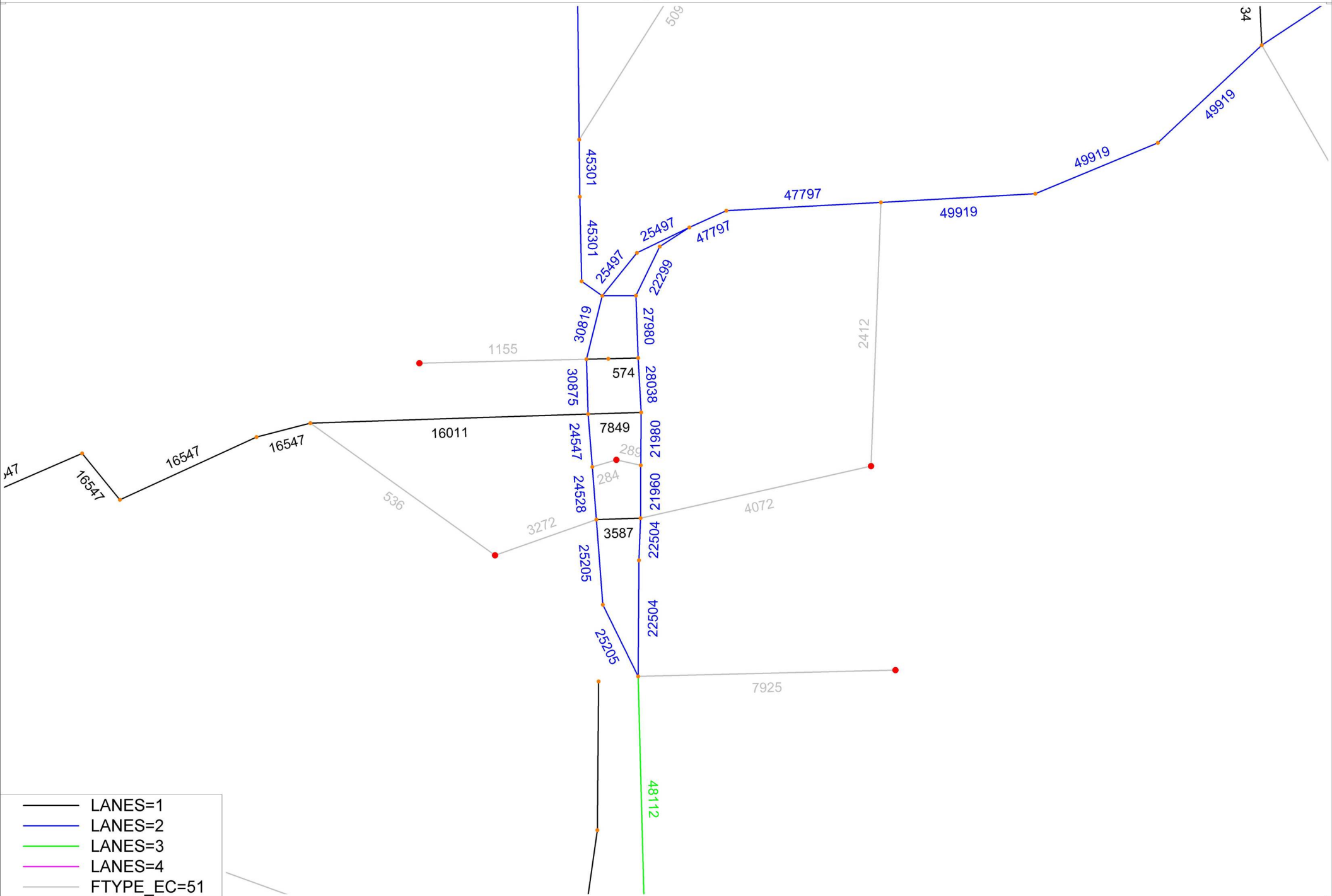


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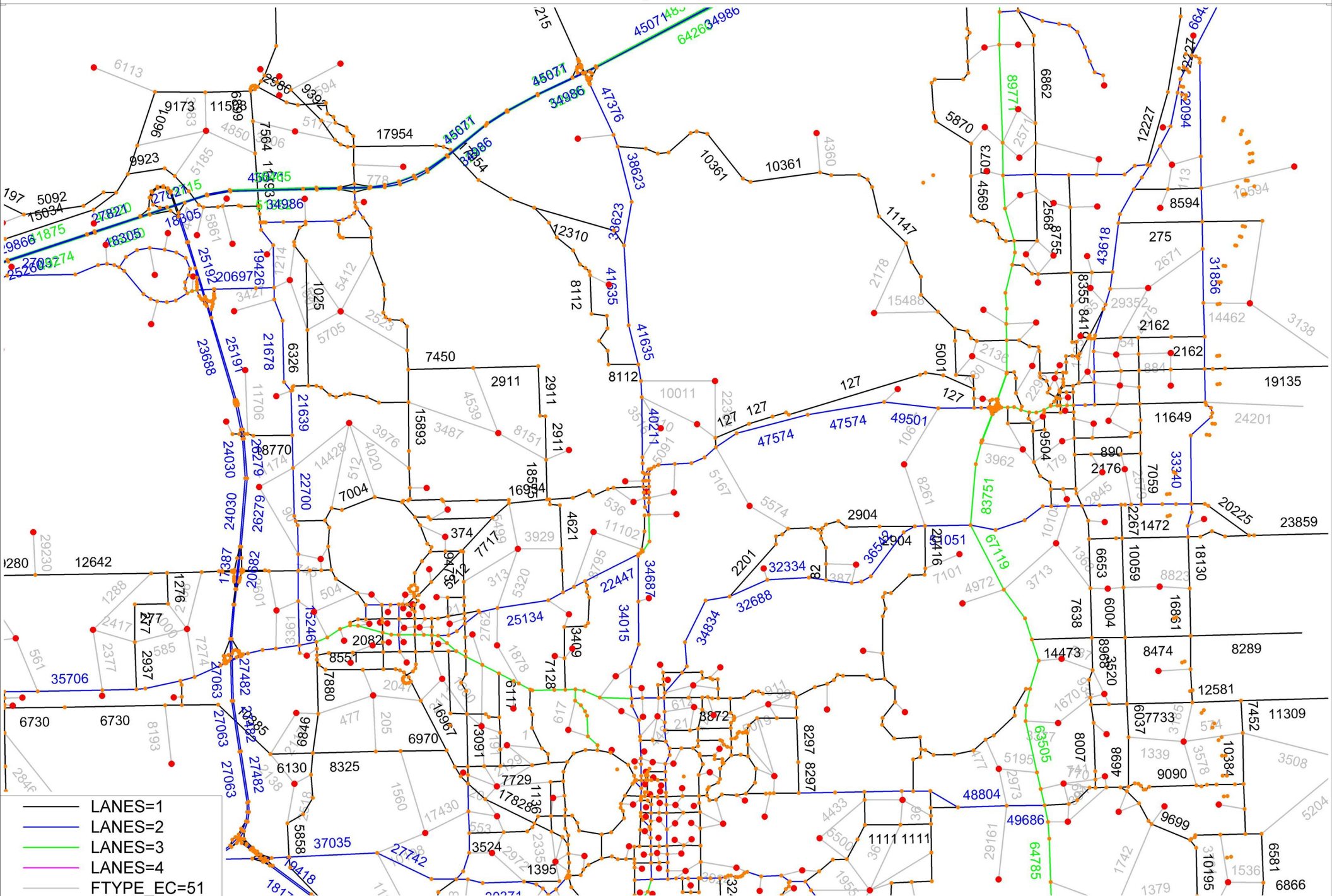


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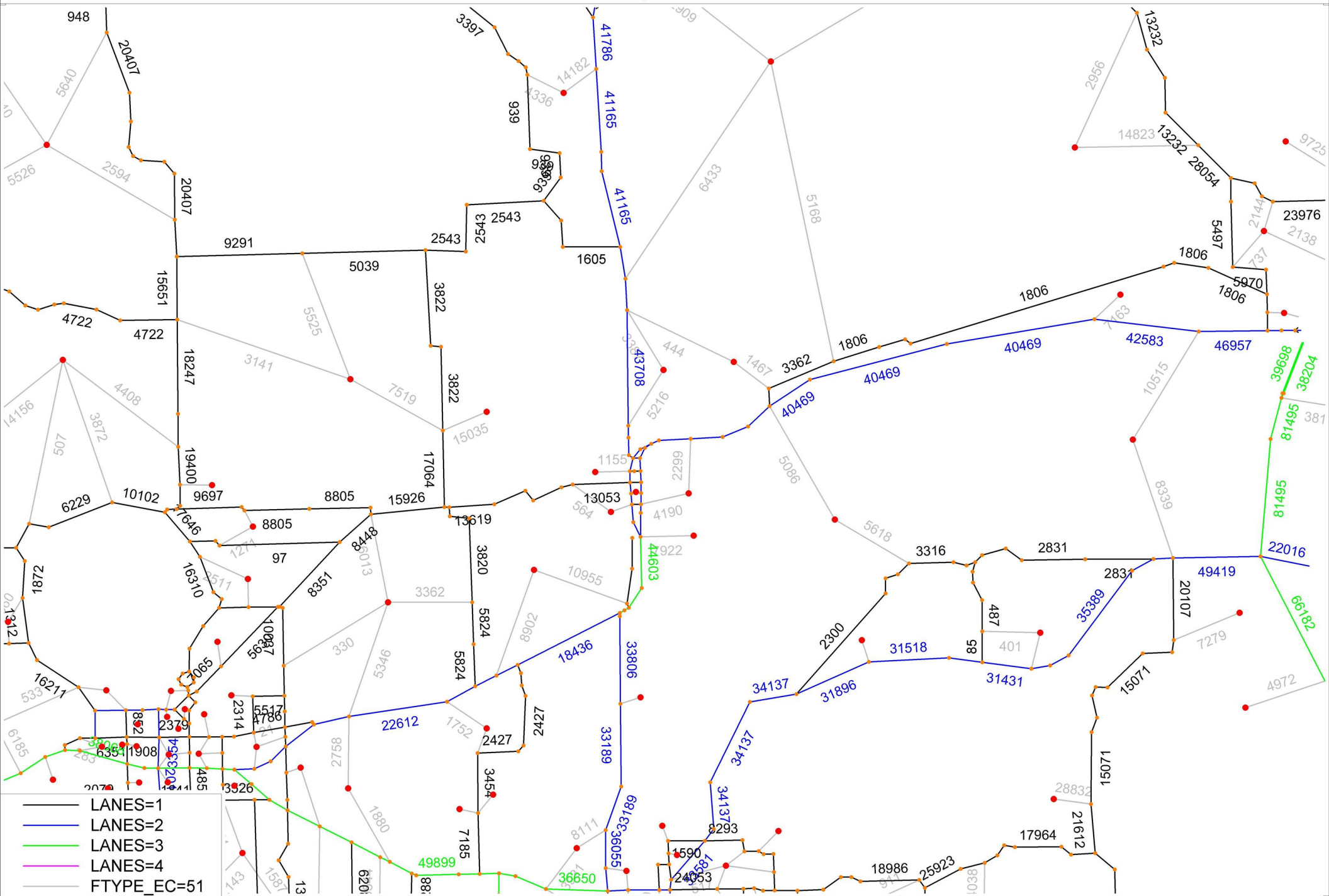


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Lake Alfred Transportation Master Plan

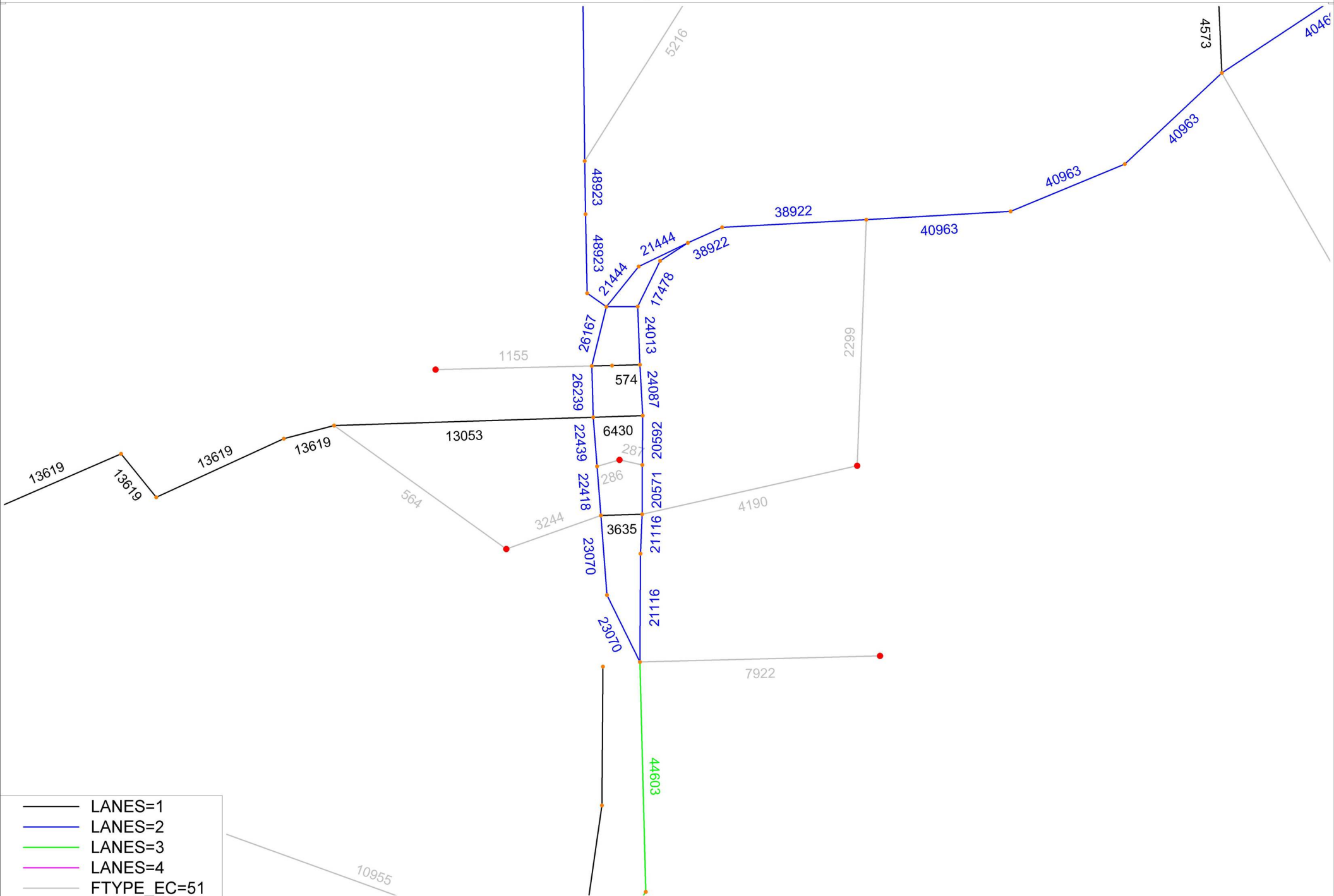


D1RMP_V2.0 CF 2045

2045 BASE MODEL + ADDITIONAL DEVELOPMENT + 2 LANES THROUGH DOWNTOWN LAKE ALFRED + ADDITIONAL CONNECTIONS

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Lake Alfred Transportation Master Plan

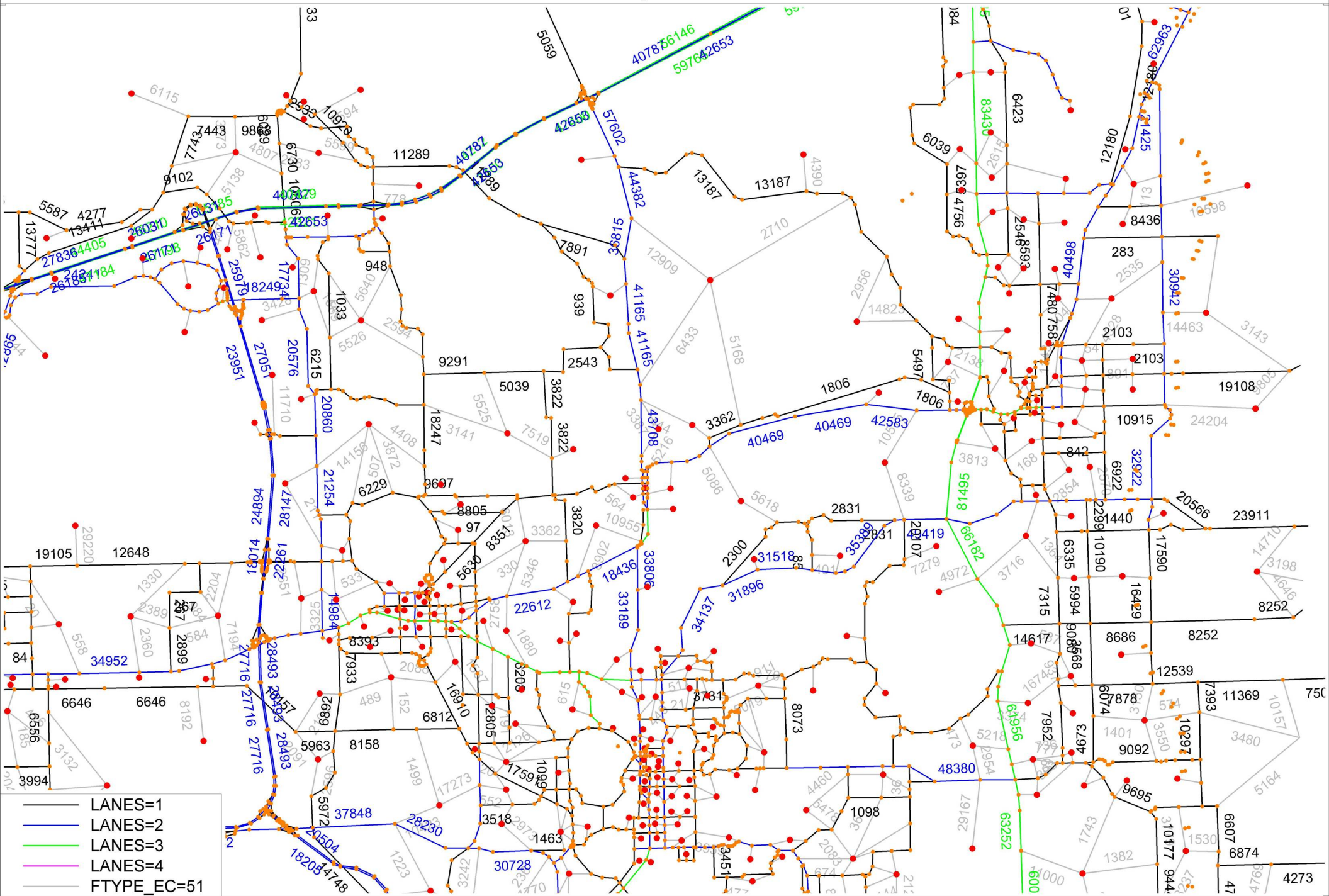


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Lake Alfred Transportation Master Plan

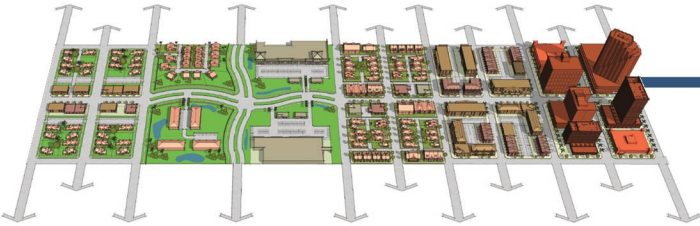


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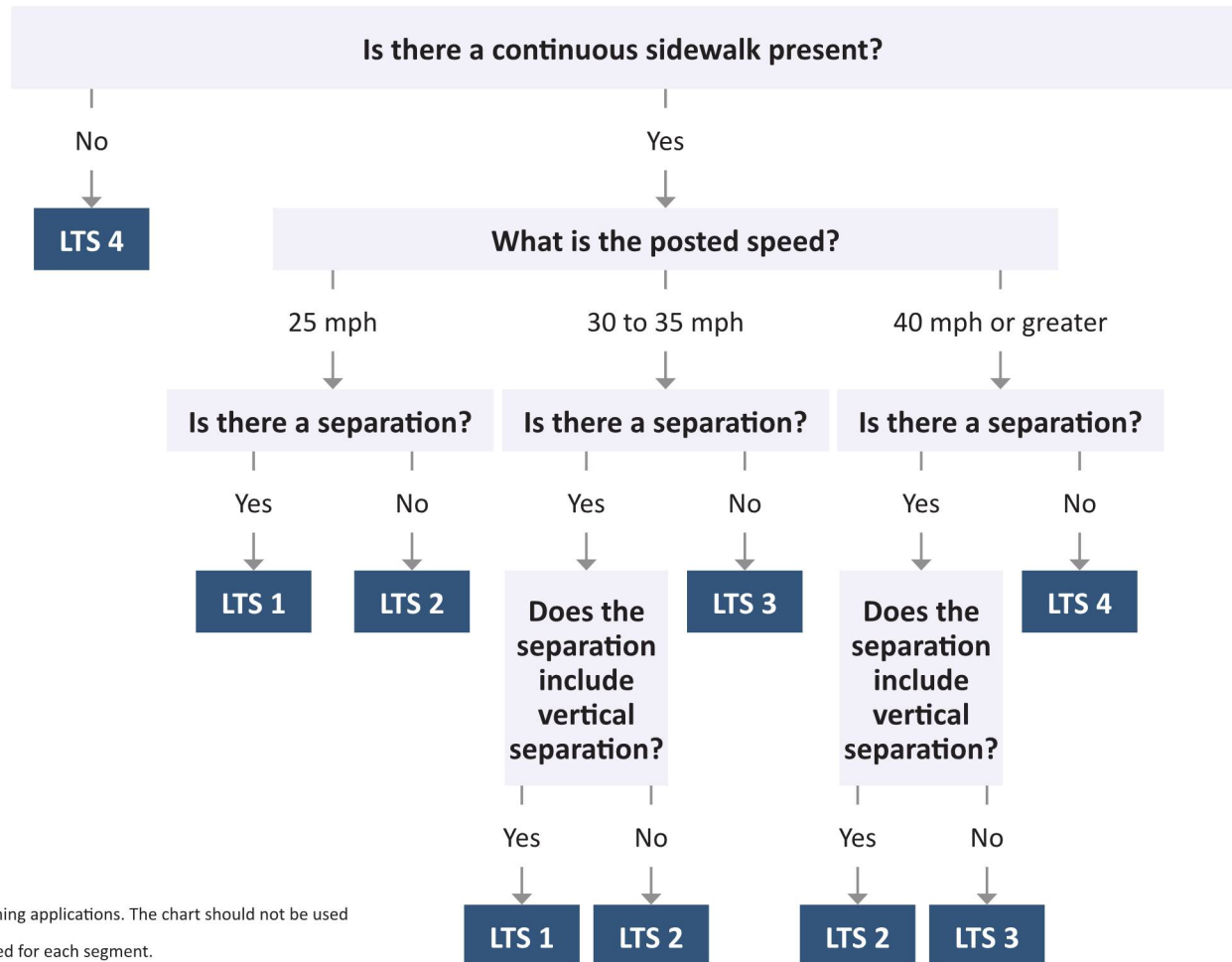
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Appendix D. Bicycle and Pedestrian Level of Service



Pedestrian Level of Traffic Stress Flow Chart

C2T, C3C, C3R, C4, C5, & C6



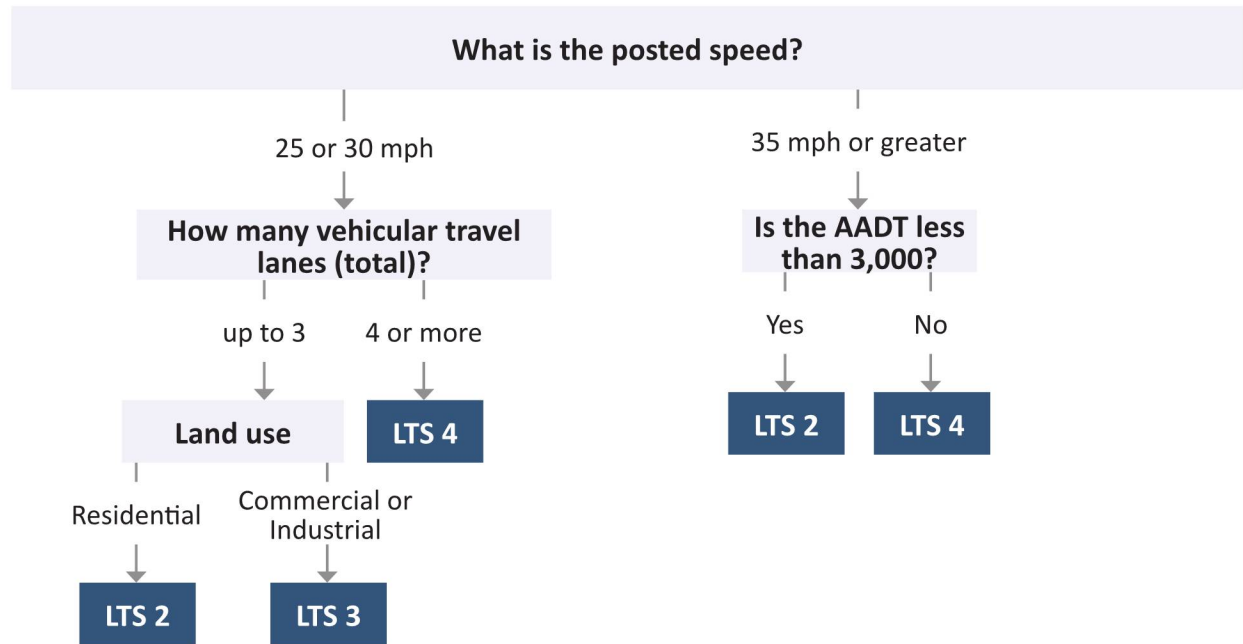
- Notes:
- 1) This chart does not constitute a standard and should be used only for general planning applications. The chart should not be used for corridor or intersection design, where more refined techniques exist.
 - 2) This analysis is conducted for each side of the road and the worst side PLTS is applied for each segment.
 - 3) If the sidewalk width is less than or equal to 5 feet, reduce the PLTS by 1.
 - 4) Separation is defined by space between the outside vehicular travel lane and sidewalk and can include bicycle lanes, unmarked shoulders, street furniture, vertical separation, landscaping, or utility strips. Vertical separation in the separation includes tubular markers, islands, on-street parking, rigid barriers, and landscaping.
 - 5) Sidewalk space over 6 feet can be evaluated as part of the separation.





Bicycle Level of Traffic Stress Flow Chart to use When No Bicycle Facility is Present or When There are Sharrows Present

C2T, C3C, C3R, C4, C5, & C6

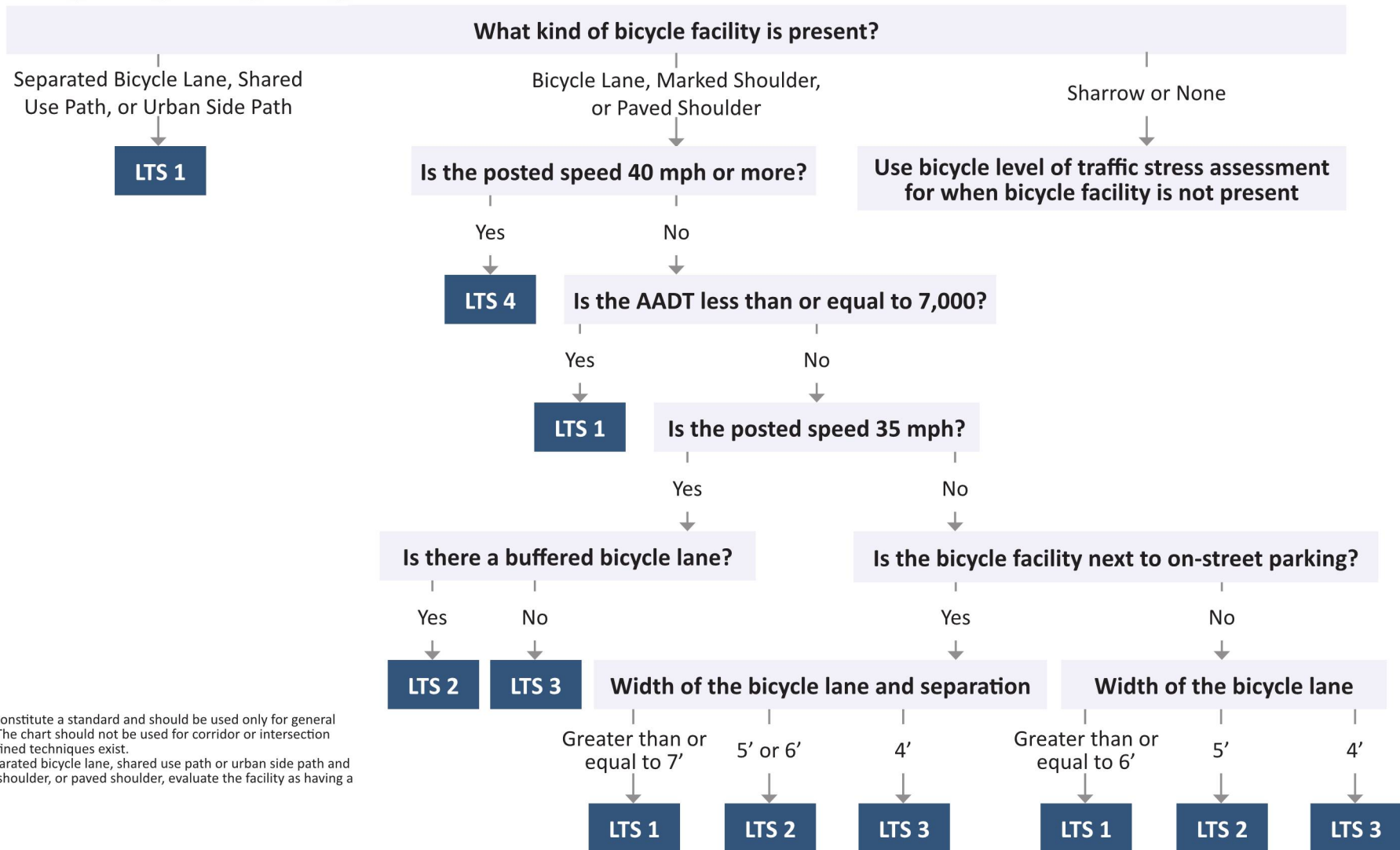
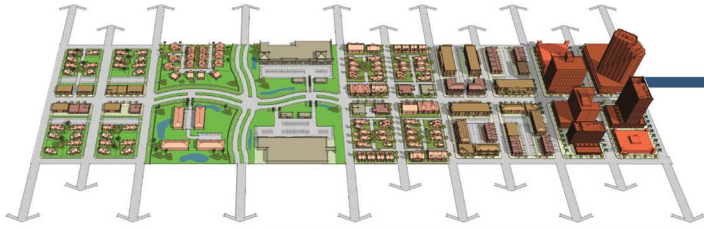


Notes:
 1) This chart does not constitute a standard and should be used only for general planning applications. The chart should not be used for corridor or intersection design, where more refined techniques exist.



Bicycle Level of Traffic Stress Flow Chart to use When Bicycle Facility is Present

C2T, C3C, C3R, C4, C5, & C6



Notes:
 1) This chart does not constitute a standard and should be used only for general planning applications. The chart should not be used for corridor or intersection design, where more refined techniques exist.
 2) If there is both a separated bicycle lane, shared use path or urban side path and a bicycle lane, marked shoulder, or paved shoulder, evaluate the facility as having a shared use path

Low Stress Tolerance High Stress Tolerance

LTS 1



LTS 2



LTS 3



LTS 4



Appendix E. Transportation Project Costs

Road Name	From	To	Type	Working Length	Map #	Roadway Classification	Current Maintaining Jurisdiction	Impact Fee Creditable?	Improvement Code	Cost per Mile	Construction Cost	Impact Fee Creditable Cost	ROW Width	Comments
North Experiment Station Rd	White Rd #4	North Experiment Station Rd #32	Improved 2 Lane	1.2	1	Neighborhood Collector	Polk County	TBD	R1	\$2,546,994	\$3,056,392	\$0	No public ROW	Should be a new 2-lane road
Old Lake Alfred Rd	CR 557A	Cass Rd	Improved 2 Lane	3.04	2	Neighborhood Collector	Polk County	N	RC1	\$1,023,678	\$3,111,980	\$0	Majority 30' but varies to 60'	Add center turn lane
White Road	North Experiment Station Rd #1	White Rd #28	Improved 2 Lane	0.9	3	Neighborhood Collector	Polk County	TBD	R1	\$2,546,994	\$2,292,294	\$0	Majority 40' but as narrow as 16'	Substandard; Will need to be reconstructed
White Road	White Rd #29	North Experiment Station Rd #1	Improved 2 Lane	0.2	4	Neighborhood Collector	Polk County	TBD	R1	\$2,546,994	\$509,399	\$0	16'	Should be considered a new 2-lane construction
Gum Rd	CR 557	Gum Rd Extension #33	Improved 2 Lane	0.14	5	Neighborhood Collector	Polk County	N	R1	\$2,546,994	\$356,579	\$0	50'	Road will need to be reconstructed to bring it up to standard. IF creditable if #32 is constructed.
Waylanco Rd	CR 557	North Experiment Station Rd #35	Improved 2 Lane	0.2	6	Neighborhood Local	Lake Alfred	Y	R1	\$2,546,994	\$509,399	\$509,399	50'	Substandard; Will need to be reconstructed
Pierce Street	Adams Barm Rd	Shinn Blvd	Improved 2 Lane	1.55	7	Neighborhood Collector	Lake Alfred	Y	RC1	\$1,023,678	\$1,586,700	\$1,586,700	Between 44' and 66'	Add center turn lane
Lynchburg Rd	US 92	Lake Alfred Rd	Improved 2 Lane	1.58	8	Neighborhood Collector	Lake Alfred	Y	RC1	\$1,023,678	\$1,617,410	\$1,617,410	30'	Add center turn lane
Evenhouse Rd	CR 557	Old Lee Jackson Rd	Improved 2 Lane	1.13	9	Neighborhood Local	Polk County	TBD	RC2	\$1,203,845	\$1,360,345	\$0	Varies between 30' and 46'	Recommend raised median west of Creek Road and east of Cypress Creek Blvd; center turn lane between Creek Road and Cypress Creek Blvd.
Creek Rd	CR 557	Evenhouse Rd	Improved 2 Lane	0.74	10	Neighborhood Collector	Polk County	TBD	RC1	\$1,023,678	\$757,521	\$0	Varies between 32' and 40'	Add center turn lane
Cass Rd	Adams Barm Rd	Old Lake Alfred Rd	Improved 2 Lane	1.35	11	Neighborhood Collector	Polk County	N	RC2	\$1,203,845	\$1,625,190	\$0	Varies between 44' and 60'	Recommend raised median
Adams Barm Rd	Lake Alfred Rd	Cass Rd	Improved 2 Lane	1.82	12	Neighborhood Collector	Polk County	N	RC2	\$1,203,845	\$2,190,997	\$0	Varies between 30' and 90'	The half-mile section between the two Waterridge roundabouts has been improved; adjust length accordingly. Recommend raised median for remainder.
Lock St	Lake George Rd	US 92	Improved 2 Lane	0.15	13	Neighborhood Local	Lake Alfred	Y	R1	\$2,546,994	\$382,049	\$382,049	30'	Substandard; Will need to be reconstructed. Narrow ROW.
Lake George Rd	George Rd	S. Buena Vista Dr	Improved 2 Lane	0.46	14	Neighborhood Local	Lake Alfred	Y	R1	\$2,546,994	\$1,171,617	\$1,171,617	Varies between 30' and 35'	Substandard; Will need to be reconstructed
Lake Lowery Rd	Old Haines City Lake Alfred Rd	Old Polk City Rd	Improved 2 Lane	5.87	15	Neighborhood Collector	Polk County	N	RC1	\$1,023,678	\$6,008,987	\$0	Varies between 18' and 60'	Add center turn lane
Experiment Station Rd	US 17/92	White Rd #3	Improved 2 Lane	1	16	Neighborhood Collector	Polk County	TBD	RC1	\$1,023,678	\$1,023,678	\$0	Varies between 26' and 38'	Add center turn lane; substandard north of Evenhouse Road
Old Haines City Lake Alfred Rd	Experiment Station Rd #16	Government Center Center	Improved 2 Lane	2	17	Neighborhood Local	Polk County	N	RC2	\$1,203,845	\$2,407,690	\$0	Varies between 30' and 60'	Recommend raised median west of Lake Lowery Rd; center turn lane between Lake Lowery Rd and Gov't Center
WGTO Tower Rd	CR 557	North Experiment Station Rd #32	Improved 2 Lane	0.62	18	Neighborhood Local	Polk County	TBD	RC1	\$1,023,678	\$634,680	\$0	Varies between 28' and 50'	Add center turn lane; sidewalk; IF creditable only if #32 is constructed.
CR 557	Shinn Blvd	CR 557A	Improved 4 Lane	3.43	19	Neighborhood Collector	Polk County	N	R21	\$2,815,022	\$9,655,525	\$0	Varies between 60' and 160'	County project; design @ 60%; PD&E concurrent with design
Orange St	Lake Shore Blvd	Shinn Blvd	Network Connectivity Improvements	0.08	20	Neighborhood Local	Lake Alfred	N				\$0		Median to improve left turn
Alley	Hoffman St	Cummings St	Network Connectivity Improvements	0.2	21	Alley	Lake Alfred	N				\$0		Signalize when warranted
Maintain Alley/Circulation	Haines Blvd	Cummings St	Network Connectivity Improvements	0.25	22	Alley	Lake Alfred	N				\$0		Signalize when warranted
S Nekoma Ave	S Echo Dr	Lake George Rd	Improved 2 Lane	0.17	23	Neighborhood Local	Lake Alfred	N	R1	\$2,546,994	\$432,989	\$0	40'	New Roadway
West Gum Lane	CR 557	Old Lake Alfred Rd	New 2 Lane	0.5	24	Neighborhood Local	Lake Alfred	Y	R2	\$3,091,694	\$1,545,847	\$1,545,847		New Roadway
Unnamed Rd	Old Lake Alfred Rd	Adams Barm Rd / Lake Mattie Rd	New 2 Lane	1.35	25	Neighborhood Local	Lake Alfred	Y	R2	\$3,091,694	\$4,173,787	\$4,173,787		New Roadway
CR 557 Connector	CR 557	Old Lake Alfred Rd	New 2 Lane	0.33	26	Neighborhood Local	Lake Alfred	TBD	R1	\$2,546,994	\$840,508	\$0		New Roadway
White Road Connector	White Rd #3	Lake Lowery Rd	New 2 Lane	0.3	27	Neighborhood Local	TBD	Y	R1	\$2,546,994	\$764,098	\$764,098		New Roadway
White Road	White Rd #3	Lake Lowery Rd	New 2 Lane	0.6	28	Neighborhood Local	TBD	TBD	R1	\$2,546,994	\$1,528,196	\$0		New Roadway
White Road	Creek Rd	White Rd #4	New 2 Lane	0.3	29	Neighborhood Collector	TBD	TBD	R1	\$2,546,994	\$764,098	\$0		New Roadway
Lake Lowery Road - CR557 Connector	Gum Rd Extension #33	Lake Lowery Rd	New 2 Lane	1.5	30	Neighborhood Collector	TBD	TBD	R1	\$2,546,994	\$3,820,490	\$0		New Roadway
Experiment Station Connector	CR 557	North Experiment Station Rd #32	New 2 Lane	1.2	31	Neighborhood Collector	Lake Alfred	TBD	R1	\$2,546,994	\$3,056,392	\$0		New Roadway
North Experiment Station Rd	North Experiment Station Rd #1	Gum Rd Extension #33	New 2 Lane	0.9	32	Neighborhood Collector	Lake Alfred	TBD	R1	\$2,546,994	\$2,292,294	\$0		New Roadway
Gum Rd Extension	Gum Rd #5	North Experiment Station Rd #32	New 2 Lane	0.32	33	Neighborhood Collector	TBD	Y	R2	\$3,091,694	\$989,342	\$989,342		New Roadway
Unnamed Rd	CR 557	North Experiment Station Rd #35	New 2 Lane	0.25	34	Neighborhood Local	TBD	Y	R2	\$3,091,694	\$772,923	\$772,923		New Roadway
North Experiment Station Rd	Waylanco Rd	Gum Rd Extension #33	New 2 Lane	1.2	35	Neighborhood Local	TBD	Y	R2	\$3,091,694	\$3,710,033	\$3,710,033		New Roadway
Ramona Ave	S Ramona Ave	New Developments South	New 2 Lane	0.15	36	Neighborhood Local	Lake Alfred	Y	R1	\$2,546,994	\$382,049	\$382,049		New Roadway - Evaluate project for pedestrian only connection at time of implementation.
Echo Dr	S Winona Ave	S Echo Dr	New 2 Lane	0.45	37	Neighborhood Local	Lake Alfred	Y	R1	\$2,546,994	\$1,146,147	\$1,146,147		New Roadway
Lake Cumming Rd	Lake Cumming Rd	Lake George Rd	New 2 Lane	0.25	38	Neighborhood Local	Lake Alfred	Y	R2	\$3,091,694	\$772,923	\$772,923		New Roadway
US 17/92	Mackey Blvd	-	Intersection Improvements	0	39	-	FDOT	Y	O5	\$300,000	\$300,000	\$300,000		Median
Lake Shore Way	Cummings St	-	Intersection Improvements	0	40	-	FDOT	N	O5	\$300,000	\$300,000	\$0		Signalization
Shinn Blvd	Cummings St	-	Intersection Improvements	0	41	-	FDOT	N	O5	\$300,000	\$300,000	\$0		Signalization
Shinn Blvd	Pierce St	-	Intersection Improvements	0	42	-	FDOT	N	O5	\$300,000	\$300,000	\$0		Signalization
CR 557	Shinn Blvd	-	Intersection Improvements	0	43	-	FDOT	N	O5	\$300,000	\$300,000	\$0		Turn lanes
Adams Barm Rd	Old Lake Alfred Rd	-	Intersection Improvements	0	44	-	Polk County	N	O5	\$300,000	\$300,000	\$0		Two-lane section
US 17	US 92	-	Intersection Improvements	0	45	-	FDOT	Y	O5	\$300,000	\$300,000	\$300,000		Displaced left-turn lane
US 17/92	Experiment Station Rd #16	-	Intersection Improvements	0	46	-	FDOT	N	O5	\$300,000	\$300,000	\$0		Signalization
Old Lee Jackson Rd	White Rd #3	-	Intersection Improvements	0	47	-	Polk County	N	O5	\$300,000	\$300,000	\$0		Roundabout
Lakeview Blvd	Stanford St	E. Haines Blvd	Meet Current Local Road Standards	0.13	100		Lake Alfred	N	R1	\$2,546,994	\$331,109	\$0		Reconstruct
E. Pierce St	Ramona Ave	Lakeview Blvd	Meet Current Local Road Standards	0.08	101		Lake Alfred	N	R1	\$2,546,994	\$203,759	\$0		Reconstruct
E. Pierce St	S. Glencruiten Ave	S. Townner Ave	Meet Current Local Road Standards	0.12	102		Lake Alfred	N	R1	\$2,546,994	\$305,639	\$0		Reconstruct
Twin Lake Rd	N Ridge Ave	E. Oak St	Meet Current Local Road Standards	0.22	103		Lake Alfred	N	R1	\$2,546,994	\$560,339	\$0		Reconstruct
N Ridge Ave	Twin Lake Rd	E. Oak St	Meet Current Local Road Standards	0.16	104		Lake Alfred	N	R1	\$2,546,994	\$407,519	\$0		Reconstruct
E. Columbia St	Shinn Blvd	Lake Shore Way	Meet Current Local Road Standards	0.06	105		Lake Alfred	N	R1	\$2,546,994	\$152,820	\$0		Reconstruct
Davis Ave	S. Nekoma Ave	S. Cross Ave	Meet Current Local Road Standards	0.05	106		Lake Alfred	N	R1	\$2,546,994	\$127,350	\$0		Reconstruct
Terrace Ave	S. Nekoma Ave	S. Buena Vista Drive	Meet Current Local Road Standards	0.2	107		Lake Alfred	N	R1	\$2,546,994	\$509,399	\$0		Reconstruct
W. Necho Ave	US 17/92	E. Davis Ave	Meet Current Local Road Standards	0.04	108		Lake Alfred	N	R1	\$2,546,994	\$101,880	\$0		Reconstruct
S. Cross Ave	S. Echo Dr	W. Terrace Ave	Meet Current Local Road Standards	0.14	109		Lake Alfred	N	R1	\$2,546,994	\$356,579	\$0		Reconstruct
N. Nekoma Ave	W. Haines Blvd	W. Cummings St	Meet Current Local Road Standards	0.26	110		Lake Alfred	N	R1	\$2,546,994	\$662,218	\$0		Reconstruct
Myers Lane	Lynchburg Road	Fannies Path	Meet Current Local Road Standards	0.1	111		Lake Alfred	N	R1	\$2,546,994	\$254,699	\$0		Reconstruct
Lake Swoope Dr	Evenhouse Rd	E. Tangerine Ave	Traffic Calming	0.88	201		Lake Alfred	N	O6	\$100,000	\$88,000	\$0		Traffic Calming
Lake Shore Way	E. Echo St	Cummings St	Traffic Calming	0.25	202		FDOT	N	O1	\$344,769	\$86,192	\$0		Shared Use Path
E. Haines Blvd	Lake Shore Way	Lake Haines Boat Ramp	Traffic Calming	0.79	203		Lake Alfred	N	O6	\$100,000	\$79,000	\$0		Shared Use Path
Pierce St	Adams Barm Rd	Shinn Blvd	Traffic Calming	1.55	204		Lake Alfred	N	O1	\$344,769	\$534,392	\$0		Shared Use Path
Glencruiten Ave	Mackey Blvd	US 17/92	Traffic Calming	0.95	205		Lake Alfred	N	O6	\$100,000	\$95,000	\$0		Traffic Calming
Ramona St	Echo St	US 17/92	Traffic Calming	0.7	206		Lake Alfred	N	O6	\$100,000	\$70,000	\$0		Traffic Calming
Cumming St	Pennsylvania Ave	Ramona St	Traffic Calming	0.84	207		Lake Alfred	N	O6	\$100,000	\$84,000	\$0		Traffic Calming
Lynchburg Rd	Lake Alfred Rd	US 92	Traffic Calming	1.56	208		Lake Alfred	N	O6	\$100,000	\$156,000	\$0		Traffic Calming
Shinn Blvd	Echo St	N Seminole Ave	Traffic Calming	0.9	209		FDOT	N	O6	\$100,000	\$90,000	\$0		Traffic Calming
Lake Shore Way	Cummings St	N Seminole Ave	Traffic Calming	0.58	210		FDOT	N	O6	\$100,000	\$58,000	\$0		Traffic Calming
Mackay Blvd	US 17/92	Yellow Perch Lane	Traffic Calming	0.88	211		Lake Alfred	N	O6	\$100,000	\$88,000	\$0		Traffic Calming
CR 557	Shinn Blvd	E. Swoope St	Shared Use Path	0.27	301		Polk County	N	O1	\$344,769	\$93,088	\$0		Traffic Calming
Nekoma Ave	Pierce St	Lions Park	Shared Use Path	0.2	302		Lake Alfred	N	O1	\$344,769	\$68,954	\$0		Traffic Calming
Old Dixie Trail	Along Pierce	-	Trail	4.2	303		FDOT	N	O2	\$324,467	\$1,362,760	\$0		Trail
Total											\$76,877,246	\$20,124,325		

Appendix F. Impact Fee Calculations

Land Use	Unit	Trip Gen Rate	New Trip Factor	Average Trip Length	Non-State Hwy VMT	Assessed Trip Length	Total Project Cost	Total Trips	Cost per Trip	Total Impact Cost
Single Family	DU	9.43	100%	8.37	22.3%	0.375	\$20,124,325	61,983	\$324.67	\$1,531
Multi-Family (1-3 story)	DU	6.74	100%	8.37	22.3%	0.375	\$20,124,325	61,983	\$324.67	\$1,094
Hotel	Rooms	7.99	100%	8.37	22.3%	0.375	\$20,124,325	61,983	\$324.67	\$1,297
General Office	KSF	10.84	100%	8.37	22.3%	0.375	\$20,124,325	61,983	\$324.67	\$1,760
Medical Office	KSF	36.00	100%	8.37	22.3%	0.375	\$20,124,325	61,983	\$324.67	\$5,844
Hospital	KSF	10.77	100%	8.37	22.3%	0.375	\$20,124,325	61,983	\$324.67	\$1,748
Nursing Home	Beds	3.06	100%	8.37	22.3%	0.375	\$20,124,325	61,983	\$324.67	\$497
Industrial	KSF	4.87	100%	8.37	22.3%	0.375	\$20,124,325	61,983	\$324.67	\$791
Warehouse	KSF	1.71	100%	8.37	22.3%	0.375	\$20,124,325	61,983	\$324.67	\$278
General Commercial (<40,000)	KSF	54.45	66%	8.37	22.3%	0.375	\$20,124,325	61,983	\$324.67	\$5,834
General Commercial (40,000-150,000)	KSF	67.52	66%	8.37	22.3%	0.375	\$20,124,325	61,983	\$324.67	\$7,234
General Commercial (<150,000)	KSF	37.01	66%	8.37	22.3%	0.375	\$20,124,325	61,983	\$324.67	\$3,965
Fast-Food	KSF	467.48	50%	8.37	22.3%	0.375	\$20,124,325	61,983	\$324.67	\$37,945
Restaurant	KSF	107.20	56%	8.37	22.3%	0.375	\$20,124,325	61,983	\$324.67	\$9,745
Charter School	Students	1.85	100%	8.37	22.3%	0.375	\$20,124,325	61,983	\$324.67	\$300
Church	KSF	7.60	100%	8.37	22.3%	0.375	\$20,124,325	61,983	\$324.67	\$1,234
Day Care	KSF	47.62	100%	8.37	22.3%	0.375	\$20,124,325	61,983	\$324.67	\$7,731
Gas Station	Fueling Positions	265.12	34%	8.37	22.3%	0.375	\$20,124,325	61,983	\$324.67	\$14,633
Bank	KSF	100.35	65%	8.37	22.3%	0.375	\$20,124,325	61,983	\$324.67	\$10,589