



City of Deltona

2345 Providence Blvd.

Deltona, FL 32725

Agenda

Planning and Zoning Board

Chair Andrea Cardo

Vice Chair Tara D'Errico

Secretary Rachel Amoroso

Member Larry French

Member Ron Gonzalez

Member Pat Northey

Member David Stewart

Alternate Karen Neher

Alternate Christian O'Brien

Alternate Lori Warnicke

Alternate Jeffrey Zlatos

Wednesday, January 21, 2026

6:00 PM

Deltona Commission Chambers

1. CALL TO ORDER:

2. ROLL CALL:

3. APPROVAL OF MINUTES & AGENDA:

[Minutes of December 17, 2025](#)

Attachments: [Minutes for December 17, 2025](#)

4. PRESENTATIONS/AWARDS/REPORTS:

5. PUBLIC FORUM: Time permitted, public comments shall be limited to items on the agenda and shall not exceed two minutes. Please be courteous and respectful of the views of others. Personal attacks on Committee/Board members, City staff or members of the public are not allowed and will be ruled out of order by the Chair.

6. OLD BUSINESS:

7. NEW BUSINESS:

[Resolution No. 2026-01 – Granting a Conditional Use to Permit a House of Worship within the R-1 Residential Zoning District for the Property Located at 590 Fort Smith Boulevard, within the City of Deltona.](#)

Attachments: [CU25-0001 Staff Report](#)
 [Res 2026 01 590 Fort Smith Blvd. Conditional Use Final](#)
 [Maps](#)
 [590 Ft Smith Bl Cond Use](#)

[Ordinance No. 01-2026 – Amending the Official Zoning Map to rezone approximately 14.43 acres of land located at 2830, 2846, and 2855 Lake Helen Osteen Road from Residential Estate One \(RE-1\) to Mixed Use Planned Unit Development \(MPUD\).](#)

Attachments: [New Hope Staff Report](#)
 [Ordinance 01-2026 - New Hope MPUD](#)
 [Map Series](#)
 [Neighborhood Meeting Memo](#)

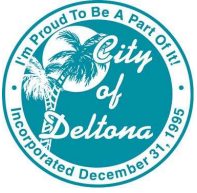
8. STAFF COMMENTS:

9. BOARD/COMMITTEE MEMBERS COMMENTS:

10. ADJOURNMENT:

NOTE: If any person decides to appeal any decision made by the City Commission with respect to any matter considered at this meeting or hearing, he/she will need a record of the proceedings, and for such purpose he/she may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based (F.S. 286.0105).

Individuals with disabilities needing assistance to participate in any of these proceedings should contact the City Manager in writing at CityManager@deltonafl.gov or to Deltona City Hall, 2345 Providence Blvd., Deltona, FL 32725 at least 48 hours prior to the meeting at which the person wishes to attend. The City is not permitted to provide the use of human physical assistance to physically handicapped persons in lieu of the construction or use of ramps or other mechanical devices in order to comply with Florida law. If proper accommodations for handicapped access cannot be made at a particular public meeting venue pursuant to a timely written request under Section 286.26 F.S., the City Manager shall change the venue of that meeting to a location where those accommodations can be provided.

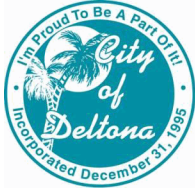


City of Deltona

2345 Providence Blvd.
Deltona, FL 32725

Agenda Memo

AGENDA ITEM:



City of Deltona

2345 Providence Blvd.
Deltona, FL 32725

Minutes

Planning and Zoning Board

Wednesday, December 17, 2025

6:00 PM

Deltona Commission Chambers

1. CALL TO ORDER:

The meeting was called to order at 6:00pm.

2. ROLL CALL:

Present: 9 - Chair Andrea Cardo
Vice Chair Tara D'Errico
Secretary Rachel Amoroso
Member Ron Gonzalez
Member Pat Northey
Member David Stewart
Alternate Lori Warnicke
Alternate Jeffrey Zlatos
Alternate Christian O'Brien

Excused: 2 - Member Larry French
Alternate Karen Neher

3. APPROVAL OF MINUTES & AGENDA:

Motion by Member Northey, seconded by Vice Chair D'Errico, to approve the Minutes of October 15, 2025, as presented.

Minutes of October 15, 2025.

4. PRESENTATIONS/AWARDS/REPORTS:

None.

5. PUBLIC FORUM: Time permitted, public comments shall be limited to items on the agenda and shall not exceed two minutes. Please be courteous and respectful of the views of others. Personal attacks on Committee/Board members, City staff or members of the public are not allowed and will be ruled out of order by the Chair.

Chair Cardo opened and closed public forum, as there were none.

6. OLD BUSINESS:

None.

7. NEW BUSINESS:

Ordinance No. 36-2025 - Amending Section 110-814, "Additional Regulations for certain permitted principal uses and structures," of Chapter 110, "Zoning," and Chapter 74, "Administration," of the land development code updating procedures and regulations related to certified recovery residences in compliance with Florida Statutes.

City Attorney Good read and briefly explained Ordinance No. 36-2025. Discussion occurred regarding the requested changes made by the City Commission.

Ms. Entwistle presented the proposed changes to Ordinance No. 36-2025, noting changes occurred in Section 110-814 regarding enforcement, parking, occupancy limits, spacing and code compliance.

Secretary Amoroso raised questions regarding recovery residences and applicable restrictions, which City Attorney Good clarified.

Alternate O'Brien discussed the application and forms process. Ms. Entwistle explained both paper and electronic applications will be made once the Ordinance goes before the City Commission.

Chair Cardo opened and closed public forum, as there was none.

Motion by Secretary Amoroso, seconded by Vice Chair D'Errico, to recommend the City Commission approve Ordinance No. 36-2025, amending Section 110-814, "Additional Regulations for Certain Permitted Principal Uses and Structures," of Chapter 110, "Zoning," and Chapter 74, "Administration," of the Land Development Code updating procedures and regulations related to certified recovery residences in compliance with Florida Statutes.

For: 7 - Chair Cardo, Vice Chair D'Errico, Secretary Amoroso, Member Gonzalez, Member Northey, Member Stewart and Alternate O'Brien

8. STAFF COMMENTS:

Ms. Entwistle announced the next Comprehensive Plan Workshop is scheduled for January 26th. She asked if anyone needed educational hours or wanted to take the Ethics course.

Chair Cardo requested that staff notify members of available education hour opportunities and advised members to email Nelly, Jessica, or Jordan if interested.

9. BOARD/COMMITTEE MEMBERS COMMENTS:

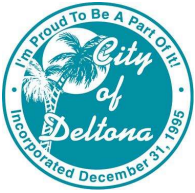
Member Northey asked whether the City Commission is required to take the same courses. City Attorney Good clarified that the City Commission is required to take the ethics course annually, but does not have the same continuing education hour requirement.

10. ADJOURNMENT:

Meeting adjourned at 6:15pm.

Chairperson, Andrea Cardo

Board Secretary, Nelly Kerr



City of Deltona

2345 Providence Blvd.
Deltona, FL 32725

Agenda Memo

AGENDA ITEM:



MEMORANDUM

DATE: January 21, 2026

TO: Planning and Zoning Board

FROM: Matthew West, AICP, Planning Manager

THRU: Jordan Smith, AICP, PP, Community and Development Services Director

SUBJECT: **CU25-0005, Resolution No. 2026-01, Lighthouse Pentecostal Church (590 Fort Smith Blvd)** Applicant: Solange Dao, P.E. (Quasi-Judicial – Public Hearing) (Matthew West, Project Manager)

REFERENCES: City Comprehensive Plan, Code of Ordinances.

REQUEST: The City has received a Major Conditional Use application for the property located at 590 Fort Smith Boulevard to allow a house of worship in the R-1 Zoning District.

The tax parcel number for the subject property is 813400000090

DISCUSSION:

Location and History: The applicant, Solange Dao P.E, on behalf of Lighthouse Pentecostal Church, has submitted a Major Conditional Use application to construct a House of Worship at 590 Fort Smith Boulevard. The subject property consists of approximately +/- 3.3 acres and is currently undeveloped. The proposed House of Worship will contain 10,568 square feet, with accessory playground and recreational facilities also proposed.

The Future Land Use Map (FLUM) designates the subject property as Residential Low Density.

Project Description:

On November 19, 2018, the property owner received approval of a Conditional Use application (CU-18-020) to permit a House of Worship within the R-1 zoning district. That approval expired on November 19, 2020, and the property has remained vacant.

The property owner is seeking to renew the previously approved Conditional Use and has submitted a new Major Conditional Use application to the City.

Per Section 110-828 of the Land Development Code, solid waste collection is provided by Waste Pro, potable water is provided by the City of Deltona, wastewater will be provided by a private septic system, and electric service is provided by Florida Power & Light (FP&L). Public safety services are provided by Deltona Fire Station 61 and the Volusia County Sheriff's Office.

The surrounding land uses are shown in the table below.

Direction	Zoning	Existing Land Use	Future Land Use
North	R-1	Single-Family Residential	Residential Low Density
East	R-1	Single-Family Residential	Residential Low Density
South	R-1	Single-Family Residential	Residential Low Density
West	R-1	Church	Residential Low Density

Matters for Consideration: Pursuant to Section 74-16(b)(6) and (7) of the Code of Ordinances, the City Commission may approve, approve with conditions, or deny a Major Conditional Use application based on the following criteria:

CRITERIA No. 1:

Is the proposed use consistent with the intent of Chapter 110?

FINDINGS OF FACT No. 1: Yes, a house of worship is listed as a Major Conditional Use within the R-1 zoning district, and the proposed use is consistent with the purpose and intent of the City's Land Development Code.

CRITERIA MET: YES

CRITERIA No. 2:

Is the proposed use consistent with the Comprehensive Plan?

FINDINGS OF FACT No. 2: Yes. The proposed use is consistent with the Residential Low Density future land use designation. With reasonable conditions to mitigate potential impacts, the use aligns with the Comprehensive Plan and is compatible with surrounding land uses.

CRITERIA MET: YES

CRITERIA No. 3:

Will the proposal adversely affect the public interest?

FINDINGS OF FACT No. 3: No. The proposed House of Worship is located on a large parcel and is adequately buffered from adjacent residential uses. Additionally, an existing church is located directly west of the subject property.

CRITERIA MET: YES

CRITERIA No. 4:

Can the applicant meet the expressed requirements of applicable City Conditional Use regulations?

FINDINGS OF FACT No. 4: Yes. The proposed development meets or exceeds the applicable requirements of a Major Conditional Use pursuant to Section 110-817(d) of the Land Development Code.

CRITERIA MET: YES

CRITERIA No. 5:

Comply with the City's Code of Ordinances, the Florida Building Code, and the Florida Fire Prevention Code.

FINDINGS OF FACT No. 5: The applicant will be required to comply with all applicable local and state codes.

CRITERIA MET: YES

CRITERIA No. 6:

Protect public health safety, and welfare to ensure basic function operation, including, but not limited to, full utilities, access management in Chapter 96, off-street parking in Section 110-828, and Solid Waste in Chapter 50.

FINDINGS OF FACT No. 6: The subject site has adequate utilities, access, and off-street parking to support the proposed use.

CRITERIA MET: YES

CRITERIA No. 7:

Will the applicant be able to meet all requirements imposed by Federal, State or Local governments?

FINDINGS OF FACT No. 7: Yes. The applicant will be required to comply with all applicable Federal, State, and local regulations.

CRITERIA MET: YES

CRITERIA No. 8:

Will the proposed use generate undue traffic congestion?

FINDINGS OF FACT No. 8: The proposed House of Worship is not expected to generate traffic volumes requiring a Traffic Impact Analysis (less than 1,000 daily trips and less than 100 peak-hour trips), as projected trips are below the established thresholds.

CRITERIA MET: YES

CRITERIA No. 9:

Will the proposed use create a hazard, public nuisance or be dangerous?

FINDINGS OF FACT No. 9: No. The proposed use will not create a hazard, public nuisance or danger.

CRITERIA MET: YES

CRITERIA No. 10:

Will the proposed use materially alter the character of surrounding neighborhoods or adversely affect the value of surrounding land, structures or buildings?

FINDINGS OF FACT No. 10: No. Compliance with the Land Development Code will ensure compatibility with surrounding residential uses.

CRITERIA MET: YES

CRITERIA No. 11:

Will the proposed use adversely affect the natural environment, natural resources or scenic beauty or cause excessive pollution?

FINDINGS OF FACT No. 11: No adverse environmental impacts are anticipated.

CRITERIA MET: YES

FINDING OF FACT: Based on the above analysis and decision-making criteria, staff recommends that the Planning and Zoning Board recommend approval of Resolution No. 2026-01, granting a Major Conditional Use approval for a House of Worship to be located at 590 Fort Smith Boulevards, subject to the following conditions:

1. A Certificate of Occupancy shall be obtained within two (2) years of the date of adoption of this resolution. Upon a showing of good cause, the Planning and Zoning Director may, in his sole and absolute discretion, grant extension to this deadline not exceed one (1) year.
2. No principal or accessory building shall be located less than 50 feet from any property line.
3. Off-street parking areas meeting the requirements of section 110-828 and landscaped buffer areas meeting the requirements of section 110-808 shall be constructed. Notwithstanding the provisions of section 110-828(b)(2), off-street parking and loading areas shall be surfaced with brick, asphalt, bituminous, concrete or packed shell or marl material and shall be maintained in a smooth, well-graded condition.
4. The site will be developed in conformance with the attached concept plan.

STAFF RECOMMENDATION: Request recommendation of approval to the City Commission to adopt Resolution 2026-01.

NEXT STEPS: The Mayor and City Commission will hear this item on February 2, 2026

LEGAL DESCRIPTION: 4-18-31 E 312.81 FT OF E 1/2 OF SE 1/4 SE /14 LYING N OF FORT SMITH BLVD PER OR 2537 PG 1529 PER OR 4213 PG 1058 PER OR 5802 PG 0110 PER OR 6514 PG 0164 PER OR 6769 PG 0517 & PER OR 7398 PG 1553

ATTACHMENTS:

- Maps
- Resolution No. 2026-01
- Concept Plan

RESOLUTION NO. 2026-01

**A RESOLUTION OF THE CITY OF DELTONA, FLORIDA;
GRANTING A CONDITIONAL USE TO PERMIT A HOUSE
OF WORSHIP WITHIN THE R-1, RESIDENTIAL ZONING
DISTRICT FOR THE PROPERTY LOCATED AT 590 FORT
SMITH BOULEVARD, WITHIN THE CITY OF DELTONA;
PROVIDING FOR CONDITIONS, RECORDING,
CONFLICTS, SEVERABILITY, AND AN EFFECTIVE DATE.**

WHEREAS, pursuant to Section 74-16, “Conditional Uses,” of Article III, “Reserved Development Review Procedures and Criteria,” of Chapter 74, “Administration,” of the Land Development Code of the City of Deltona, Florida, Solange Dao, P.E. (the “Applicant”), has applied to the City of Deltona, Florida (the “City”), for approval of a Major Conditional Use in accordance with Table 1, “Permitted Uses Table,” of Chapter 110, “Zoning,” to permit a house of worship within the R-1, Residential Zoning District on a property located at 590 Fort Smith Boulevard, Deltona, Florida and legally described in Exhibit “A” (the “Property”) (Application CU25-0005); and

WHEREAS, the Conditional Use CU18-020 to permit a house of worship within the R-1, Residential Zoning District on the Property was approved on November 19, 2018, and expired on November 19, 2020; and

WHEREAS, the City Commission of the City of Deltona, Florida (the “City Commission”) finds that granting the requested Major Conditional Use is warranted because the application meets the criteria for granting a Major Conditional Use as required by Section 74-16, “Conditional Uses,” of Article III, “Development Review Procedures and Criteria,” of Chapter 74, “Administration,” of the Land Development Code of the City of Deltona, Florida; and

WHEREAS, staff recommended approval of the requested Major Conditional Use in its report dated January 21, 2026; and

WHEREAS, Planning and Zoning Board held a public hearing on January 21, 2026, and forwarded its recommendations to the City Commission; and

WHEREAS, public notice was provided in accordance with law; and

WHEREAS, the City Commission finds that the proposed Major Conditional Use is consistent with the City's Code and Comprehensive Plan.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF DELTONA, FLORIDA:

Section 1. Findings. The foregoing Whereas clauses are hereby ratified and incorporated as the legislative intent of this Resolution.

Section 2. Approval of Conditional Use. In accordance with Section 74-16, "Conditional Uses," of Article III, "Development Review Procedures and Criteria," of Chapter 74, "Administration," of the Land Development Code of the City of Deltona, Florida, the Deltona Planning and Zoning Board hereby grants approval of a Major Conditional Use, CU25-0005, to permit a house of worship within the R-1, Residential Zoning District on a property located at 590 Fort Smith Boulevard, Deltona, Florida and legally described in Exhibit "A."

Section 3. Conditions. The approvals granted by this Resolution are subject to the Applicant's compliance with the following conditions required under Section 110-817(d), Code of Ordinances, and those to which the Applicant stipulated at the public hearing:

- 1) No principal or accessory building shall be located less than fifty (50) feet from any property line.
- 2) Off-street parking areas meeting the requirements of [section 110-828](#) and landscaped buffer areas meeting the requirements of [section 110-808](#) shall be constructed. Notwithstanding the provisions of [section 110-828\(b\)\(2\)](#), off-street parking and loading areas shall be surfaced with brick, asphalt, bituminous, concrete or packed shell or marl material and shall be maintained in a smooth, well-graded condition.
- 3) The site will be developed in conformance with the concept plan attached hereto and incorporated herein as Exhibit "B" (the "Concept Plan").
- 4) A Certificate of Occupancy shall be obtained within two (2) years of the date of adoption of this Resolution. Upon a showing of good cause, the Planning and Zoning Director may, in his sole and absolute discretion, grant extension to this deadline not to exceed one (1) year.

Section 4. Violation of Conditions. Failure to adhere to the terms and conditions of approval above shall be considered a violation of the City Code and persons found violating the conditions shall be subject to the penalties described by the City Code, including but not limited to, the revocation of the approvals granted by this Resolution. The Applicant understands and acknowledges that it must comply with all other applicable requirements of the City before it may commence construction or operation, and this Resolution may be revoked by the City Commission at any time upon a determination that the Applicant is not in compliance with the City Code.

Section 5. Recording. The City, or the Applicant if so requested by the City Clerk, shall record this Resolution at the Applicant's sole expense in the Public Records of Volusia County, Florida.

Section 6. Conflicts. All Resolutions or parts of Resolution insofar as they are inconsistent or in conflict with the provisions of this Resolution are hereby repealed to the extent of any conflict.

Section 7. Severability. In the event any portion of this Resolution is determined to be invalid, illegal, or unconstitutional by a court of competent jurisdiction, such decision shall in no manner affect the remaining portion or sections of the Resolution, which shall remain in full force and effect.

Section 8. Effective Date. This Resolution shall become effective immediately upon its adoption. If this resolution does not begin to serve the purpose for which it is granted within 24 months from the date of adoption, unless extended as otherwise provided herein, or if its use is abandoned for 12 consecutive months from the date of adoption, it shall expire.

**PASSED AND ADOPTED BY THE CITY COMMISSION OF THE CITY OF
DELTONA, FLORIDA, THIS _____ DAY OF _____, 2026.**

BY: _____
Santiago Avila, Jr., MAYOR

ATTEST:

Joyce Raftery, CMC, MMC, CITY CLERK

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

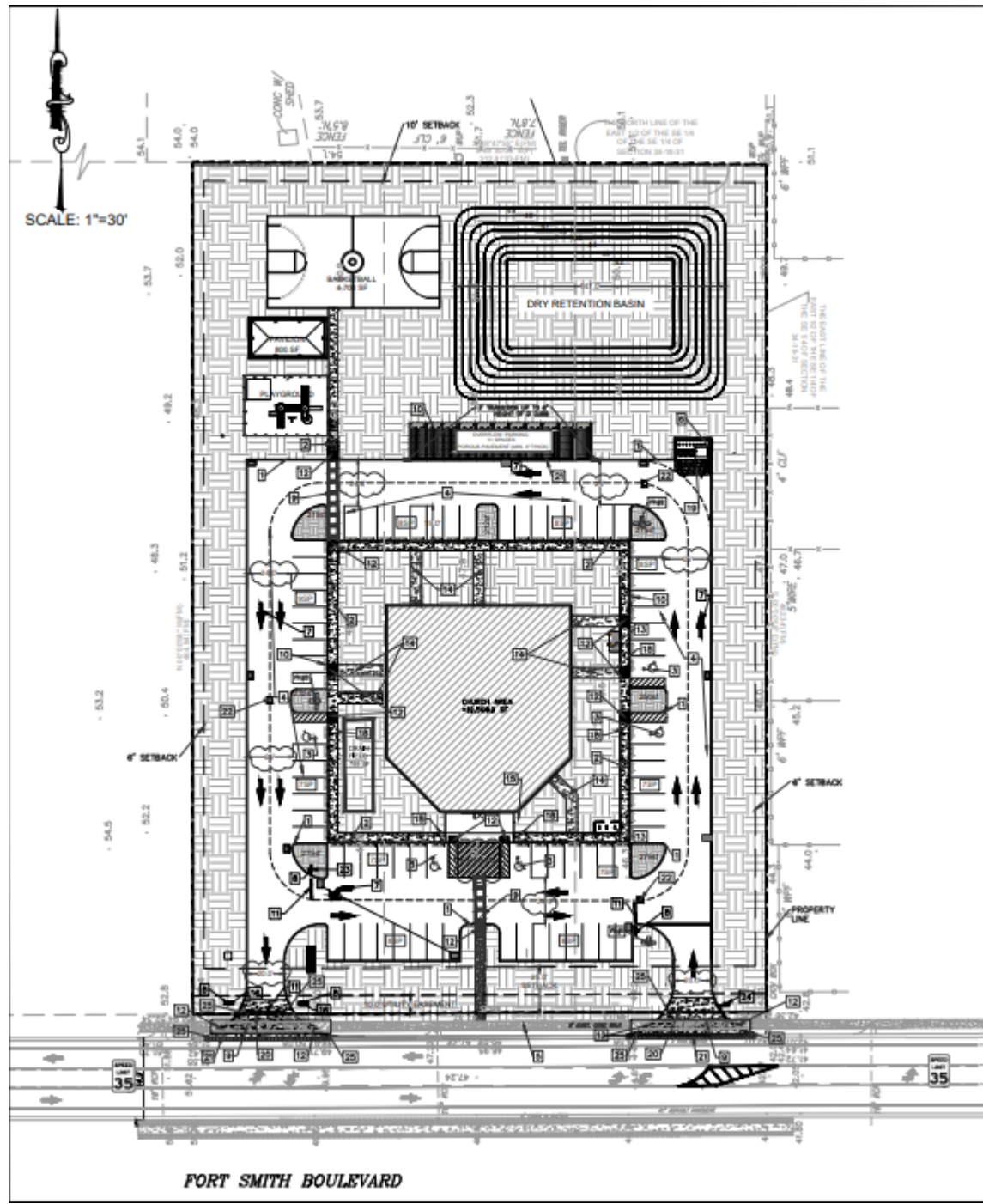
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Avila-Vazquez		
Colwell		
Heriot		
Howington		
Nabith		
Santiago		
Avila		

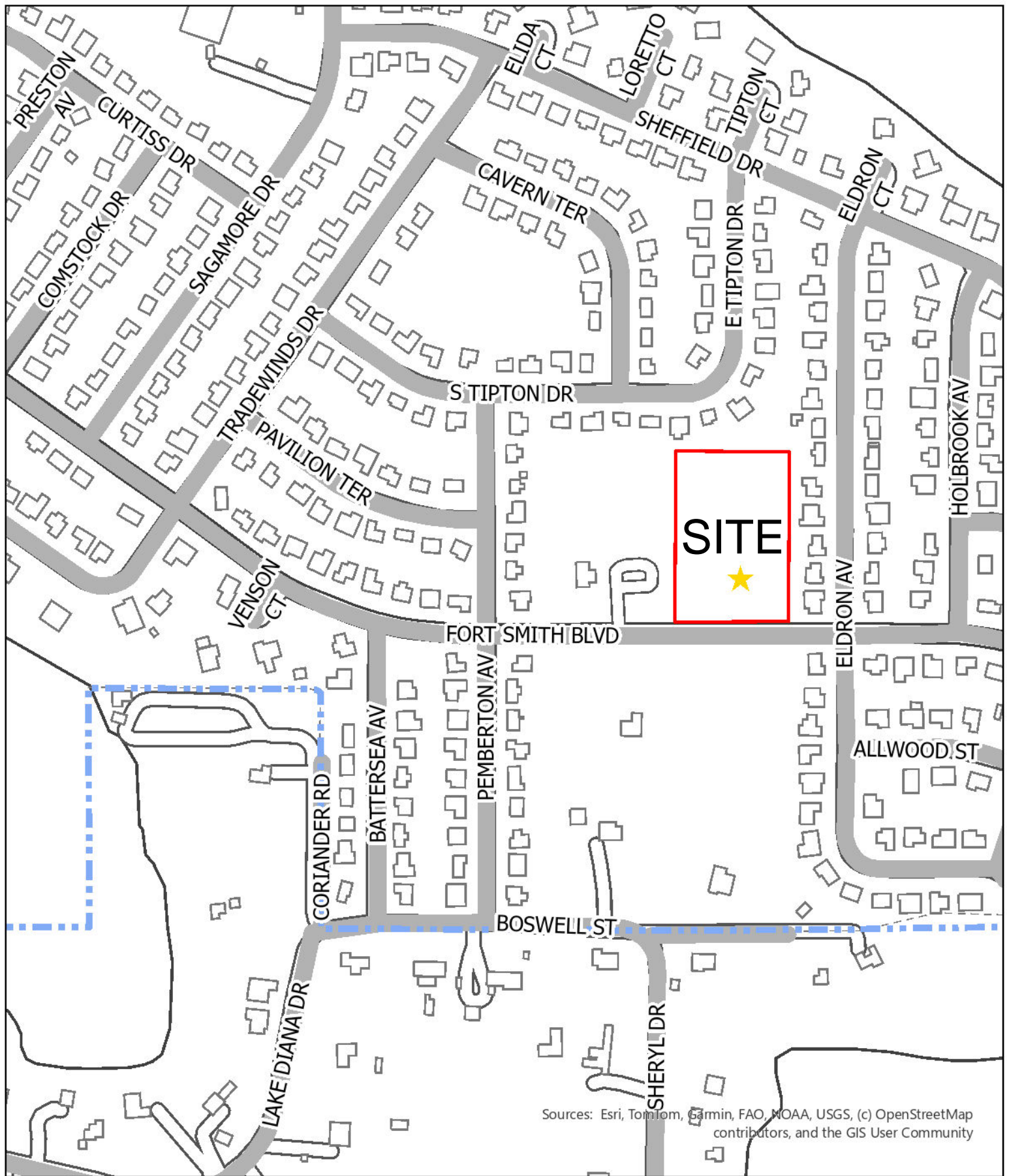
TG Law PLLC, CITY ATTORNEY

EXHIBIT "A" – LEGAL DESCRIPTION

34-18-31 East 312.81 Feet of East 1/2 of the Southeast 1/4 Southeast 14 Lying north of Fort Smith Boulevard as recorded in the Volusia County public records. (34-18-31 E 312.81 FT OF E 1/2 OF SE 1/4 SE /14 LYING N OF FORT SMITH BLVD PER OR 2537 PG 1529 PER OR 4213 PG 1058 PER OR 5802 PG 0110 PER OR 6514 PG 0164 PER OR 6769 PG 0517 & PER OR 7398 PG 1553)

EXHIBIT "B" – CONCEPT PLAN





Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community

LOCATION MAP

590 Fort Smith Blvd. - Conditional Use



CITY OF DELTONA PLANNING AND
DEVELOPMENT SERVICES
2345 PROVIDENCE BLVD.,
DELTONA, FL, 32725
PHONE: (386) 878-8600 FAX: (386) 878-8601

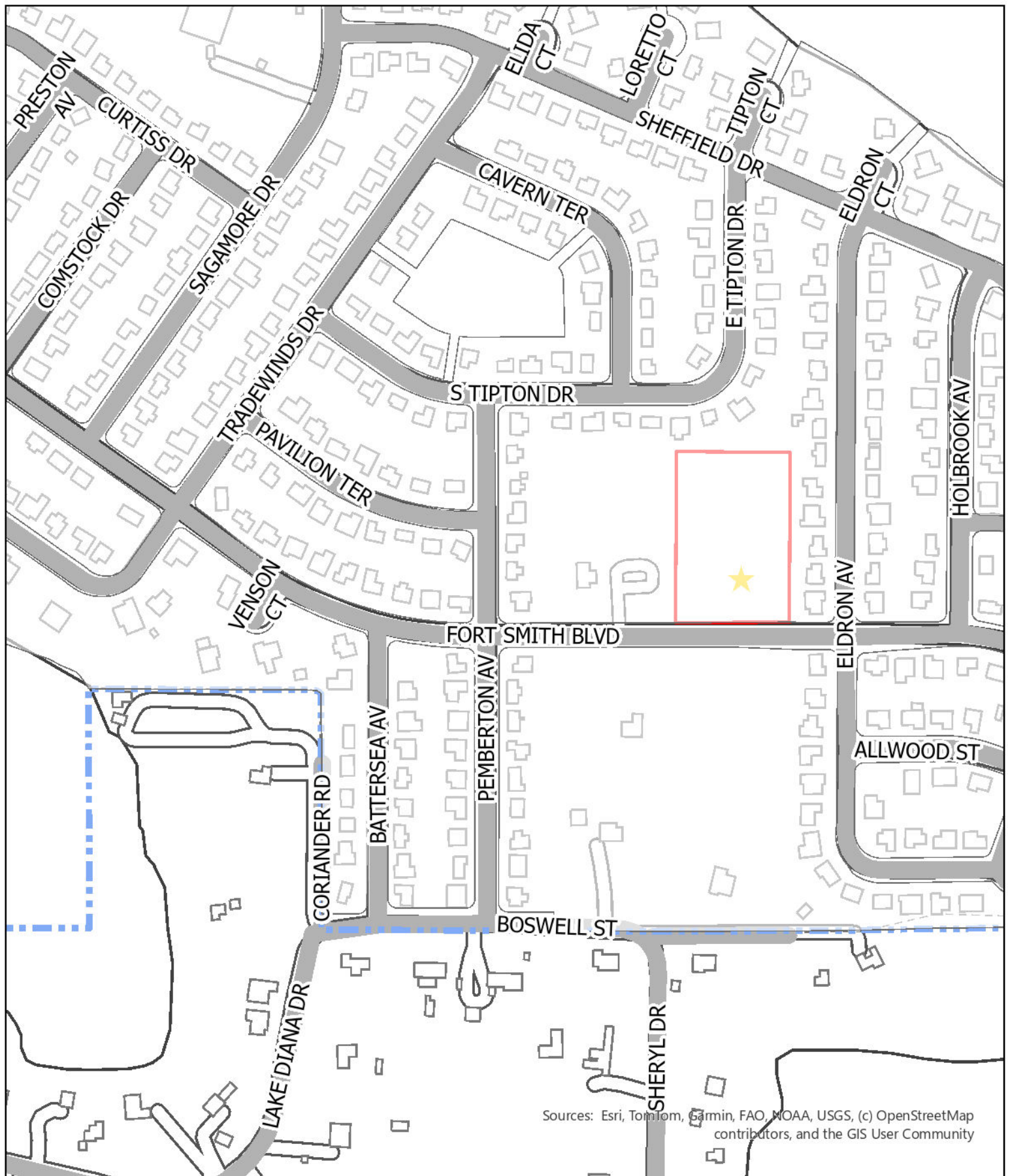
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Legend

590 Fort Smith Blvd.

DeltonaCityBoundary

0 0.03 0.07 0.13 Miles

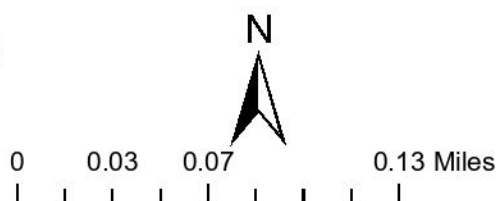


Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community

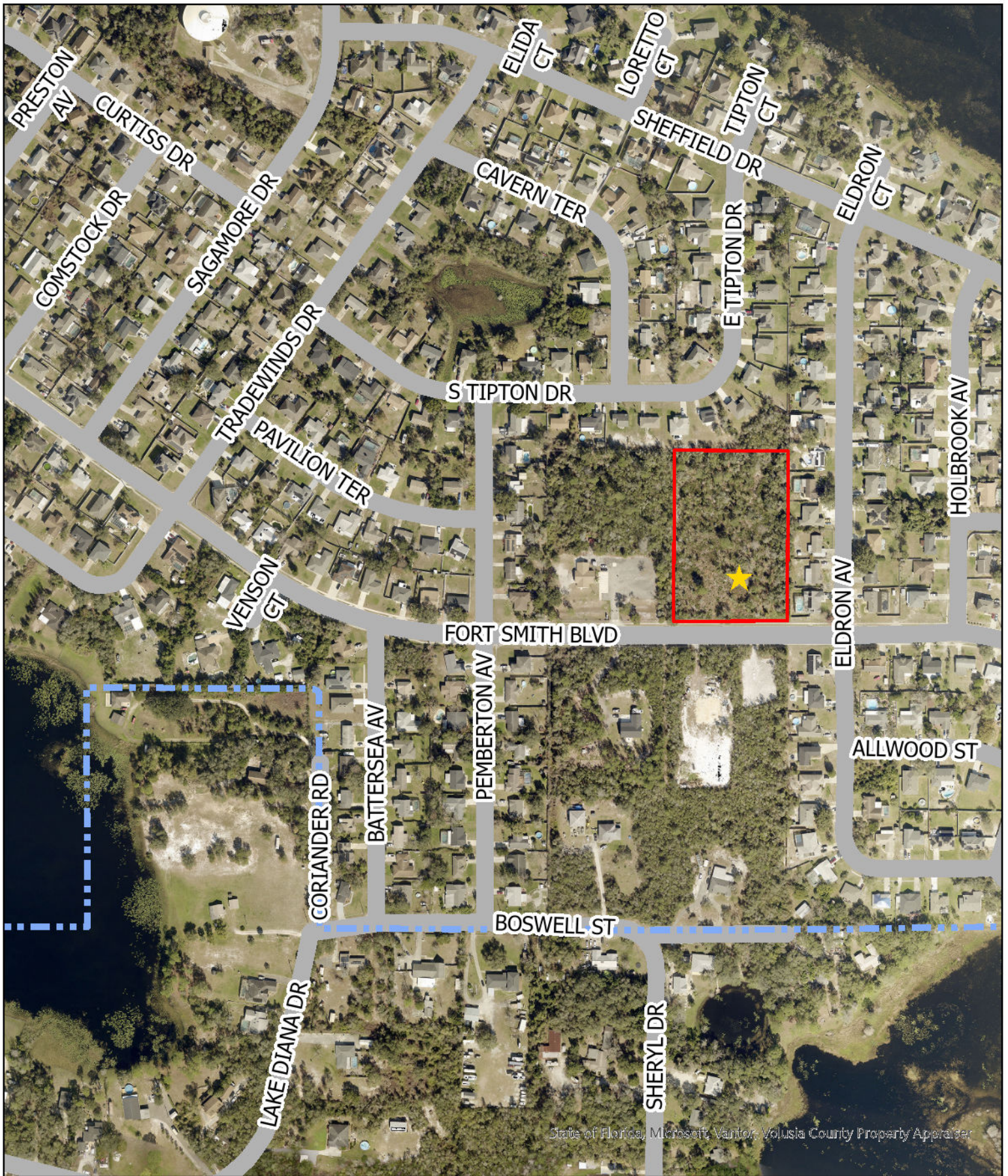
ZONING MAP 590 Fort Smith Blvd. - Conditional Use



CITY OF DELTONA PLANNING AND
 DEVELOPMENT SERVICES
 2345 PROVIDENCE BLVD.,
 DELTONA, FL, 32725
 PHONE: (386) 878-8600 FAX: (386) 878-8601



- Legend**
- 590 Fort Smith Blvd.
 - Deltona City Boundary
 - R1



AERIAL MAP

590 Fort Smith Blvd. - Conditional Use



CITY OF DELTONA PLANNING AND
DEVELOPMENT SERVICES
2345 PROVIDENCE BLVD.,
DELTONA, FL, 32725
PHONE: (386) 878-8600 FAX: (386) 878-8601

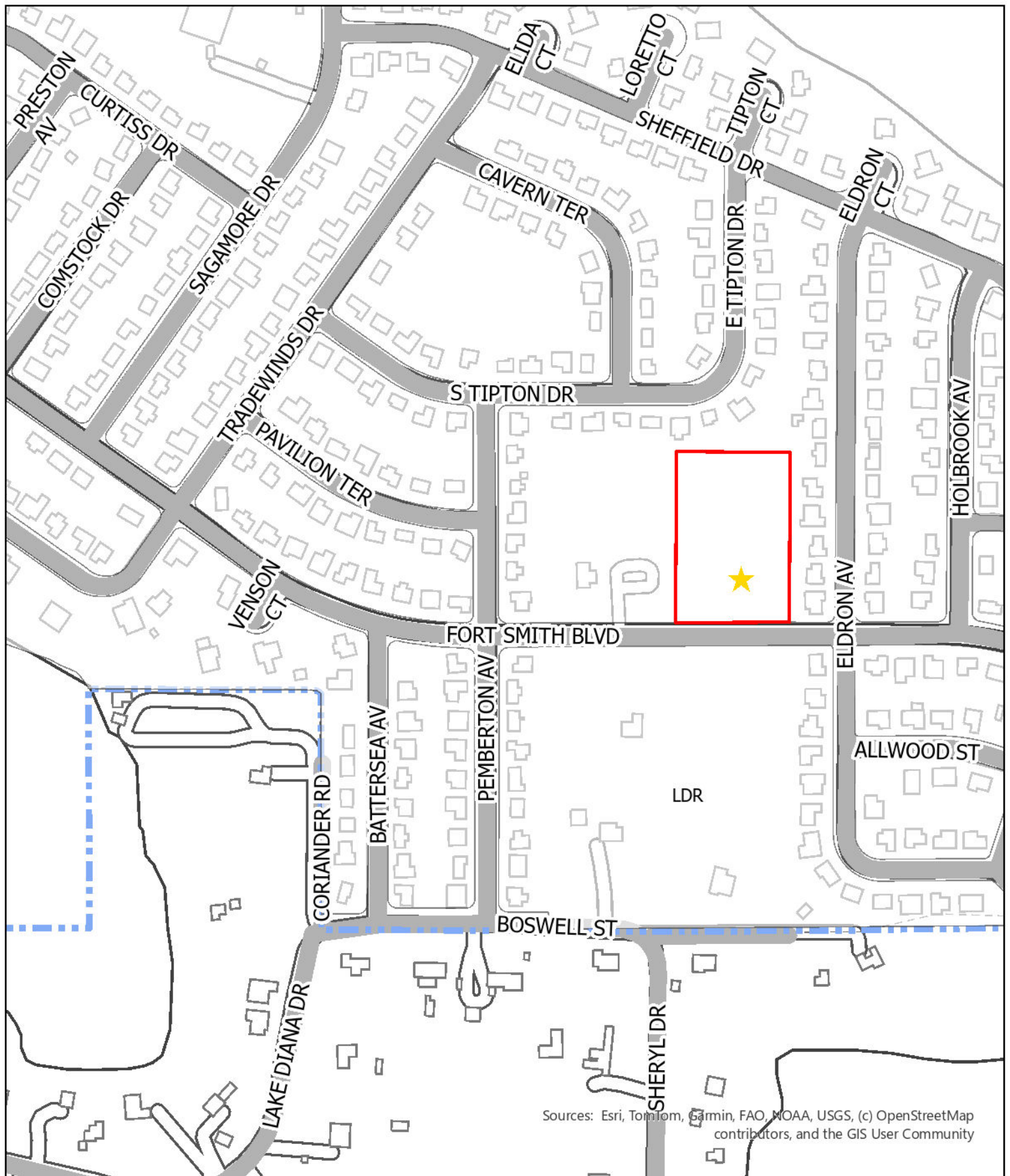


0 0.03 0.07 0.13 Miles

Legend

590 Fort Smith Blvd.

DeltonaCityBoundary



FUTURE LAND USE MAP

590 Fort Smith Blvd. - Conditional Use



CITY OF DELTONA PLANNING AND
DEVELOPMENT SERVICES
2345 PROVIDENCE BLVD.,
DELTONA, FL, 32725
PHONE: (386) 878-8600 FAX: (386) 878-8601

N



0 0.03 0.07 0.13 Miles

Legend

- 590 Fort Smith Blvd.
- Deltona City Boundary
- RESIDENTIAL LOW DENSITY (0 - 6 UNITS / ACRE)



Major Conditional Use Request Resolution No. 2026-01

CU25-0005

CITY OF DELTONA PLANNING & ZONING BOARD

JANUARY 21, 2026

Background

- ❑ Site: 590 Fort Smith Blvd.
- ❑ Size: ±3.3 Acres
- ❑ Zoning District: R-1, Residential
- ❑ Future Land Use: Residential Low Density
- ❑ Currently undeveloped acreage.
- ❑ A site plan is being reviewed concurrently with this application.
- ❑ Proposed Church size is 10,568 square feet.

Conditional Use Request

- ▶ Major Conditional Use in a R-1 Zoning District for a House of Worship to be located at 590 Fort Smith Blvd. Renewing a previously approved Conditional Use which expired in November 2020.
- ▶ The new layout of the site is substantially similar to the previously expired plan.

Matters of Consideration

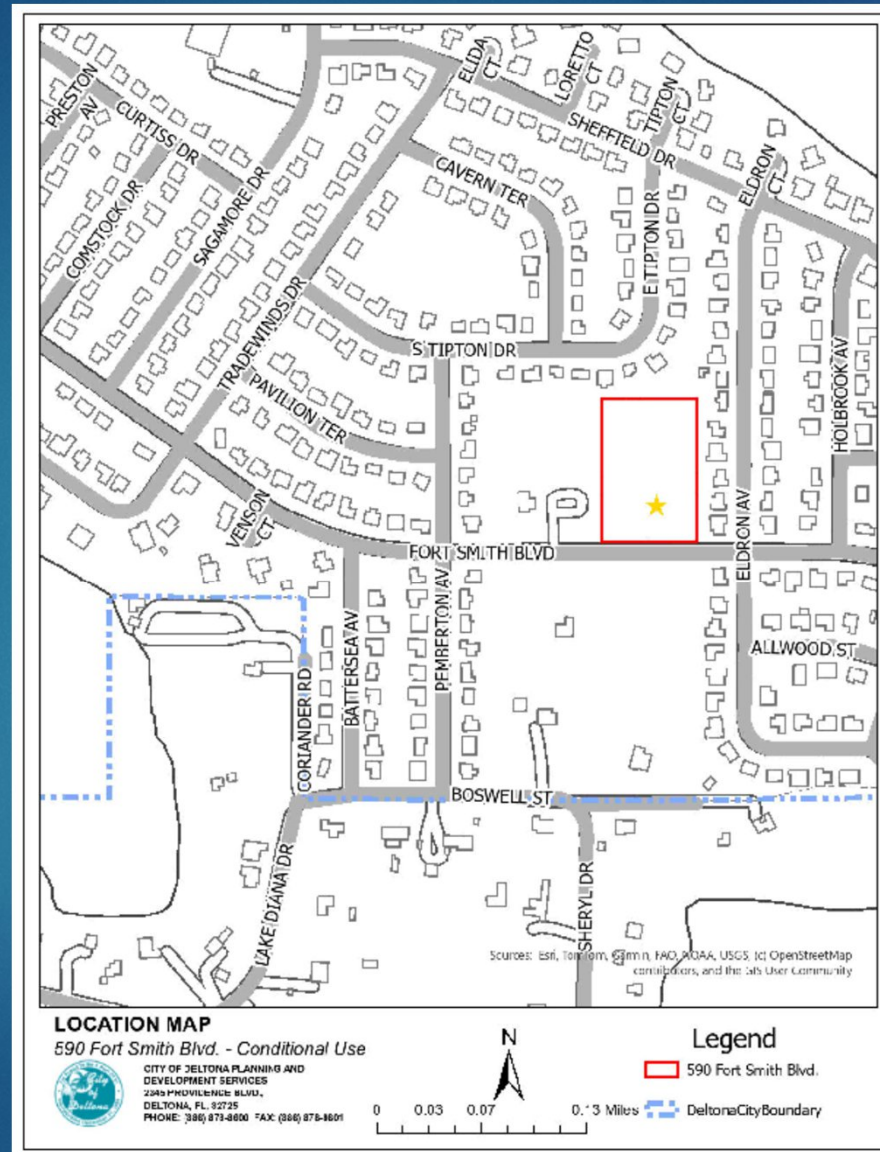
- ▶ Is the proposed use consistent with the intent of chapter 110?
- ▶ Is the proposed use consistent with the Comprehensive Plan?
- ▶ Will the proposal adversely affect the public interest?
- ▶ Can the applicant meet the expressed requirements of applicable City Conditional Use regulations?
- ▶ Comply with the City's Code of Ordinances, the Florida Building Code, and the Florida Fire Prevention Code.

Matters of Consideration Continued...

6. Protect public health, safety, and welfare to ensure basic function operation, including, but not limited to, full utilities, access management in chapter 96, off-street parking in section 110-828, and solid waste in Chapter 50.
7. Will the applicant be able to meet all requirements imposed by federal, state or local governments?
8. Will the proposed use generate undue traffic congestion?
9. Will the proposed use create a hazard, public nuisance or be dangerous?
10. Will the proposed use materially alter the character of surrounding neighborhoods or adversely affect the value of surrounding land, structures or buildings?
11. Will the proposed use adversely affect the natural environment, natural resources or scenic beauty or cause excessive pollution?

Map Series

► Location



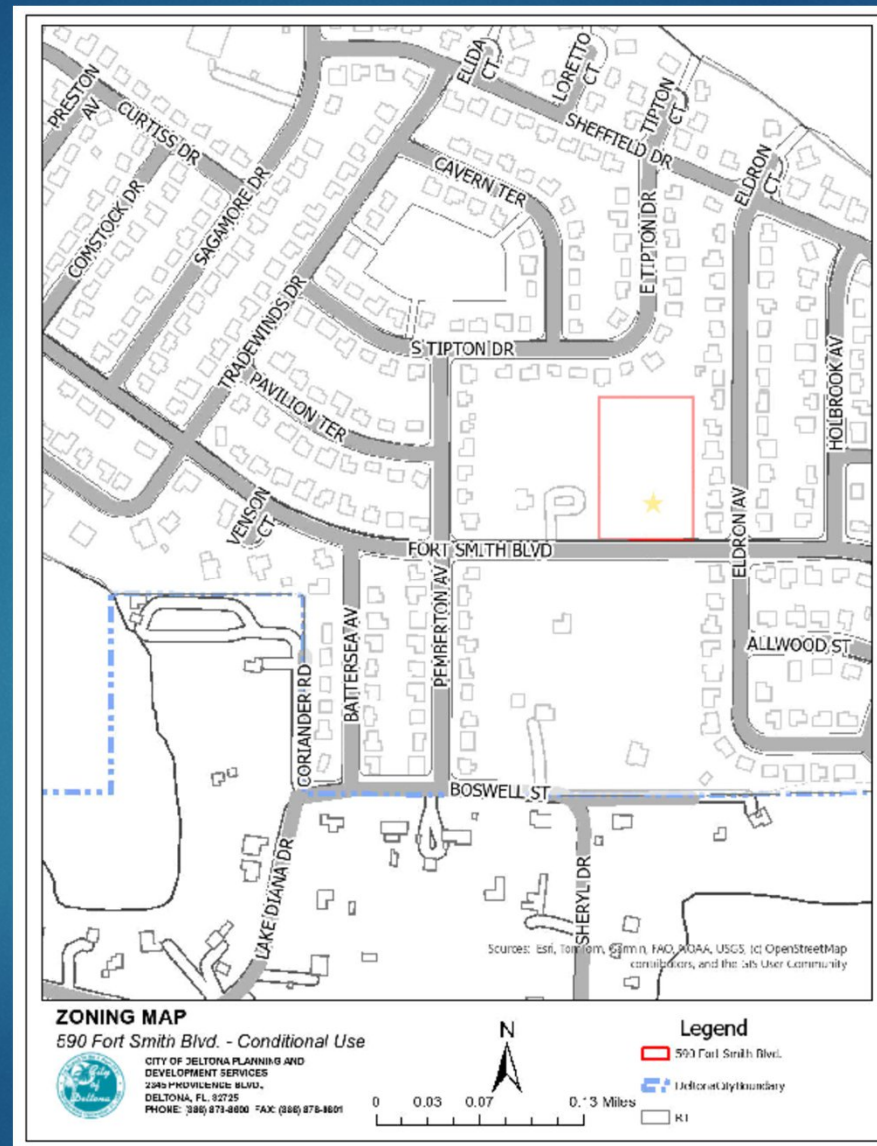
Map Series

► Aerial



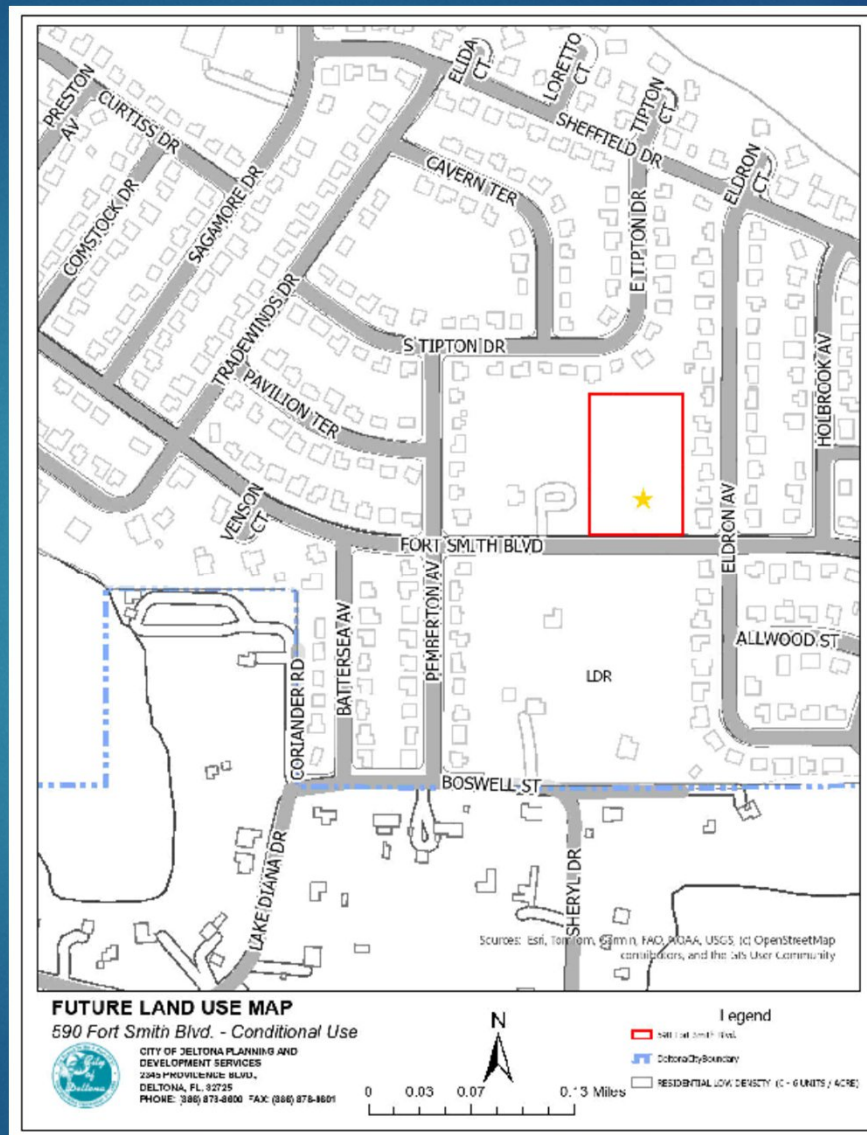
Map Series

► Zoning



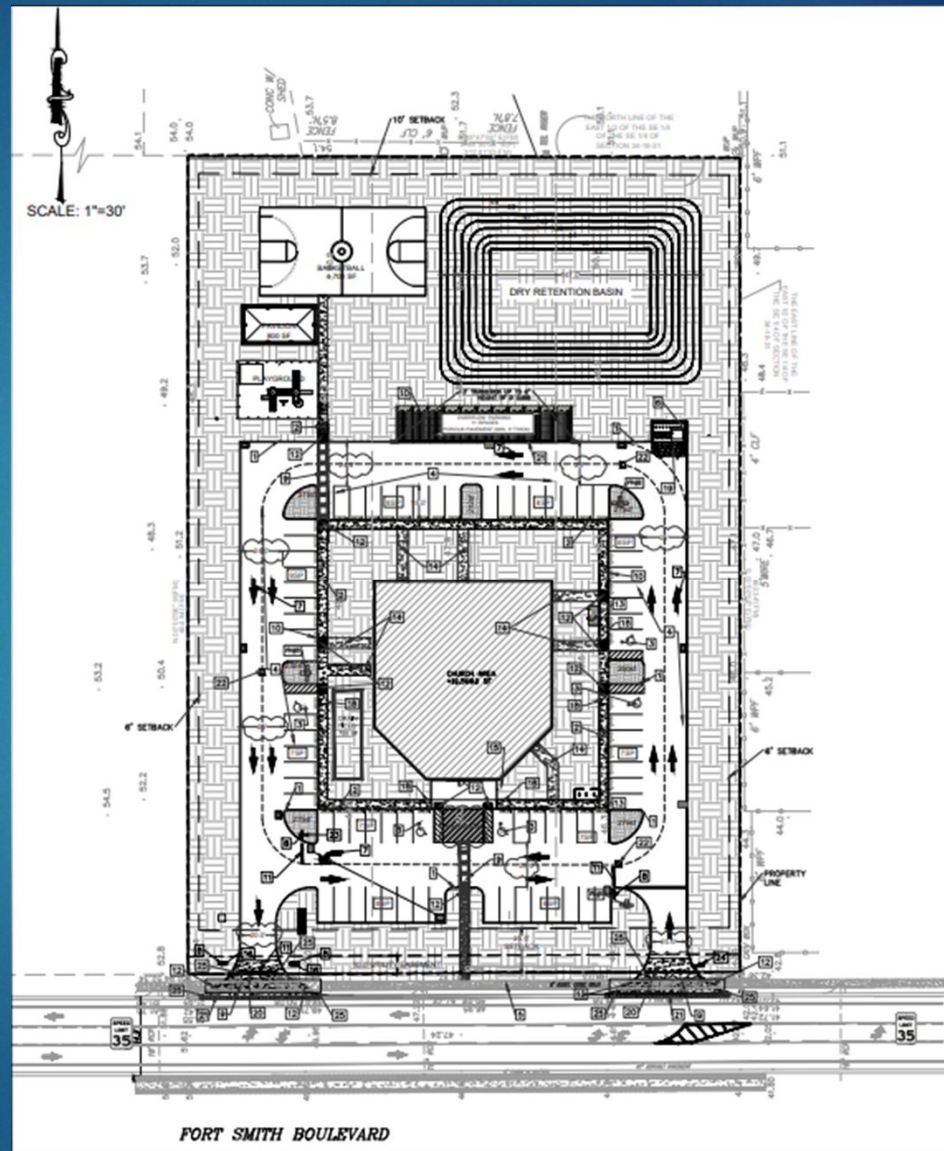
Map Series

► Future Land Use



Map Series

► Concept Plan



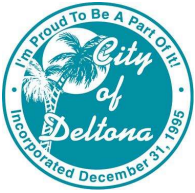
Staff Recommendation

Based on decision making criteria, staff recommends the Planning and Zoning Board recommend approval of Resolution 26- 01 granting a Major Conditional Use for a House of Worship to be located at 590 Fort Smith Blvd. with the following added conditions:

1. The House of Worship must obtain all necessary licenses and permits and legally commence operations within twelve (12) months of the adoption of this resolution, or the conditional use approval shall expire (Per Land Development Code).
2. No principal or accessory building shall be located less than 50 feet from any property line (Per the Land Development Code.)
3. Off-street parking areas meeting the requirements of section 110-828 and landscaped buffer areas meeting the requirements of section 110-808 shall be constructed. Notwithstanding the provisions of section 110-828(b)(2), off-street parking and loading areas shall be surfaced with brick, asphalt, bituminous, concrete or packed shell or marl material and shall be maintained in a smooth, well-graded condition (Per the Land Development Code).
4. The site will be developed in conformance with the attached concept plan.

Final Action

The City Commission is tentatively scheduled to take final action on this application February 17, 2026.



City of Deltona

2345 Providence Blvd.
Deltona, FL 32725

Agenda Memo

AGENDA ITEM:



MEMORANDUM

DATE: January 21, 2026
TO: Planning and Zoning Board
FROM: Jordan Smith, AICP, PP Community and Development Services Director
THRU: Jordan Smith, AICP, PP Community and Development Services Director
SUBJECT: RZ24-0009, Ordinance No. 01-2026, Amending the Official Zoning Map to rezone +/- 14.43 acres of land located at 2830, 2846 and 2855 Lake Helen Osteen Road from Residential Estate-One (RE-1) to Mixed-Use Planned Unit Development (MPUD). Applicant: Mark Watts (Quasi-Judicial – Public Hearing) (Jordan Smith, Project Manager)

REFERENCES: City Comprehensive Plan and Code of Ordinances.

REQUEST: The City had received an application to amend to the Official Zoning Map to rezone approximately +/-14.43 acres of land located at 2830, 2846 and 2855 Lake Helen Osteen Road from Residential Estate-One (RE-1) to Mixed-Use Planned Unit Development (MPUD).

The tax parcel numbers for the subject properties are 8110-00-00-0041, 8110-00-00-0070 and 8110-00-00-0080.

DISCUSSION:

The subject property is located southeast of the intersection of Lake Helen Osteen Road and Catalina Boulevard, directly east and south of the New Hope Baptist Church. The property consists of three parcels totaling approximately 14.43 acres and is currently undeveloped.

The Future Land Use designation for the site is is Low Density Residential (LDR). The surrounding area is primarily established single-family residential neighborhoods developed at low density. The site fronts Lake Helen Osteen Road, a two-lane County roadway functioning as a local corridor. The roadway is not designated as an Activity Center, mixed-use corridor, or employment hub.

The applicant proposes rezoning to MPUD to allow:

- Residential: Up to 96 affordable housing units, up to three stories/45 feet in height
- Church Expansion: 15,565 sq. ft. chapel, 10,000 sq. ft. school with park, 15,000 sq. ft. community center

While Comprehensive Plan Policy FLU 1-8.3 supports affordable housing with residential zoning, developments must remain consistent with the Future Land Use designation, surrounding development pattern, and Comprehensive Plan intent. The proposed MPUD would introduce a level of density and mixed-use intensity inconsistent with the LDR designation.

Unlike sites located within designated Activity Centers of mixed-use corridor, the subject property is surrounded by low-density residential uses and lacks the infrastructure and roadway capacity typically necessary to support MPUD zoning. Staff finds the proposed MPUD does not meet the locational criteria for higher intensity development.

MATTERS FOR CONSIDERATION:

Section 110-1101 of the Code of City Ordinances, states that the City shall consider the following matters when reviewing applications for amendments to the Official Zoning Map:

1. Whether it is consistent with all adopted elements of the Comprehensive Plan.

The Comprehensive Plan serves as the City's long-range master planning document, establishing goals, objectives, and policies to guide growth and development in a manner that promotes compatible land use patterns, protects established neighborhoods, and ensures the efficient use of public infrastructure.

The subject property is designated Low Density Residential (LDR) on the Future Land Use Map. This designation is intended to accommodate low intensity residential development, preserve existing neighborhood character, and limit residential density and non-residential intensity in areas not planned for mixed-use or urban scale development.

Policy FLU 1-2.4 *The City shall seek opportunities to provide for multi-family or other higher density residential uses in appropriate locations such as near commercial nodes and employment centers in order to reduce vehicle miles traveled and land consumption.*

The subject property is not located near a commercial node, employment center, Activity Center, or mixed-use corridor identified on the Future Land Use Map. The proposed MPUD would introduce higher density residential development in a location that does not meet the locational criteria established by this policy.

Policy FLU 1-8.3 *Affordable housing is considered an allowable use within all residential zoning classifications and the City will continue to support it.*

While affordable housing is supported citywide, this policy does not exempt development from consistency with the Future Land Use Map or from adopted density and intensity expectations. The proposed MPUD would exceed the development pattern contemplated for areas designated Low Density Residential.

Policy FLU 1-7.24 *The City shall seek to expand commercial, industrial and mixed-use development at appropriate locations.*

The Comprehensive Plan directs mixed-used development to specifically identified locations such as Activity Centers and designated corridors. The subject property is not located within an area identified as appropriate for mixed-use development.

Policy H 1-3.1 *The City shall designate lands for residential development consistent with the Future Land Use Map and the Comprehensive Plan.*

The requested rezoning to MPUD is not consistent with the Low Density Residential designation applied to the subject property.

Policy H 1-3.5 *The City shall continue to foster the provision of a variety of housing types to meet the needs of residents of various income levels and household types in appropriate locations.*

While the City encourages housing diversity, higher density residential development is intended to occur in areas planned to accommodate such intensity. The subject property does not meet this criterion.

Policy H 1-6.3 *The City shall promote the reduction of urban sprawl by providing for higher residential densities in appropriate locations.*

Increasing residential density within an area planned for low density residential development is inconsistent with this policy.

Policy T 1-4.8 *In the evaluation of proposed changes in land use and zoning, the existing design of the transportation system shall be considered in addition to its functional classification.*

Lake Helen Osteen Road is a two-lane County roadway designed to serve low density residential development. The proposed MPUD would introduce traffic volume inconsistent with the roadway's intended function and surrounding land use context.

Policy T 1-2.2 *Residential neighborhoods shall be protected, to the greatest extent possible, from impacts associated with high volume transportation systems.*

Approval of the proposed MPUD could result in increased traffic and related impacts that adversely affect the surrounding low density residential neighborhood.

Based on the above policies and their application to the subject property, staff finds that the proposed rezoning to MPUD is not consistent with adopted Comprehensive Plan

2. Its impact upon the environment or natural resources.

The Comprehensive Plan includes goals and policies intended to protect environmentally sensitive areas while allowing development that is consistent with adopted land use designations.

Policy FLU 1-4.4 *All development and proposed use shall be consistent with the Conservation Element.*

Policy FLU 1-4.1 *An environmental upland buffer of no less than 25 feet shall be utilized to protect the ecological functions of lake shores, streams, and wetlands.*

Policy FLU 3-4.7 *Land development proposals shall be required to protect ecologically viable natural habitats. Management plans shall be required to ensure that habitat is protected or mitigated consistent with applicable local, State and Federal Agencies.*

Wetlands are located on the western portion of the subject property and are proposed to be preserved with a minimum 25 foot upland buffer. While these resources can be preserved through site design and permitting, environmental protection alone does not resolve land use compatibility or Future Land Use consistency concerns.

An environmental assessment dated February 29, 2024, identified five potentially occupied gopher tortoise burrows. If confirmed, relocation would be required in accordance with state regulations. While impacts may be mitigated through regulatory compliance, environmental

mitigation does not overcome the incompatibility of the proposed MPUD with the Low Density Residential designation.

3. *Its impact upon the economy of any affected area.*

The Comprehensive Plan seeks to promote economic development in a manner that is compatible with surrounding land uses and consistent with long term planning objectives.

Policy ED2-1.3 *The City shall encourage developers to pursue sites zoned to accommodate economic development and redevelopment opportunities.*

While the proposed development may provide localized economic benefits, economic benefit alone does not justify rezoning that is inconsistent with the Future Land Use Map or incompatible with surrounding low density residential development.

Policy ED2-1.4 *For the promotion of mixed-use development, the City shall encourage proposed projects within the Deltona Activity Center to be accompanied by a mix of uses, including multi-family residential.*

The subject property is not located within an Activity Center, corridor or employment hub.

4. *Notwithstanding the provisions of Article XIV of the Land Development Code, Ordinance No. 92-25 [Chapter 86, Code of Ordinances], as it may be amended from time to time, its impact upon necessary governmental services, such as schools, sewage disposal, potable water, drainage, fire and police protection, solid waste, or transportation systems.*

The Comprehensive Plan requires development to be coordinate with available public facilities and services.

Policy FLU 1-1.1 *Development consistent with the Future Land Use Map shall not occur until services and facilities have been determined to be available concurrent with the impacts of the proposed development.*

- a. ***Schools:*** The Volusia County School Board reviewed the proposal and provided no objections.
- b. ***Sewage Disposal:*** Central sewer service would be provided by Deltona Water.
- c. ***Potable Water:*** Central water service would be provided by Deltona Water.
- d. ***Drainage:*** On-site drainage facilities would be reviewed during Final Site Plan approval.
- e. ***Transportation:*** Prior traffic studies identified the need for proportionate fair share mitigation. Although the applicant reduced the number of residential units, staff finds the development intensity remains inconsistent with roadway function.

Use Trip Generation Comparison Chart				
<i>Use</i>	<i>Sq. Ft.</i>	<i>A.M. Peak Hour Trips</i>	<i>P.M. Peak Hour Trips</i>	<i>Total Daily Trips</i>
Multi-Family (low-rise)	122 DU	60	72	845
Church	31.29 KSF	10	15	238
Daycare Center	115 students	90	91	457
Community Center	15.0 KSF	33	34	223

5. Any changes in circumstances or conditions affecting the area.

No changes in land use patterns, infrastructure capacity, or community needs have been identified that would justify increased density of mixed-use zoning at this location.

6. Any mistakes in the original classification.

No evidence has been presented demonstrating an error in the original Future Land Use Map designation or zoning classification.

7. Its effect upon the use or value of the affected area.

***Policy FLU 1-7.2** The City of Deltona shall maintain the viability of existing and proposed residential neighborhoods by maintaining guidelines and regulations for vehicular and pedestrian access, roadway buffers, landscaping, fences and walls, and the maintenance of common open space area.*

Introduction of MPUD zoning and increased development intensity would be incompatible with the existing development pattern and may adversely affect neighborhood stability.

8. Impact upon the public health, safety, or welfare.

***Policy FLU 1-7.7** Appropriate buffer and transition areas shall be utilized to ensure compatibility between residential areas and more intensive land uses.*

The proposed MPUD does not provide an appropriate transition from surrounding low density residential development and therefore does not promote public health, safety or welfare.

NEIGHBORHOOD MEETINGS: The New Hope MPUD held two neighborhood meetings, with notice provided to approximately 35 surrounding property owners within 300 feet of the site.

The first meeting took place on November 14, 2024, at the New Hope Baptist Church following Hurricane Milton. Members of the public expressed concerns related to flooding, wetland buffers, traffic, and overall project density.

The second meeting was on June 23, 2025, at the New Hope Baptist Church, with approximately 10-15 member of the public in attendance, excluding church members. The applicant presented revisions to the proposal, including increased wetland buffers, relocation of stormwater facilities, and a reduction in residential density by 26 units.

FINDING OF FACT: Based on the foregoing analysis and the criteria set forth in Section 110-1101 of the Code of Ordinances, staff finds that the proposed rezoning of the subject property from Residential Estate-One (RE-1) to Mixed Use Planned Development (MPUD):

- Is not consistent with the Future Land Use Map or the intent of the Low Density Residential designation;
- Introduces mixed-use development and residential density that is incompatible with the surrounding low density residential development pattern;
- Is not located within an Activity Center, corridor, or other area identified by the Comprehensive Plan as appropriate for higher intensity or mixed use development; and
- Does not adequately protect neighborhood character as intended by the Comprehensive Plan.

RECOMMENDATION: Staff recommends that the Planning and Zoning Board recommend denial of Ordinance 01-2026 to the City Commission.

NEXT STEPS: The Mayor and City Commission will hear this item at first reading on February 2, 2026.

LEGAL DESCRIPTION:

DESCRIPTION PER ORB 4041 PG. 402

THE SOUTH 264 FEET OF THE NORTH 792 FEET OF THE SOUTHWEST $\frac{1}{4}$ OF THE NORTHEAST $\frac{1}{4}$, EAST OF ROAD, SECTION 10, TOWNSHIP 18 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA.

AND

DESCRIPTION: PER OR 6785 PG 1227

THE SOUTH 264 FEET OF THE NORTH 792 FEET OF THE SOUTHWEST $\frac{1}{4}$ OF THE NORTHEAST $\frac{1}{4}$, EAST OF ROAD, SECTION 10, TOWNSHIP 18 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA.

AND

DESCRIPTION: PER OR 7585 PG 4982

THE SOUTH 528 FEET OF THE SOUTHWEST $\frac{1}{4}$ OF THE NORTHEAST $\frac{1}{4}$, EXCEPT THE SOUTH 68 FEET OF THE WEST 180 FEET THEREOF; AND THE NORTH 132 FEET OF THE SOUTHEAST $\frac{1}{4}$, EXCEPT THE NORTH 32 FEET OF THE WEST 180 FEET THEREOF, SECTION 10, TOWNSHIP 18 SOUTH, RANGE 31 EAST, LYING WEST OF LAKE HELEN-OSTEEN ROAD.

EXCEPT THE FOLLOWING DESCRIBED PROPERTY:

THAT PORTION OF THE SOUTH 105 FEET OF THE SOUTHWEST $\frac{1}{4}$ OF THE NORTHEAST $\frac{1}{4}$ OF SECTION 10, TOWNSHIP 18 SOUTH, RANGE 31 EAST; VOLUSIA COUNTY, FLORIDA; LYING WEST OF "LAKE HELEN-OSTEEN ROAD", EXCEPT THE WEST 180 FEET THEREOF.

AND EXCEPT THAT PORTION OF THE NORTH 132 FEET OF THE SOUTHEAST $\frac{1}{4}$ OF SECTION 10, TOWNSHIP 18 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA, LYING WEST OF "LAKE HELEN-OSTEEN ROAD", EXCEPT THE NORTH 32 FEET OF THE WEST 180 FEET THEREOF.

Containing approximately 14.43 total acres.

ATTACHMENTS:

- Exhibit A – Development Agreement
- Exhibit B - Legal Description
- Exhibit C - Master Development Plan
- Exhibit D - Elevations
- Exhibit E - Traffic Impact Analysis
- Neighborhood Meeting Memos
- Map Series
- New Hope MPUD PowerPoint

ORDINANCE NO. 01-2026

AN ORDINANCE OF THE CITY OF DELTONA, FLORIDA, AMENDING THE OFFICIAL ZONING MAP TO REZONE APPROXIMATELY 14.43 ACRES OF LAND LOCATED AT 2830, 2846, AND 2855 LAKE HELEN OSTEEN ROAD FROM RESIDENTIAL ESTATE ONE (RE-1) TO MIXED USE PLANNED UNIT DEVELOPMENT (MPUD); PROVIDING FOR RECORDING, CONFLICTS, SEVERABILITY, AND AN EFFECTIVE DATE.

WHEREAS, the City of Deltona, Florida (the “City”), has received an application from New Hope Baptist Church of Deltona, Inc. and New Hope Church of Deltona, Inc. (the “Applicant”) to rezone ±14.43-acres of land located at 2830, 2846, and 2855 Lake Helen Osteen Road, Deltona, Florida 32738 (the “Subject Property”) from Residential Estate-One (RE-1) to Mixed Use Planned Unit Development (MPUD); and

WHEREAS, the Applicant has stipulated to a Master Development Plan, certain allowable and prohibited uses, housing affordability restrictions, parking requirements, enhanced landscaping standards, architectural controls, transportation/traffic impacts, development phasing, and other miscellaneous conditions applicable to the Subject Property, as further described in the Development Agreement and associated exhibits attached hereto and incorporated herein; and

WHEREAS, the City and its Planning and Zoning Board, sitting as the Local Planning Agency, have complied with the requirements of the Municipal Home Rule Powers Act, sections 166.011 et. seq., Florida Statutes, in considering the proposed MPUD rezoning; and

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

**NOW, THEREFORE, BE IT ORDAINED BY THE CITY COMMISSION OF
THE CITY OF DELTONA, FLORIDA, AS FOLLOWS:**

Section 1. Findings. The foregoing Whereas clauses are hereby ratified and incorporated as the legislative intent of this ordinance.

Section 2. Property Zoning Amendment Approved. Located in the City of Deltona, Florida this Mixed Planned Unit Development (MPUD) zoning amendment is hereby approved and includes Exhibit “A”, Development Agreement as a written agreement for the Mixed-Use Planned Unit Development, Exhibit “B”, Legal Description depicting the land hereby rezoned from R1-AA to MPUD, Exhibit “C”, Master Development Plan, Exhibit “D”, Elevations, Exhibit “E”, and Traffic Impact Analysis. The following identification numbers are included for this zoning amendment: 8110-00-00-0041, 8110-00-00-0080, and 8110-00-00-0070.

Section 3. Recording. The Applicant shall record and shall be responsible for all costs incurred in recording, this Ordinance and all exhibits hereto in the Public Records of Volusia County, Florida.

Section 4. Conflicts. Any and all Ordinances or parts of Ordinances in conflict herewith are hereby repealed.

Section 5. Severability. If any provision of this Ordinance or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect any other provision or application of this Ordinance which can be given effect without the invalid provision or application.

Section 6. Effective Date. This Ordinance shall take effect immediately upon its final adoption by the City Commission.

**PASSED AND ADOPTED BY THE CITY COMMISSION OF THE CITY OF
DELTONA, FLORIDA THIS _____ DAY OF _____, 2026.**

First Reading: _____

Advertised: _____

Second Reading: _____

BY: _____

Santiago Aliva, Jr., MAYOR

ATTEST:

Joyce Raftery, CMC, MMC, CITY CLERK

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

TG Law PLLC, CITY ATTORNEY

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

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

Gemma Torcivia
TG Law PLLC
City Attorney
City of Deltona
2345 Providence Boulevard
Deltona, Florida 32725

Exhibit “A” to Ordinance No. 01-2026

DEVELOPMENT AGREEMENT

for the project known as New Hope Mixed-Use Planned Unit Development (MPUD) located at 2830, 2846 and 2855 Lake Helen Osteen Rd., Deltona, FL 32738 (hereinafter referred to as the “Subject Properties”).

THIS DEVELOPMENT AGREEMENT (hereinafter referred to as the “Agreement”) is entered into and made as of the ____ day of _____, 2026, by and between the CITY OF DELTONA, a Florida municipal corporation, with a mailing address of 2345 Providence Boulevard, Deltona, Florida 32725, (hereinafter referred to as the “City”), and New Hope Baptist Church of Deltona, Inc., (hereinafter referred to as the “Owner”), and Tacolcy Economic Development Corporation, Inc., (hereinafter referred to as the “Developer”).

W I T N E S S E T H

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

WHEREAS, the Owner has clear title of the Subject Properties, and the Developer is currently under contract to purchase the Subject Properties and intends to develop such properties as a MPUD; and

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

WHEREAS, the development permitted or proposed under this Agreement is consistent with the City's Comprehensive Plan, concurrency management system, and all land development regulations and this Agreement does not replace, supersede, or grant variances to those regulations; and

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

WHEREAS, the Developer have sought the City's approval to develop the Subject Properties, and the City approved Ordinance No. 01-2026, through rezoning the Subject Properties to a form of Planned Unit Development (PUD), as defined under the City's Land Development Code on Section 110-319. The PUD shall consist of this Agreement as the Written Agreement of the PUD and an **Exhibit "C"**, Master Development Plan (MDP), attached hereto and by this reference made a part hereof as the Preliminary Plan, subject to the covenants, restrictions, and easements offered by the Developer and contained herein, (hereinafter the "Master Development Plan" or "MDP"). Where more detailed criteria for City required submittals exceed the criteria required for a Master Development Plan, the more detailed criteria apply.

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

1. **Recitals and Definitions.** The recitals herein contained are true and correct and are incorporated herein by reference. All capitalized terms not otherwise defined herein shall be as defined or described in the City's Land Development Code as it may be amended from time to time, unless otherwise indicated.
2. **Ownership.** The legal and equitable owners of the Subject Properties is: New Hope Church of Deltona, Inc.
3. **Title Opinion/Certification.** The Developer will provide to the City, in advance of the City's execution and recordation of this Agreement, a title opinion from a licensed attorney in the state of Florida, or a certification by an abstractor or title company authorized to do business in the state of Florida, verifying marketable title to the Subject Properties to be in the name of the Owner and any and all liens, mortgages, and other encumbrances that are either satisfied or not satisfied or released of record.
4. **Subordination/Joinder.** Unless otherwise agreed to by the City and if applicable, all liens, mortgages, and other encumbrances that are not satisfied or released of record, must be subordinated to the terms of this Agreement or the lienholder may join in this Agreement. It shall be the responsibility of the

Developer to promptly obtain said subordination or joinder, in form and substance that is acceptable to the City Attorney, prior to the execution and recordation of this Agreement.

5. **Duration.** The duration of this Agreement is binding and runs with the land in perpetuity, unless amended or terminated earlier pursuant to the provisions of this Agreement. If a Final Site Plan for either phase/lot, a building permit for vertical construction of either phase/lot, or a plat has not been approved within two (2) years from the rezone approval by the City it shall have the effect of automatically voiding the development and the land shall revert to the same zoning classification which existed immediately preceding the approval of the Planned Unit Development (PUD). A PUD may receive one (1) extension issued by the Director or designee of Planning and Development Services, for good cause that is valid for three (3) years. Good cause may include factors such as market conditions, financing delays, infrastructure or utility coordination, or other circumstances beyond the applicant's control. Upon expiration of the extension, and if no vertical construction or plat has been approved as stated above, the PUD shall be null and void.
6. **Development of the Subject Properties.** Development of the Subject Properties shall be subject to performance standards listed in this Agreement. Where a land use listed below differs from a defined use in the City of Deltona's Code of Ordinances, the use listed in this Agreement shall prevail.
 - A. The New Hope Mixed-Use Planned Unit Development is consistent with the Comprehensive Plan, specific to these Subject Properties.
 - B. Permitted principal uses allowable on the Subject Properties:
 1. Residential – Multi-family residential dwellings not to exceed 96 units collectively used for affordable housing as defined by the U.S. Department of Housing and Urban Development (HUD).
 2. Houses of worship.
 3. School, parochial or private.
 4. Daycare.
 5. Meeting space/rooms.
 6. Parks or recreation areas publicly or privately owned.
 - C. Permitted accessory uses allowable on the Subject Properties:
 1. Garages (residential accessory only).
 2. Private active and passive recreational facilities.

3. Dumpsters, trash compactors, mail kiosks, maintenance buildings, and other similar uses.
4. Clubhouse and associated amenities.
5. Rental Office.
6. Home occupations, per LDC Section 110-807, as it is amended from time to time.

D. Prohibited principal uses, if any:

1. Mobile/manufactured homes defined by the United States Department of Housing and Urban Development
2. Any use not listed as a permitted use.

E. Development Standards for Overall PUD

- | | |
|-------------------------------------|-----------------------|
| 1. Minimum Open Space: | 25% common open space |
| 2. Maximum Impervious Surface Area: | 60% |
| 3. Minimum lot size: | 1 acre |
| 4. Minimum lot width: | 300 feet |

F. Development Standards for Residential Area

1. Proposed maximum density: 15 units per acre.
2. Maximum lot coverage: 30%
3. No single multi-family building shall exceed 48 units.
4. Minimum landscaping requirements shall be per the City's Land Development Code (LDC) Section 110-808, utilizing the multifamily standards.
5. Landscape Buffers: a minimum 25-foot landscape buffer shall be provided along Lake Helen Osteen Road; a minimum 20-foot landscape buffer shall be provided along all other perimeter property lines where a required wetland buffer is not otherwise located, except that a limited encroachment of the parking lot into the northern boundary of the required landscape buffer shall be permitted southwest of the existing church, as depicted on the MDP attached hereto. No landscape buffers will be required between residential and church or school use areas that are located internal to the overall Property.

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

6. Wetland buffer: A minimum 25-foot upland buffer is required adjacent to any wetlands on the property, per the City's LDC Section 98-53.
7. Maximum building height and length:
 - Maximum height: 3 stories, not to exceed 45 feet.
 - Maximum length: No buildings shall exceed 170 feet.
8. Minimum floor area per dwelling unit:
 1. Studio, efficiency, one-bedroom: 651 square feet
 2. Two-bedroom: 870 square feet
 3. Three-bedroom: 1,041 square feet
9. Building setbacks:
 1. Front yard: 35 ft.
 2. Side yard (north and south): 25 feet
 3. Rear yard: 50 feet
10. Perimeter Setbacks: Perimeter setbacks apply only along the exterior property lines of the Planned Unit Development (PUD). All principal and accessory structure shall comply with the perimeter setbacks listed in this Agreement for the applicable development area.
11. Building Separation and Interior Setbacks: A minimum 25-foot building separation shall be required between any two principal buildings within the interior of the PUD. This standard serves as the interior setback requirement for the project.
 1. The 25-foot building separation is not cumulative with perimeter property line setbacks.
 2. Only one 25-foot distance is required between principal buildings.
 3. This requirement does not apply to accessory structures unless otherwise required by the City's Land Development Code.
12. Minimum parking standards are per Sections. 110-828 and 110-829 of the City's Land Development Code, as it is amended from time to time. In the event shared parking is proposed between the residential

and church portions of the Property, a parking study shall be provided during final site plan review to support an requested modification. In addition, designated visitor spaces or overflow parking shall be generally provided as depicted on the MDP based upon the multi-family standards in Section 110-828 of the City's Land Development Code. Parking maintenance, including striping shall be the responsibility of the Owner/Developer, or an entity designated by the Owner/Developer. Landscaping, design, and other elements of the overflow parking shall be addressed during the site plan review process consistent with the Land Development Code. Finally, no unpaved area shall be used to park, store or otherwise accommodate any vehicle, car, truck, trailer, boat, recreational vehicle or other equipment. No boat, unregistered vehicle, trailer, recreational vehicle or other shall be parked/stored in a driveway or any parking place.

G. Development Standards for Church/School Area:

1. Maximum FAR: 0.30
2. Maximum lot coverage: 30%.
3. Minimum landscaping requirements shall be per the City's Land Development Code.
4. Landscape Buffers: a minimum 25-foot landscape buffer shall be provided along Lake Helen Osteen Road; a minimum 20-foot landscape buffer shall be provided along all other perimeter property lines. No landscape buffers will be required between residential and church or school use areas that are located internal to the overall Property.
5. Maximum building height and length:
 1. Maximum height: 35 feet
 2. Maximum length: 260 feet
6. Building setbacks:
 1. Front yard: 90 feet
 2. Side yard (north and south): 15 feet
 3. Rear yard: 25 feet
7. Perimeter Setbacks: All principal and accessory structures shall meet or exceed a 20-foot setback from the perimeter property line.

8. Interior Setbacks: All principal and accessory structures shall meet or exceed a 10-foot setback from any interior street, drive, or off-street parking area.
9. Minimum building separation distance: Principal structures shall be located at least 25 feet from one another, subject to the interior setback requirements provided above.

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

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

Light Pole Height Standards and Exceptions:

4. Standard Light Pole Height. The maximum height for light poles throughout the project shall be 35 feet, consistent with the City's Land Development Code.

I. Architectural controls and development on the Subject Properties shall follow a common architectural theme as listed in this Agreement by harmoniously coordinating the general appearance of all buildings and accessory structures.

1. Exterior walls shall be constructed of finished materials such as stucco, natural brick or stone, finished concrete, wood or concrete fiberboard or other similar materials on all sides.
2. Ground level utility boxes, air conditioning condensers, pool pumps and similar mechanical apparatuses shall be screened from the public rights-of-way by architectural screening consistent with the structure or landscaping of sufficient density and maturity at planting to provide opaque screening. Waste dumpsters servicing the community shall be enclosed within a gated enclosure, the exterior of which shall be consistent with the architecture of the project.
3. **Temporary/Permanent Signage** – All signs shall be consistent with Chapter 102 of the City's Land Development Code, as it may be

amended from time to time. The entrances to New Hope PUD are planned to be at Lake Helen Osteen Road, as depicted on the Master Development Plan. Subdivision entrance signs may be erected at each entrance generally in the locations shown on the MDP. The entrance signs shall be free-standing monument signs of no more than six-feet in height with an 18-inch base. The copy area shall feature no more than 75 square feet per side and will be maintained by a Property Owners' Association (POA). The easement to maintain the sign will be deeded in favor of the Property Owner/ POA. The signs shall not contain any electronic messaging. Foundation landscaping will be a required element of the signs. The entrance signs shall be permitted separately and must be approved by the Director of Community Development or designee. An elevation of the sign, including color renditions, landscaping and other design elements shall be part of the Final Site Plan and/or plat submittal to the Development Review Committee (DRC).

4. **Centralized Mail Delivery:** A centralized mail kiosk will be provided as shown on the MDP or as otherwise located during Final Site Plan and/or subdivision review and approval by the City. These facilities will include parking and will be maintained by the POA in accordance with the USPS requirements as applicable.
 5. **Architectural Elevation Submissions.** Architectural elevation drawings shall be required as part of all Preliminary Plat, Plat, and/or Final Site Plan applications, and must demonstrate adherence to the unified architectural theme and shall comply with the requirements of Chapter 111 of the City's Land Development Code, as may be amended from time to time.
- J. **Utility provision and dedication:** The Developer shall connect to the City of Deltona's central utility systems, when available, or to Volusia County's central utility systems, where applicable, at their sole cost and expense. Utility fees shall be paid to Deltona Water or Volusia County, respectively, before any building permit is issued. Central utility systems are to be designed, permitted, and constructed to the respective service provider specifications and dedicated to the respective service provider upon final inspection, clearance, and acceptance by the service provider.
- K. **Waste Disposal:** One (1) standard compactor shall be provided to service the development. Individual solid waste disposal pads and collection points shall be provided for every 60 residential units. The compactor shall be screened in accordance with Sec. 110-808(j) of the City Land Development

Code. All other collection points shall be strategically located within fully enclosed garage type structures. An acceptable design shall be reviewed and approved at the time of Final Site Plan. Any trash collection activities within the MPUD shall comply with the exclusive waste disposal franchise granted to Waste Pro, or any subsequent hauler as may be designated by the City in the future. No trash compactor or collection point shall be at the perimeter of the property adjacent to adjoining single-family neighbors.

- L. **Stormwater and environmental:** Per parcel stormwater systems or master stormwater systems shall be owned and maintained by an established Property Owners Association in private ownership and shall not be dedicated to or become the responsibility of the City of Deltona. All environmental permitting, mitigation, and/or soil and erosion control for the properties shall conform to all federal, state, and local permits/requirements, shall be the sole responsibility of the Property Owners Association, and shall be maintained in good condition/standing with the applicable permitting authorities. Best Management Practices and conformance to National Pollutant Discharge Elimination System (NPDES) criteria are required. The lift stations shall be elevated, equipped with a generator, and have sufficient space for fuel storage.
- M. **Transportation, site access, and traffic devices:** The Developer is responsible for all transportation improvements within the Subject Properties and any off-site transportation requirements, as a result of the proposed development, for site function, that maintains or improves the level of service for area roadways, and ensures the public health, safety, and welfare for the community as determined by the Traffic Impact Analysis and required by the Land Development Code. All permits shall be obtained from appropriate permitting agencies prior to development, and the City shall determine the appropriate level of service per the City Comprehensive Plan and current traffic counts.
- N. **Development Phases:** The Subject Properties may be developed in one (1) or more phases. If the MPUD is developed in phases a Preliminary Plat will be required. If the project is developed in phases a separate Final Site Plan for review and approval shall be consistent with this Agreement. The Final Site Plan for the phases of construction shall allow the applicant to provide for flexibility for providing amendments to the plan that may be done without the necessity of requiring a separate site plan application and review, providing the following are provided:
 - 1. Evidence that such amendment does not cause an increase in stormwater retention, and

2. The said amendments are consistent with the limitations and requirements provided by this Developer Agreement. During any construction phasing, Developer shall be required to maintain the undeveloped portions of the property so as not to cause any harm to any surrounding properties. Land clearing and grading for all construction phases shall be permitted in the first construction phase provided all tree preservation areas, if any, are maintained.
 3. If the development occurs in phases, enhanced landscaping and an open public space shall be provided and maintained on the undeveloped lot until the second phase begins. Enhanced landscaping refers to site design that goes above and beyond the minimum standard landscaping code requirements.
7. **Public Facilities/Land Dedication.** Facilities or tracts that either are or shall become public facilities/tracts that will serve the development and/or are on the Subject Properties will be determined at platting.
8. **Development Permits/Fees.** The Developer is responsible for obtaining, permitting, and the payment of all fees for facilities and services for the Subject Properties. Any site permits shall be kept current with the respective permitting agency and shall ensure the protection of the public health, safety, and welfare of the community and the development. All impact fees are applicable, and no impact fee credits shall be awarded through this Agreement; unless a cessation exists through a City moratorium that is Citywide. Proportionate fair share site improvements shall not be used in lieu of impact fees.
9. **Obligations.** Should the Developer fail to undertake and complete its obligations as described in this Agreement to the City's specifications, then the City shall give the Developer 30 days written notice to commence and 90 days to complete said required obligation. If the Developer fails to complete the obligations within the 90-day period, then the City, without further notice to the Developer, or its successors in interest, may, without prejudice to any other rights or remedies it may have, place liens and take enforcement action on the Subject Properties. A lien of such assessments shall be superior to all others, and all existing lienholders and mortgagees, by their execution of the subordination or joinder documents, agree to subordinate their liens or mortgages to the City's said liens or assessments. Notice to the Developer and its successors in interest shall be deemed to have been given upon the mailing of notice to the address or addresses set forth in Paragraph (20) hereof.

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

Agreement and to the City's specifications, then the City shall give the Developer 30 days written notice to commence and 90 days to complete said required obligation at the sole expense of the Developer. If the Developer fails to complete the obligations within the 90 day period, then the City, without further notice to the Developer and their successors and assigns in interest, may but shall not be required to, perform such obligations at the expense of the Developer or their successors and assigns in interest, without prejudice to any other rights or remedies the City may have under this Agreement. Further, the City is hereby authorized to immediately recover the actual and verified cost of completing the obligations required under this Agreement and any legal fees from the Developer in an action at law for damages, as well as record a lien against the Subject Properties in that amount. The lien of such assessments shall be superior to all others, and all existing lienholders and mortgagees, by their execution of the subordination or joinder documents, agree to subordinate their liens or mortgages to the City's said liens or assessments. Notice to the Developer and their successors and assigns in interest shall be deemed to have been given upon the mailing of notice as provided in paragraph (24) of this Agreement.

14. **Concurrency and Vested Rights.** The Developer acknowledges and agrees that prior to the issuance of any development orders for the Properties, the Developer must have received and be in possession of a valid unexpired certificate of capacity/concurrency management system approval consistent with the City's Land Development Code. The capacity certificate/approval verifies the availability of infrastructure and service capacity sufficient to permit the proposed development of the Subject Properties without causing a reduction in the levels of service adopted in the City's Comprehensive Plan. The certificate of capacity/approval shall be effective for a term, as defined in the City's Code of Ordinances. Neither this Agreement nor the approved Master Development Plan shall create or result in a vested right or rights to develop the Subject Properties, as cited in Section 86-34 of the City's Land Development Code.
15. **Environmental and Tree Preservation.** The Developer is responsible for obtaining all site related permits and approval prior to any development activity on or for the Subject Properties. This may involve mitigation for habitat of threatened or endangered flora and fauna or for species identified for proportion (i.e. tree preservation). This Agreement does not vest or exempt the Developer from any permitting and mitigation obligations needed to develop a Subject Properties. In addition, tree replacement and/or wetland mitigation fees, as applicable, shall be paid in full prior to issuance of building permits. If the property contains gopher tortoise habitats, then the site will need to be

surveyed and, if deemed necessary, tortoises relocated. Any relocation of tortoises needs to be consistent with applicable permitting agencies. A minimum of 25' of upland buffer shall be maintained adjacent to all wetland areas.

16. **Homeowners Association or Property Owners Association.** The charter and by-laws of Property Owners Association ("POA") for the Subject Properties and any deed restrictions related thereto shall be furnished to the City for approval by the City Attorney prior to the recording thereof in the Public Records of Volusia County, Florida. Such recording shall take place before a Certificate of Occupancy is issued for the first development project on land covered by this Agreement. The POA shall at a minimum be responsible for maintaining the common open space, any common utility systems, such as for irrigation and site lighting, and project signage. The Developer shall be responsible for establishing the POA and recording said information in the Public Records of Volusia County, Florida. The City is not responsible for the enforcement of any agreements or deed restrictions entered into between property owners or occupiers of the Subject Properties. If maintenance for the Subject Properties is not maintained following issuance of a Certificate of Occupancy, the City has Code Enforcement services.
17. **Enforcement.** Both parties may seek specific performance of this Agreement and/or bring an action for damages in a court within Volusia County, Florida, if this Agreement is breached by either party. In the event that enforcement of this Agreement by the City becomes necessary, and the City is successful in such enforcement, the Developer shall be responsible for the payment of all of the City's costs and expenses, including attorney fees, whether or not litigation is necessary and, if necessary, both at trial and on appeal. Such costs, expenses and fees shall also be a lien upon the Subject Properties superior to all others. Should this Agreement require the payment of any monies to the City, the recording of this Agreement shall constitute a lien upon the Subject Properties for said monies, until said are paid, in addition to such other obligations as this Agreement may impose upon the Subject Properties and the Developer. Interest on unpaid overdue sums shall accrue at the rate of the lesser of eighteen percent (18%) compounded annually or at the maximum rate allowed by law.
18. **Utility Easements.** For any easement not established on a plat for the Subject Properties, the Developer shall provide to the City such easements and other legal documentation, in form mutually acceptable to the City Attorney and the Developer, as the City may deem reasonably necessary or appropriate for the installation and maintenance of the utility and other services, including but not

limited to, sanitary sewer, potable water, and reclaimed water services, electric, cable, gas, fire protection and telecommunications.

19. **Periodic Review.** The City reserves the right to review the Subject Properties subject in relation to this Agreement periodically to determine if there has been demonstrated good faith compliance with the terms of this Agreement. If the City finds that on the basis of substantial competent evidence that there has been a failure to comply with the terms of this Agreement, the City may not issue development orders or permits until compliance with this Agreement has been established.
20. **Notices.** Where notice is herein required to be given, it shall be by certified mail return receipt requested, hand delivery or nationally recognized courier, such as Federal Express or UPS. E-mail delivery of documents shall not replace or be in lieu of the aforementioned process. Said notice shall be sent to the following, as applicable:

DEVELOPER'S REPRESENTATIVES:

DEVELOPER

Tacolcy Economic Development Corp., Inc.
Attn: Carol Gardner
5900 NW 7th Ave., Suite 102
Miami, FL 33127

With copy to:

Mark A. Watts, Esq.
Cobb Cole
231 N. Woodland Blvd.
DeLand, FL 32720

CITY'S REPRESENTATIVES:

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

With copy to:

Planning & Development Services
City of Deltona
2345 Providence Boulevard
Deltona, Florida 32725

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

21. **Compliance with the Law.** The failure of this Agreement to address a particular permit, condition, term, or restriction shall not relieve the Developer of the Subject Properties from the necessity of complying with the law governing said permitting requirements, conditions, terms, or restrictions.
22. **Captions.** The captions used herein are for convenience only and shall not be relied upon in construing this Agreement.

23. **Binding Effect.** This Agreement shall run with the land, shall be binding upon and inure to the benefit of the Developer and their successors and assigns in interest, and the City and their successor and assigns in interest. This Agreement shall become effective upon its execution and recordation with the Public Records of Volusia County, Florida. This Agreement does not, and is not intended to, prevent or impede the City from exercising its legislative authority as the same may affect the Subject Properties.
24. **Subsequently Enacted State or Federal Law.** If either state or federal law is enacted after the effective date of this Agreement that is applicable to and precludes the parties' compliance with the terms of this Agreement, this Agreement and correlating zoning amendment shall be modified or revoked, as is necessary, to comply with the relevant state or federal law.
25. **Severability.** If any part of this Development Agreement is found invalid or unenforceable in any court, such invalidity or unenforceability shall not affect the other parts of this Development Agreement, if the rights and obligations of the parties contained herein are not materially prejudiced and if the intentions of the parties can be affected. To that end, this Development Agreement is declared severable.
26. **Covenant Running with the Land.** This Agreement shall run with the Subject Properties and inure to and be for the benefit of the parties hereto and their respective successors and assigns and any person, firm, corporation, or entity who may become the successor in interest to the Subject Properties or any portion thereof.
27. **Recordation of Agreement.** The parties hereto agree that an executed original of this Agreement shall be recorded by the City, at the Developer's expense, in the Public Records of Volusia County, Florida.
28. **Applicable Law/Venue.** This Agreement and the provisions contained herein shall be construed, controlled, and interpreted according to the laws of the State of Florida. Venue of any litigation relating to this Agreement shall be in the courts of Volusia County, Florida.
29. **Time of the Essence.** Time is hereby declared of the essence to the lawful performance of the duties and obligations contained in this Agreement. The Owner/Developer shall execute this Agreement within 30 business days of City Commission adoption of Ordinance No. 01-2026; and agrees to pay the cost of recording this document in the Public Records of Volusia County, Florida. Failure to execute this Agreement within 30 business days of this Ordinance adoption may result in the City not issuing development orders or permits until execution and recordation of this Agreement has occurred.

30. **Agreement; Amendment.** This Agreement constitutes the entire agreement between the parties, and supersedes all previous discussions, understandings and agreements, with respect to the subject matter hereof; provided, however, that it is agreed that this Agreement is supplemental to the City's Comprehensive Plan and does not in any way rescind or modify any provisions of the City's Comprehensive Plan. Amendments to and waivers of the provisions of this Agreement shall be made by the parties only in writing by formal amendment.
31. **Effective Date.** The Effective Date of this Agreement shall be the day this Agreement is recorded in the Public Records of Volusia County, Florida.

[Remainder of the page intentionally left blank]

IN WITNESS WHEREOF, the Owner, the Developer and the City have executed this Agreement.

**NEW HOPE BAPTIST CHURCH OF
DELTONA, INC. (Owner)**

By:

Signature of Witness # 1

Signature

Print or type name

Print or type name

AS:

Signature of Witness # 1

Signature

Print or type name

Print or type name

As:

Mailing Address:

STATE OF FLORIDA

COUNTY OF _____

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this _____ day of _____, 2026, by _____, and _____, of _____, who is/are personally known to me or who has/have produced _____ as identification and who did not (did) take an oath.

(NOTARY SEAL)

Signature of Notary

Print or type name

**TACOLCY ECONOMIC
DEVELOPMENT CORPORATION, INC.
(Developer)**

By:

Signature of Witness # 1

Signature

Print or type name

Print or type name

AS:

Signature of Witness # 1

Signature

Print or type name

Print or type name

As:

Mailing Address:

**STATE OF FLORIDA
COUNTY OF _____**

The foregoing instrument was acknowledged before me by means of ☐ physical presence
or ☐ online notarization, this _____ day of _____, 2026, by
_____, and _____, of
_____, who is/are personally known to me or who has/have produced
_____ as identification and who did not (did) take
an oath.

(NOTARY SEAL)

Signature of Notary

Print or type name

CITY OF DELTONA:

By: _____

Date: _____

ATTEST:

Date: _____

Mailing Address:

City of Deltona
2345 Providence Boulevard
Deltona, Florida 32725

STATE OF FLORIDA

COUNTY OF _____

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this ____ day of _____, 202__, by _____, and _____, who are personally known to me and acknowledge executing the same freely and voluntarily under authority vested in them by the City of Deltona.

Signature of Notary

(NOTARY SEAL)

Print or type name

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

Gemma Torcivia
City Attorney

EXHIBIT "B"
LEGAL DESCRIPTION

DESCRIPTION PER ORB 4041 PG. 402

THE SOUTH 264 FEET OF THE NORTH 792 FEET OF THE SOUTHWEST $\frac{1}{4}$ OF THE NORTHEAST $\frac{1}{4}$, EAST OF ROAD, SECTION 10, TOWNSHIP 18 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA.

AND

DESCRIPTION: PER OR 6785 PG 1227

The South 264 feet of the North 792 feet of the Southwest $\frac{1}{4}$ of the Northeast $\frac{1}{4}$ West of Road, Section 10, Township 18 South, Range 31 East, Volusia County, Florida.

AND

DESCRIPTION: PER OR 7585 PG 4982

The South 528 feet of the Southwest $\frac{1}{4}$ of the Northeast $\frac{1}{4}$, except the South 68 feet of the West 180 feet thereof; and the North 132 feet of the Southeast $\frac{1}{4}$, except the North 32 feet of the West 180 feet thereof, Section 10, Township 18 South, Range 31 East, lying West of Lake Helen-Osteen Road.

EXCEPT the following described property:

That portion of the South 105 feet of the Southwest $\frac{1}{4}$ of the Northeast $\frac{1}{4}$ of Section 10, Township 18 South, Range 31 East; Volusia County, Florida; lying West of "Lake Helen-Osteen Road", except the West 180 feet thereof.

AND EXCEPT that portion of the North 132 feet of the Southeast $\frac{1}{4}$ of Section 10, Township 18 South, Range 31 East, Volusia County, Florida, lying West of "Lake Helen-Osteen Road", except the North 32 feet of the West 180 feet thereof.

Containing approximately 14.43 total acres.

Exhibit B

LEGAL DESCRIPTION NEW HOPE PUD

DESCRIPTION PER ORB 4041 PG. 402

THE SOUTH 264 FEET OF THE NORTH 792 FEET OF THE SOUTHWEST $\frac{1}{4}$ OF THE NORTHEAST $\frac{1}{4}$, EAST OF ROAD, SECTION 10, TOWNSHIP 18 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA.

AND

DESCRIPTION: PER OR 6785 PG 1227

The South 264 feet of the North 792 feet of the Southwest $\frac{1}{4}$ of the Northeast $\frac{1}{4}$ West of Road, Section 10, Township 18 South, Range 31 East, Volusia County, Florida.

AND

DESCRIPTION: PER OR 7585 PG 4982

The South 528 feet of the Southwest $\frac{1}{4}$ of the Northeast $\frac{1}{4}$, except the South 68 feet of the West 180 feet thereof; and the North 132 feet of the Southeast $\frac{1}{4}$, except the North 32 feet of the West 180 feet thereof, Section 10, Township 18 South, Range 31 East, lying West of Lake Helen-Osteen Road.

EXCEPT the following described property:

That portion of the South 105 feet of the Southwest $\frac{1}{4}$ of the Northeast $\frac{1}{4}$ of Section 10, Township 18 South, Range 31 East; Volusia County, Florida; lying West of "Lake Helen-Osteen Road", except the West 180 feet thereof.

AND EXCEPT that portion of the North 132 feet of the Southeast $\frac{1}{4}$ of Section 10, Township 18 South, Range 31 East, Volusia County, Florida, lying West of "Lake Helen-Osteen Road", except the North 32 feet of the West 180 feet thereof.

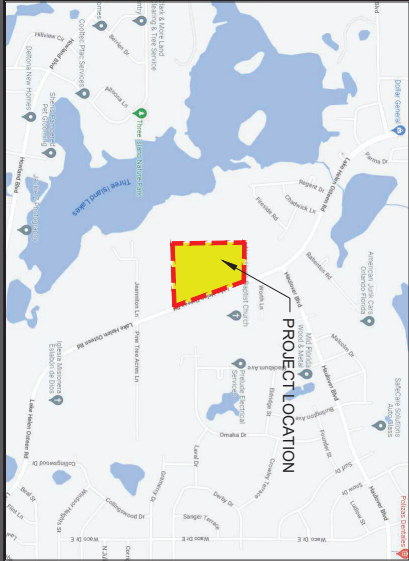
Containing approximately 14.43 total acres.

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EXHIBIT C

PROJECT LOCATION



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4955 SW 75TH Avenue
Miami, Florida 33155
T 786.879.8882
F 786.350.0151
www.modisarchitects.com

New Hope Church & Residence
04/29/2025
Deltona, FLORIDA

Zoning & Project Data

Residential Data			
Description	Required	Proposed	
Lot			
Parcel ID			
811000000080	83,199.60 sf	1.91 Acres	
811000000041	196,020.00 sf	4.50 Acres	
Lot Area Summary			
Gross Lot Area:	279,220 sf	6.41 Acres	
Zoning District			
Proposed Residential	279,220 sf		District
	6.41 Acres		PUD
Density			
Density	6.41 Acres	77 Units	96 Units
Building Height		12.00 Du/AC	0
Building Height			40'-0"
Building Setbacks			0
Front Setback (East)		25'-0"	41'-0"
Side Setback (North)		25'-0"	25'-0"
Side Setback (South)		25'-0"	25'-0"
Rear Setback (West)		25'-0"	56'-0"

Building Data

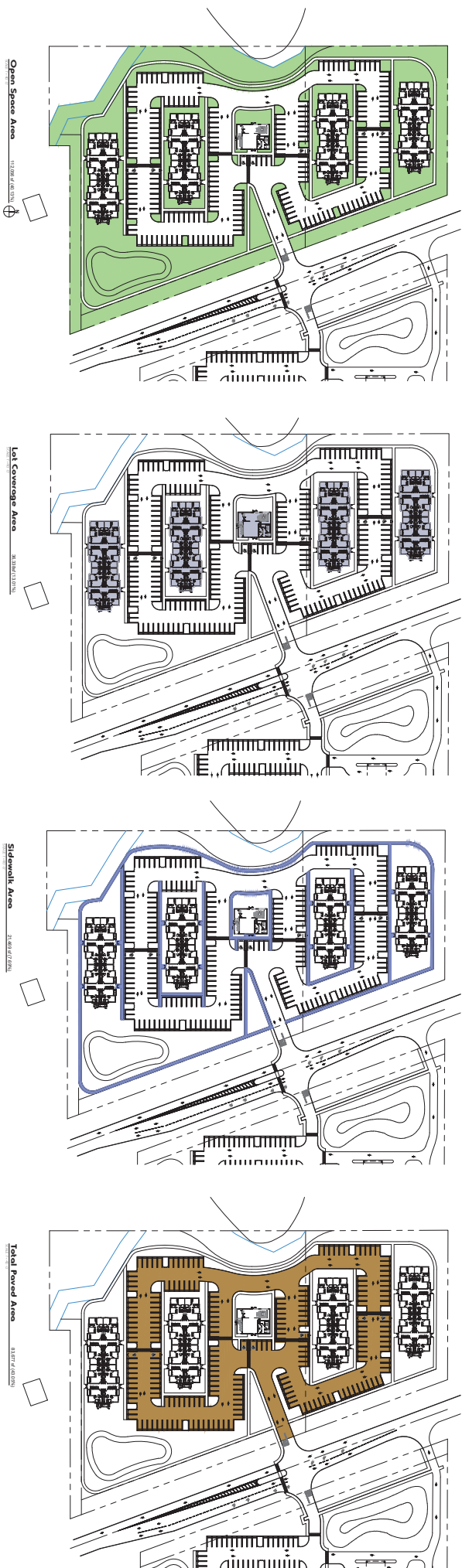
Building Area A			
Total Sq Ft. does not include Balcony Sq Ft.			
Levels	Leasable Area	Non-Leasable	Total Bldg Gross SF
Level 1	6,864 sf	1,253 sf	8,117 sf
Level 2	6,864 sf	1,094 sf	7,958 sf
Level 3	6,864 sf		
Total	20,592 sf	3,441 sf	24,033 sf
Total of 4 Bldg			96,132 sf

Unit Data

Unit Area				
	Unit A (1 BD)	Unit B (2 BD)	Unit C (3 BD)	Total Units
	651 sf	870 sf	1,041 sf	
Type A				
Level 1	2 Units	4 Units	2 Units	8 Units
Level 2	2 Units	4 Units	2 Units	8 Units
Level 3	2 Units	4 Units	2 Units	8 Units
Sub Total				
Total of 4 Bldg	6 Units	12 Units	6 Units	24 Units
Total Units				96 Units

Parking Data

Residential Parking Requirement				
		Required	Provided	
Unit A (1 BD)	24 Units	25.00%	1.5 SP/UD	36 spaces
Unit B (2 BD)	48 Units	50.00%	2.0 SP/UD	96 spaces
Unit C (3 BD)	24 Units	25.00%	2.0 SP/UD	48 spaces
Total Units	96 Units	100.00%	1 sp/10 units	10 spaces
Visitors				
	Sub Total			190 spaces
Parking Provided				
Standard	206	HC	Parallel	
Surface		7		213 spaces
				190 spaces
				213 spaces

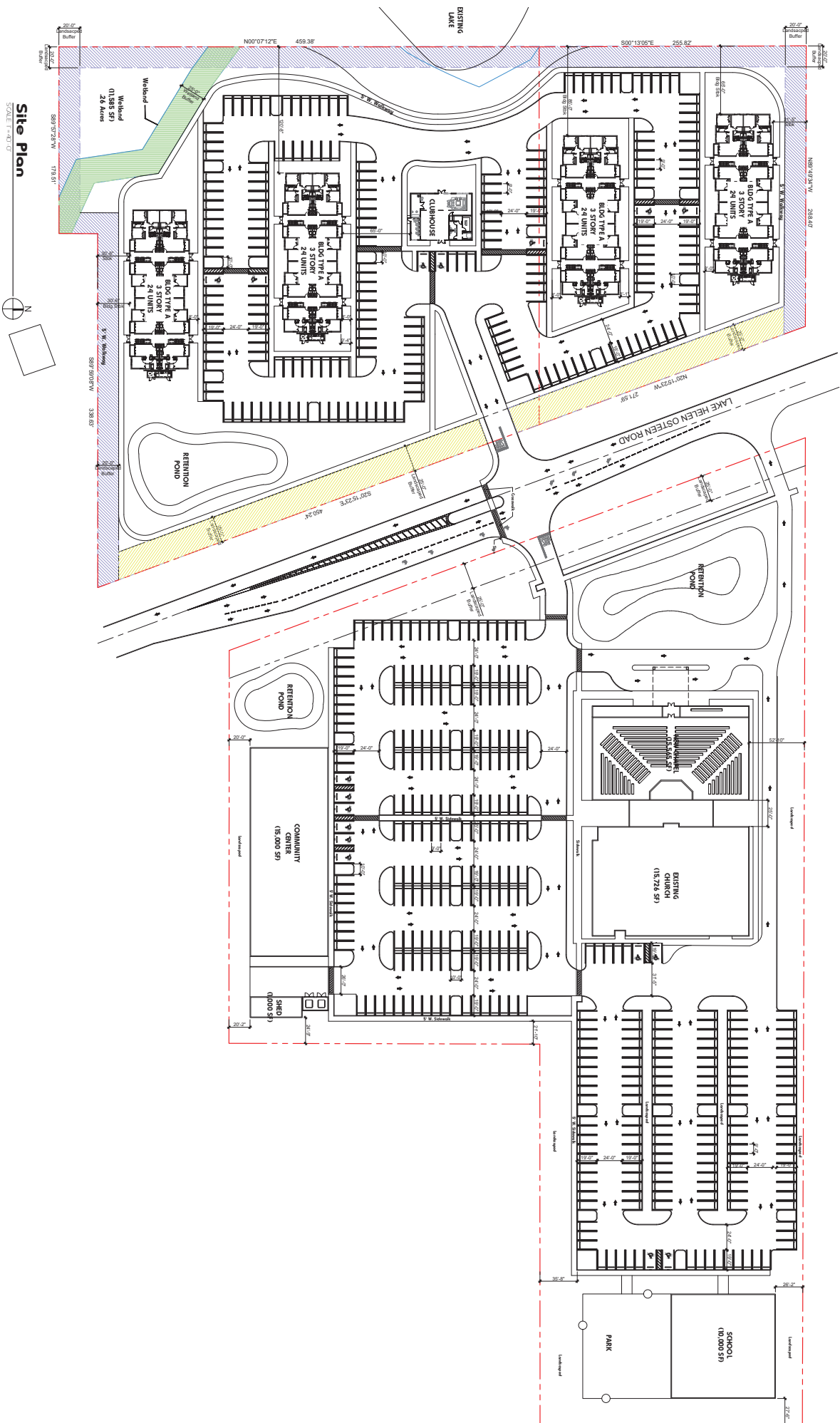


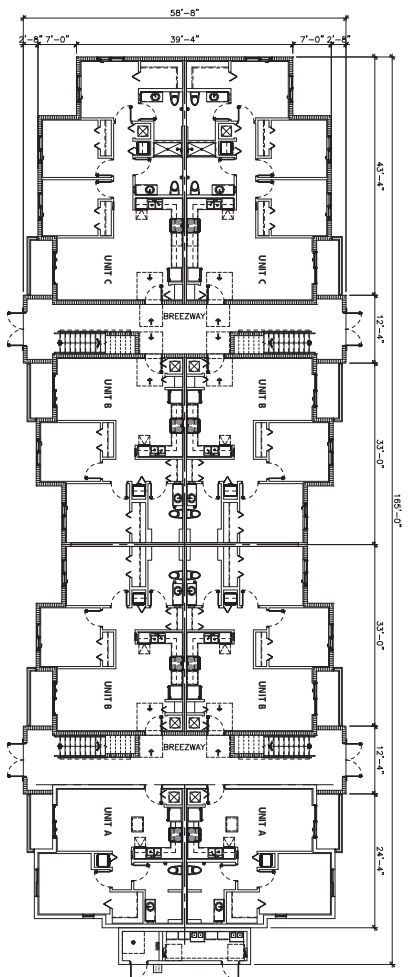
Description		Residential Data		Required	Proposed
Lot					
Parcel ID					
81100000030	83,198.60 sf	1.91 Acres			
81100000041	196,020.00 sf	4.50 Acres			
Lot Area Summary					
Gross Lot Area	279,220 sf	6.41 Acres			
Zoning District					
Proposed Residential	279,220 sf		District		PUD
	6.41 Acres				
Density					
Density	6.41 Acres		77 Units		96 Units
			12.00 DU/AC		0
Building Height					
Building Height:			40'-0"		0
Building Setbacks					
Front Setback (East)			25'-0"		41'-0"
Side Setback (North)			25'-0"		25'-0"
Side Setback (South)			25'-0"		25'-0"
Rear Setback (West)			25'-0"		56'-0"
General Requirements					
Total Area Ratio					96.13% sf
Lot Coverage			N/A		38.33% sf
Landscape Open Space					13.01%
			69,305 sf		112,056 sf
Total Paved Area			26 %		40.13%
			N/A		89,677 sf
					43.05%
Sidewalk Area			N/A		21,469 sf
					7.69%

New Hope Church & Residence

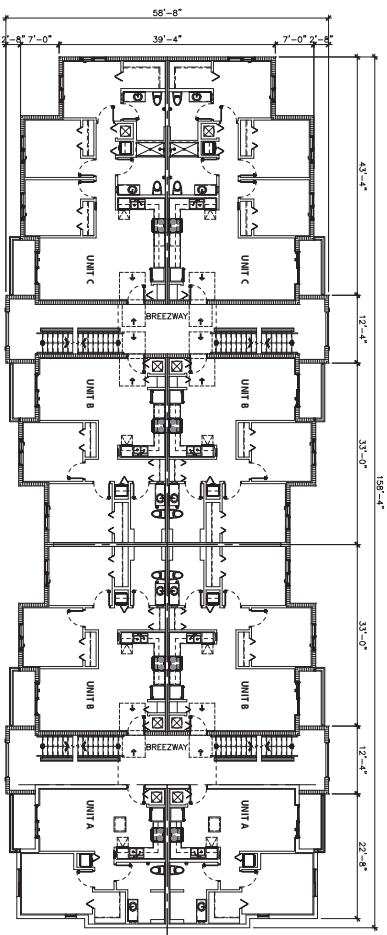
CONCEPTUAL DESIGN
Current Scheme
Site Plan

#22043
04/29/2025
SCALE: 1"=40'

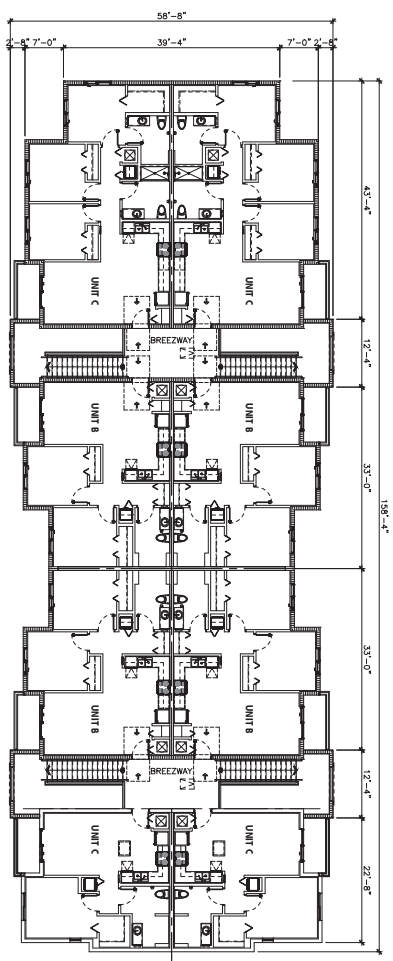




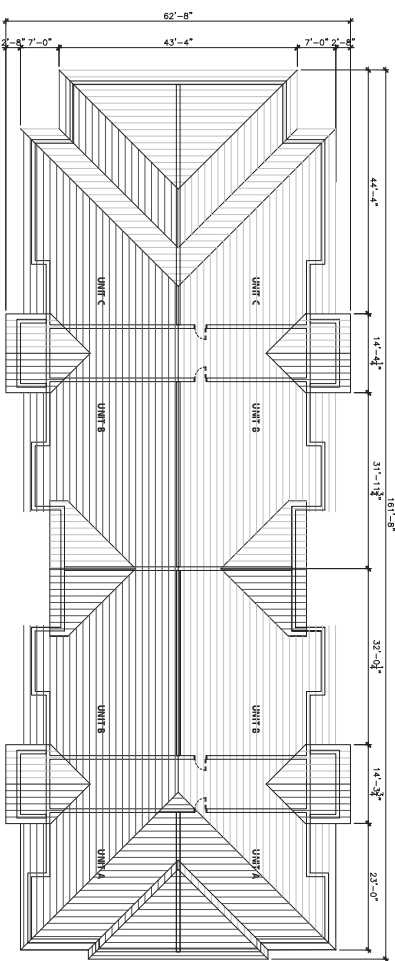
01 Building Type-A - Ground Level



02 Building Type-A - Floor Plan - Level 2

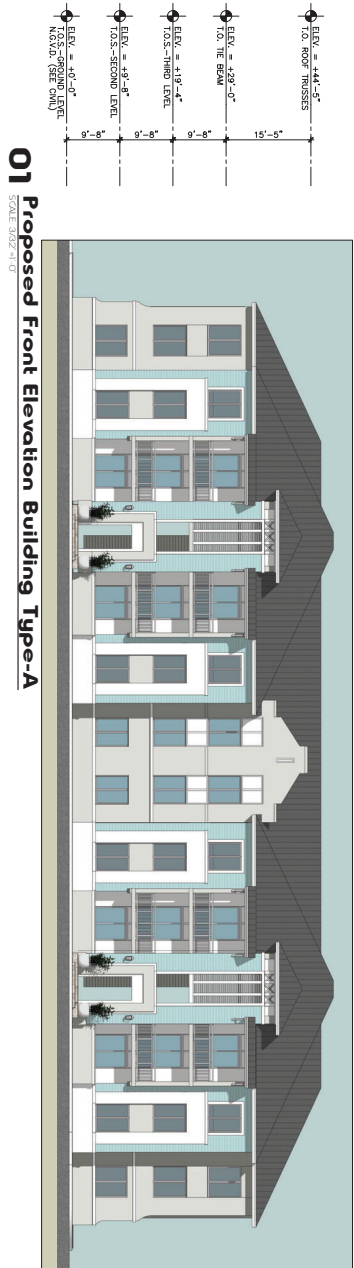


03 Building Type-A -Floor Plan - Level 3

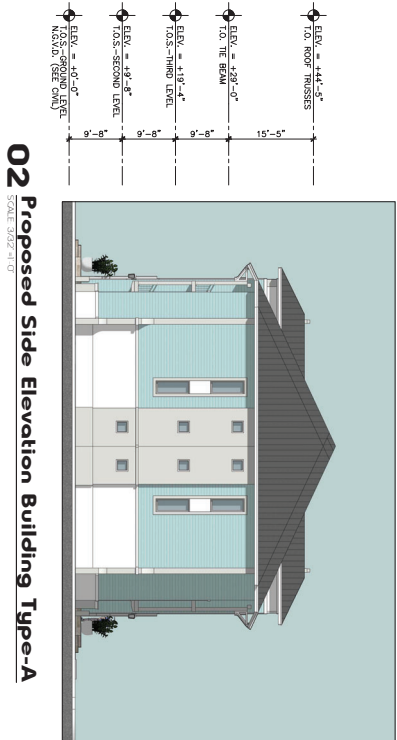


04 Building Type-A -Floor Plan - Roof Level

Exhibit D



01 Proposed Front Elevation Building Type-A
SCALE 3/32" = 1'-0"



02 Proposed Side Elevation Building Type-A
SCALE 3/32" = 1'-0"



01 Proposed Front Elevation Building Type-B
SCALE: 3/32"=1'-0"



02 Proposed Side Elevation Building Type-B
SCALE: 3/32"=1'-0"

Exhibit E



■ TRAFFIC IMPACT ANALYSIS

NEW HOPE PUD

DELTONA, FLORIDA

MARCH 2024

PREPARED BY:

WALSH TRAFFIC ENGINEERING, LLC

285 PALMETTO SPRINGS STREET

DEBARY, FLORIDA 32713

PHONE – 386.668.0062

TRAFFIC IMPACT ANALYSIS



NEW HOPE PUD

DELTONA, FLORIDA

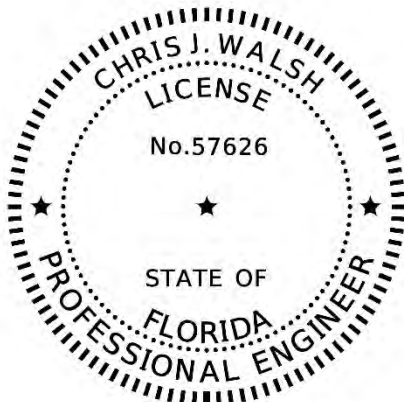
MARCH 2024

PREPARED BY:

CHRIS J. WALSH, P.E.
WALSH TRAFFIC ENGINEERING, LLC
285 PALMETTO SPRINGS STREET
DEBARY, FLORIDA 32713
PHONE – 386.668.0062
PROJECT #: 10068

PREPARED FOR:

TACOLCY ECONOMIC DEVELOPMENT CORPORATION, INC.
5900 NW 7TH AVENUE, SUITE 102
MIAMI, FLORIDA 33127



THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY:

ON THE DATE ADJACENT TO THE SEAL

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

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APPENDICES

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Appendix B	Approved TIA Methodology
Appendix C	Traffic Counts
Appendix D	Existing Conditions Synchro Printouts
Appendix E	Historical Data/Trends & Applied Annual Growth Rates
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INTRODUCTION

Walsh Traffic Engineering, LLC (Walsh Traffic) was retained to conduct a traffic impact analysis for the proposed New Hope PUD located on Lake Helen Osteen Road, south of Haulover Boulevard in Deltona, Florida (see **Figure 1**). The subject property straddles both sides of Lake Helen Osteen Road. The property on the west side is vacant. The property on the east side includes a 15,726 square-foot building that serves as a church and can accommodate up to 648 seats. Additionally, this building is used as a daycare facility and is licensed/certified for up to 85 students, operating from 6:30 AM to 6:00 PM with child drop offs/pick-ups occurring continuously throughout the day. The development is proposed to include the following:

West side of Lake Helen Osteen Road

- 120-dwelling unit multi-family development

East side of Lake Helen Osteen Road

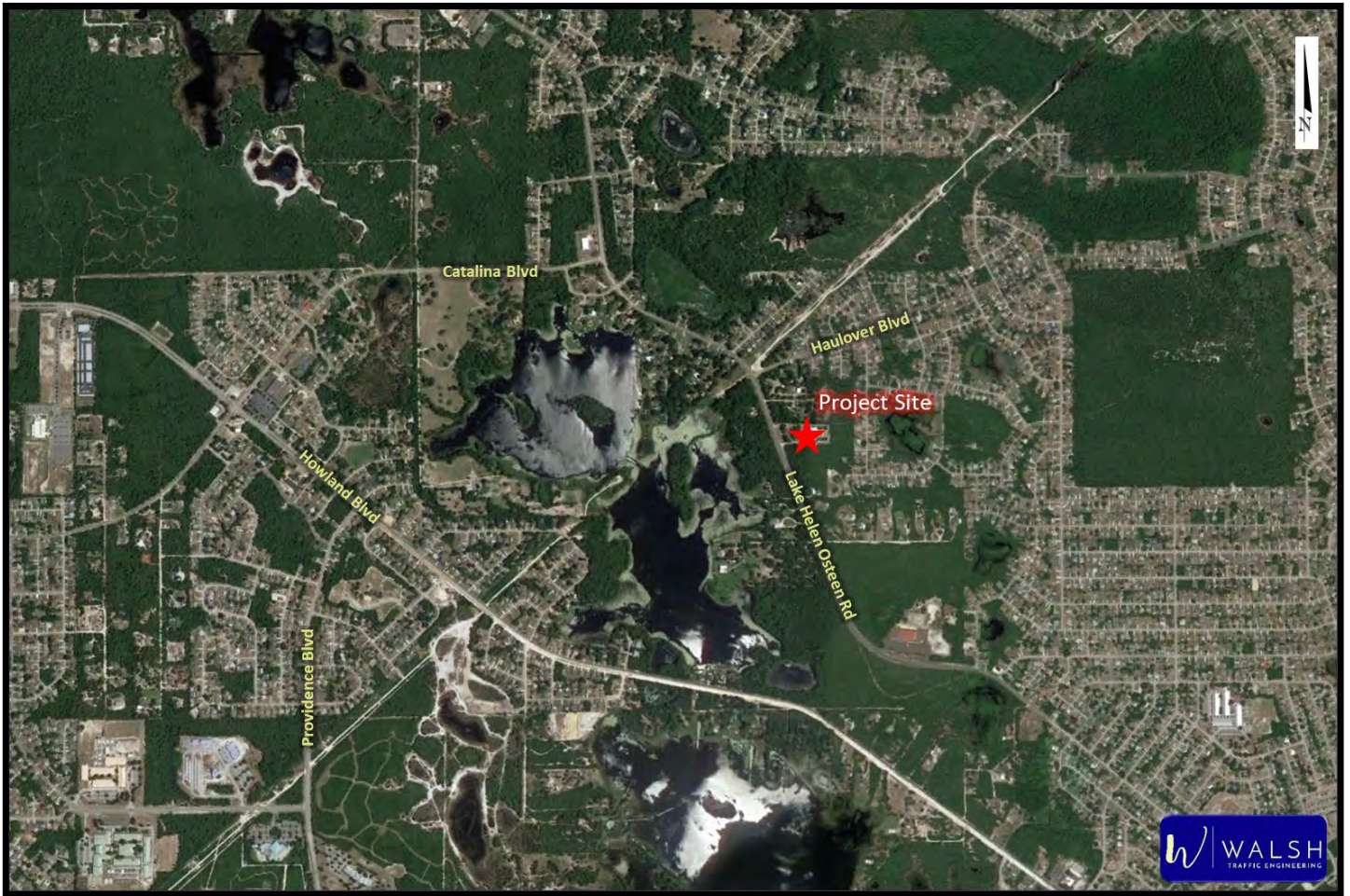
- 10,000 square-foot daycare building for 115 students
- 15,000 square-foot community center building
- 31,291 square-foot church (expansion of the existing church)

A copy of the preliminary development plan is included in **Appendix A**. Additionally, the development is proposed to have a build out date of 2029. This study, which evaluates the overall impact of the development on the adjacent roadway network, was prepared for the City of Deltona's transportation concurrency requirements and Volusia County's TIA requirements for the driveway connection permit. The study was conducted in accordance with the approved methodology as included in **Appendix B**.

Access

Access to the development (on the east side) is currently provided via two driveways with the northern driveway (exit only) located approximately 650 feet south of Haulover Boulevard and the southern driveway (entrance only) located approximately 900 feet south of Haulover Boulevard. Both driveways will be maintained for the eastern portion of the development, however the southern driveway will be converted to bi-directional. The multi-family development on the west side will have a single driveway that aligns with the southern driveway.

Figure 1 - Site Location Map



Study Area

Based on the River to Sea TPO TIA Guidelines and as included in the approved methodology, the study area includes those roadways where the project impact consumes 3% or more of a roadway's two-way peak-hour generalized service volume. Additionally, the study area includes any critical/near critical roadway segments located within three miles. The study roadway segments and intersections are summarized below:

Study Roadway Segments

- Lake Helen Osteen Road – from Howland Blvd to Elkcarn Blvd
- Lake Helen Osteen Road – from Elkcarn Blvd to Project
- Lake Helen Osteen Road – from Project to Haulover Blvd
- Lake Helen Osteen Road – from Haulover Blvd to Catalina Blvd
- Catalina Boulevard – from Howland Blvd to Lake Helen Osteen Rd
- Howland Boulevard – from Catalina Blvd to Wolf Pack Run
- Howland Boulevard – from Wolf Pack Run to I-4

Study Intersections

- Lake Helen Osteen Rd at Elkcarn Blvd
- Lake Helen Osteen Rd at Project Driveways
- Lake Helen Osteen Rd at Catalina Blvd
- Catalina Blvd at Howland Blvd

EXISTING CONDITIONS

Existing Volumes

For purposes of this study, AM and PM peak-period turning movement counts, from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM, were conducted at the study intersections. *Figure 2* and *Figure 3* summarize the existing AM and PM peak-hour turning movement volumes at the study intersections. Based on FDOT's Peak Season Factor Category Report for Volusia County, a seasonal factor of 1.02 for January 18th (the date of the turning movement counts) was applied to the turning movement counts. Printouts of the traffic counts are provided in *Appendix C*.

Existing Roadway Segment Conditions

The existing PM peak-hour two-way volumes on the roadway segments were obtained from Volusia County where available. Since data was not available on Catalina Boulevard, the PM peak-hour two-way volumes were based on the average approach/departure volumes from the PM peak-hour turning movement counts at the Howland Boulevard/Catalina Boulevard and Lake Helen Osteen Road/Catalina Boulevard intersections. The resulting volumes were then compared against the generalized service volume for each study roadway segment. The generalized peak-hour two-way service volume for each roadway segment was obtained from Volusia County's 2022 Average Annual Daily Traffic & Historical Counts based on the adopted level of service standards. *Table 1* shows the adopted level of service and generalized service volume under the adopted level of service for each study roadway segment. As shown in *Table 1*, the existing PM peak-hour two-way volumes for all of the study roadway segments are below the generalized service volume with the exception of the volumes on Providence Boulevard from Fort Smith Boulevard to Elkcam Boulevard. This indicates that all roadway segments currently have acceptable operating conditions with the exception of the study segment of Providence Boulevard.

Figure 2 - Existing AM Peak-Hour Volumes (Year 2024)

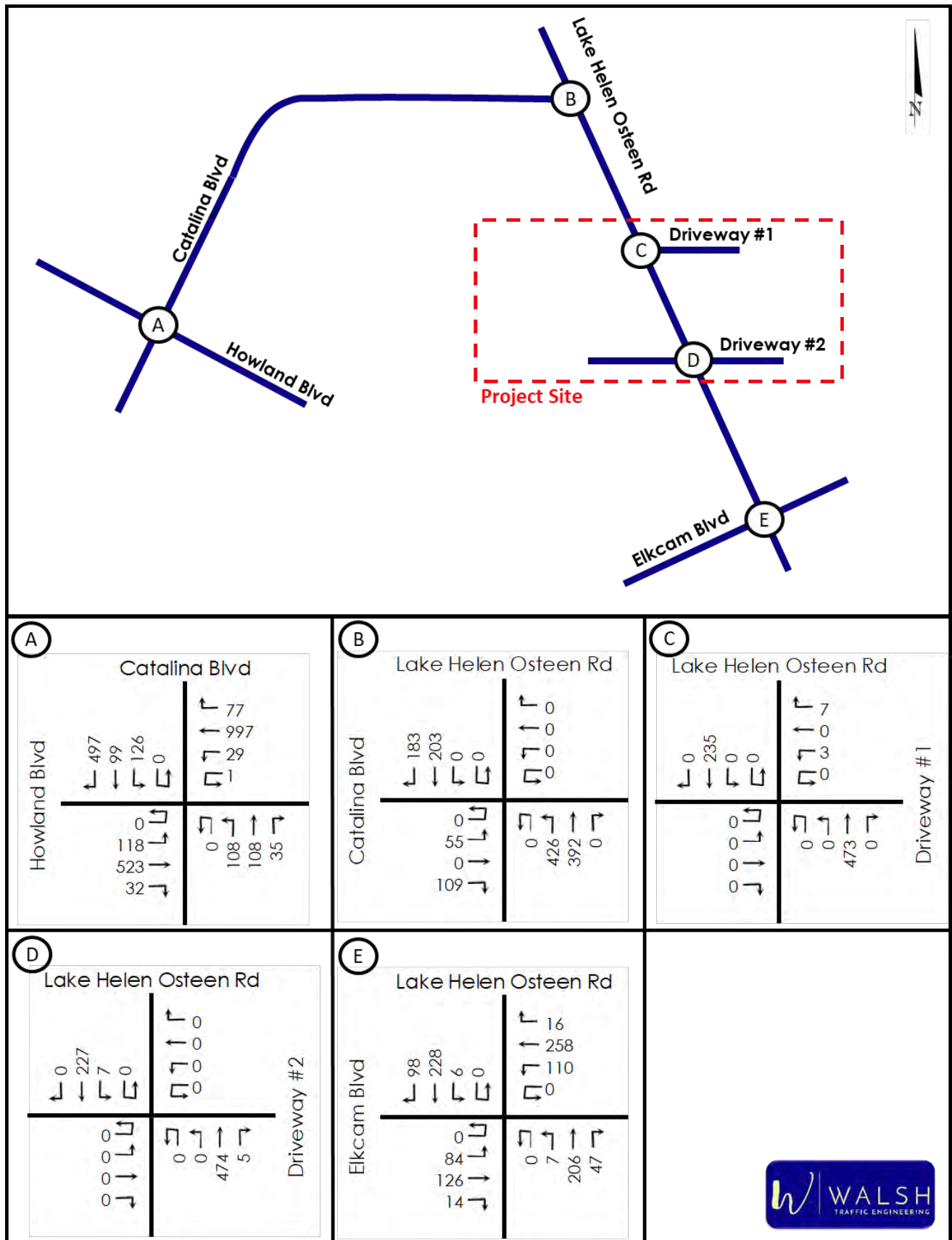


Figure 3 - Existing PM Peak-Hour Volumes (Year 2024)

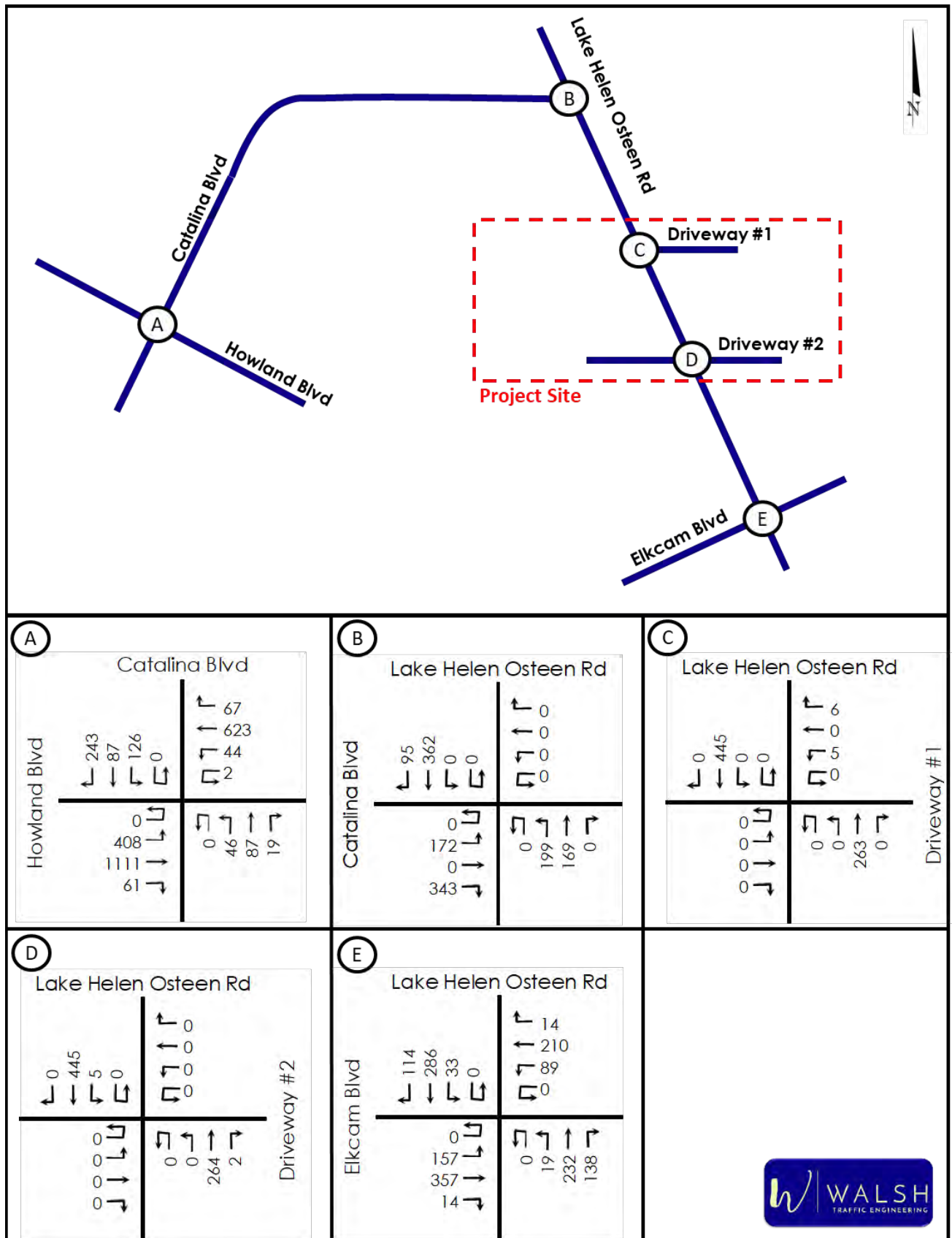


Table 1 - Existing Roadway Segment Operating Conditions (PM Peak Hour)

Roadway Segment	# of Lanes	Adopted LOS	Service Volume	Existing Volume			
				Existing Volume	Year	Source	Volume Exceeds Svc Vol?
Lake Helen Osteen Road							
Howland Blvd to Elkcaml Blvd	2	E	1,020	770	2022	VC	no
Elkcaml Blvd to Project	2	E	1,230	865	2022	VC	no
Project to Haulover Blvd	2	E	1,230	865	2022	VC	no
Haulover Blvd to Catalina Blvd	2	E	1,230	1,170	2022	VC	no
Catalina Boulevard							
Howland Blvd to Lake Helen Osteen Rd	2	E	1,230	1,018	2024	TMC	no
Howland Boulevard							
Catalina Blvd to Wolf Pack Run	4	E	3,410	2,125	2022	VC	no
Wolf Pack Run to I-4	4	E	3,410	2,410	2022	VC	no
Providence Boulevard							
Fort Smith Blvd to Elkcaml Blvd	2	E	1,020	1,075	2022	VC	yes

Note: VC = Volusia County 2022 Counts, TMC = Turning Movement Counts

Existing Intersection Conditions

The AM and PM peak-hour existing operating conditions of the study intersections were evaluated using *Highway Capacity Manual (HCM)*, 6th Edition methodologies with the Synchro 11 software. The existing AM and PM peak-hour turning movement volumes, existing roadway geometry, and existing signal timings (where applicable) were utilized in the analyses. **Table 2** summarizes the results of the intersection operational analyses. All movements at the unsignalized driveway intersections on Lake Helen Osteen Road currently operate well at LOS B or better.

As for the signalized intersections, all three study locations currently have overall acceptable levels of service (LOS) of D or better. The only noted existing deficiency is the southbound right-turn movement at the Howland Boulevard/Catalina Boulevard intersection. This deficiency can be addressed through the optimization of signal timings (signal timing optimization analysis is provided in the buildout conditions analysis). Printouts of the operational analyses are provided in **Appendix D**.

Table 2 - Existing Intersection Operating Conditions (Year 2024)

		Eastbound				Westbound				Northbound				Southbound				Overall
		L/U	T	R	App	L/U	T	R	App	L/U	T	R	App	L/U	T	R	App	Intxn
Howland Blvd at Catalina Blvd - Signalized																		
AM Peak	Delay (sec/veh)	32.6	29.0	-	29.6	24.4	47.7	-	47.0	32.1	28.7	-	30.1	41.3	38.7	129.2	99.4	54.2
	LOS	C	C	-	C	C	D	-	D	C	C	-	C	D	D	F	F	D
	V/C	0.61	0.4	-	-	0.09	0.82	-	-	0.33	0.22	-	-	0.35	0.21	1.12	-	-
	Queue (ft)	63	-	-	-	15	-	-	-	68	-	-	-	93	-	588	-	-
	Storage (ft)	315	-	-	-	225	-	-	-	135	-	-	-	190	-	375	-	-
PM Peak	Delay (sec/veh)	29.1	24.9	-	25.9	21.7	30.4	-	29.9	39.1	36.0	-	36.9	48.7	45.1	55.8	51.3	31.1
	LOS	C	C	-	C	C	C	-	C	D	D	-	D	D	D	E	D	C
	V/C	0.83	0.66	-	-	0.2	0.52	-	-	0.2	0.25	-	-	0.51	0.31	0.83	-	-
	Queue (ft)	188	-	-	-	20	-	-	-	30	-	-	-	95	-	160	-	-
	Storage (ft)	315	-	-	-	225	-	-	-	135	-	-	-	190	-	375	-	-
Lake Helen Osteen Rd at Catalina Blvd - Signalized																		
AM Peak	Delay (sec/veh)	22.7	-	27.7	26.0	-	-	-	-	12.9	4.5	-	8.9	-	20.0	-	20.0	14.1
	LOS	C	-	C	C	-	-	-	-	B	A	-	A	-	C	-	C	B
	V/C	0.3	-	0.69	-	-	-	-	-	0.79	0.36	-	-	-	0.81	-	-	-
	Queue (ft)	18	-	-	-	-	-	-	-	58	-	-	-	-	-	-	-	-
	Storage (ft)	145	-	-	-	-	-	-	-	215	-	-	-	-	-	-	-	-
PM Peak	Delay (sec/veh)	20.0	-	37.4	31.6	-	-	-	-	15.6	7.9	-	-	-	26.5	-	26.5	24.5
	LOS	B	-	B	C	-	-	-	-	B	A	-	-	-	C	-	C	C
	V/C	0.39	-	0.88	-	-	-	-	-	0.59	0.18	-	-	-	0.85	-	-	-
	Queue (ft)	55	-	-	-	-	-	-	-	40	-	-	-	-	-	-	-	-
	Storage (ft)	145	-	-	-	-	-	-	-	215	-	-	-	-	-	-	-	-
		Eastbound				Westbound				Northbound				Southbound				Overall
		L	T	R	App	L	T	R	App	L/U	T	R	App	L	T	R	App	Intxn
Lake Helen Osteen Rd at Driveway #1 - 1-Way STOP Control																		
AM Peak	Delay (sec/veh)	-	-	-	-	-	13.1	-	13.1	-	-	-	-	-	-	-	-	-
	LOS	-	-	-	-	-	B	-	B	-	-	-	-	-	-	-	-	-
	V/C	-	-	-	-	-	0.026	-	-	-	-	-	-	-	-	-	-	-
	Queue (ft)	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PM Peak	Delay (sec/veh)	-	-	-	-	-	12.8	-	12.8	-	-	-	-	-	-	-	-	-
	LOS	-	-	-	-	-	B	-	B	-	-	-	-	-	-	-	-	-
	V/C	-	-	-	-	-	0.027	-	-	-	-	-	-	-	-	-	-	-
	Queue (ft)	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake Helen Osteen Rd at Driveway #2 - 1-Way STOP Control																		
AM Peak	Delay (sec/veh)	-	-	-	-	-	-	-	-	-	-	-	-	-	8.6	-	0.3	-
	LOS	-	-	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-
	V/C	-	-	-	-	-	-	-	-	-	-	-	-	-	0.008	-	-	-
	Queue (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PM Peak	Delay (sec/veh)	-	-	-	-	-	-	-	-	-	-	-	-	-	7.9	-	0.1	-
	LOS	-	-	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-
	V/C	-	-	-	-	-	-	-	-	-	-	-	-	-	0.005	-	-	-
	Queue (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake Helen Osteen Rd at Elkcam Blvd - Signalized																		
AM Peak	Delay (sec/veh)	22.0	25.9	-	24.5	20.9	30.1	-	27.5	19.8	27.8	-	27.7	20.4	24.1	-	24.0	26.2
	LOS	C	C	-	C	C	C	-	C	B	C	-	C	C	C	-	C	C
	V/C	0.33	0.45	-	-	0.31	0.79	-	-	0.02	0.8	-	-	0.04	0.6	-	-	-
	Queue (ft)	28	-	-	-	35	-	-	-	3	-	-	-	3	-	-	-	-
	Storage (ft)	140	-	-	-	60	-	-	-	115	-	-	-	60	-	-	-	-
PM Peak	Delay (sec/veh)	24.2	42.6	-	37.1	26.5	32.3	-	30.6	23.2	32.8	-	32.0	23.5	32.8	-	32.3	33.5
	LOS	C	D	-	D	C	C	-	C	C	C	-	C	C	C	-	C	C
	V/C	0.46	0.87	-	-	0.41	0.63	-	-	0.17	0.85	-	-	0.11	0.83	-	-	-
	Queue (ft)	63	-	-	-	38	-	-	-	13	-	-	-	8	-	-	-	-
	Storage (ft)	140	-	-	-	60	-	-	-	115	-	-	-	60	-	-	-	-

FUTURE CONDITIONS

As previously conveyed, the proposed development will have a buildout date of 2029. Therefore, future background volumes and project trips were calculated and combined to arrive at the future total PM peak-hour segment volumes and the AM and PM peak-hour turning movement counts.

Future Background Conditions

ROADWAY SEGMENTS

Future background traffic is the non-project-related traffic projected to utilize the study roadways and intersections. For the purposes of this analysis, the future background traffic was estimated in accordance with Volusia County's Segment Growth Rates and Vested Trips Instruction Policy. For purposes of this process historical traffic counts for the study roadway segments, where available, were obtained. It should be noted that neither the City of Deltona nor Volusia County have vested trip information available for the study roadways/intersections. The resulting growth rate calculations are summarized in *Appendix E* along with the historical annual volumes and historical trend worksheets. *Table 3* below shows the resulting future background PM peak-hour two-way volumes on the study roadway segments. Additionally, *Table 3* below demonstrates that the resulting future background PM peak-hour two-way volumes are projected to be below the generalized service volumes with the exception of those volumes on Lake Helen Osteen Road from Haulover Canal to Catalina Boulevard and on Providence Boulevard from Fort Smith Boulevard to Elkcarn Boulevard. Therefore, both of these roadway segments need to be widened to four lanes to accommodate future background traffic.

Table 3 - Future Background PM Peak-Hour Volumes (Year 2029) for Roadway Segments

Roadway Segment	Existing Pk Hr Volume	Applied Annual Growth Rate	Existing Year	Buildout Year	Based on Growth Rate	Vested Trips	Applied Volume Growth	Total Background Volume	Service Volume	Bckgrnd Volume Exceeds Svc Vol?
Lake Helen Osteen Road										
Howland Blvd to Elkcarn Blvd	770	3.5%	2022	2029	189	0	189	959	1,020	no
Elkcarn Blvd to Project	865	1.0%	2022	2029	61	0	61	926	1,230	no
Project to Haulover Blvd	865	1.0%	2022	2029	61	0	61	926	1,230	no
Haulover Blvd to Catalina Blvd	1,170	1.0%	2022	2029	82	0	82	1,252	1,230	yes
Catalina Boulevard										
Howland Blvd to Lake Helen Osteen Rd	1,018	1.0%	2024	2029	51	0	51	1,069	1,230	no
Howland Boulevard										
Catalina Blvd to Wolf Pack Run	2,125	1.0%	2022	2029	149	0	149	2,274	3,410	no
Wolf Pack Run to I-4	2,410	1.0%	2022	2029	169	0	169	2,579	3,410	no
Providence Boulevard										
Fort Smith Blvd to Elkcarn Blvd	1,075	1.0%	2022	2029	75	0	75	1,150	1,020	yes

INTERSECTIONS

With regards to the future background turning movements, the annual growth rates as established through Volusia County's Segment Growth Rates and Vested Trips Instruction Policy and summarized in *Appendix E*, were applied to existing turning movement volumes. The resulting future background AM and PM peak-hour turning movement volumes are provided in *Figure 4* and *Figure 5*. Turning movement worksheets are provided in *Appendix F*.

Figure 4 - Future Background AM Peak-Hour Volumes (Year 2029)

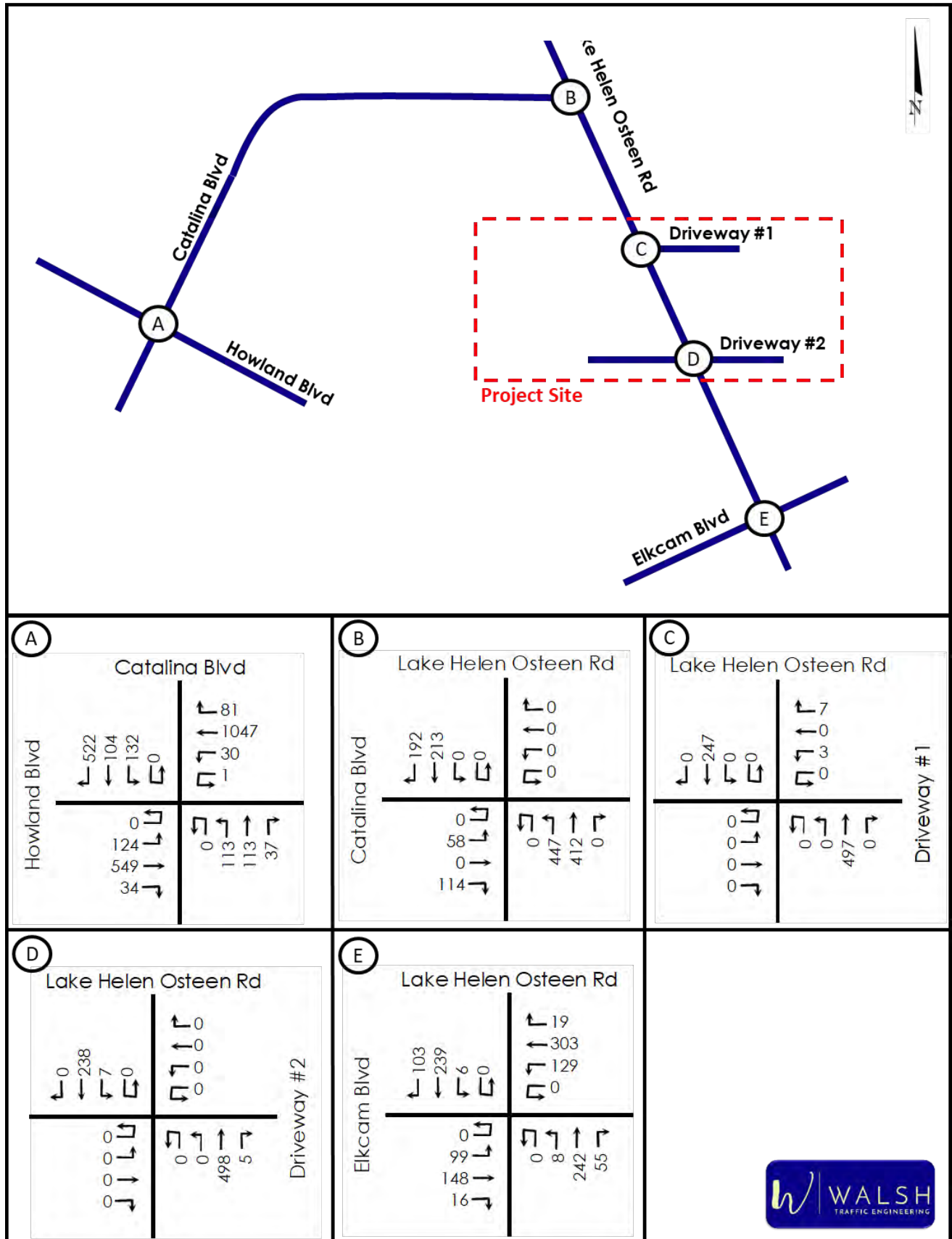
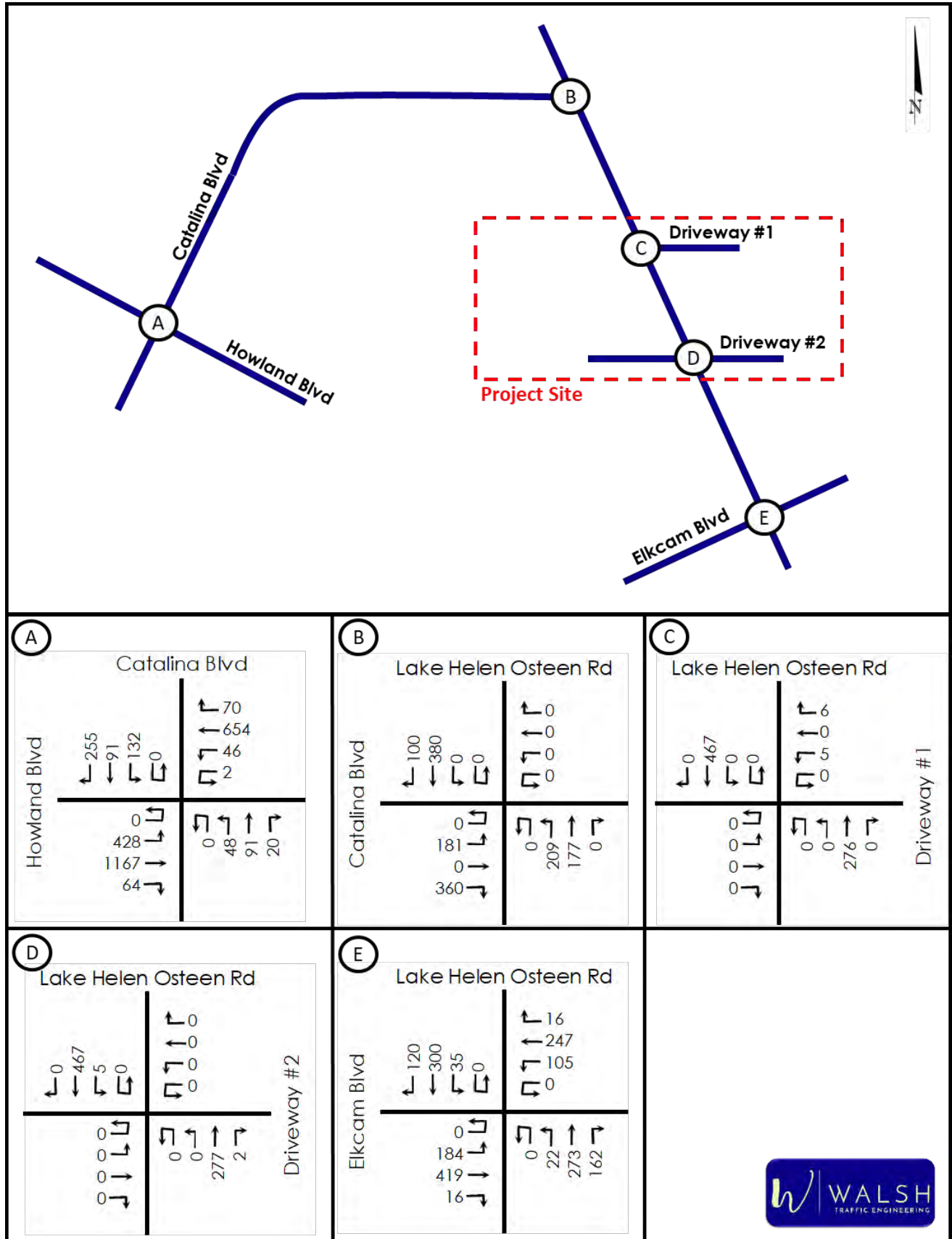


Figure 5 - Future Background PM Peak-Hour Volumes (Year 2029)



Project Trips

TRIP GENERATION

The total daily, AM peak-hour, and PM peak-hour trip generation proposed development is provided below based on trip generation equations/rates provided in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual, 11th Edition*. As summarized below in **Table 4**, and as included in the approved methodology, the proposed development is projected to generate 1,763 total daily trips, 193 total AM peak-hour trips (97 in, 96 out), and 212 total PM peak-hour trips (101 in, 111 out).

Table 4 – Total Trip Generation Summary for Proposed Development

Land Use	ITE Land Use Code	Intensity	Daily		
			Total Trips		
			In	Out	Total
Multi-Family (Low-Rise)	220	120 DU	422	423	845
Church	560	31.29 KSF	119	119	238
Day Care Center	565	115 Students	228	229	457
General Office (Community Center)	710	15.0 KSF	111	112	223
Total			880	883	1,763

Land Use	ITE Land Use Code	Intensity	AM Peak Hour		
			Total Trips		
			In	Out	Total
Multi-Family (Low-Rise)	220	120 DU	14	46	60
Church	560	31.29 KSF	6	4	10
Day Care Center	565	115 Students	48	42	90
General Office (Community Center)	710	15.0 KSF	29	4	33
Total			97	96	193

Land Use	ITE Land Use Code	Intensity	PM Peak Hour		
			Total Trips		
			In	Out	Total
Multi-Family (Low-Rise)	220	120 DU	45	27	72
Church	560	31.29 KSF	7	8	15
Day Care Center	565	115 Students	43	48	91
General Office (Community Center)	710	15.0 KSF	6	28	34
Total			101	111	212

ITE provides a PM peak-hour pass-by rate of 44% for the daycare facility. The pass-by trips were thus calculated and the resulting new external trips identified. Pass-by trips were compared against 14% of the future background traffic on the adjacent section of Lake Helen Osteen Road and, per the River to Sea TPO's TIA Guidelines, determined to be acceptable. As summarized in **Table 5** below, and as included in the approved methodology, the proposed development is projected to generate 193 new external AM peak-hour trips (97 in, 96 out) and 172 new external PM peak-hour trips (82 in, 90 out).

Table 5 – New External Trip Generation Summary for Proposed Development

Land Use	ITE Land Use Code	Intensity	AM Peak Hour									
			Total Trips			Pass-By Trips			Net New External Trips			
			In	Out	Total	%	In	Out	Total	In	Out	Total
Multi-Family (Low-Rise)	220	120 DU	14	46	60	0.0%	0	0	0	14	46	60
Church	560	31.29 KSF	6	4	10	0.0%	0	0	0	6	4	10
Day Care Center	565	115 Students	48	42	90	0.0%	0	0	0	48	42	90
General Office (Community Center)	710	15.0 KSF	29	4	33	0.0%	0	0	0	29	4	33
Total			97	96	193	0.0%	0	0	0	97	96	193

Land Use	ITE Land Use Code	Intensity	PM Peak Hour									
			Total Trips			Pass-By Trips			Net New External Trips			
			In	Out	Total	%	In	Out	Total	In	Out	Total
Multi-Family (Low-Rise)	220	120 DU	45	27	72	0.0%	0	0	0	45	27	72
Church	560	31.29 KSF	7	8	15	0.0%	0	0	0	7	8	15
Day Care Center	565	115 Students	43	48	91	44.0%	19	21	40	24	27	51
General Office (Community Center)	710	15.0 KSF	6	28	34	0.0%	0	0	0	6	28	34
Total			101	111	212	18.9%	19	21	40	82	90	172

Trip generation was then calculated for the existing development on the eastern portion of the subject property. It is important to note that the existing building currently serves as both a church and a day-care facility. For purposes of calculating trip generation, trips were first calculated based on the 85-student daycare facility. Based on the proposed development, a 10,000 square-foot daycare accommodates 115 students. This equates to approximately 87 square feet required per student. Applying this same ratio to the 85 students, it is estimated that approximately 7,395 square feet of the existing building serves as daycare during the weekdays. Thus, the remaining 8,300 square feet of the existing building is used as a church. As summarized on the following page in **Table 6**, and as included in the approved methodology, the existing development therefore generates 1,195 total daily trips, 69 total AM peak-hour trips (37 in, 32 out) and 71 total PM peak-hour trips (34 in, 37 out).

Similar to the proposed development, pass-by trips were calculated for the existing daycare facility and the resulting new external trips identified. As summarized in **Table 7** on the following page, and as included in the approved methodology, the proposed development is projected to generate 69 new external AM peak-hour trips (37 in, 32 out) and 42 new external PM peak-hour trips (20 in, 22 out).

Table 6 – Total Trip Generation Summary for Existing Development

Land Use	ITE Land Use Code	Intensity	Daily		
			Total Trips		
			In	Out	Total
Church	560	8.30 KSF	32	32	63
Day Care Center	565	85 Students	175	175	350
Total			207	207	413

Land Use	ITE Land Use Code	Intensity	AM Peak Hour		
			Total Trips		
			In	Out	Total
Church	560	8.30 KSF	2	1	3
Day Care Center	565	85 Students	35	31	66
Total			37	32	69

Land Use	ITE Land Use Code	Intensity	PM Peak Hour		
			Total Trips		
			In	Out	Total
Church	560	8.30 KSF	2	2	4
Day Care Center	565	85 Students	32	35	67
Total			34	37	71

Table 7 – New External Trip Generation Summary (Existing Development)

Land Use	ITE Land Use Code	Intensity	AM Peak Hour									
			Total Trips			Pass-By Trips			Net New External Trips			
			In	Out	Total	%	In	Out	Total	In	Out	Total
Church	560	8.30 KSF	2	1	3	0.0%	0	0	0	2	1	3
Day Care Center	565	85 Students	35	31	66	0.0%	0	0	0	35	31	66
Total			37	32	69	0.0%	0	0	0	37	32	69

Land Use	ITE Land Use Code	Intensity	PM Peak Hour									
			Total Trips			Pass-By Trips			Net New External Trips			
			In	Out	Total	%	In	Out	Total	In	Out	Total
Church	560	8.30 KSF	2	2	4	0.0%	0	0	0	2	2	4
Day Care Center	565	85 Students	32	35	67	44.0%	14	15	29	18	20	38
Total			34	37	71	40.8%	14	15	29	20	22	42

Recognizing that the existing development is vested, the difference between the existing and proposed development was then calculated. As summarized below in **Table 8**, and as included in the approved methodology, the proposed development modification will increase the AM peak-hour external trips by 124 trips (60 in, 64 out) and the new external PM peak-hour trips by 130 (62 in, 68 out).

Table 8 – New External Trip Generation Increase of Proposed Development

Land Use	AM Peak Hour		
	Total Trips		
	In	Out	Total
Proposed Development	97	96	193
Existing Development	37	32	69
Additonal Trips from Proposed Development	60	64	124

Land Use	PM Peak Hour		
	Total Trips		
	In	Out	Total
Proposed Development	82	90	172
Existing Development	20	22	42
Additonal Trips from Proposed Development	62	68	130

TRIP DISTRIBUTION

The trip distribution pattern defines the primary corridors that will be traveled by the traffic generated by the project. The trip distribution for the new external trips, as included in the approved methodology, is shown in *Figure 6*.

Figure 6 – New External Trip Distribution



TRIP ASSIGNMENT

The new external trip generation increase in AM and PM peak-hour project trips from *Table 10* were then assigned to the study roadways and non-access intersections based on the trip distribution. *Figure 7* and *Figure 8* show the AM and PM peak-hour new external trips, assigned to the non-access study intersections.

For the access-related intersections, the turning projections were developed by first removing exiting trips turning into and out of the development. Then, the total new external trips and pass-by trips from Table 5 were assigned to the driveways. When assigning exiting trips from the eastern portion of the development, approximately 50% of the daycare exiting trips destined to the north on Lake Helen Osteen Road and 33% of the daycare exiting trips destined to the south on Lake Helen Osteen Road were assigned to Driveway #1 (northern driveway). All other exiting trips were assigned to Driveway #2. AM and PM peak-hour turning movement projections at the access-related intersections are summarized in *Figure 9* and *Figure 10*.

Figure 7 - AM Peak-Hour Project Trips at Non-Access Intersections (New External)

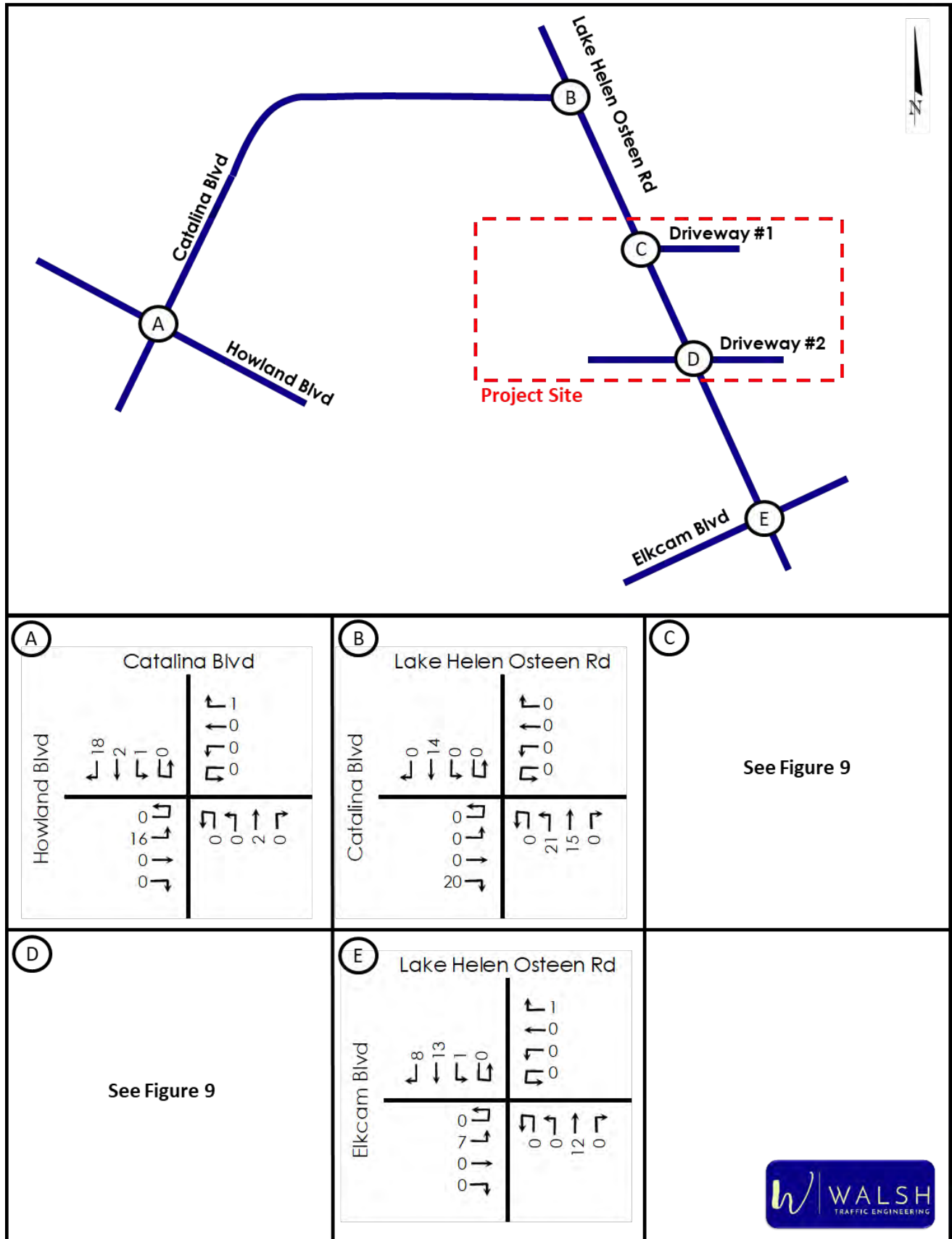


Figure 8 - PM Peak-Hour Project Trips at Non-Access Intersections (New External)

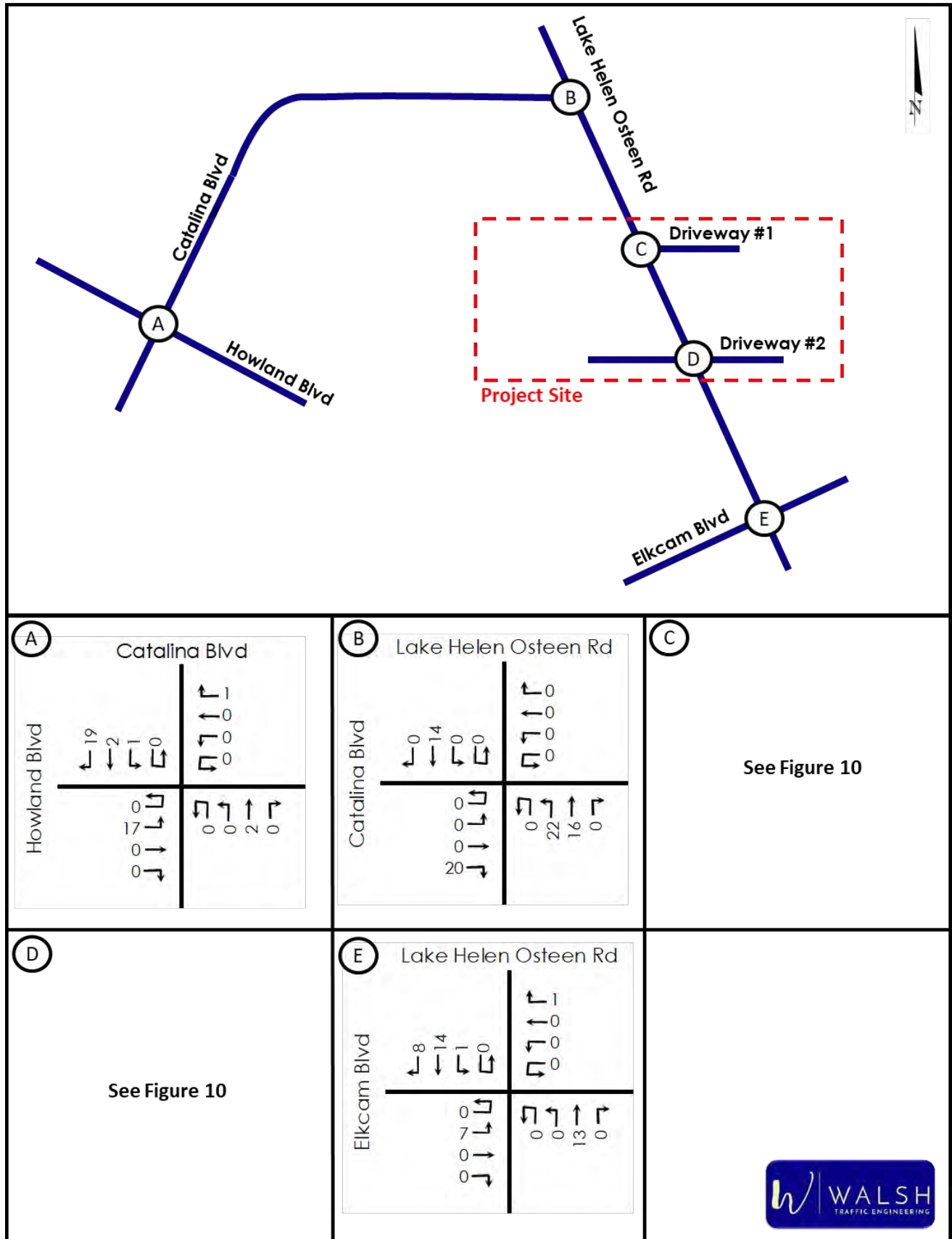


Figure 9 - AM Peak-Hour Project Trips at Access Intersections

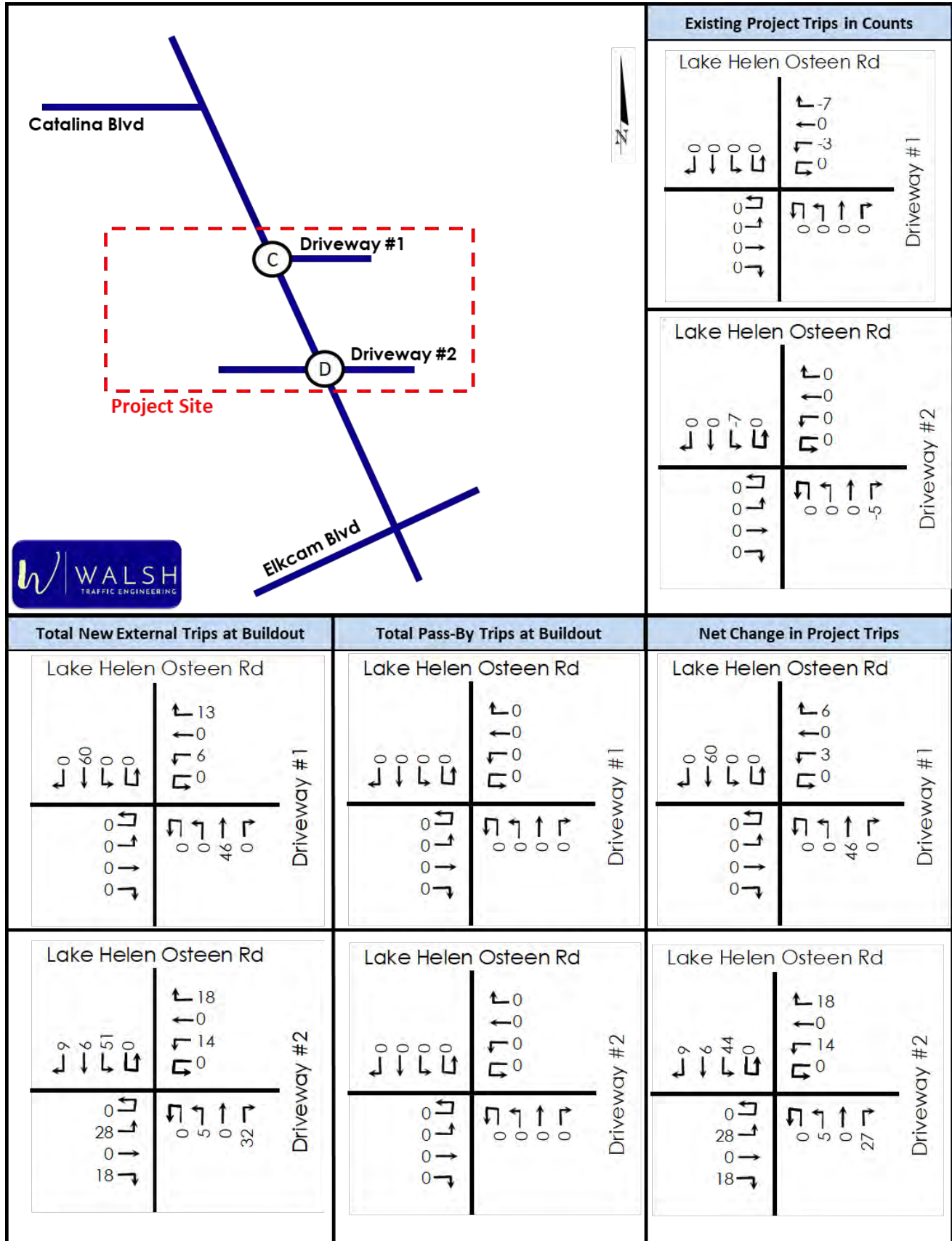
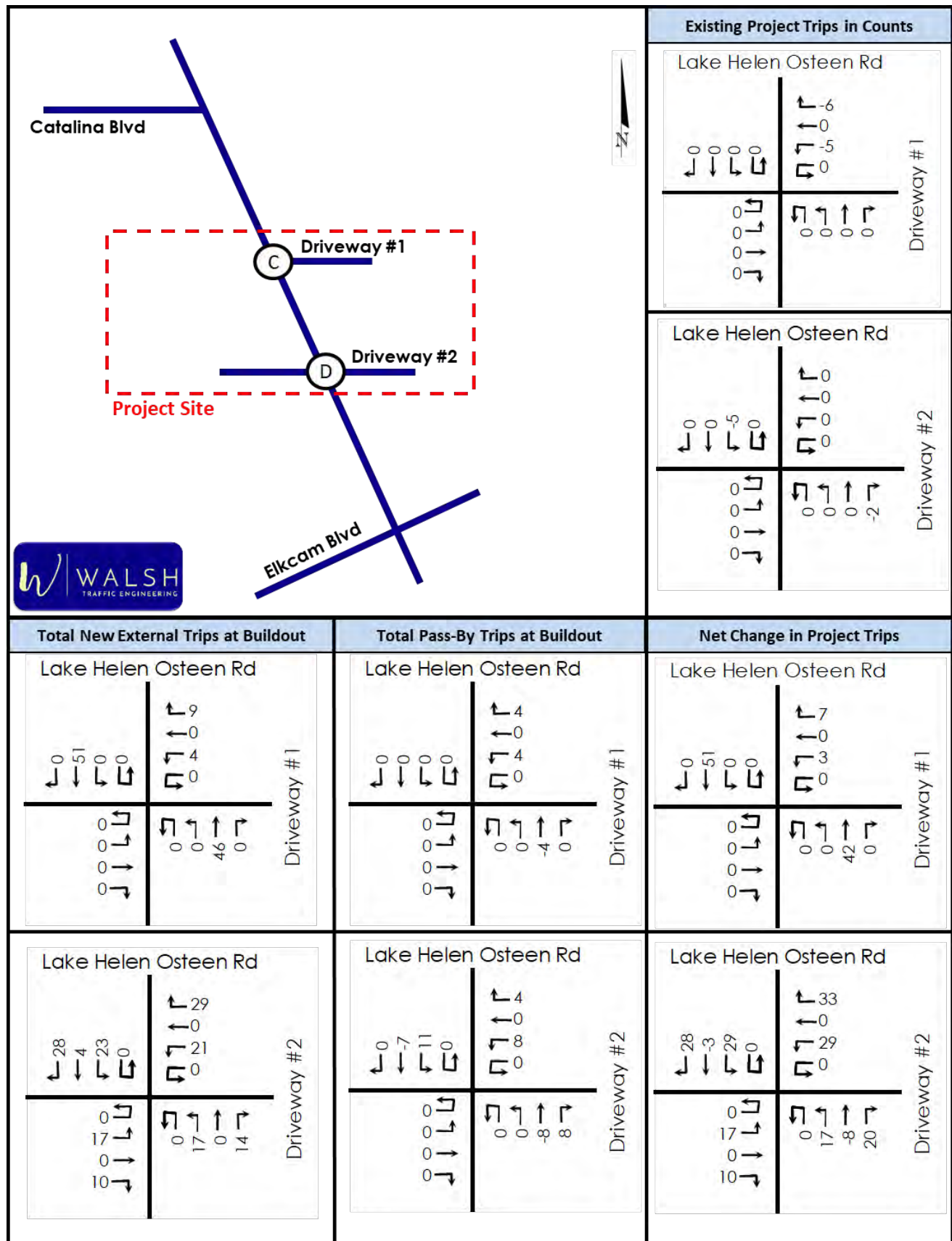


Figure 10 - PM Peak-Hour Project Trips at Access Intersections



Future Buildout Conditions

ROADWAY SEGMENTS

The total projected PM peak-hour two-way segment volumes for the study roadway segments were calculated by adding the new external trip increase for the project to the future background volume projections. The PM peak-hour operating conditions of the study roadway segments were then analyzed by comparing total projected PM peak-hour two-way segment volumes to each roadway segment's generalized service volume. **Table 9** summarizes the total PM peak-hour two-way volumes in year 2029 on the roadway segments at build out of the development. Consistent with the future background conditions analysis, the buildout PM peak-hour two-way volumes are projected to be below the generalized service volumes with the exception of those volumes on Lake Helen Osteen Road from Haulover Canal to Catalina Boulevard and on Providence Boulevard from Fort Smith Boulevard to Elkcarn Boulevard. Therefore, consistent with the future background analyses, both of these roadway segments need to be widened to four lanes to accommodate traffic at buildout of the development.

Table 9 - Year 2029 Roadway Segment Operating Conditions (PM Peak Hour)

Roadway Segment	# of Lanes	Adopted LOS	Total Background Volume	Project Trips		Total Buildout Volume	Service Volume	Buildout Volume Exceeds Svc Vol?
				% Assign.	Volume			
Lake Helen Osteen Road								
Howland Blvd to Elkcarn Blvd	2	E	959	20.3%	26	985	1,020	no
Elkcarn Blvd to Project	2	E	926	38.8%	50	976	1,230	no
Project to Haulover Blvd	2	E	926	61.2%	80	1,006	1,230	no
Haulover Blvd to Catalina Blvd	2	E	1,252	55.6%	72	1,324	1,230	yes
Catalina Boulevard								
Howland Blvd to Lake Helen Osteen Rd	2	E	1,069	32.7%	43	1,112	1,230	no
Howland Boulevard								
Catalina Blvd to Wolf Pack Run	4	E	2,274	27.4%	36	2,310	3,410	no
Wolf Pack Run to I-4	4	E	2,579	27.1%	35	2,614	3,410	no
Providence Boulevard								
Fort Smith Blvd to Elkcarn Blvd	2	E	1,150	6.3%	8	1,158	1,020	yes

It is important to note that all improvements identified are the same improvements as those needed to address the future background deficiencies. Per Florida Statutes 163.3180(5)(h)4:

A "transportation deficiency" means a facility or facilities on which the adopted level of service standard is exceeded by the existing, committed, and vested trips, plus additional projected background trips from any source other than the development project under review...

Further, it is conveyed under F.S. 163.3180(5)(h)2b:

If any road is determined to be transportation deficient without the project traffic under review, the costs of correcting that deficiency shall be removed from the project's proportionate-share calculation and the necessary transportation improvements to correct that deficiency shall be considered to be in place for purposes of the proportionate-share calculation. The improvement necessary to correct the transportation deficiency is the funding responsibility of the entity that has maintenance responsibility for the facility. The development's proportionate share shall be calculated only for the needed transportation improvements that are greater than the identified deficiency.

Therefore, because the needed improvements for buildout are the same as those needed to mitigate deficiencies that are projected without the project, the development is not responsible to mitigate impacts to these roadway segments.

INTERSECTIONS

For purposes of analyzing the study intersections at buildout of the development, AM and PM peak-hour turning movement projections were calculated by adding the future background volume projections and the project trips. The resulting total AM and PM peak-hour turning movement projections at buildout of the development are summarized in **Figures 11** and **12** on the following pages.

The AM and PM peak-hour operating conditions for the study intersections were analyzed at build out of the proposed development in year 2029 using the projected turning movements, existing roadway geometry, and existing signal timings (where applicable). **Table 10** summarizes the results of the future buildout intersection operational analyses in 2029. All movements at the unsignalized driveway intersections on Lake Helen Osteen Road are projected to operate acceptably at LOS C or better.

As for the signalized intersections, all three study locations are projected to have overall acceptable levels of service (LOS) of E or better. Consistent with the existing conditions analysis, the only noted projected deficiency is the southbound right-turn movement at the Howland Boulevard/Catalina Boulevard intersection. With the optimization of signal timings, the same improvement needed to address the existing deficiency, this intersection and all movements are projected to operate acceptably. Printouts of the operational analyses are provided in **Appendix G**.

Similar to the roadway segment improvements, because the needed intersection improvement for buildout is the same as that needed to mitigate a deficiency that currently exists without the project, per Florida Statutes 163.3180 the development is not responsible to mitigate impacts to these roadway segments.

Figure 11 – Buildout (Year 2029) AM Peak-Hour Volumes

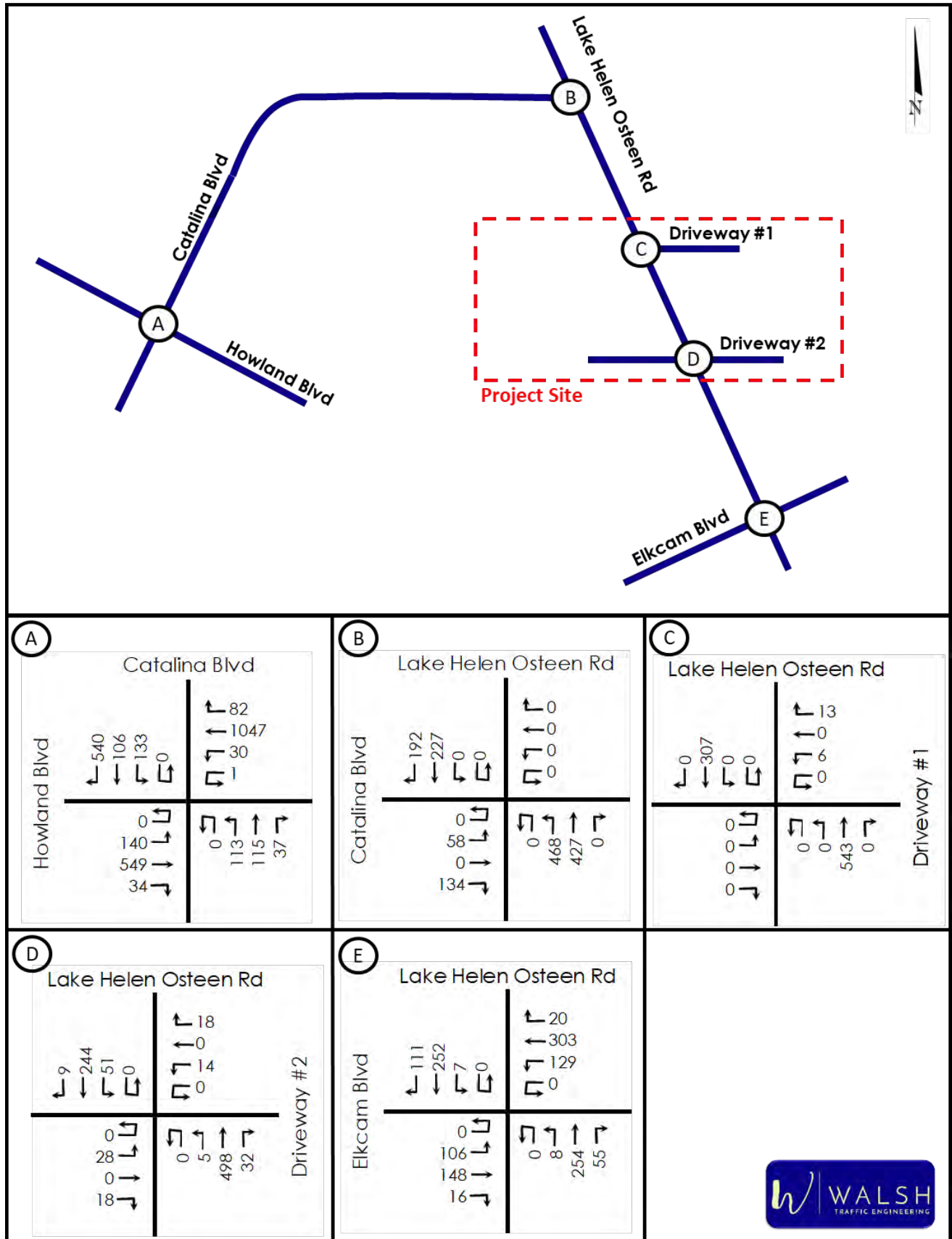


Figure 12 - Buildout (Year 2029) PM Peak-Hour Volumes

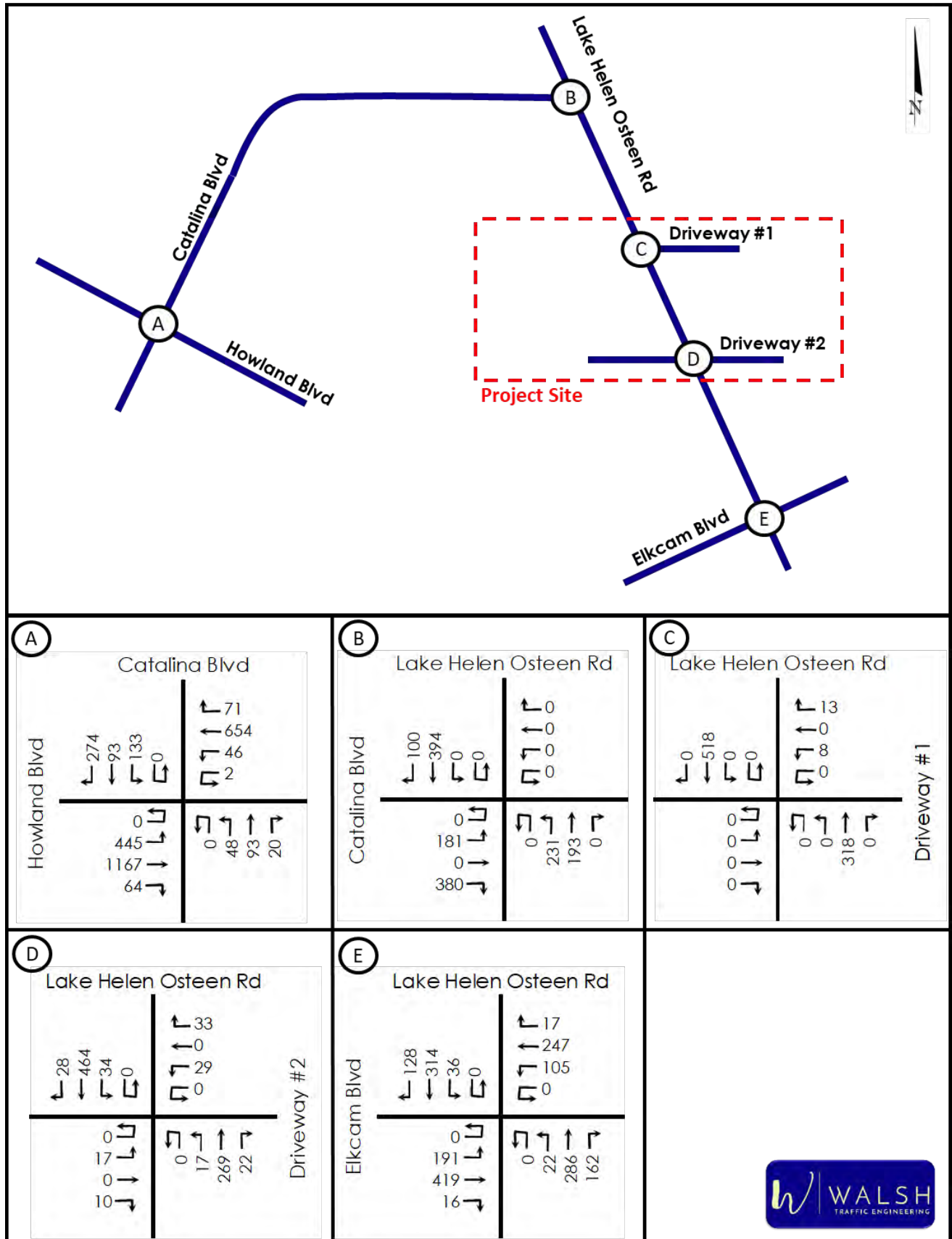


Table 10 – Future Buildout Intersection Operating Conditions (Year 2029)

		Eastbound				Westbound				Northbound				Southbound				Overall
		L/U	T	R	App	L/U	T	R	App	L/U	T	R	App	L/U	T	R	App	Intxn
Howland Blvd at Catalina Blvd - Signalized																		
AM Peak	Delay (sec/veh)	37.3	29.6	-	31.1	25.2	55.1	-	54.2	32.3	28.8	-	30.3	41.8	39.1	171.4	128.5	65.1
	LOS	D	C	-	C	C	E	-	D	C	C	-	C	D	D	F	F	E
	V/C	0.73	0.42	-	-	0.1	0.88	-	-	0.35	0.23	-	-	0.37	0.23	1.23	-	-
	Queue (ft)	78	-	-	-	15	-	-	-	70	-	-	-	100	-	710	-	-
	Storage (ft)	315	-	-	-	225	-	-	-	135	-	-	-	190	-	375	-	-
PM Peak	Delay (sec/veh)	45.4	27.9	-	32.5	24.7	35.0	-	34.3	39.3	36.5	-	37.3	49.1	45.4	57.6	52.6	36.2
	LOS	D	C	-	C	C	C	-	C	D	D	-	D	D	D	E	D	D
	V/C	0.93	0.7	-	-	0.23	0.57	-	-	0.2	0.25	-	-	0.5	0.3	0.86	-	-
	Queue (ft)	268	-	-	-	23	-	-	-	33	-	-	-	105	-	195	-	-
	Storage (ft)	315	-	-	-	225	-	-	-	135	-	-	-	190	-	375	-	-
Lake Helen Osteen Rd at Catalina Blvd - Signalized																		
AM Peak	Delay (sec/veh)	24.3	-	30.2	28.4	-	-	-	-	20.2	5.0	-	12.9	-	23.4	-	23.4	17.8
	LOS	C	-	C	C	-	-	-	-	B	A	-	A	-	C	-	C	B
	V/C	0.28	-	0.73	-	-	-	-	-	0.88	0.39	-	-	-	0.84	-	-	-
	Queue (ft)	20	-	-	-	-	-	-	-	98	-	-	-	-	-	-	-	-
	Storage (ft)	145	-	-	-	-	-	-	-	215	-	-	-	-	-	-	-	-
PM Peak	Delay (sec/veh)	21.9	-	53.1	43.0	-	-	-	-	18.2	8.6	-	13.8	-	33.7	-	33.7	31.5
	LOS	C	-	D	D	-	-	-	-	B	A	-	B	-	C	-	C	C
	V/C	0.4	-	0.94	-	-	-	-	-	0.7	0.2	-	-	-	0.89	-	-	-
	Queue (ft)	65	-	-	-	-	-	-	-	55	-	-	-	-	-	-	-	-
	Storage (ft)	145	-	-	-	-	-	-	-	215	-	-	-	-	-	-	-	-
		Eastbound				Westbound				Northbound				Southbound				Overall
		L	T	R	App	L	T	R	App	L/U	T	R	App	L	T	R	App	Intxn
Lake Helen Osteen Rd at Driveway #1 - 1-Way STOP Control																		
AM Peak	Delay (sec/veh)	-	-	-	-	-	15.0	-	15.0	-	-	-	-	-	-	-	-	-
	LOS	-	-	-	-	-	C	-	C	-	-	-	-	-	-	-	-	-
	V/C	-	-	-	-	-	0.58	-	-	-	-	-	-	-	-	-	-	-
	Queue (ft)	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PM Peak	Delay (sec/veh)	-	-	-	-	-	13.9	-	13.9	-	-	-	-	-	-	-	-	-
	LOS	-	-	-	-	-	B	-	B	-	-	-	-	-	-	-	-	-
	V/C	-	-	-	-	-	0.057	-	-	-	-	-	-	-	-	-	-	-
	Queue (ft)	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake Helen Osteen Rd at Driveway #2 - 1-Way STOP Control																		
AM Peak	Delay (sec/veh)	-	22.0	-	22.0	-	19.3	-	19.3	-	7.9	-	0.1	-	9.0	-	1.5	-
	LOS	-	C	-	C	-	C	-	C	-	A	-	-	-	A	-	-	-
	V/C	-	0.24	-	-	-	0.13	-	-	-	0.005	-	-	-	0.063	-	-	-
	Queue (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PM Peak	Delay (sec/veh)	-	21.0	-	21.0	-	18.7	-	18.7	-	8.6	-	0.5	-	8.0	-	0.5	-
	LOS	-	C	-	C	-	C	-	C	-	A	-	-	-	A	-	-	-
	V/C	-	0.121	-	-	-	0.214	-	-	-	0.019	-	-	-	0.032	-	-	-
	Queue (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake Helen Osteen Rd at Elkcam Blvd - Signalized																		
AM Peak	Delay (sec/veh)	23.6	27.6	-	26.0	21.8	35.3	-	31.4	22.1	27.1	-	26.9	21.4	30.6	-	30.5	29.1
	LOS	C	C	-	C	C	D	-	C	C	C	-	C	C	C	-	C	C
	V/C	0.42	0.46	-	-	0.35	0.84	-	-	0.05	0.68	-	-	0.03	0.83	-	-	-
	Queue (ft)	38	-	-	-	45	-	-	-	3	-	-	-	3	-	-	-	-
	Storage (ft)	140	-	-	-	60	-	-	-	115	-	-	-	60	-	-	-	-
PM Peak	Delay (sec/veh)	27.9	66.2	-	54.5	31.4	39.5	-	37.2	25.6	43.1	-	42.3	26.1	38.4	-	37.4	44.1
	LOS	C	E	-	D	C	D	-	D	C	D	-	D	C	D	-	D	D
	V/C	0.57	0.96	-	-	0.54	0.71	-	-	0.13	0.89	-	-	0.22	0.84	-	-	-
	Queue (ft)	90	-	-	-	53	-	-	-	15	-	-	-	10	-	-	-	-
	Storage (ft)	140	-	-	-	60	-	-	-	115	-	-	-	60	-	-	-	-

Project Driveway Turn-Lane Analysis

Driveway #1 on Lake Helen Osteen Road is and will remain exit only. Therefore, this driveway was not evaluated for turn lanes on Lake Helen Osteen Road into the site. However, Driveway #2 on Lake Helen Osteen Road was evaluated for the need for a northbound and/or southbound right-turn lane based on Section 72-619 of the Volusia County Land Development Code recognizing that Lake Osteen Road is a Volusia County roadway. Based on Volusia County's LDC, a right-turn lane is warranted for roadways with posted speed limits of 35 miles per hour or where the right-turn volume is projected to exceed 100 vehicles per hour. The northbound right-turn volume is projected to be 32 vehicles in the AM peak hour and 22 vehicles in the PM peak hour. Thus, from a traffic volume perspective, the northbound right-turn volume is well below the County's volume threshold for warranting a right-turn lane. However, given that the northbound right-turn lane serves the day care center as well as the church, a northbound right-turn lane of 320 feet is recommended based on the County's LDC given the 45-mph posted speed limit. The 320-foot turn-lane length includes a 50-foot taper.

The southbound right-turn volume is projected to be 9 vehicles in the AM peak hour and 28 vehicles in the PM peak hour. Thus, from a traffic volume perspective, the northbound right-turn volume is well below the County's volume threshold for warranting a right-turn lane. Although the posted speed limit is 45 mph, a waiver of the requirements for a southbound right-turn lane is requested given that the right-turn volumes are only projected to reach, at most, 30% of the County's volume threshold requirements.

Lake Helen Osteen Road at Driveway #2 was also evaluated for the need for northbound and southbound left-turn lanes on Lake Helen Osteen Road based on Section 72-619 of the Volusia County Land Development Code. Based on the County's LDC, a left-turn lane is warranted for roadways where the left-turn volume is projected to exceed 25 vehicles per hour. The northbound left-turn volume is projected to be five (5) vehicles in the AM peak hour and 17 vehicles in the PM peak hour. Thus, a northbound left-turn lane is not warranted.

The southbound left-turn volume is projected to exceed the 25 vehicle per hour threshold. Thus, a southbound right-turn lane of 370 feet is recommended based on a 50-foot queue (the 95th percentile queue is less than two vehicles) plus a deceleration distance of 320 feet based on the County's LDC given the 45-mph posted speed limit. The 370-foot turn-lane length includes a 50-foot taper.

Internal Site Queue Analysis for Daycare Operations

Based on **Table 4**, the proposed daycare will have 48 inbound AM peak-hour trips and 42 inbound PM peak-hour trips. There will be an additional 35 AM and 13 PM peak-hour non-daycare trips destined to parking spaces in the eastern portion of the development. These additional trips were not included in the queue analysis as they are expected to pull directly into the parking spaces.

The daycare will be located at the easternmost portion of the property. The existing entry driveway extends approximately 400' to the eastern end of the existing church. Then an additional 300' of parking aisle leads to the front of the daycare facility. This combined 700' can accommodate 28 vehicles. It is estimated that 25% of drop offs will occur with motorists parking and walking their children into the facility. Thus, these motorists will not be involved in the drop-off queues. If half of the peak-hour entering vehicles to be queued arrive in a 15-minute increment, that would equate to 18 queued vehicles ($48 \times 75\%$ to be queued $\times 50\%$ in 15-minute increment) in the AM peak hour and 17 queue vehicles ($43 \times 75\% \times 50\%$) in the PM peak hour. Without even considering a staggering-of-the-vehicles, 18 vehicles equate to a 450-foot queue and 17 vehicles to a 425-foot queue. Thus, the back of the worst-case queue would be contained on-site approximately 250' east of Lake Helen Osteen Road.

Alternative Mode Analysis

Per the River to Sea TPO TIA Guidelines, an evaluation relating to transit, pedestrian, and bicycle facilities is provided below.

Transit – Votran does not provide fixed-route transit service in close proximity to the development. The nearest fixed-route service is nearly two miles away at the Howland Boulevard/Elkcam Boulevard intersection (routes 21/22).

Pedestrian Facilities – Currently, sidewalks are not provided on either side of Lake Helen Osteen Road. However, a 5' walkway will be provided around the western portion of the development with pedestrian connections to the various buildings. Internal pedestrian connectivity will be provided in the eastern portion along with the provision of a sidewalk that runs parallel with Lake Helen Osteen Road within the development. This sidewalk will provide the opportunity for adjacent properties to provide sidewalk connectivity along the east side of Lake Helen Osteen Road. It is also proposed to provide a midblock crosswalk with a refuge island across Lake Helen Osteen Road on the south side of the south driveway intersection.

Bicycle Facilities – There are no bicycle facilities provided along Lake Helen Osteen Road.

Crash Analysis

A five-year crash analysis (January 1, 2019 to December 31, 2023) was conducted on Lake Helen Osteen Road immediately adjacent to the proposed development. Based on the University of Florida's Signal Four Analytics, there was only one rear-end crash (property damage only) on Lake Helen Osteen Road (see Signal Four Analytics screenshot of analysis in *Appendix I*). No other crashes were identified. Thus, there is no existing crash trend on Lake Helen Osteen Road adjacent to the development. Further, the development is not projected to trigger any new roadway segment/intersection deficiencies. Therefore, no additional crash analyses were required per the approved methodology.

CONCLUSIONS

A traffic impact analysis was prepared for the proposed New Hope PUD located on Lake Helen Osteen Road, south of Haulover Boulevard in Deltona, Florida. Below is a summary of the findings of the study:

- Based on the existing conditions analyses, all study roadway segments currently operate at an acceptable level of service (LOS) with the exception of the volumes on Providence Boulevard from Fort Smith Boulevard to Elkcarn Boulevard.
- Based on the future background conditions analyses, all study roadway segments are projected to operate acceptably with the exception Lake Helen Osteen Road from Haulover Canal to Catalina Boulevard and Providence Boulevard from Fort Smith Boulevard to Elkcarn Boulevard. Both of these roadway segments need to be widened to four lanes to accommodate future background traffic.
- Based on the future buildout conditions analyses, consistent with the future background analyses, all study roadway segments are projected to operate acceptably with the exception Lake Helen Osteen Road from Haulover Canal to Catalina Boulevard and Providence Boulevard from Fort Smith Boulevard to Elkcarn Boulevard. Both of these roadway segments need to be widened to four lanes to accommodate future background traffic. These improvements identified are the same improvements as those needed to address the future background deficiencies. Therefore, per Florida Statutes 163.3180, because the needed improvements for buildout are the same as those needed to mitigate deficiencies that are projected without the project, the development is not responsible to mitigate impacts to these roadway segments.
- Based on the existing conditions intersection analyses, all movements at the unsignalized driveway intersections on Lake Helen Osteen Road currently operate well at LOS B or better. As for the signalized intersections, all three study locations currently have overall acceptable levels of service (LOS) of D or better. The only noted existing deficiency is the southbound right-turn movement at the Howland Boulevard/Catalina Boulevard intersection which can be addressed through the optimization of signal timings.
- Based on the future buildout intersection analyses, all movements at the unsignalized driveway intersections on Lake Helen Osteen Road are projected to operate acceptably at LOS C or better. As for the signalized intersections, all three study locations are projected to have overall acceptable levels of service (LOS) of E or better. Consistent with the existing conditions analysis, the only noted projected deficiency is the southbound right-turn movement at the Howland Boulevard/Catalina Boulevard intersection. With the optimization of signal timings, the same improvement needed to address the existing deficiency, this intersection and all movements are

projected to operate acceptably. Because the needed intersection improvement for buildout is the same as that needed to mitigate a deficiency that currently exists without the project, per Florida Statutes 163.3180 the development is not responsible to mitigate impacts to these roadway segments.

- Driveway #1 on Lake Helen Osteen Road is and will remain exit only.
- Relative to Driveway #2 on Lake Helen Osteen Road
 - A northbound right-turn lane of 320 feet is recommended.
 - A southbound right-turn lane is not recommended.
 - A northbound left-turn lane is not warranted.
 - A southbound right-turn lane of 370 feet is recommended
- The daycare will be located at the easternmost portion of the property. The back of the worst-case projected queue will be contained on-site approximately 250' east of Lake Helen Osteen Road. Based on the buildout conditions (year 2026) intersection analyses:
- A 5' walkway will be provided around the western portion of the development with pedestrian connections to the various buildings. Internal pedestrian connectivity will be provided in the eastern portion along with the provision of a sidewalk that runs parallel with Lake Helen Osteen Road within the development. This sidewalk will provide the opportunity for adjacent properties to provide sidewalk connectivity along the east side of Lake Helen Osteen Road. It is also proposed to provide a midblock crosswalk with a refuge island across Lake Helen Osteen Road on the south side of the south driveway intersection.
- All movements at the STOP-controlled intersections are projected to operate acceptably.
- Based on a five-year crash analysis there is no existing crash trend on Lake Helen Osteen Road adjacent to the development.

Appendix A

Preliminary Development Plan

Residential Data				
Description			Required	Proposed
Lot				
Parcel ID				
811000000080	83,199.60 sf	1.91 Acres		
811000000041	196,020.00 sf	4.50 Acres		
Lot Area Summary				
Gross Lot Area:	279,220 sf	6.41 Acres		
Zonning District				
			District	
Proposed Residential	279,220 sf			PUD
	6.41 Acres			
Density				
Density	6.41 Acres		77 Units	120 Units
			12.00 Du/AC	0
Building Height				
Building Height:				40'-0"
				0
Building Setbacks				
Front Setback (East)			25'-0"	41'-0"
Side Setback (North)			25'-0"	25'-0"
Side Setback (South)			25'-0"	25'-0"
Rear Setback (West)			25'-0"	56'-0"
General Requirements				
Floor Area Ratio				121,486 sf
				43.51%
Lot Coverage			N/A	45,500 sf
				16.30%
Landscape Open Space:			69,805 sf	91,783 sf
			25 %	32.87%
Total Paved Area			N/A	120,214 sf
				43.05%
Sidewalk Area			N/A	21,723 sf
				7.78%

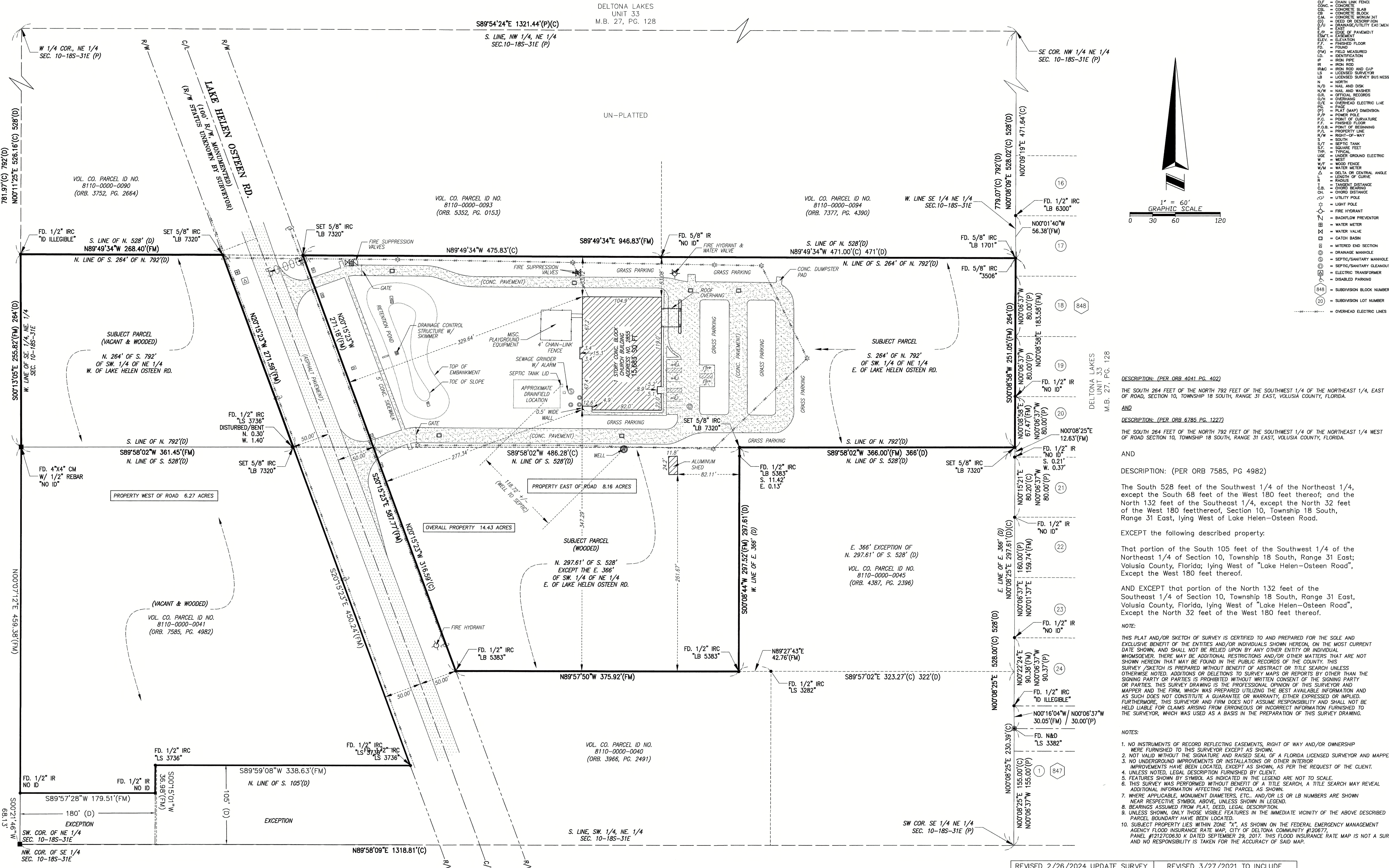
Building Area A					
Total Sq Ft. does not include Balcony Sq Ft.					
Levels	Leasable Area	Non-Leasable			Total Bldg Gross SF
Level 1	7,860 sf	1,247 sf			9,107 sf
Level 2	7,860 sf	1,087 sf			8,947 sf
Level 3	7,860 sf	1,087 sf			8,947 sf
Total	23,580 sf	3,421 sf			27,001 sf
			Total of 2 Bldg		54,002 sf
Building Area B					
Total Sq Ft. does not include Balcony Sq Ft.					
Levels	Leasable Area	Non-Leasable			Total Bldg Gross SF
Level 1	9,564 sf	1,778 sf			11,342 sf
Level 2	9,564 sf	1,636 sf			11,200 sf
Level 3	9,564 sf	1,636 sf			11,200 sf
Total	28,692 sf	5,050 sf			33,742 sf
			Total of 2 Bldg		67,484 sf

Unit Area						
			Unit A (1 BD)	Unit B (2 BD)	Uni C (3 BD)	Total Units
			651 sf	870 sf	1,095 sf	
Type A	Level 1			4 Units	4 Units	8 Units
	Level 2			4 Units	4 Units	8 Units
	Level 3			4 Units	4 Units	8 Units
Sub Total				12 Units	12 Units	24 Units
Total of 2 Bldg				24 Units	24 Units	48 Units
Type B	Level 1		4 Units	8 Units		12 Units
	Level 2		4 Units	8 Units		12 Units
	Level 3		4 Units	8 Units		12 Units
Sub Total			12 Units	24 Units		36 Units
Total of 2 Bldg			24 Units	48 Units		72 Units
				Total Units		120 Units

Residential Parking Requirement							
						Required	Provided
Unit A (1 BD)	24 Units	20.00%			1.5 SP/DU	36 spaces	
Unit B (2 BD)	72 Units	60.00%			2.0 SP/DU	144 spaces	
Uni C (3 BD)	24 Units	20.00%			2.0 SP/DU	48 spaces	
Total Units	120 Units	100.00%					
Visitors					1 sp/10 units	12 spaces	
					Sub Total	240 spaces	
				Sub Total		240 spaces	
Parking Provided							
Surface	Standard	HC	Parallel				240 spaces
	233	7					
						240 spaces	240 spaces
Bicycle Requirements							
Parking Space	240 spaces	6 Plus 1 for each 20 Autos over 100				10 spaces	10 spaces

SECTION 10, TOWNSHIP 18 SOUTH, RANGE 31 EAST
CITY OF DELTONA, VOLUSIA COUNTY, FLORIDA

DELTONA LAKES
UNIT 33
M.B. 27, PG. 128



ACREAGE CALCULATIONS
OVERALL PROPERTY 14.43 ACRES
PROPERTY WEST OF ROAD 6.27 ACRES
PROPERTY EAST OF ROAD 8.16 ACRES
EXISTING CHURCH BUILDING 15,683 SQ FT

EFIRD SURVEYING GROUP, INC.

475 S. BLUE LAKE AVENUE
DELAND, FLORIDA 32724
PHONE: (386) 740-4144 FAX: (386) 740-4155
WEBSITE: www.efirdsurveying.com
e-mail: larry@efirdsurveying.com
Certificate Of Authorization Licensed Business Number 7230

Boundary Survey

Survey Date: 8/26/19 Drawing Number: 19-0543
Scale: 1"=60' Drawn By: BE

NEW HOPE BAPTIST CHURCH
OF DELTONA, INC.

I HEREBY CERTIFY THIS SURVEY DRAWING TO BE
CORRECT, TO THE BEST OF MY KNOWLEDGE AND
BELIEF, AND COMES IN FORM WITH THE
STANDARDS OF PRACTICES SET FORTH BY THE
FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND
MAPPERS IN CHAPTER 17, F.A.C. PURSUANT TO
SECTION 472.027, FLORIDA STATUTES.
LARRY R. EFIRD, JR.
Professional Surveyor & Mapper No. 6823

Appendix B

Approved TIA Methodology

The following proposed development project has an **APPROVED TIA METHODOLOGY**:

Project: New Hope PUD

Date of Approval: February 9, 2024

Date of Expiration*: August 9, 2024

TIA Approval Required By*: February 9, 2025

Conditions:

The respective TIA can now be accepted for review by the county. TIAs must be completed per the River-to-Sea TPO TIA Guidelines, which can be found on the R2CTPO.org website.

Approval Signature: Omar Atallah

TIA SUBMISSION TO COUNTY:

Two steps are required:

- 1) Submit the following items through email to Omar Atallah (Oatallah@volusia.org) and William White (Wdwhite@volusia.org)
 - PDF copy of the complete TIA (TIA needs to include completed TIA checklist)
 - Response to Comments (if resubmitted)
- 2) Due size limitations and computer input file incompatibility issues, send the following directly to VCTE by Mail or Delivery:
 - CD or USB drive containing all computer input files

***REMINDERS:**

- TIA approval needs to be obtained within a year of the approved methodology based on the interpretation of the TPO TIA Guidelines, which state that an approved methodology is valid for up to 6 months and a TIA is valid for up to a year..
- The TIA submitted to support a development plan or use permit cannot be older than one year.
- Advisory: If the applicant waits to submit the TIA or TIA revisions, requested updates to vested trip data, growth rates, traffic count data, etc. are likely to occur. (Example: Applicant submits TIA, receives comments, but doesn't update the TIA and respond to comments until 10 months later.)

Questions about TIAs and TIA methodologies should be addressed to Omar Atallah at Oatallah@volusia.org

MEMORANDUM

To: Ms. Jessica Entwistle – Deltona Planning & Development Services
From: Mr. Chris J. Walsh, P.E.
Date: February 2, 2024
Subject: New Hope PUD – Response to City TIA Methodology Comments
Deltona, Florida

Walsh Traffic Engineering, LLC (Walsh Traffic) has received comments on the November 26, 2023 TIA methodology for the proposed New Hope PUD located on Lake Helen Osteen Road, south of Haulover Boulevard in Deltona, Florida. We offer the following responses:

1) Page 1:

a. For the existing land uses on the east side of Lake Helen Osteen Road, please provide the source for the information stated, for verification of the land use sizes.

Response: The site plan for the existing site shows 15,726 square feet. This is highly comparable to the property appraiser information which shows 15,748 square feet. As for the daycare, they are only licensed/certified to have a maximum of 85 students.

b. It is stated that the “Access to the development (on the east side) is currently provided via two full-access driveways with the northern driveway located approximately 650 feet south of Haulover Boulevard and the southern driveway located approximately 900 feet south of Haulover Boulevard”.

Based on street view of the existing driveways into the property, it is observed that these are entry only (southern driveway) and exit only (northern driveway) driveways. Is it proposed to make these full access driveways (each driveway provides both entry and exit ways) as part of the development? If it is not the case, suggest modifying the description to keep them as entrance and exit only driveways.

Response: It is proposed to convert the southern driveway to full access. The northern driveway will remain as exit only.

c. The southern driveway (entrance only driveway) which is located approximately 900 feet south of Haulover Boulevard has a substandard exclusive right turn lane. It is suggested to improve/provide an exclusive right turn lane in accordance with Volusia County and City of Deltona design requirements.

Response: As conveyed in the methodology, turn lanes at the project driveways will be addressed in the traffic impact analysis.

2) **Table 1: To calculate the weekday/daily trip generation for Day Care Center (Land Use Code 565), suggest using the average rate instead of fitted curve since $R^2 < 0.75$ and sample size/number of studies are less than 20. (The R^2 value should be at least 0.75, if using the fitted curve, “because it indicates the recommended acceptable level of correlation between trips generated by a site and the value measured for an independent variable” (ITE Trip Generation Handbook, 3rd edition)).**

Please update the trip generation values in the table accordingly.

Response: The daily trip generation for the Day Care Center has been updated as requested.

3) **Table 2: For the PM peak hour trip generation calculation for Day Care Center, the pass-by trips should be 19 (In) which is 44% of 43 and 21 (out) which is 44% of 48, instead of 20 (In) and 20 (Out). Please update accordingly.**

Response: The trip generation has been updated accordingly.

4) **Table 3:**

a. **The total trips calculated for Church are incorrect. Using the land use code 560 and intensity of 8.30 KSF, using the average rate (because the intensity value is out of data range), the calculated trip ends are calculated to be 63 (total) with 32 (entering) and 31 (exiting).**

b. **For the Church land use, suggest using average rate for the AM and PM peak hour trip generation. Please modify/update the table accordingly.**

Response: The requested modifications have been made.

5) **Table 4: For the PM peak hour trip generation calculation for Day Care Center:**

a. **Why is the pass-by trip percentage 43.3% instead of 44%?**

b. **The pass-by trips should be 14 (In) which is 44% of 32 and 15 (out) which is 44% of 35, instead of 15 (In) and 14 (Out). Please update the table accordingly.**

Response: The trip generation table has been updated based on these comments.

6) **Trip Generation: It is assumed that one-fourth of the trips that were shown on Lake Helen Osteen Road between Elkcarn Boulevard and Howland Boulevard will now be diverted to use Elkcarn Boulevard and Howland Boulevard roadways instead. Please justify the detour of 5% on to Elkcarn Boulevard. Is it based on the existing roadway capacities or new modeling effort?**

Response: The reassignment consideration has been removed.

7) **Study Area: For the intersections to be studied, suggest including Lake Helen Osteen Road and Howland Boulevard intersection, since 17% of the project traffic will end up at the intersection.**

Response: The methodology follows the River to Sea TPO's TIA Guidelines' defined significance process for determining the study area. The project impact on Lake Helen Osteen Road is below the three-percent impact threshold. Further, this intersection is not part of the County's critical/near critical list of roadways. The TIA Guidelines were established to provide consistency in the TIA process.

8) **Analysis Periods:**

Walsh Traffic Engineering

285 Palmetto Springs Street, DeBary, Florida 32713
www.walshtraffic.com

Phone: 386.668.0062



- a. **Please specify the times of data collection for turning movement counts,**
- b. **Please include a queuing analysis for turning movements at study intersections.**

Response: The methodology has been revised to incorporate the two items above.

9) Conceptual Design: Please provide parking requirements and parking spaces provided for the proposed land uses on the east side of Lake Helen Osteen Road.

Response: This is a site plan item that will be addressed within the engineering plans, not within the TIA.

Please let us know if you have any questions.

MEMORANDUM

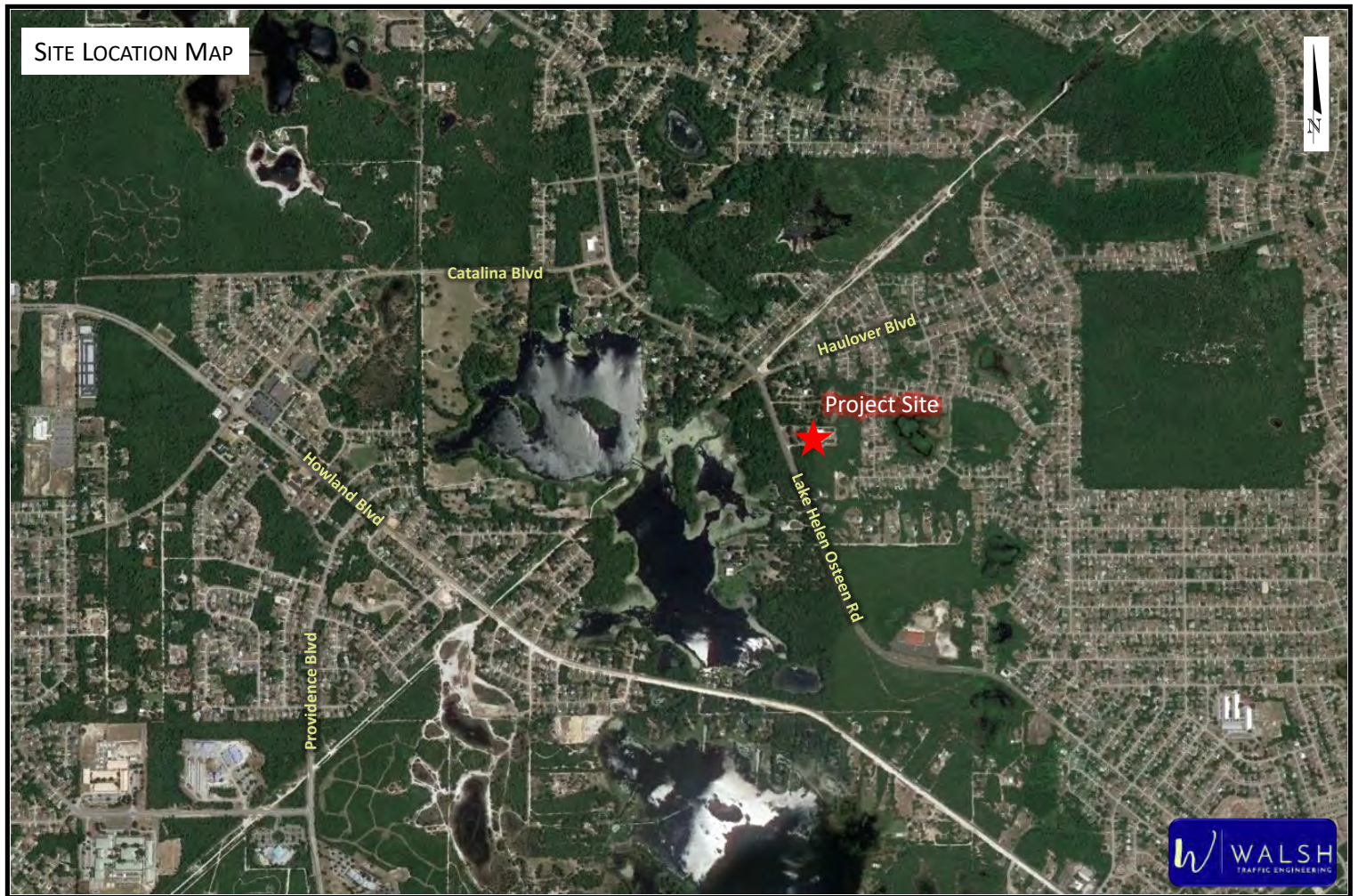
To: Ms. Jessica Entwistle – Deltona Planning & Development Services
From: Mr. Chris J. Walsh, P.E.
Date: February 2, 2024
Subject: New Hope PUD Traffic Impact Analysis Methodology (Revised)
Deltona, Florida

Walsh Traffic Engineering, LLC (Walsh Traffic) has been retained to conduct a traffic impact analysis (TIA) for a proposed New Hope PUD located on Lake Helen Osteen Road, south of Haulover Boulevard in Deltona, Florida (see **Site Location Map**). The subject property straddles both sides of Lake Helen Osteen Road. The property on the west side is vacant. The property on the east side includes a 15,726 square-foot building that serves as a church and can accommodate up to 648 seats. Additionally, this building is used as a daycare facility and is licensed/certified for up to 85 students, operating from 6:30 AM to 6:00 PM with child drop offs/pick-ups occurring continuously throughout the day.

The development is proposed to include the following:

- West side of Lake Helen Osteen Road
 - 120-dwelling unit multi-family development
- East side of Lake Helen Osteen Road
 - 10,000 square-foot daycare building for 115 students
 - 15,000 square-foot community center building
 - 31,291 square-foot church (expansion of the existing church)

Access to the development (on the east side) is currently provided via two driveways with the northern driveway (exit only) located approximately 650 feet south of Haulover Boulevard and the southern driveway (entrance only) located approximately 900 feet south of Haulover Boulevard. Both driveways will be maintained for the eastern portion of the development, however the southern driveway will be converted to bi-directional. The multi-family development on the west side will have a single driveway that aligns with the southern driveway. A copy of the preliminary development plan is attached. The development is proposed to be constructed by year 2029. This memorandum is intended to serve as the methodology for the TIA, prepared in accordance with the River to Sea TPO TIA Guidelines.



Trip Generation

The total daily, AM peak-hour and PM peak-hour trip generation potential for the proposed development is provided below based on trip generation equations/rates provided in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual, 11th Edition*. As summarized below in **Table 1**, the proposed development is projected to generate 1,763 total daily trips, 193 total AM peak-hour trips (97 in, 96 out), and 212 total PM peak-hour trips (101 in, 111 out).

Table 1 – Total Trip Generation Summary (Proposed Development)

Land Use	ITE Land Use Code	Intensity	Daily		
			Total Trips		
			In	Out	Total
Multi-Family (Low-Rise)	220	120 DU	422	423	845
Church	560	31.29 KSF	119	119	238
Day Care Center	565	115 Students	228	229	457
General Office (Community Center)	710	15.0 KSF	111	112	223
Total			880	883	1,763

Land Use	ITE Land Use Code	Intensity	AM Peak Hour		
			Total Trips		
			In	Out	Total
Multi-Family (Low-Rise)	220	120 DU	14	46	60
Church	560	31.29 KSF	6	4	10
Day Care Center	565	115 Students	48	42	90
General Office (Community Center)	710	15.0 KSF	29	4	33
Total			97	96	193

Land Use	ITE Land Use Code	Intensity	PM Peak Hour		
			Total Trips		
			In	Out	Total
Multi-Family (Low-Rise)	220	120 DU	45	27	72
Church	560	31.29 KSF	7	8	15
Day Care Center	565	115 Students	43	48	91
General Office (Community Center)	710	15.0 KSF	6	28	34
Total			101	111	212

ITE provides a PM peak-hour pass-by rate of 44% for the daycare facility (see attachment). The pass-by trips were thus calculated and the resulting new external trips identified. Within the TIA, pass-by trips will be limited to 14% of the future background traffic on the adjacent roadway per the River to Sea TPO's TIA Guidelines. As summarized in **Table 2** below, the proposed development is projected to generate 193 new external AM peak-hour trips (97 in, 96 out) and 172 new external PM peak-hour trips (82 in, 90 out).

Table 2 – New External Trip Generation Summary (Proposed Development)

Land Use	ITE Land Use Code	Intensity	AM Peak Hour									
			Total Trips			Pass-By Trips				Net New External Trips		
			In	Out	Total	%	In	Out	Total	In	Out	Total
Multi-Family (Low-Rise)	220	120 DU	14	46	60	0.0%	0	0	0	14	46	60
Church	560	31.29 KSF	6	4	10	0.0%	0	0	0	6	4	10
Day Care Center	565	115 Students	48	42	90	0.0%	0	0	0	48	42	90
General Office (Community Center)	710	15.0 KSF	29	4	33	0.0%	0	0	0	29	4	33
Total			97	96	193	0.0%	0	0	0	97	96	193

Land Use	ITE Land Use Code	Intensity	PM Peak Hour									
			Total Trips			Pass-By Trips				Net New External Trips		
			In	Out	Total	%	In	Out	Total	In	Out	Total
Multi-Family (Low-Rise)	220	120 DU	45	27	72	0.0%	0	0	0	45	27	72
Church	560	31.29 KSF	7	8	15	0.0%	0	0	0	7	8	15
Day Care Center	565	115 Students	43	48	91	44.0%	19	21	40	24	27	51
General Office (Community Center)	710	15.0 KSF	6	28	34	0.0%	0	0	0	6	28	34
Total			101	111	212	18.9%	19	21	40	82	90	172

Trip generation was then calculated for the existing development on the eastern portion of the subject property. It is important to note that the existing building currently serves as both a church and a day-care facility. For purposes of calculating trip generation, trips were first calculated based on the 85-student daycare facility. Based on the proposed development, a 10,000 square-foot daycare accommodates 115 students. This equates to approximately 87 square feet required per student. Applying this same ratio to the 85 students, it is estimated that approximately 7,395 square feet of the existing building serves as daycare during the weekdays. Thus, the remaining 8,300 square feet of the existing building is used as a church. As summarized on the following page in **Table 3**, the existing development therefore generates 1,195 total daily trips, 69 total AM peak-hour trips (37 in, 32 out) and 71 total PM peak-hour trips (34 in, 37 out).

Similar to the proposed development, pass-by trips were calculated for the existing daycare facility and the resulting new external trips identified. As summarized in **Table 4** on the following page, the proposed development is projected to generate 69 new external AM peak-hour trips (37 in, 32 out) and 42 new external PM peak-hour trips (20 in, 22 out).

Table 3 – Total Trip Generation Summary (Existing Development)

Land Use	ITE Land Use Code	Intensity	Daily		
			Total Trips		
			In	Out	Total
Church	560	8.30 KSF	32	32	63
Day Care Center	565	85 Students	175	175	350
Total			207	207	413

Land Use	ITE Land Use Code	Intensity	AM Peak Hour		
			Total Trips		
			In	Out	Total
Church	560	8.30 KSF	2	1	3
Day Care Center	565	85 Students	35	31	66
Total			37	32	69

Land Use	ITE Land Use Code	Intensity	PM Peak Hour		
			Total Trips		
			In	Out	Total
Church	560	8.30 KSF	2	2	4
Day Care Center	565	85 Students	32	35	67
Total			34	37	71

Table 4 – New External Trip Generation Summary (Existing Development)

Land Use	ITE Land Use Code	Intensity	AM Peak Hour									
			Total Trips			Pass-By Trips				Net New External Trips		
			In	Out	Total	%	In	Out	Total	In	Out	Total
Church	560	8.30 KSF	2	1	3	0.0%	0	0	0	2	1	3
Day Care Center	565	85 Students	35	31	66	0.0%	0	0	0	35	31	66
Total			37	32	69	0.0%	0	0	0	37	32	69

Land Use	ITE Land Use Code	Intensity	PM Peak Hour									
			Total Trips			Pass-By Trips			Net New External Trips			
			In	Out	Total	%	In	Out	Total	In	Out	Total
Church	560	8.30 KSF	2	2	4	0.0%	0	0	0	2	2	4
Day Care Center	565	85 Students	32	35	67	44.0%	14	15	29	18	20	38
Total			34	37	71	40.8%	14	15	29	20	22	42

Recognizing that the existing development is vested, the difference between the existing and proposed development was then calculated. As summarized below in **Table 5**, the proposed development modification will increase the AM peak-hour external trips by 124 trips (60 in, 64 out) and the new external PM peak-hour trips by 130 (62 in, 68 out).

Table 5 – New External Trip Generation Increase of Proposed Development

Land Use	AM Peak Hour		
	Total Trips		
	In	Out	Total
Proposed Development	97	96	193
Existing Development	37	32	69
Additonal Trips from Proposed Development	60	64	124

Land Use	PM Peak Hour		
	Total Trips		
	In	Out	Total
Proposed Development	82	90	172
Existing Development	20	22	42
Additonal Trips from Proposed Development	62	68	130

Trip Distribution

A TIA was recently prepared by LTG, Inc. in April of 2023 for the proposed development in support of a future land use change and rezoning. The TIA included a model distribution for the development as attached. This model distribution is also proposed for this TIA as it looked reasonable based on engineering judgment. The proposed distribution is attached.

Pass-by trip distribution for day care center will be assessed separately taking into consideration the directional volume of traffic on Lake Helen Osteen Road and the ease of access from each direction of travel.

Study Area

Based on the River to Sea TPO TIA Guidelines, the study area is to include those roadways where the project impact consumes 3% or more of a roadway's two-way peak-hour generalized service volume. **Table 2** below summarizes the significance analysis, based on the net increase of external trips, for purposes of determining the study area. Additionally, the study area is to include any critical/near critical roadway segments located within three miles. The attached critical/near critical map as included in the April 2023 TIA shows the 3-mile radius. It is important to note that the County current critical/near critical map on the County website map is based on 2021 counts. However, the section of Howland Boulevard from Elkcam Boulevard to Providenced Boulevard was recently widened and is thus no longer critical.

Table 2 – Study Area Determination

Roadway Segment	# of Lanes	Adopted LOS	Peak-Hr 2-Way Service Volume	Project Trips (2-Way)				Critical/Near Critical?	Study Roadway Segment?
				% Assign	Project Trips	% Significant	Significant?		
Lake Helen Osteen Road									
Howland Blvd to Elkcam Blvd	2	E	1,020	20.3%	26	2.55%	no	YES	YES
Elkcam Blvd to Project	2	E	1,230	38.8%	50	4.07%	YES	YES	YES
Project to Haulover Blvd	2	E	1,230	61.2%	80	6.50%	YES	YES	YES
Haulover Blvd to Catalina Blvd	2	E	1,230	55.6%	72	5.85%	YES	no	YES
Catalina Blvd to Captain Dr	2	E	1,020	22.8%	30	2.94%	no	no	no
Catalina Boulevard									
Eustace Ave to Howland Blvd	2	E	1,230	2.9%	4	0.33%	no	no	no
Howland Blvd to Lake Helen Osteen Rd	2	E	1,230	32.7%	43	3.50%	YES	YES	YES
Elkcam Boulevard									
Howland Blvd to Lake Helen Osteen Rd	2	E	1,230	11.9%	15	1.22%	no	no	no
Lake Helen-Osteen Rd to Courtland Blvd	2	E	1,230	1.5%	2	0.16%	no	no	no
Howland Boulevard									
Providence Blvd to Catalina Blvd	4	E	3,410	1.5%	2	0.06%	no	no	no
Catalina Blvd to Wolf Pack Run	4	E	3,410	27.4%	36	1.06%	no	YES	YES
Wolf Pack Run to I-4	4	E	3,410	27.1%	35	1.03%	no	YES	YES
Providence Boulevard									
Fort Smith Blvd to Elkcam Blvd	2	E	1,020	6.3%	8	0.78%	no	YES	YES

The study roadways will include the following:

- Lake Helen Osteen Road – from Howland Blvd to Elkcam Blvd
- Lake Helen Osteen Road – from Elkcam Blvd to Project
- Lake Helen Osteen Road – from Project to Haulover Blvd
- Lake Helen Osteen Road – from Haulover Blvd to Catalina Blvd
- Catalina Boulevard – from Howland Blvd to Lake Helen Osteen Rd
- Howland Boulevard – from Catalina Blvd to Wolf Pack Run
- Howland Boulevard – from Wolf Pack Run to I-4
- Providence Boulevard – from Fort Smith Blvd to Elkcam Blvd

The study intersections include the following:

- Lake Helen Osteen Rd at Elkcam Blvd
- Lake Helen Osteen Rd at Project Driveways
- Lake Helen Osteen Rd at Catalina Blvd
- Catalina Blvd at Howland Blvd

The map on the following page shows the study roadway segments and intersections.

Existing turning movement counts will be obtained from 7:00 to 9:00 AM and 4:00 to 6:00 PM for each of the study intersections. The counts, which will be no older than one year, will also include trucks, bikes, and pedestrians.

Future Volume Traffic Projections

Future background traffic volumes will be estimated in accordance with Volusia County's *Segment Growth Rates and Vested Trips Instruction Policy* (see attachment). Because the existing development is in full operation, the net increase in new external project trips will then be added to the future background peak-hour volumes to develop the future total volume projections.

Analysis Periods

The study roadway segments and intersections will be analyzed under existing conditions and future build-out conditions. In the event a roadway segment or intersection is shown to have unacceptable operations at buildout of the development, future background conditions will also be conducted to determine if deficiencies are triggered by future background traffic volumes.

Roadway segments will be analyzed by comparing the PM peak-hour two-way volumes against each roadway's generalized service volume. In the event that the volumes exceed the generalized service volume, then a more detailed arterial/highway analysis may be conducted using HCM methodologies in accordance with the *FDOT Quality/Level of Service Handbook*. The operating conditions of the study intersections will be analyzed for AM and PM peak-hour conditions using *Synchro 11*, employing *HCM, 6th Edition* methodologies. A queueing summary for each study intersection will also be provided.

Planned Roadway Improvements

Improvements in the study area programmed for construction within the next three years by FDOT, Volusia County, or the City of Deltona will be included in the analyses as committed improvements. Based on information obtained, no improvements are committed for construction within the study area.

Crash Analysis

A five-year crash analysis with a crash summary and crash diagram will be provided for Lake Helen Osteen Road immediately adjacent to the proposed development as well as at each intersection where improvements are recommended under build-out conditions (due to the inclusion of project trips). The crash analysis will seek to identify any crash trends and whether or not any proposed improvements will result in degradation of an existing crash trend. In an effort to avoid unnecessarily burdening the developer, in the event no crash trends are identified, a screen shot of the signal four crash summary will be provided in place of a crash diagram/summary.

Alternative Mode Analysis

An alternative mode analysis will be conducted to evaluate present and programmed bike, pedestrian, and transit mobility options. Planned bicycle and pedestrian connections within the development will be documented. Votran will be notified of the proposed project and appropriate sections of the development review checklist on page 9, Table 2, of the Transit Development Design Guidelines, will be followed. Additionally, an assessment of pedestrian connectivity between the western and eastern portions of the development will be included in the study.

Project Driveway Evaluation

The project driveways on Lake Helen Osteen Road will be evaluated with regard to the need for a right-turn and left-turn lanes. This analysis will be conducted in accordance with requirements in Volusia County's Land Development Code. Should a turn lane be warranted, the study will identify the required turn-lane length in accordance with Volusia County criteria. As a part of this assessment, a queuing analysis will also be provided with regards to the operation of the day care center to better understand if there will be any concerns regarding potential queue spillback onto Lake Helen Osteen Road.

Mitigation

Where roadway segment or intersection deficiencies are identified, appropriate improvements will be identified for existing, future background, and future total build-out conditions. Following, the applicant and the development team will coordinate with the City, and other agencies where applicable, to determine the development's mitigation responsibility. All proposed mitigation improvements must be consistent with the appropriate city and county comprehensive plans transportation element. By way of example, if a proposed improvement is to widen a county roadway beyond that of which is indicated on the county's adopted Future Number of Lanes, the mitigation will consider improvements to a parallel facility. It should be noted that mitigation and associated credits towards impact fees will be addressed in accordance with Florida Statutes 163.3180.

Attachments



www.modisarchitects.com

CONCEPTUAL DESIGN
Current Scheme
Site Plan

Residential Data				
Description			Required	Proposed
Lot				
Parcel ID				
811000000080	83,199.60 sf	1.91 Acres		
811000000041	196,020.00 sf	4.50 Acres		
Lot Area Summary				
Gross Lot Area:	279,220 sf	6.41 Acres		
Zonning District				
			District	
Proposed Residential	279,220 sf			PUD
	6.41 Acres			
Density				
Density	6.41 Acres		77 Units	120 Units
			12.00 Du/AC	0
Building Height				
Building Height:				40'-0"
				0
Building Setbacks				
Front Setback (East)			25'-0"	41'-0"
Side Setback (North)			25'-0"	25'-0"
Side Setback (South)			25'-0"	25'-0"
Rear Setback (West)			25'-0"	56'-0"
General Requirements				
Floor Area Ratio				121,486 sf
				43.51%
Lot Coverage			N/A	45,500 sf
				16.30%
Landscape Open Space:			69,805 sf	91,783 sf
			25 %	32.87%
Total Paved Area			N/A	120,214 sf
				43.05%
Sidewalk Area			N/A	21,723 sf
				7.78%

Building Area A					
Total Sq Ft. does not include Balcony Sq Ft.					
Levels	Leasable Area	Non-Leasable			Total Bldg Gross SF
Level 1	7,860 sf	1,247 sf			9,107 sf
Level 2	7,860 sf	1,087 sf			8,947 sf
Level 3	7,860 sf	1,087 sf			8,947 sf
Total	23,580 sf	3,421 sf			27,001 sf
			Total of 2 Bldg		54,002 sf
Building Area B					
Total Sq Ft. does not include Balcony Sq Ft.					
Levels	Leasable Area	Non-Leasable			Total Bldg Gross SF
Level 1	9,564 sf	1,778 sf			11,342 sf
Level 2	9,564 sf	1,636 sf			11,200 sf
Level 3	9,564 sf	1,636 sf			11,200 sf
Total	28,692 sf	5,050 sf			33,742 sf
			Total of 2 Bldg		67,484 sf

Unit Area						
			Unit A (1 BD)	Unit B (2 BD)	Uni C (3 BD)	Total Units
			651 sf	870 sf	1,095 sf	
Type A	Level 1			4 Units	4 Units	8 Units
	Level 2			4 Units	4 Units	8 Units
	Level 3			4 Units	4 Units	8 Units
Sub Total				12 Units	12 Units	24 Units
Total of 2 Bldg				24 Units	24 Units	48 Units
Type B	Level 1		4 Units	8 Units		12 Units
	Level 2		4 Units	8 Units		12 Units
	Level 3		4 Units	8 Units		12 Units
Sub Total			12 Units	24 Units		36 Units
Total of 2 Bldg			24 Units	48 Units		72 Units
				Total Units		120 Units

Residential Parking Requirement							
						Required	Provided
Unit A (1 BD)	24 Units	20.00%			1.5 SP/DU	36 spaces	
Unit B (2 BD)	72 Units	60.00%			2.0 SP/DU	144 spaces	
Uni C (3 BD)	24 Units	20.00%			2.0 SP/DU	48 spaces	
Total Units	120 Units	100.00%					
Visitors					1 sp/10 units	12 spaces	
					Sub Total	240 spaces	
				Sub Total		240 spaces	
Parking Provided							
Surface	233	HC	7	Parallel			240 spaces
						240 spaces	240 spaces
Bicycle Requirements							
Parking Space	240 spaces	6 Plus 1 for each 20 Autos over 100				10 spaces	10 spaces

Vehicle Pass-By Rates by Land Use									
Source: ITE <i>Trip Generation Manual</i> , 11th Edition									
Land Use Code	565								
Land Use	Day Care Center								
Setting	General Urban/Suburban								
Time Period	Weekday PM Peak Period								
# Data Sites	1								
Average Pass-By Rate	44%								
	Pass-By Characteristics for Individual Sites								
	State or Province	Survey Year	# Interviews	Pass-By Trip (%)	Non-Pass-By Trips			Adj Street Peak Hour Volume	Source
GFA (000)					Primary (%)	Diverted (%)	Total (%)		
7.2	Pennsylvania	1990	—	44	24	32	56	—	23

Via Email: (info@tedcbuilds.org)

Ref: 5903.01

TECHNICAL MEMORANDUM

To: Ms. Carol Gardner, Tacolcy Economic Development Corporation

From: Matthew West, AICP

Subject: New Hope PUD – Comprehensive Plan Amendment (CPA) and Rezoning Traffic Impact Analysis (RTIA)
Deltona, FL

Date: April 26, 2023

INTRODUCTION

LTG, Inc. (LTG) has been retained by Tacolcy Economic Development Corporation, to prepare a traffic impact analysis in support of a future land use change and a rezoning for the proposed New Hope PUD. The subject property is located on the east and west sides of Lake Helen Osteen Road, south of Haulover Boulevard, in the City of Deltona, Florida. The land on the west side of Lake Helen Osteen Road is 6.24-acres and is currently vacant. The land on the east side of Lake Helen Osteen Road currently has a 648-seat church and an 85-student capacity day care center. Figure 1 shows the location of the project relative to the surrounding roadway network.

COMPREHENSIVE PLAN AMENDMENT (CPA)

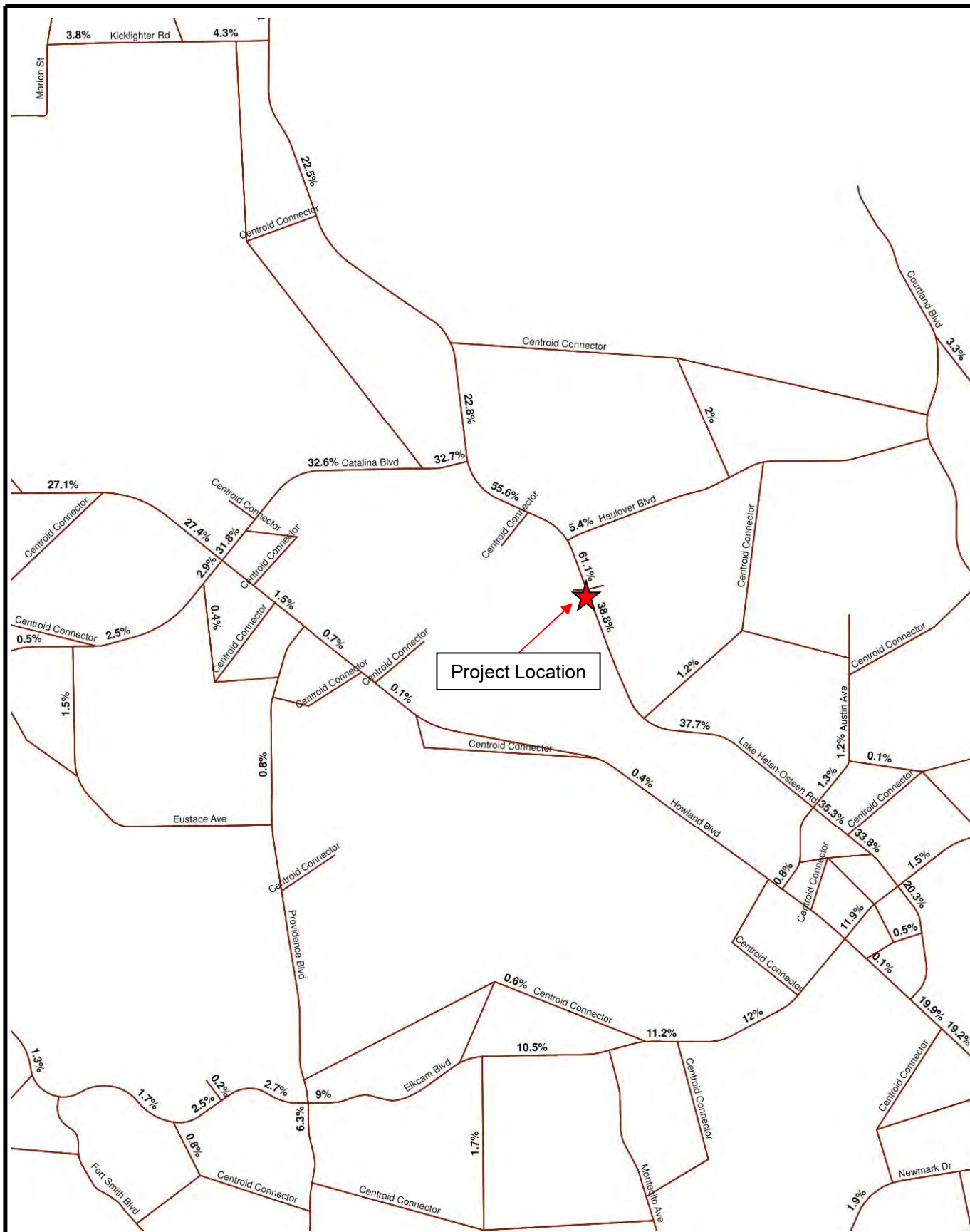
The future land use proposed change for the subject property is from Low Density Residential (LDR) to High Density Residential (HDR) on six (6) acres of the 14.4-acre property. The breakdown of the existing and proposed future land use categories on the subject property, by acreage, and the resultant maximum theoretical development are shown in Table 1 below.

Table 1
Existing and Proposed Future Land Use
New Hope PUD CPA and RTIA

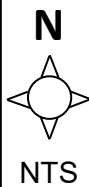
Condition	FLUM	Land Use	Acreage	Intensity/Density	Resultant Size	Units
Existing	LDR	Single-Family	6.00	6 DU/Acre	36	DU
Proposed	HDR	Multi-Family Low Rise	6.00	20 DU/Acre (limited)	120	DU

TRIP GENERATION FOR THE EXISTING VS. PROPOSED FLU DESIGNATIONS

The site has an existing future land use designation of LDR, which allows for single-family residential land uses at the density indicated in Table 1. The daily, AM and PM peak-hour trip generation for the existing future land uses were determined using the Institute of Transportation Engineers (ITE) document, *Trip Generation Manual*, 11th Edition and are presented in Table 2, below.



New Hope PUD



Project Distribution

Project No.: 5903.01

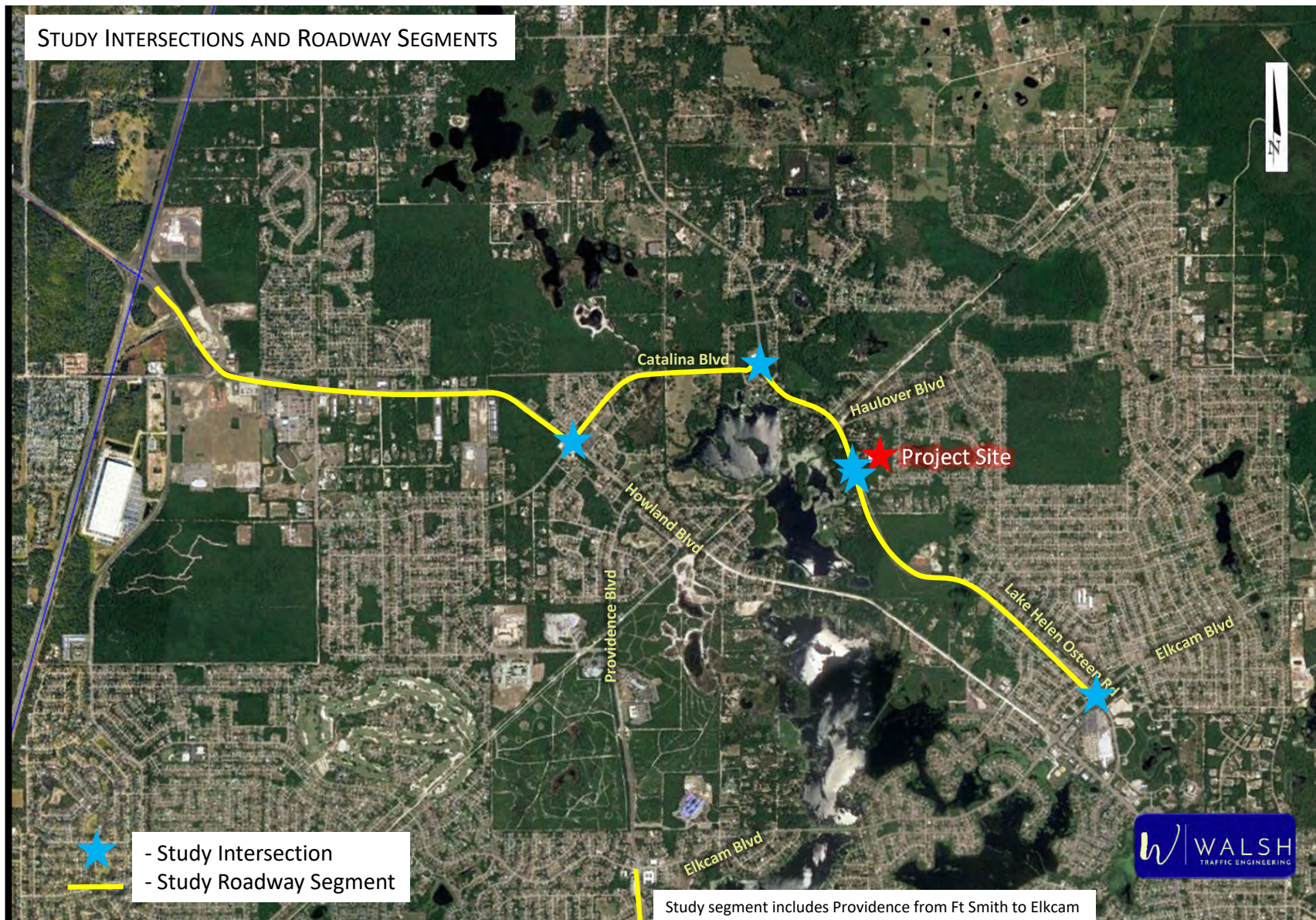
Figure: 3



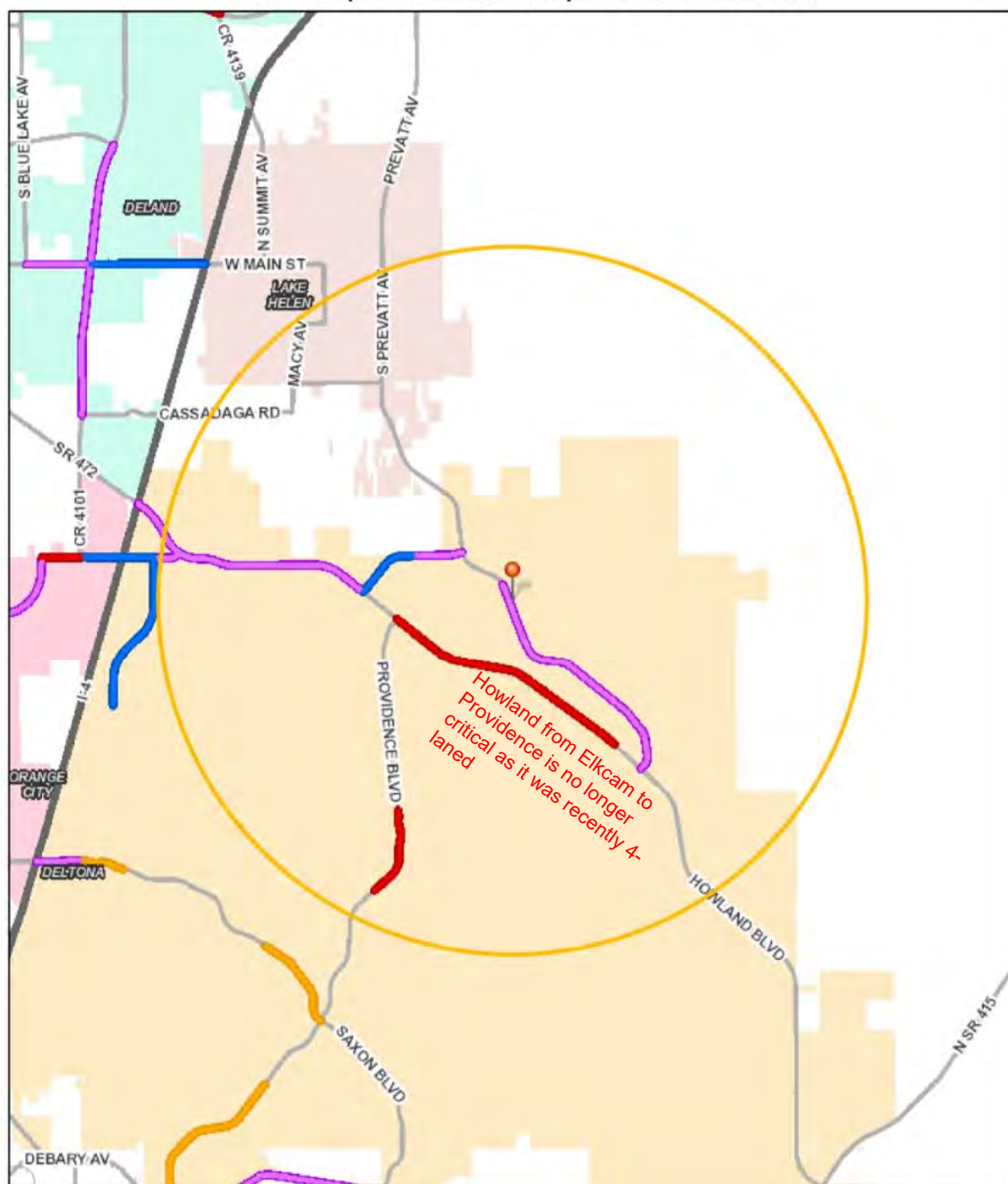
LTG Engineering & Planning

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

STUDY INTERSECTIONS AND ROADWAY SEGMENTS



Traffic Impact Buffer Map - 3 Mile Radius



3/27/2023, 10:55:35 AM

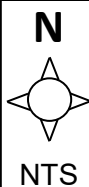
1:72,099

Critical and Near Critical — Critical Vested
— Critical — Near Critical Vested
— Near Critical

0 0.5 1 2 mi
0 1 2 4 km

Note: Map includes all critical and near-critical roadway segments within 3-miles of proposed development.

New Hope PUD



**3-Mile Radius
Critical Map**

Project No.: 5903.01

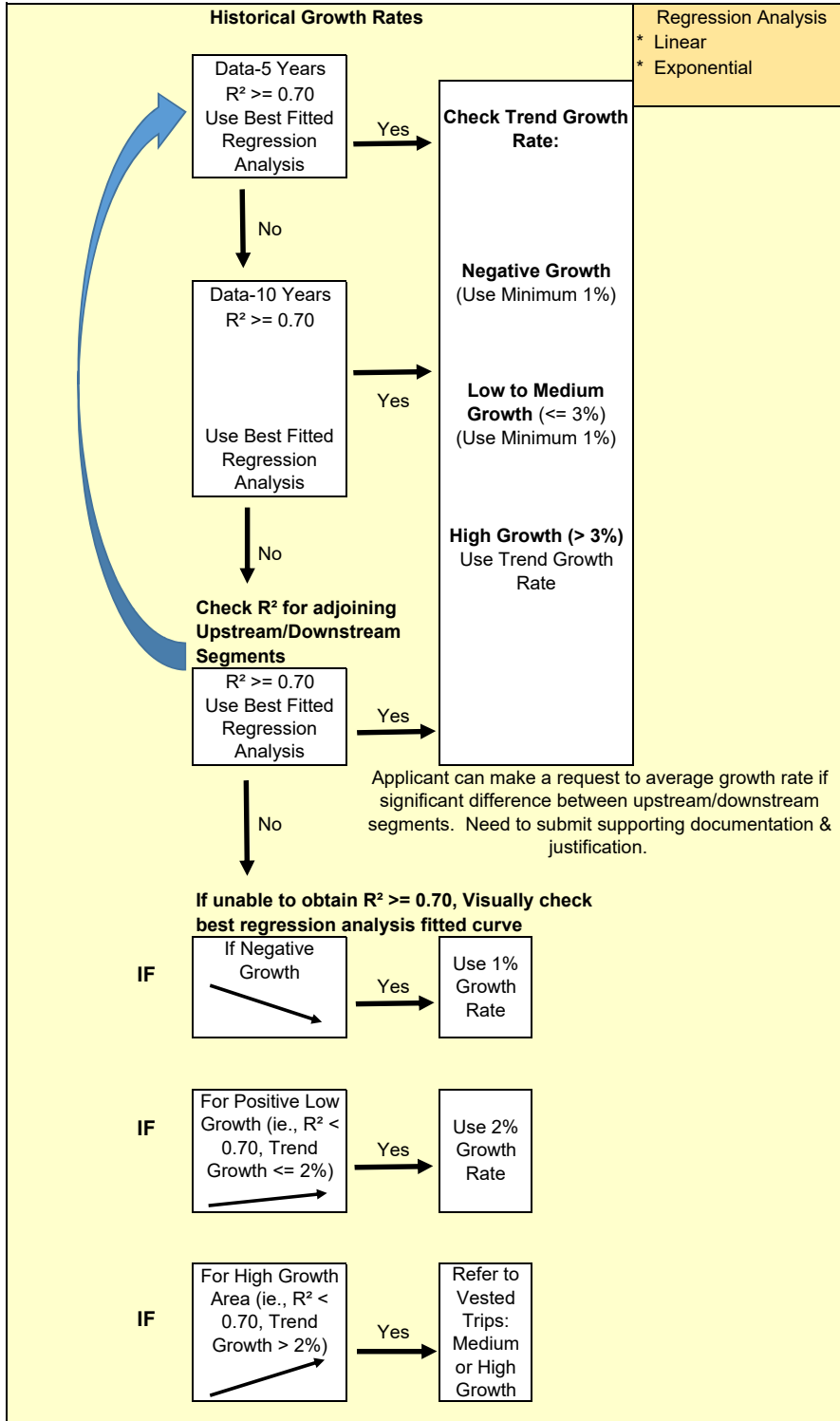
Figure: 2



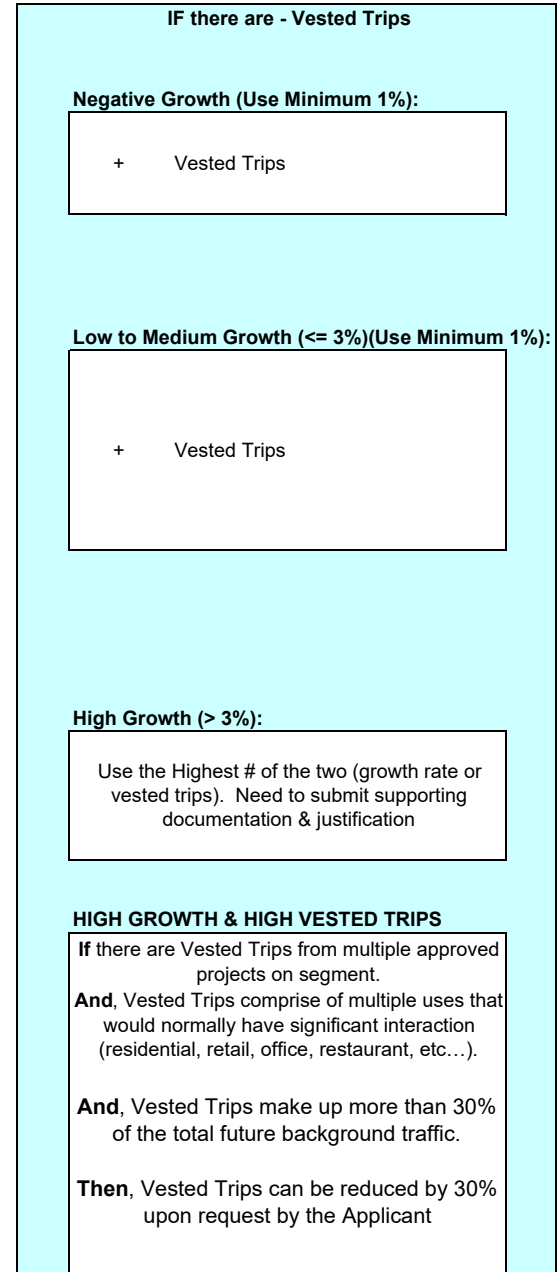
LTG Engineering
& Planning

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

Volusia County's Segment Growth Rates and Vested Trips Instructions Policy



AND



Signed: _____
Jon E. Cheney, P.E.

Date: _____

Appendix C

Traffic Counts

National Data & Surveying Services

Intersection Turning Movement Count

Location: Catalina Blvd & Howland Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-005
Date: 1/18/2024

Data - Total

NS/EW Streets:	Catalina Blvd				Catalina Blvd				Howland Blvd				Howland Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	17	9	5	0	13	12	131	0	23	105	10	0	5	230	16	0	576
7:15 AM	15	15	7	0	28	13	147	0	28	139	10	0	6	245	23	0	676
7:30 AM	26	41	7	0	39	31	122	0	16	132	5	0	8	250	23	1	701
7:45 AM	31	28	9	0	39	35	107	0	41	114	11	0	9	233	20	0	677
8:00 AM	34	22	11	0	18	18	111	0	31	128	5	0	5	249	9	0	641
8:15 AM	18	9	11	0	10	14	114	0	34	129	7	0	10	209	10	0	575
8:30 AM	16	22	8	0	10	18	96	0	50	156	12	0	10	213	5	1	617
8:45 AM	18	11	5	0	15	18	84	0	29	134	8	0	4	167	5	0	498
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	175	157	63	0	172	159	912	0	252	1037	68	0	57	1796	111	2	4961
	44.30%	39.75%	15.95%	0.00%	13.84%	12.79%	73.37%	0.00%	18.57%	76.42%	5.01%	0.00%	2.90%	91.35%	5.65%	0.10%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	106	106	34	0	124	97	487	0	116	513	31	0	28	977	75	1	2695
PEAK HR FACTOR :	0.779	0.646	0.773	0.000	0.795	0.693	0.828	0.000	0.707	0.923	0.705	0.000	0.778	0.977	0.815	0.250	0.961
	0.831				0.922				0.932				0.958				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	16	11	4	0	32	20	51	0	92	261	11	0	10	157	20	2	687
4:15 PM	15	28	12	0	29	25	67	0	101	255	7	0	11	145	14	0	709
4:30 PM	17	25	9	0	21	18	61	0	101	229	12	0	10	149	24	2	678
4:45 PM	12	25	10	0	22	20	69	0	98	258	13	0	11	164	12	0	714
5:00 PM	11	23	7	0	32	16	44	0	88	277	22	0	10	143	19	0	692
5:15 PM	10	21	6	0	27	22	59	0	99	271	14	0	14	155	20	2	720
5:30 PM	9	24	2	0	25	16	75	0	108	265	12	0	15	163	15	0	729
5:45 PM	15	17	4	0	40	31	60	0	105	276	12	0	4	150	12	0	726
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	105	174	54	0	228	168	486	0	792	2092	103	0	85	1226	136	6	5655
	31.53%	52.25%	16.22%	0.00%	25.85%	19.05%	55.10%	0.00%	26.51%	70.04%	3.45%	0.00%	5.85%	84.38%	9.36%	0.41%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	45	85	19	0	124	85	238	0	400	1089	60	0	43	611	66	2	2867
PEAK HR FACTOR :	0.750	0.885	0.679	0.000	0.775	0.685	0.793	0.000	0.926	0.983	0.682	0.000	0.717	0.937	0.825	0.250	0.983
	0.909				0.853				0.985				0.935				
	1%	1%	3%	#DIV/0!	2%	0%	2%	#DIV/0!	4%	5%	3%	#DIV/0!	0%	3%	3%	0%	
	2%	0%	0%	#DIV/0!	0%	0%	3%	#DIV/0!	1%	1%	5%	#DIV/0!	0%	1%	0%	0%	

National Data & Surveying Services

Intersection Turning Movement Count

Location: Catalina Blvd & Howland Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-005
Date: 1/18/2024

Data - Cars

NS/EW Streets:	Catalina Blvd				Catalina Blvd				Howland Blvd				Howland Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	16	8	5	0	13	12	129	0	23	102	9	0	5	229	15	0	566
7:15 AM	14	14	7	0	27	13	145	0	28	133	9	0	6	240	23	0	659
7:30 AM	26	41	7	0	38	31	122	0	14	129	5	0	8	242	22	1	686
7:45 AM	31	28	9	0	39	35	104	0	41	113	11	0	9	230	20	0	670
8:00 AM	34	22	10	0	18	18	107	0	28	113	5	0	5	239	8	0	607
8:15 AM	17	9	11	0	10	14	112	0	34	122	6	0	10	202	9	0	556
8:30 AM	15	20	8	0	10	16	96	0	49	150	12	0	10	205	5	1	597
8:45 AM	18	11	5	0	15	16	80	0	26	131	8	0	4	165	5	0	484
TOTAL VOLUMES :	NL 171	NT 153	NR 62	NU 0	SL 170	ST 155	SR 895	SU 0	EL 243	ET 993	ER 65	EU 0	WL 57	WT 1752	WR 107	WU 2	TOTAL 4825
APPROACH %'s :	44.30%	39.64%	16.06%	0.00%	13.93%	12.70%	73.36%	0.00%	18.68%	76.33%	5.00%	0.00%	2.97%	91.35%	5.58%	0.10%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	105	105	33	0	122	97	478	0	111	488	30	0	28	951	73	1	2622
PEAK HR FACTOR :	0.772	0.640	0.825	0.000	0.782	0.693	0.824	0.000	0.677	0.917	0.682	0.000	0.778	0.982	0.793	0.250	0.956
	0.821				0.912				0.925				0.964				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	16	10	4	0	29	20	50	0	88	256	10	0	10	155	19	2	669
4:15 PM	15	27	12	0	28	25	66	0	101	248	7	0	11	138	13	0	691
4:30 PM	16	24	9	0	21	18	60	0	101	227	12	0	10	148	24	2	672
4:45 PM	12	25	10	0	20	19	68	0	94	255	12	0	11	159	11	0	696
5:00 PM	11	23	7	0	32	16	44	0	88	273	22	0	10	143	19	0	688
5:15 PM	10	21	6	0	27	22	57	0	96	269	12	0	14	151	20	2	707
5:30 PM	8	24	2	0	25	16	72	0	106	265	11	0	15	161	15	0	720
5:45 PM	15	17	4	0	40	31	57	0	105	272	12	0	4	148	12	0	717
TOTAL VOLUMES :	NL 103	NT 171	NR 54	NU 0	SL 222	ST 167	SR 474	SU 0	EL 779	ET 2065	ER 98	EU 0	WL 85	WT 1203	WR 133	WU 6	TOTAL 5560
APPROACH %'s :	31.40%	52.13%	16.46%	0.00%	25.72%	19.35%	54.92%	0.00%	26.48%	70.19%	3.33%	0.00%	5.96%	84.30%	9.32%	0.42%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	44	85	19	0	124	85	230	0	395	1079	57	0	43	603	66	2	2832
PEAK HR FACTOR :	0.733	0.885	0.679	0.000	0.775	0.685	0.799	0.000	0.932	0.988	0.648	0.000	0.717	0.936	0.825	0.250	0.983
	0.902				0.857				0.984				0.935				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Catalina Blvd & Howland Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-005
Date: 1/18/2024

Data - HT

NS/EW Streets:	Catalina Blvd				Catalina Blvd				Howland Blvd				Howland Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	1	1	0	0	0	0	2	0	0	3	1	0	0	1	1	0	10
7:15 AM	1	1	0	0	1	0	2	0	0	6	1	0	0	5	0	0	17
7:30 AM	0	0	0	0	1	0	0	0	2	3	0	0	0	8	1	0	15
7:45 AM	0	0	0	0	0	0	3	0	0	1	0	0	0	3	0	0	7
8:00 AM	0	0	1	0	0	0	4	0	3	15	0	0	0	10	1	0	34
8:15 AM	1	0	0	0	0	0	2	0	0	7	1	0	0	7	1	0	19
8:30 AM	1	2	0	0	0	2	0	0	1	6	0	0	0	8	0	0	20
8:45 AM	0	0	0	0	0	2	4	0	3	3	0	0	0	2	0	0	14
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	4	4	1	0	2	4	17	0	9	44	3	0	0	44	4	0	136
	44.44%	44.44%	11.11%	0.00%	8.70%	17.39%	73.91%	0.00%	16.07%	78.57%	5.36%	0.00%	0.00%	91.67%	8.33%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	1	1	1	0	2	0	9	0	5	25	1	0	0	26	2	0	73
PEAK HR FACTOR :	0.250	0.250	0.250	0.000	0.500	0.000	0.563	0.000	0.417	0.417	0.250	0.000	0.000	0.650	0.500	0.000	0.537
	0.375				0.688				0.431				0.636				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	1	0	0	3	0	1	0	4	5	1	0	0	2	1	0	18
4:15 PM	0	1	0	0	1	0	1	0	0	7	0	0	0	7	1	0	18
4:30 PM	1	1	0	0	0	0	1	0	0	2	0	0	0	1	0	0	6
4:45 PM	0	0	0	0	2	1	1	0	4	3	1	0	0	5	1	0	18
5:00 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
5:15 PM	0	0	0	0	0	0	2	0	3	2	2	0	0	4	0	0	13
5:30 PM	1	0	0	0	0	0	3	0	2	0	1	0	0	2	0	0	9
5:45 PM	0	0	0	0	0	0	3	0	0	4	0	0	0	2	0	0	9
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	2	3	0	0	6	1	12	0	13	27	5	0	0	23	3	0	95
	40.00%	60.00%	0.00%	0.00%	31.58%	5.26%	63.16%	0.00%	28.89%	60.00%	11.11%	0.00%	0.00%	88.46%	11.54%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	1	0	0	0	0	0	8	0	5	10	3	0	0	8	0	0	35
PEAK HR FACTOR :	0.250	0.000	0.000	0.000	0.000	0.000	0.667	0.000	0.417	0.625	0.375	0.000	0.000	0.500	0.000	0.000	0.673
	0.250				0.667				0.643				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Catalina Blvd & Howland Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-005
Date: 1/18/2024

Data - Bikes

NS/EW Streets:	Catalina Blvd				Catalina Blvd				Howland Blvd				Howland Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
TOTAL VOLUMES : APPROACH %'s :	NL 0	NT 0	NR 0	NU 0	SL 0	ST 0	SR 1	SU 0	EL 0	ET 0	ER 0	EU 0	WL 0	WT 1	WR 0	WU 0	TOTAL 2
PEAK HR :	07:15 AM - 08:15 AM				0.00% 0.00% 100.00% 0.00%								0.00% 100.00% 0.00% 0.00%				TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:30 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
TOTAL VOLUMES : APPROACH %'s :	NL 0	NT 1	NR 0	NU 0	SL 0	ST 0	SR 0	SU 0	EL 0	ET 4	ER 0	EU 0	WL 0	WT 0	WR 1	WU 0	TOTAL 6
PEAK HR :	05:00 PM - 06:00 PM				0.00% 100.00% 0.00% 0.00%				0.00% 100.00% 0.00% 0.00%				0.00% 0.00% 100.00% 0.00%				TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	0	0	3	0	0	0	0	1	0	5
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.250	0.000	0.625

National Data & Surveying Services

Intersection Turning Movement Count

Location: Catalina Blvd & Howland Blvd
City: Deltona

Project ID: 24-130025-005
Date: 1/18/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Catalina Blvd		Catalina Blvd		Howland Blvd		Howland Blvd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	1	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	0	1	0	0	0	0	0	0	1
	0.00%	100.00%							
PEAK HR :	07:15 AM - 08:15 AM								TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	0	1
PEAK HR FACTOR :		0.250							0.250
		0.250							

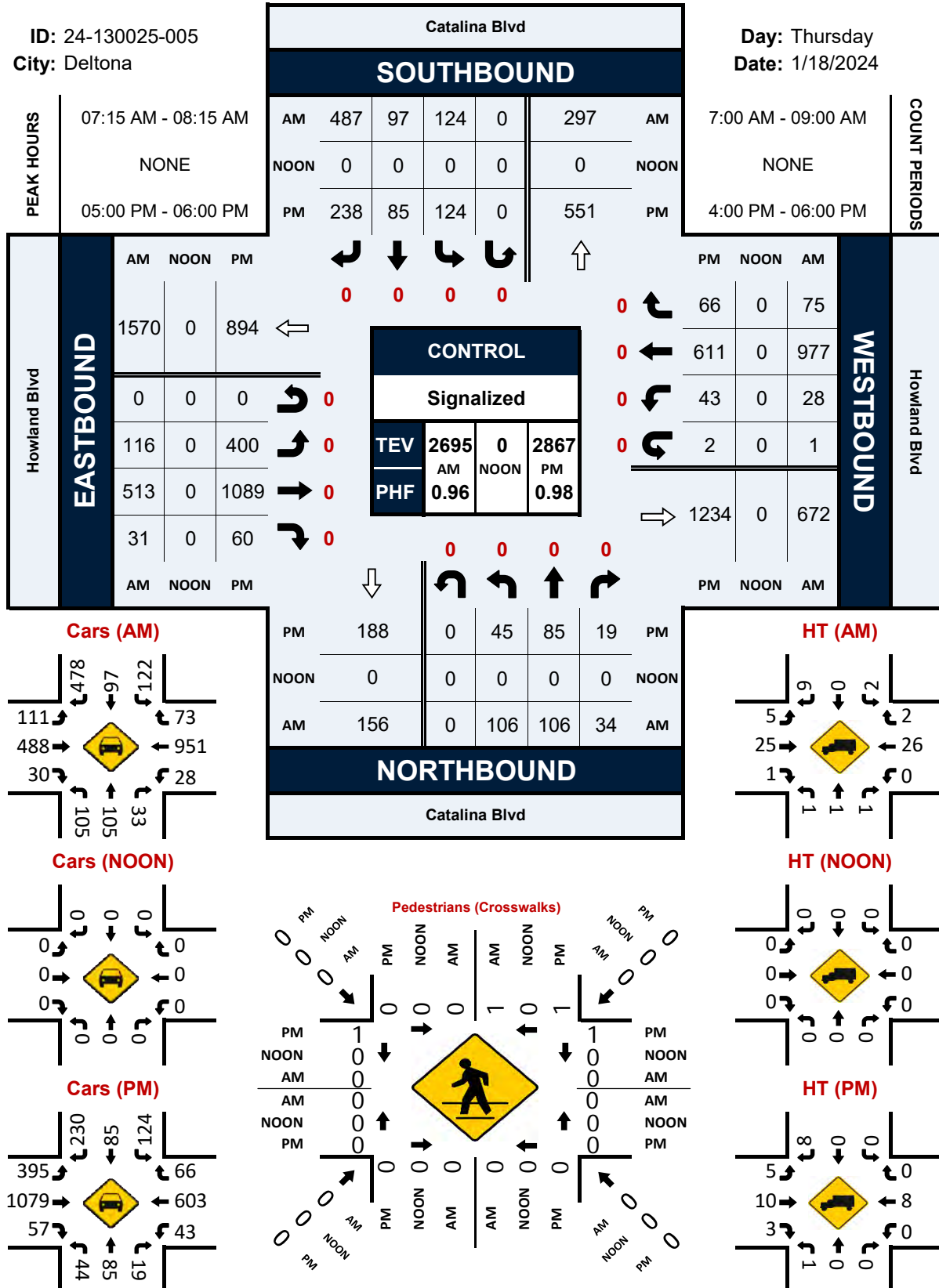
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	3	0	1	0	0	0	0	0	4
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	2	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	1	0	0	0	1	0	1	3
5:45 PM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	3	1	1	0	2	1	0	1	9
	75.00%	25.00%	100.00%	0.00%	66.67%	33.33%	0.00%	100.00%	
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	0	1	0	0	0	1	0	1	3
PEAK HR FACTOR :		0.250				0.250		0.250	0.250
		0.250			0.250		0.250		

Catalina Blvd & Howland Blvd

Peak Hour Turning Movement Count

ID: 24-130025-005
City: Deltona

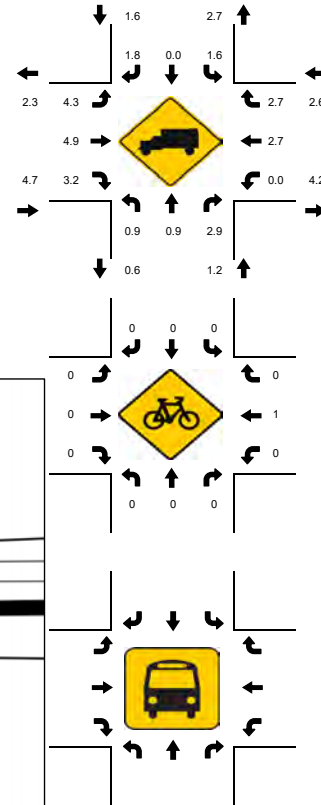
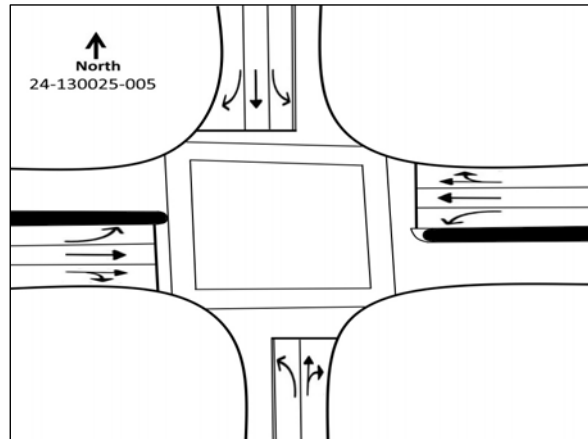
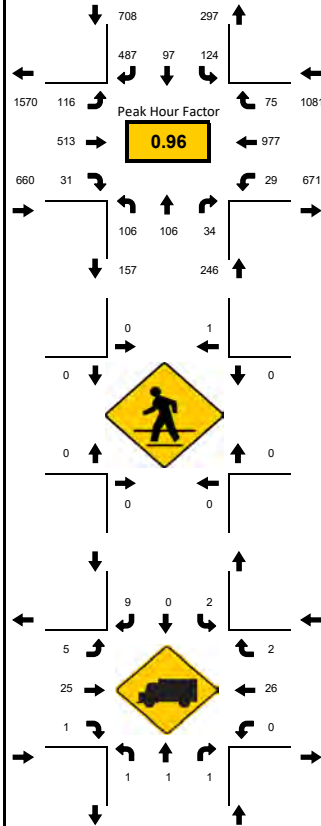
Day: Thursday
Date: 1/18/2024



LOCATION: Catalina Blvd & Howland Blvd
CITY/STATE: Deltona, FL

PROJECT ID: 24-130025-005
DATE: Thu, Jan 18, 2024

Peak-Hour: 07:15 AM - 08:15 AM
Peak 15-Minute: 07:30 AM - 07:45 AM

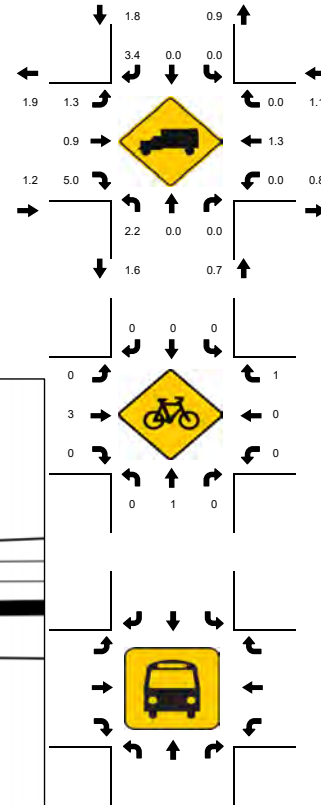
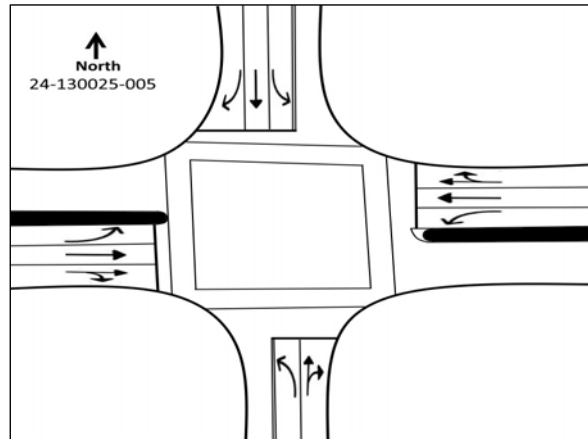
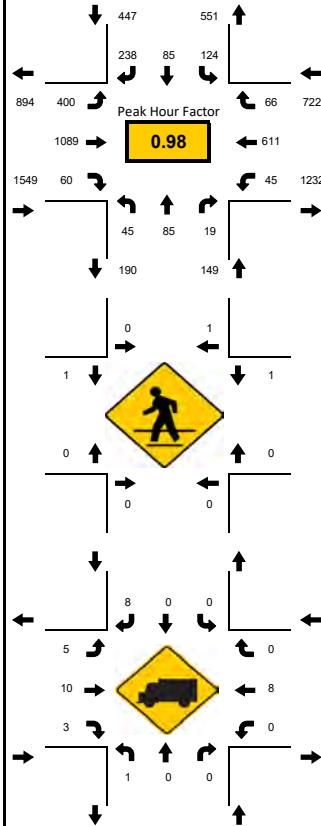


15-Min Count Period Beginning At	Catalina Blvd Northbound					Catalina Blvd Southbound					Howland Blvd Eastbound					Howland Blvd Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
7:00 AM	17	9	5	0		13	12	131	0		23	105	10	0		5	230	16	0		576	2630
7:15 AM	15	15	7	0		28	13	147	0		28	139	10	0		6	245	23	0		676	2695
7:30 AM	26	41	7	0		39	31	122	0		16	132	5	0		8	250	23	1		701	2594
7:45 AM	31	28	9	0		39	35	107	0		41	114	11	0		9	233	20	0		677	2510
8:00 AM	34	22	11	0		18	18	111	0		31	128	5	0		5	249	9	0		641	2331
8:15 AM	18	9	11	0		10	14	114	0		34	129	7	0		10	209	10	0		575	1690
8:30 AM	16	22	8	0		10	18	96	0		50	156	12	0		10	213	5	1		617	1115
8:45 AM	18	11	5	0		15	18	84	0		29	134	8	0		4	167	5	0		498	498
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	136	164	44	0		156	140	588	0		164	556	44	0		36	1000	92	4		3124	
Heavy Trucks	4	4	4	0		4	0	16	0		12	60	4	0		0	40	4	0		152	
Pedestrians		0					4					0					0				4	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	4	0	0		4	
Buses																						
Stopped Buses																						

LOCATION: Catalina Blvd & Howland Blvd
CITY/STATE: Deltona, FL

PROJECT ID: 24-130025-005
DATE: Thu, Jan 18, 2024

Peak-Hour: 05:00 PM - 06:00 PM
Peak 15-Minute: 05:30 PM - 05:45 PM



15-Min Count Period Beginning At	Catalina Blvd Northbound					Catalina Blvd Southbound					Howland Blvd Eastbound					Howland Blvd Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	16	11	4	0		32	20	51	0		92	261	11	0		10	157	20	2		687	2788
4:15 PM	15	28	12	0		29	25	67	0		101	255	7	0		11	145	14	0		709	2793
4:30 PM	17	25	9	0		21	18	61	0		101	229	12	0		10	149	24	2		678	2804
4:45 PM	12	25	10	0		22	20	69	0		98	258	13	0		11	164	12	0		714	2855
5:00 PM	11	23	7	0		32	16	44	0		88	277	22	0		10	143	19	0		692	2867
5:15 PM	10	21	6	0		27	22	59	0		99	271	14	0		14	155	20	2		720	2175
5:30 PM	9	24	2	0		25	16	75	0		108	265	12	0		15	163	15	0		729	1455
5:45 PM	15	17	4	0		40	31	60	0		105	276	12	0		4	150	12	0		726	726
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	60	96	28	0		160	124	300	0		432	1108	88	0		60	652	80	8		3196	
Heavy Trucks	4	0	0	0		0	0	12	0		12	16	8	0		0	16	0	0		68	
Pedestrians		0						4				4					4				12	
Bicycles	0	4	0	0		0	0	0	0		0	4	0	0		0	0	4	0		12	
Buses																						
Stopped Buses																						

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & Catalina Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-004
Date: 1/18/2024

Data - Total

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				Catalina Blvd				Catalina Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	107	81	0	0	0	33	37	0	14	0	16	0	0	0	0	0	288
7:15 AM	116	109	0	0	0	34	42	0	11	0	28	0	0	0	0	0	340
7:30 AM	106	113	0	0	0	51	53	0	19	0	26	0	0	0	0	0	368
7:45 AM	89	81	0	0	0	81	47	0	10	0	37	0	0	0	0	0	345
8:00 AM	69	61	0	0	0	29	40	0	18	0	40	0	0	0	0	0	257
8:15 AM	80	48	0	0	0	33	42	0	13	0	38	0	0	0	0	0	254
8:30 AM	65	53	0	0	0	28	25	0	25	0	36	0	0	0	0	0	232
8:45 AM	65	39	0	0	0	29	30	0	10	0	29	0	0	0	0	0	202
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	697	585	0	0	0	318	316	0	120	0	250	0	0	0	0	0	2286
	54.37%	45.63%	0.00%	0.00%	0.00%	50.16%	49.84%	0.00%	32.43%	0.00%	67.57%	0.00%	0	0	0	0	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	418	384	0	0	0	199	179	0	54	0	107	0	0	0	0	0	1341
PEAK HR FACTOR :	0.901	0.850	0.000	0.000	0.000	0.614	0.844	0.000	0.711	0.000	0.723	0.000	0.000	0.000	0.000	0.000	0.911
	0.891				0.738				0.856								
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	56	46	0	0	0	58	23	0	25	0	68	0	0	0	0	0	276
4:15 PM	57	41	0	0	0	85	25	0	43	0	86	0	0	0	0	0	337
4:30 PM	44	50	0	0	0	62	22	0	28	0	89	0	0	0	0	0	295
4:45 PM	48	40	0	0	0	81	24	0	29	0	76	0	0	0	0	0	298
5:00 PM	43	44	0	0	0	73	20	0	46	0	76	0	0	0	0	0	302
5:15 PM	51	38	0	0	0	111	23	0	34	0	97	0	0	0	0	0	354
5:30 PM	42	45	0	0	0	93	24	0	37	0	84	0	0	0	0	0	325
5:45 PM	59	39	0	0	0	78	26	0	52	0	79	0	0	0	0	0	333
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	400	343	0	0	0	641	187	0	294	0	655	0	0	0	0	0	2520
	53.84%	46.16%	0.00%	0.00%	0.00%	77.42%	22.58%	0.00%	30.98%	0.00%	69.02%	0.00%	0	0	0	0	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	195	166	0	0	0	355	93	0	169	0	336	0	0	0	0	0	1314
PEAK HR FACTOR :	0.826	0.922	0.000	0.000	0.000	0.800	0.894	0.000	0.813	0.000	0.866	0.000	0.000	0.000	0.000	0.000	0.928
	0.921				0.836				0.964								

1% 3% #DIV/0! #DIV/0! #DIV/0! 5% 1% #DIV/0! 0% #DIV/0! 3% #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0!

5% 2% #DIV/0! #DIV/0! #DIV/0! 3% 4% #DIV/0! 1% #DIV/0! 2% #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0!

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & Catalina Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-004
Date: 1/18/2024

Data - Cars

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				Catalina Blvd				Catalina Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	107	80	0	0	0	31	37	0	14	0	15	0	0	0	0	0	284
7:15 AM	114	106	0	0	0	31	42	0	11	0	28	0	0	0	0	0	332
7:30 AM	105	110	0	0	0	49	52	0	19	0	25	0	0	0	0	0	360
7:45 AM	88	76	0	0	0	78	46	0	10	0	36	0	0	0	0	0	334
8:00 AM	67	59	0	0	0	28	40	0	18	0	38	0	0	0	0	0	250
8:15 AM	78	48	0	0	0	31	42	0	12	0	37	0	0	0	0	0	248
8:30 AM	65	50	0	0	0	28	24	0	23	0	36	0	0	0	0	0	226
8:45 AM	61	37	0	0	0	25	26	0	10	0	27	0	0	0	0	0	186
TOTAL VOLUMES :	NL 685	NT 566	NR 0	NU 0	SL 0	ST 301	SR 309	SU 0	EL 117	ET 0	ER 242	EU 0	WL 0	WT 0	WR 0	WU 0	TOTAL 2220
APPROACH %'s :	54.76%	45.24%	0.00%	0.00%	0.00%	49.34%	50.66%	0.00%	32.59%	0.00%	67.41%	0.00%					
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	414	372	0	0	0	189	177	0	54	0	104	0	0	0	0	0	1310
PEAK HR FACTOR :	0.908	0.845	0.000	0.000	0.000	0.606	0.851	0.000	0.711	0.000	0.722	0.000	0.000	0.000	0.000	0.000	0.910
	0.893				0.738				0.859								
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	53	43	0	0	0	55	22	0	24	0	65	0	0	0	0	0	262
4:15 PM	56	61	0	0	0	38	25	0	41	0	85	0	0	0	0	0	328
4:30 PM	43	48	0	0	0	61	21	0	27	0	87	0	0	0	0	0	287
4:45 PM	47	36	0	0	0	79	23	0	28	0	73	0	0	0	0	0	286
5:00 PM	43	42	0	0	0	71	17	0	44	0	76	0	0	0	0	0	293
5:15 PM	47	38	0	0	0	105	23	0	34	0	97	0	0	0	0	0	344
5:30 PM	37	45	0	0	0	90	24	0	37	0	80	0	0	0	0	0	313
5:45 PM	58	38	0	0	0	78	25	0	52	0	76	0	0	0	0	0	327
TOTAL VOLUMES :	NL 384	NT 328	NR 0	NU 0	SL 0	ST 622	SR 180	SU 0	EL 287	ET 0	ER 639	EU 0	WL 0	WT 0	WR 0	WU 0	TOTAL 2440
APPROACH %'s :	53.93%	46.07%	0.00%	0.00%	0.00%	77.56%	22.44%	0.00%	30.99%	0.00%	69.01%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	185	163	0	0	0	344	89	0	167	0	329	0	0	0	0	0	1277
PEAK HR FACTOR :	0.797	0.906	0.000	0.000	0.000	0.819	0.890	0.000	0.803	0.000	0.848	0.000	0.000	0.000	0.000	0.000	0.928
	0.906				0.846				0.947								

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & Catalina Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-004
Date: 1/18/2024

Data - HT

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				Catalina Blvd				Catalina Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	1	0	0	0	2	0	0	0	0	1	0	0	0	0	0	4
7:15 AM	2	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	8
7:30 AM	1	3	0	0	0	2	1	0	0	0	1	0	0	0	0	0	8
7:45 AM	1	5	0	0	0	3	1	0	0	0	1	0	0	0	0	0	11
8:00 AM	2	2	0	0	0	1	0	0	0	0	2	0	0	0	0	0	7
8:15 AM	2	0	0	0	0	2	0	0	1	0	1	0	0	0	0	0	6
8:30 AM	0	3	0	0	0	0	1	0	2	0	0	0	0	0	0	0	6
8:45 AM	4	2	0	0	0	4	4	0	0	0	2	0	0	0	0	0	16
TOTAL VOLUMES :	NL 12	NT 19	NR 0	NU 0	SL 0	ST 17	SR 7	SU 0	EL 3	ET 0	ER 8	EU 0	WL 0	WT 0	WR 0	WU 0	TOTAL 66
APPROACH %'s :	38.71%	61.29%	0.00%	0.00%	0.00%	70.83%	29.17%	0.00%	27.27%	0.00%	72.73%	0.00%					
PEAK HR :	07:00 AM - 08:00 AM																TOTAL 31
PEAK HR VOL :	4	12	0	0	0	10	2	0	0	0	3	0	0	0	0	0	0.705
PEAK HR FACTOR :	0.500	0.600	0.000	0.000	0.000	0.833	0.500	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	
	0.667				0.750				0.750								
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	3	3	0	0	0	3	1	0	1	0	3	0	0	0	0	0	14
4:15 PM	1	3	0	0	0	2	0	0	2	0	1	0	0	0	0	0	9
4:30 PM	1	2	0	0	0	1	1	0	1	0	2	0	0	0	0	0	8
4:45 PM	1	4	0	0	0	2	1	0	1	0	3	0	0	0	0	0	12
5:00 PM	0	2	0	0	0	2	3	0	2	0	0	0	0	0	0	0	9
5:15 PM	4	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	10
5:30 PM	5	0	0	0	0	3	0	0	0	0	4	0	0	0	0	0	12
5:45 PM	1	1	0	0	0	0	1	0	0	0	3	0	0	0	0	0	6
TOTAL VOLUMES :	NL 16	NT 15	NR 0	NU 0	SL 0	ST 19	SR 7	SU 0	EL 7	ET 0	ER 16	EU 0	WL 0	WT 0	WR 0	WU 0	TOTAL 80
APPROACH %'s :	51.61%	48.39%	0.00%	0.00%	0.00%	73.08%	26.92%	0.00%	30.43%	0.00%	69.57%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL 37
PEAK HR VOL :	10	3	0	0	0	11	4	0	2	0	7	0	0	0	0	0	0.771
PEAK HR FACTOR :	0.500	0.375	0.000	0.000	0.000	0.458	0.333	0.000	0.250	0.000	0.438	0.000	0.000	0.000	0.000	0.000	
	0.650				0.625				0.563								

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & Catalina Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-004
Date: 1/18/2024

Data - Bikes

NS/EW Streets:		Lake Helen Osteen Rd				Lake Helen Osteen Rd				Catalina Blvd				Catalina Blvd				
AM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
		0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :		NL 1	NT 0	NR 0	NU 0	SL 0	ST 0	SR 0	SU 0	EL 0	ET 0	ER 0	EU 0	WL 0	WT 0	WR 0	WU 0	TOTAL 1
APPROACH %'s :		100.00%	0.00%	0.00%	0.00%													
PEAK HR :		07:00 AM - 08:00 AM				0	0	0	0	0	0	0	0	0	0	0	0	TOTAL 0
PEAK HR VOL :		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PEAK HR FACTOR :		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
		0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :		NL 0	NT 2	NR 0	NU 0	SL 0	ST 0	SR 0	SU 0	EL 0	ET 0	ER 0	EU 0	WL 0	WT 0	WR 0	WU 0	TOTAL 2
APPROACH %'s :		0.00%	100.00%	0.00%	0.00%													
PEAK HR :		05:00 PM - 06:00 PM				0	0	0	0	0	0	0	0	0	0	0	0	TOTAL 0
PEAK HR VOL :		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PEAK HR FACTOR :		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & Catalina Blvd
City: Deltona

Project ID: 24-130025-004
Date: 1/18/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Lake Helen Osteen Rd		Lake Helen Osteen Rd		Catalina Blvd		Catalina Blvd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	0	0	0	0	0	0	0	0	0
PEAK HR :	07:00 AM - 08:00 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

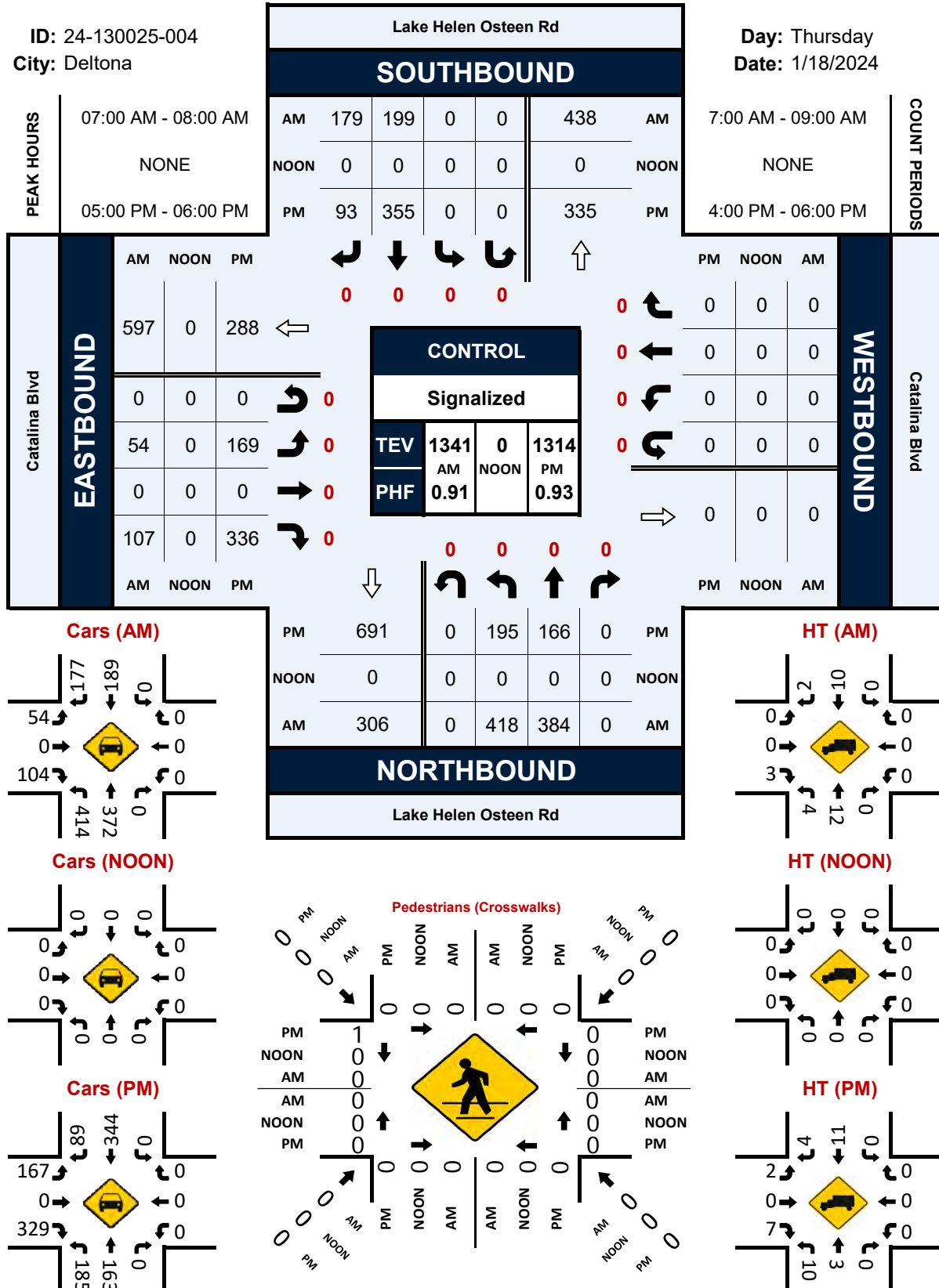
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	1	0	1
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	1	1
5:45 PM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	0	0	0	0	0	0	1 50.00%	1 50.00%	2
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	1	1
PEAK HR FACTOR :							0.250	0.250	0.250

Lake Helen Osteen Rd & Catalina Blvd

Peak Hour Turning Movement Count

ID: 24-130025-004
City: Deltona

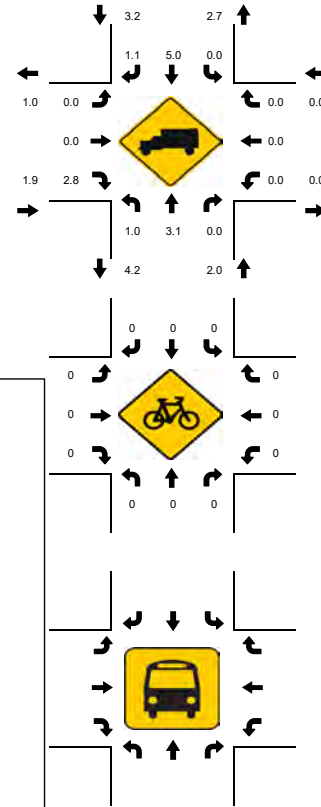
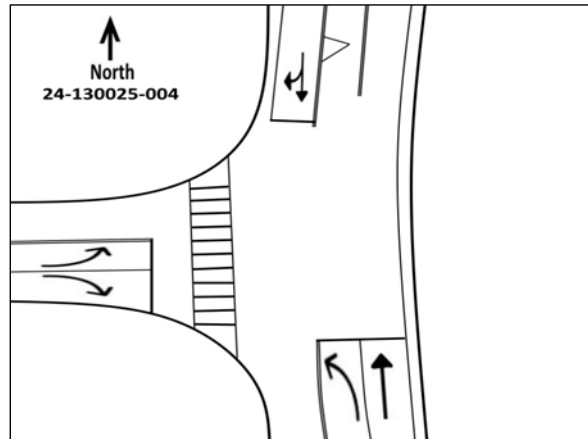
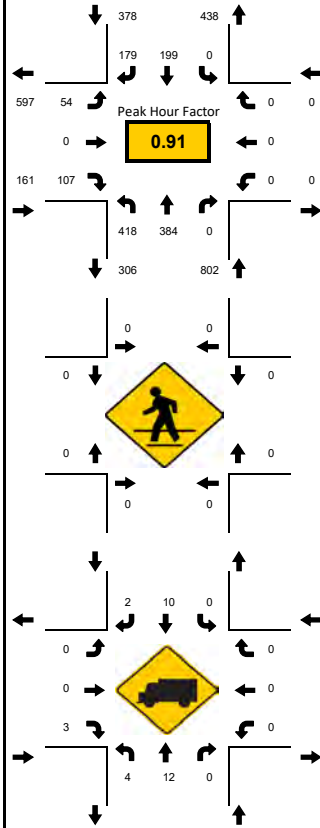
Day: Thursday
Date: 1/18/2024



LOCATION: Lake Helen Osteen Rd & Catalina Blvd
CITY/STATE: Deltona, FL

PROJECT ID: 24-130025-004
DATE: Thu, Jan 18, 2024

Peak-Hour: 07:00 AM - 08:00 AM
Peak 15-Minute: 07:30 AM - 07:45 AM

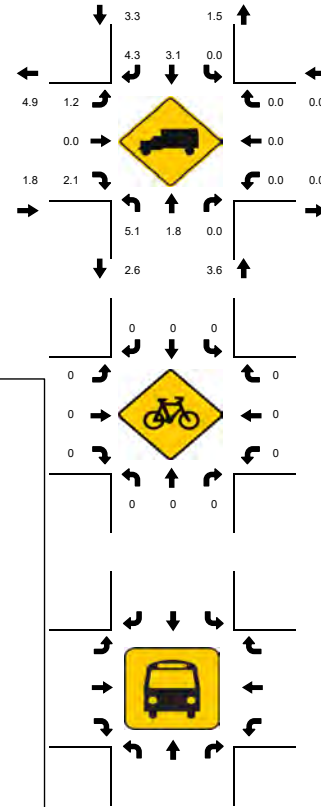
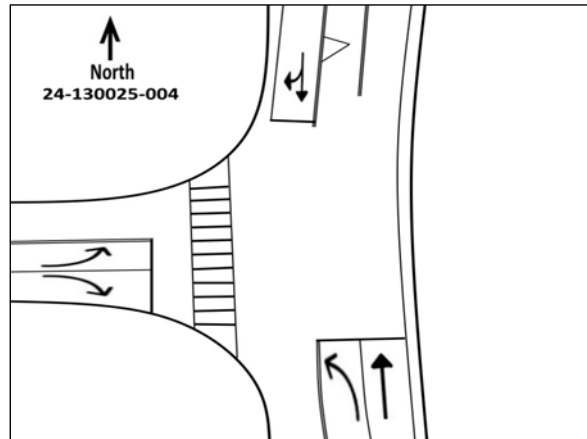
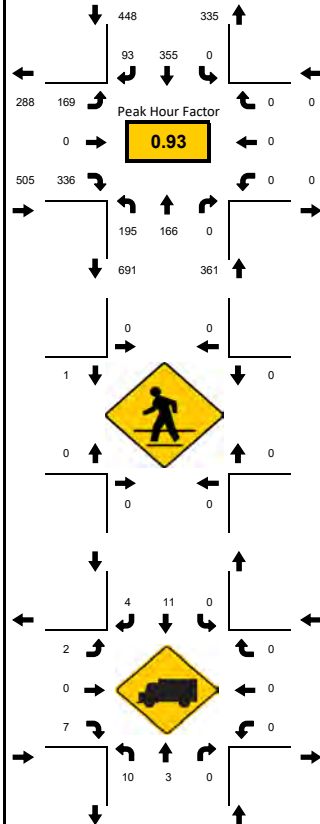


15-Min Count Period Beginning At	Lake Helen Osteen Rd Northbound					Lake Helen Osteen Rd Southbound					Catalina Blvd Eastbound					Catalina Blvd Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
7:00 AM	107	81	0	0	0	0	33	37	0	0	14	0	16	0	0	0	0	0	0	0	288	1341
7:15 AM	116	109	0	0	0	0	34	42	0	0	11	0	28	0	0	0	0	0	0	0	340	1310
7:30 AM	106	113	0	0	0	0	51	53	0	0	19	0	26	0	0	0	0	0	0	0	368	1224
7:45 AM	89	81	0	0	0	0	81	47	0	0	10	0	37	0	0	0	0	0	0	0	345	1088
8:00 AM	69	61	0	0	0	0	29	40	0	0	18	0	40	0	0	0	0	0	0	0	257	945
8:15 AM	80	48	0	0	0	0	33	42	0	0	13	0	38	0	0	0	0	0	0	0	254	688
8:30 AM	65	53	0	0	0	0	28	25	0	0	25	0	36	0	0	0	0	0	0	0	232	434
8:45 AM	65	39	0	0	0	0	29	30	0	0	10	0	29	0	0	0	0	0	0	0	202	202
Peak 15-Min Flowrates	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Total	
All Vehicles	464	452	0	0	0	0	324	212	0	0	76	0	148	0	0	0	0	0	0	0	1676	
Heavy Trucks	8	20	0	0	0	0	12	4	0	0	0	0	4	0	0	0	0	0	0	0	48	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

LOCATION: Lake Helen Osteen Rd & Catalina Blvd
CITY/STATE: Deltona, FL

PROJECT ID: 24-130025-004
DATE: Thu, Jan 18, 2024

Peak-Hour: 05:00 PM - 06:00 PM
Peak 15-Minute: 05:15 PM - 05:30 PM



15-Min Count Period Beginning At	Lake Helen Osteen Rd Northbound					Lake Helen Osteen Rd Southbound					Catalina Blvd Eastbound					Catalina Blvd Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	56	46	0	0		0	58	23	0		25	0	68	0		0	0	0	0		276	1206
4:15 PM	57	41	0	0		0	85	25	0		43	0	86	0		0	0	0	0		337	1232
4:30 PM	44	50	0	0		0	62	22	0		28	0	89	0		0	0	0	0		295	1249
4:45 PM	48	40	0	0		0	81	24	0		29	0	76	0		0	0	0	0		298	1279
5:00 PM	43	44	0	0		0	73	20	0		46	0	76	0		0	0	0	0		302	1314
5:15 PM	51	38	0	0		0	111	23	0		34	0	97	0		0	0	0	0		354	1012
5:30 PM	42	45	0	0		0	93	24	0		37	0	84	0		0	0	0	0		325	658
5:45 PM	59	39	0	0		0	78	26	0		52	0	79	0		0	0	0	0		333	333
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	236	180	0	0		0	444	104	0		208	0	388	0		0	0	0	0		1560	
Heavy Trucks	20	8	0	0		0	24	12	0		8	0	16	0		0	0	0	0		88	
Pedestrians		0					0					4					0				4	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	
Buses																						
Stopped Buses																						

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & New Hope Baptist Church N Dwy
City: Deltona
Control: 1-Way Stop(WB)

Project ID: 24-130025-003
Date: 1/18/2024

Data - Total

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				New Hope Baptist Church N Dwy				New Hope Baptist Church N Dwy					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	TOTAL	
	7:00 AM	0	104	0	0	0	38	0	0	0	0	0	0	1	0	0	0	143
	7:15 AM	0	124	0	0	0	41	0	0	0	0	0	1	0	1	0	167	
	7:30 AM	0	137	0	0	0	66	0	0	0	0	0	0	0	4	0	207	
	7:45 AM	0	99	0	0	0	85	0	0	0	0	0	1	0	2	0	187	
	8:00 AM	0	80	0	0	0	44	0	0	0	0	0	0	0	0	0	124	
	8:15 AM	0	58	0	0	0	56	0	0	0	0	0	2	0	2	0	118	
	8:30 AM	0	67	0	0	0	45	0	0	0	0	0	1	0	3	0	116	
	8:45 AM	0	60	0	0	0	36	0	0	0	0	0	2	0	0	0	98	
TOTAL VOLUMES : APPROACH %'s :	NL 0 0.00%	NT 729 100.00%	NR 0 0.00%	NU 0 0.00%	SL 0 0.00%	ST 411 100.00%	SR 0 0.00%	SU 0 0.00%	EL 0 0.00%	ET 0 0.00%	ER 0 0.00%	EU 0 0.00%	WL 8 40.00%	WT 0 0.00%	WR 12 60.00%	WU 0 0.00%	TOTAL 1160	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL	
PEAK HR VOL :	0	464	0	0	0	230	0	0	0	0	0	0	3	0	7	0	704	
PEAK HR FACTOR :	0.000	0.847	0.000	0.000	0.000	0.676	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.438	0.000	0.850	
				0.847				0.676				0.625						
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	TOTAL	
	4:00 PM	0	67	0	0	0	72	0	0	0	0	0	1	0	0	0	140	
	4:15 PM	0	71	0	0	0	109	0	0	0	0	0	2	0	1	0	183	
	4:30 PM	0	66	0	0	0	81	0	0	0	0	0	3	0	2	0	152	
	4:45 PM	0	64	0	0	0	90	0	0	0	0	0	1	0	0	0	155	
	5:00 PM	0	66	0	0	0	87	0	0	0	0	0	2	0	2	0	157	
	5:15 PM	0	55	0	0	0	145	0	0	0	0	0	2	0	2	0	204	
	5:30 PM	0	73	0	0	0	112	0	0	0	0	0	1	0	2	0	188	
	5:45 PM	0	64	0	0	0	92	0	0	0	0	0	0	0	0	0	156	
TOTAL VOLUMES : APPROACH %'s :	NL 0 0.00%	NT 526 100.00%	NR 0 0.00%	NU 0 0.00%	SL 0 0.00%	ST 788 100.00%	SR 0 0.00%	SU 0 0.00%	EL 0 0.00%	ET 0 0.00%	ER 0 0.00%	EU 0 0.00%	WL 12 57.14%	WT 0 0.00%	WR 9 42.86%	WU 0 0.00%	TOTAL 1335	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL	
PEAK HR VOL :	0	258	0	0	0	436	0	0	0	0	0	0	5	0	6	0	705	
PEAK HR FACTOR :	0.000	0.884	0.000	0.000	0.000	0.752	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.750	0.000	0.864	
				0.884				0.752				0.688						
#DIV/0!		3%	#DIV/0!	#DIV/0!	#DIV/0!	4%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0%	#DIV/0!	0%	#DIV/0!		
#DIV/0!		2%	#DIV/0!	#DIV/0!	#DIV/0!	3%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0%	#DIV/0!	17%	#DIV/0!		

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & New Hope Baptist Church N Dwy
City: Deltona
Control: 1-Way Stop(WB)

Project ID: 24-130025-003
Date: 1/18/2024

Data - Cars

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				New Hope Baptist Church N Dwy				New Hope Baptist Church N Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	103	0	0	0	38	0	0	0	0	0	0	1	0	0	0	142
7:15 AM	0	119	0	0	0	39	0	0	0	0	0	0	1	0	1	0	160
7:30 AM	0	134	0	0	0	63	0	0	0	0	0	0	0	0	4	0	201
7:45 AM	0	96	0	0	0	80	0	0	0	0	0	0	1	0	2	0	179
8:00 AM	0	75	0	0	0	41	0	0	0	0	0	0	0	0	0	0	116
8:15 AM	0	57	0	0	0	53	0	0	0	0	0	0	2	0	2	0	114
8:30 AM	0	65	0	0	0	44	0	0	0	0	0	0	1	0	3	0	113
8:45 AM	0	57	0	0	0	30	0	0	0	0	0	0	2	0	0	0	89
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	706	0	0	0	388	0	0	0	0	0	0	8	0	12	0	1114
	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					40.00%	0.00%	60.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	452	0	0	0	220	0	0	0	0	0	0	3	0	7	0	682
PEAK HR FACTOR :	0.000	0.843	0.000	0.000	0.000	0.688	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.438	0.000	0.848
	0.843				0.688								0.625				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	64	0	0	0	68	0	0	0	0	0	0	1	0	0	0	133
4:15 PM	0	67	0	0	0	107	0	0	0	0	0	0	2	0	1	0	177
4:30 PM	0	65	0	0	0	80	0	0	0	0	0	0	3	0	2	0	150
4:45 PM	0	61	0	0	0	89	0	0	0	0	0	0	1	0	0	0	151
5:00 PM	0	65	0	0	0	86	0	0	0	0	0	0	2	0	1	0	154
5:15 PM	0	53	0	0	0	140	0	0	0	0	0	0	2	0	2	0	197
5:30 PM	0	71	0	0	0	107	0	0	0	0	0	0	1	0	2	0	181
5:45 PM	0	64	0	0	0	92	0	0	0	0	0	0	1	0	0	0	156
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	510	0	0	0	769	0	0	0	0	0	0	12	0	8	0	1299
	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					60.00%	0.00%	40.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	253	0	0	0	425	0	0	0	0	0	0	5	0	5	0	688
PEAK HR FACTOR :	0.000	0.891	0.000	0.000	0.000	0.759	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.625	0.000	0.873
	0.891				0.759								0.625				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & New Hope Baptist Church N Dwy
City: Deltona
Control: 1-Way Stop(WB)

Project ID: 24-130025-003
Date: 1/18/2024

Data - HT

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				New Hope Baptist Church N Dwy				New Hope Baptist Church N Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0	0	7
7:30 AM	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6
7:45 AM	0	3	0	0	0	5	0	0	0	0	0	0	0	0	0	0	8
8:00 AM	0	5	0	0	0	3	0	0	0	0	0	0	0	0	0	0	8
8:15 AM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
8:30 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
8:45 AM	0	3	0	0	0	6	0	0	0	0	0	0	0	0	0	0	9
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	23	0	0	0	23	0	0	0	0	0	0	0	0	0	0	46
	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	12	0	0	0	10	0	0	0	0	0	0	0	0	0	0	22
PEAK HR FACTOR :	0.000	0.600	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.688
	0.600				0.500												
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	7
4:15 PM	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6
4:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
5:00 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	3
5:15 PM	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	7
5:30 PM	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	7
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	16	0	0	0	19	0	0	0	0	0	0	0	0	1	0	36
	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					0.00%	0.00%	100.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	5	0	0	0	11	0	0	0	0	0	0	0	0	1	0	17
PEAK HR FACTOR :	0.000	0.625	0.000	0.000	0.000	0.550	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.607
	0.625				0.550								0.250				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & New Hope Baptist Church N Dwy
City: Deltona
Control: 1-Way Stop(WB)

Project ID: 24-130025-003
Date: 1/18/2024

Data - Bikes

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				New Hope Baptist Church N Dwy				New Hope Baptist Church N Dwy			
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL 0	NT 0	NR 0	NU 0	SL 0	ST 0	SR 0	SU 0	EL 0	ET 0	ER 0	EU 0	WL 0	WT 0	WR 0	WU 0
APPROACH %'s :																
PEAK HR :	07:00 AM - 08:00 AM				0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
																TOTAL 0
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL 0	NT 0	NR 0	NU 0	SL 0	ST 0	SR 0	SU 0	EL 0	ET 0	ER 0	EU 0	WL 0	WT 0	WR 0	WU 0
APPROACH %'s :																
PEAK HR :	05:00 PM - 06:00 PM				0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
																TOTAL 0

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & New Hope Baptist Church N Dwy
City: Deltona

Project ID: 24-130025-003
Date: 1/18/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Lake Helen Osteen Rd		Lake Helen Osteen Rd		New Hope Baptist Church N Dwy		New Hope Baptist Church N Dwy		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES : APPROACH %'s :	EB 0	WB 0	EB 0	WB 0	NB 0	SB 0	NB 0	SB 0	TOTAL 0
PEAK HR :	07:00 AM - 08:00 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES : APPROACH %'s :	EB 0	WB 0	EB 0	WB 0	NB 0	SB 0	NB 0	SB 0	TOTAL 0
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Lake Helen Osteen Rd & New Hope Baptist Church N Dwy

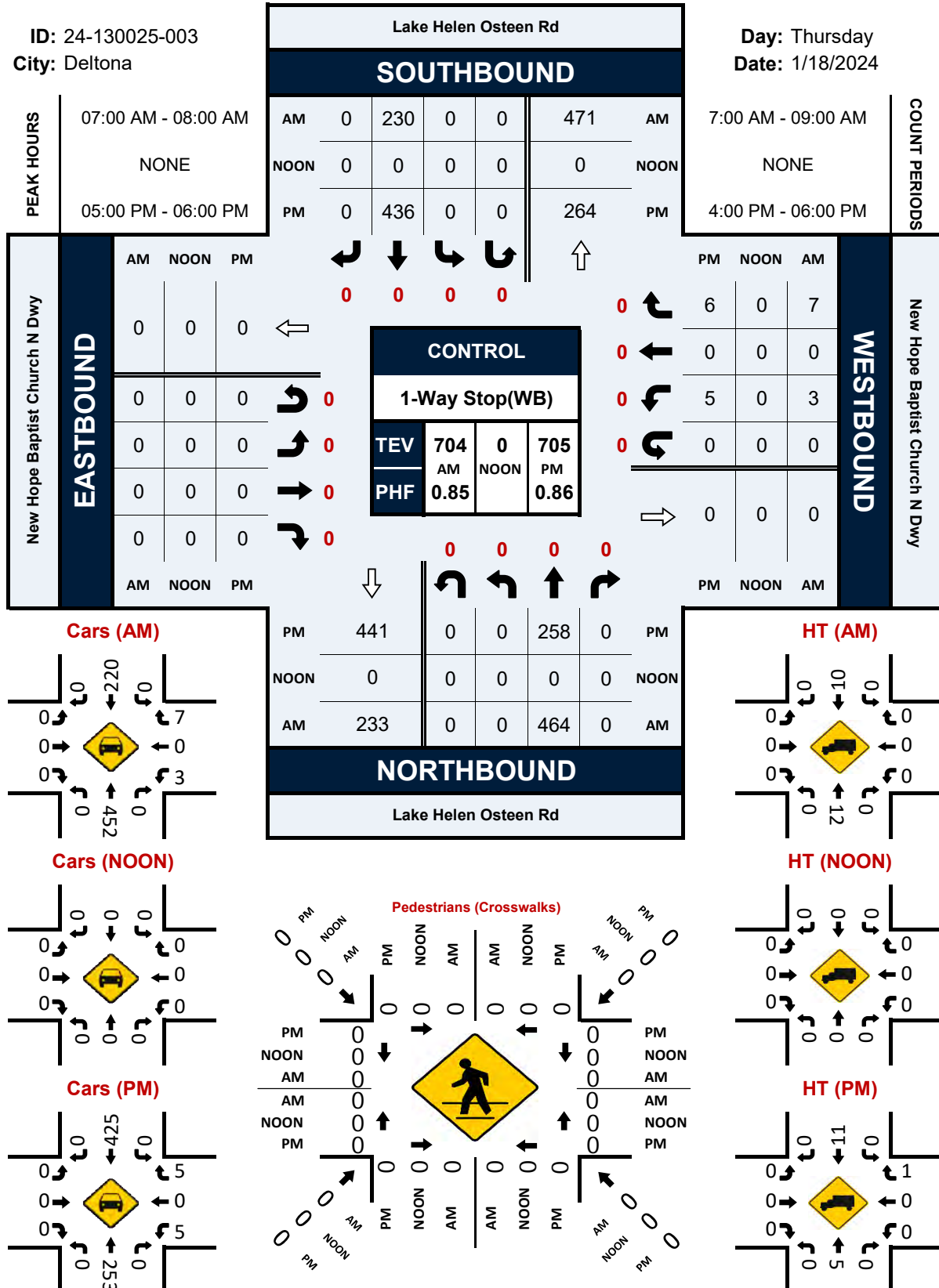
Peak Hour Turning Movement Count

ID: 24-130025-003

City: Deltona

Day: Thursday

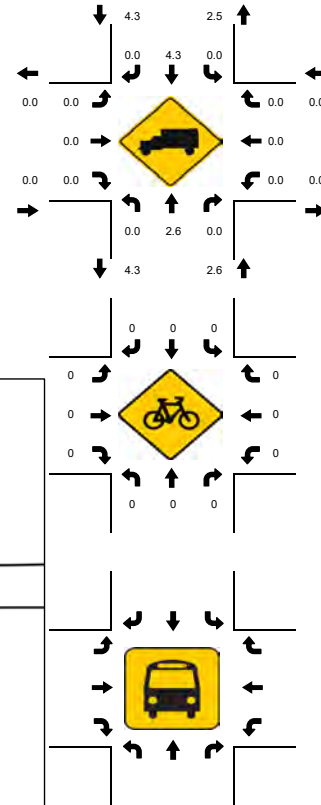
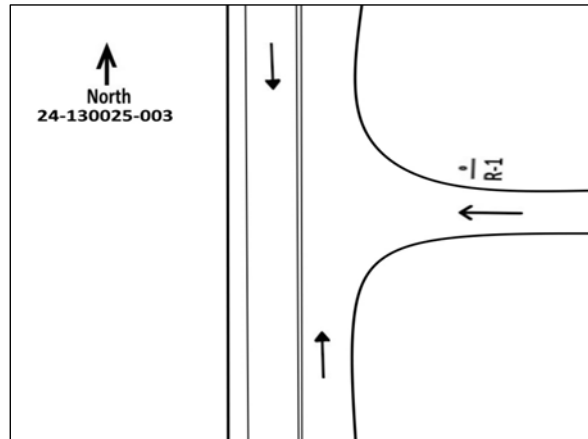
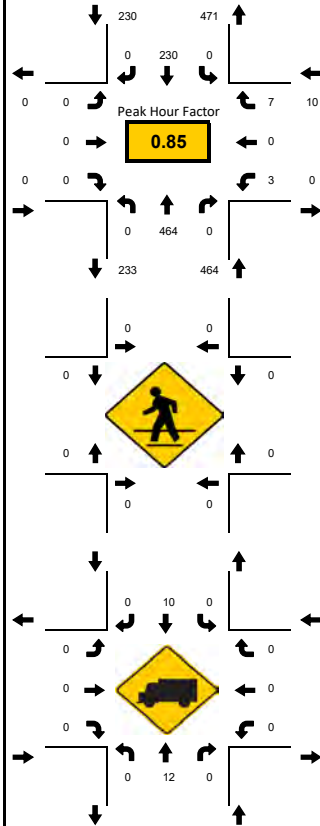
Date: 1/18/2024



LOCATION: Lake Helen Osteen Rd & New Hope Baptist Church N Dwy
CITY/STATE: Deltona, FL

PROJECT ID: 24-130025-003
DATE: Thu, Jan 18, 2024

Peak-Hour: 07:00 AM - 08:00 AM
Peak 15-Minute: 07:30 AM - 07:45 AM

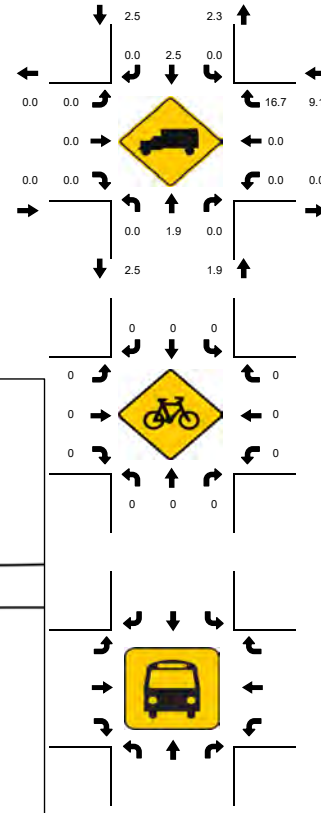
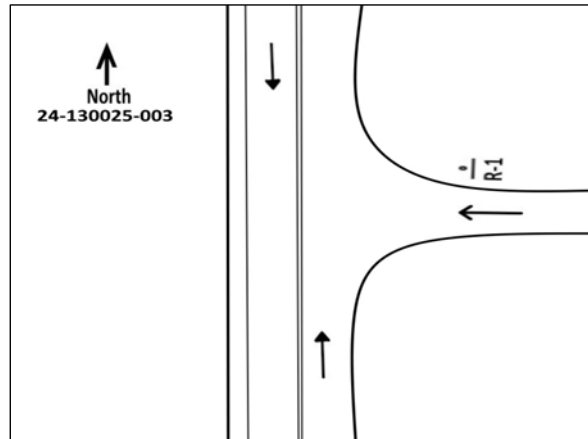
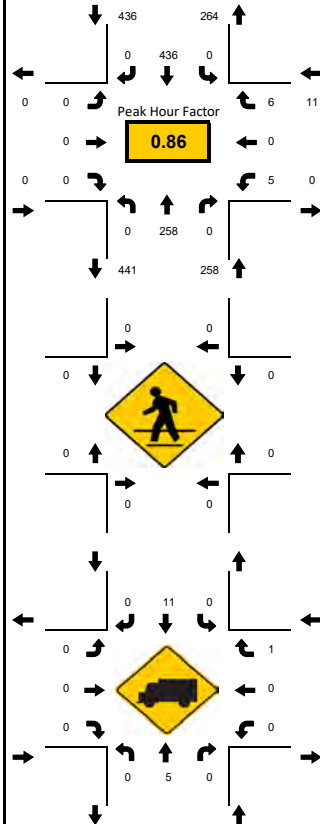


15-Min Count Period Beginning At	Lake Helen Osteen Rd Northbound					Lake Helen Osteen Rd Southbound					New Hope Baptist Church N Dwy Eastbound					New Hope Baptist Church N Dwy Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
7:00 AM	0	104	0	0	0	0	38	0	0	0	0	0	0	0	0	1	0	0	0	0	143	704
7:15 AM	0	124	0	0	0	0	41	0	0	0	0	0	0	0	0	1	0	1	0	0	167	685
7:30 AM	0	137	0	0	0	0	66	0	0	0	0	0	0	0	0	0	0	4	0	0	207	636
7:45 AM	0	99	0	0	0	0	85	0	0	0	0	0	0	0	0	1	0	2	0	0	187	545
8:00 AM	0	80	0	0	0	0	44	0	0	0	0	0	0	0	0	0	0	0	0	0	124	456
8:15 AM	0	58	0	0	0	0	56	0	0	0	0	0	0	0	0	2	0	2	0	0	118	332
8:30 AM	0	67	0	0	0	0	45	0	0	0	0	0	0	0	0	1	0	3	0	0	116	214
8:45 AM	0	60	0	0	0	0	36	0	0	0	0	0	0	0	0	2	0	0	0	0	98	98
Peak 15-Min Flowrates	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Total	
All Vehicles	0	548	0	0	0	0	340	0	0	0	0	0	0	0	0	4	0	16	0	0	908	
Heavy Trucks	0	20	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	40	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

LOCATION: Lake Helen Osteen Rd & New Hope Baptist Church N Dwy
CITY/STATE: Deltona, FL

PROJECT ID: 24-130025-003
DATE: Thu, Jan 18, 2024

Peak-Hour: 05:00 PM - 06:00 PM
Peak 15-Minute: 05:15 PM - 05:30 PM



15-Min Count Period Beginning At	Lake Helen Osteen Rd Northbound					Lake Helen Osteen Rd Southbound					New Hope Baptist Church N Dwy Eastbound					New Hope Baptist Church N Dwy Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	0	67	0	0		0	72	0	0		0	0	0	0		1	0	0	0		140	630
4:15 PM	0	71	0	0		0	109	0	0		0	0	0	0		2	0	1	0		183	647
4:30 PM	0	66	0	0		0	81	0	0		0	0	0	0		3	0	2	0		152	668
4:45 PM	0	64	0	0		0	90	0	0		0	0	0	0		1	0	0	0		155	704
5:00 PM	0	66	0	0		0	87	0	0		0	0	0	0		2	0	2	0		157	705
5:15 PM	0	55	0	0		0	145	0	0		0	0	0	0		2	0	2	0		204	548
5:30 PM	0	73	0	0		0	112	0	0		0	0	0	0		1	0	2	0		188	344
5:45 PM	0	64	0	0		0	92	0	0		0	0	0	0		0	0	0	0		156	156
Peak 15-Min Flowrates	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Total	
All Vehicles	0	292	0	0		0	580	0	0		0	0	0	0		8	0	8	0		888	
Heavy Trucks	0	8	0	0		0	20	0	0		0	0	0	0		0	0	4	0		32	
Pedestrians	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	
Buses	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	
Stopped Buses	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & New Hope Baptist Church S Dwy
City: Deltona
Control: No Control

Project ID: 24-130025-002
Date: 1/18/2024

Data - Total

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				New Hope Baptist Church S Dwy				New Hope Baptist Church S Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	109	1	0	0	39	0	0	0	0	0	0	0	0	0	0	149
7:15 AM	0	119	1	0	1	40	0	0	0	0	0	0	0	0	0	0	161
7:30 AM	0	139	1	0	5	62	0	0	0	0	0	0	0	0	0	0	207
7:45 AM	0	98	2	0	1	82	0	0	0	0	0	0	0	0	0	0	183
8:00 AM	0	80	0	0	2	45	0	0	0	0	0	0	0	0	0	0	127
8:15 AM	0	57	6	0	7	50	0	0	0	0	0	0	0	0	0	0	120
8:30 AM	0	67	2	0	0	47	0	0	0	0	0	0	0	0	0	0	116
8:45 AM	0	61	1	0	1	37	0	0	0	0	0	0	0	0	0	0	100
															0.8		
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	730	14	0	17	402	0	0	0	0	0	0	0	0	0	0	1163
	0.00%	98.12%	1.88%	0.00%	4.06%	95.94%	0.00%	0.00%									
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	465	5	0	7	223	0	0	0	0	0	0	0	0	0	0	700
PEAK HR FACTOR :	0.000	0.836	0.625	0.000	0.350	0.680	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.845
			0.839				0.693										
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	68	1	0	0	71	0	0	0	0	0	0	0	0	0	0	140
4:15 PM	0	69	1	0	3	109	0	0	0	0	0	0	0	0	0	0	182
4:30 PM	0	67	1	0	3	82	0	0	0	0	0	0	0	0	0	0	153
4:45 PM	0	63	1	0	0	91	0	0	0	0	0	0	0	0	0	0	155
5:00 PM	0	68	1	0	1	87	0	0	0	0	0	0	0	0	0	0	157
5:15 PM	0	54	1	0	4	144	0	0	0	0	0	0	0	0	0	0	203
5:30 PM	0	72	0	0	0	112	0	0	0	0	0	0	0	0	0	0	184
5:45 PM	0	65	0	0	0	93	0	0	0	0	0	0	0	0	0	0	158
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	526	6	0	11	789	0	0	0	0	0	0	0	0	0	0	1332
	0.00%	98.87%	1.13%	0.00%	1.38%	98.63%	0.00%	0.00%									
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	259	2	0	5	436	0	0	0	0	0	0	0	0	0	0	702
PEAK HR FACTOR :	0.000	0.899	0.500	0.000	0.313	0.757	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.865
			0.906				0.745										
	#DIV/OI	3%	0%	#DIV/OI	0%	4%	#DIV/OI	#DIV/OI	#DIV/OI	#DIV/OI	#DIV/OI	#DIV/OI	#DIV/OI	#DIV/OI	#DIV/OI	#DIV/OI	#DIV/OI
	#DIV/OI	2%	0%	#DIV/OI	0%	3%	#DIV/OI	#DIV/OI	#DIV/OI	#DIV/OI	#DIV/OI	#DIV/OI	#DIV/OI	#DIV/OI	#DIV/OI	#DIV/OI	#DIV/OI

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & New Hope Baptist Church S Dwy
City: Deltona
Control: No Control

Project ID: 24-130025-002
Date: 1/18/2024

Data - Cars

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				New Hope Baptist Church S Dwy				New Hope Baptist Church S Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	107	1	0	0	39	0	0	0	0	0	0	0	0	0	0	147
7:15 AM	0	115	1	0	1	38	0	0	0	0	0	0	0	0	0	0	155
7:30 AM	0	136	1	0	5	59	0	0	0	0	0	0	0	0	0	0	201
7:45 AM	0	94	2	0	1	78	0	0	0	0	0	0	0	0	0	0	175
8:00 AM	0	76	0	0	1	42	0	0	0	0	0	0	0	0	0	0	119
8:15 AM	0	56	6	0	7	47	0	0	0	0	0	0	0	0	0	0	116
8:30 AM	0	65	2	0	0	46	0	0	0	0	0	0	0	0	0	0	113
8:45 AM	0	58	1	0	1	31	0	0	0	0	0	0	0	0	0	0	91
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	707	14	0	16	380	0	0	0	0	0	0	0	0	0	0	1117
	0.00%	98.06%	1.94%	0.00%	4.04%	95.96%	0.00%	0.00%									
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	452	5	0	7	214	0	0	0	0	0	0	0	0	0	0	678
PEAK HR FACTOR :	0.000	0.831	0.625	0.000	0.350	0.686	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.843
	0.834				0.699												
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	66	1	0	0	67	0	0	0	0	0	0	0	0	0	0	134
4:15 PM	0	65	1	0	3	107	0	0	0	0	0	0	0	0	0	0	176
4:30 PM	0	66	1	0	3	81	0	0	0	0	0	0	0	0	0	0	151
4:45 PM	0	60	1	0	0	90	0	0	0	0	0	0	0	0	0	0	151
5:00 PM	0	67	1	0	1	86	0	0	0	0	0	0	0	0	0	0	155
5:15 PM	0	52	1	0	4	139	0	0	0	0	0	0	0	0	0	0	196
5:30 PM	0	70	0	0	0	107	0	0	0	0	0	0	0	0	0	0	177
5:45 PM	0	65	0	0	0	93	0	0	0	0	0	0	0	0	0	0	158
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	511	6	0	11	770	0	0	0	0	0	0	0	0	0	0	1298
	0.00%	98.84%	1.16%	0.00%	1.41%	98.59%	0.00%	0.00%									
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	254	2	0	5	425	0	0	0	0	0	0	0	0	0	0	686
PEAK HR FACTOR :	0.000	0.907	0.500	0.000	0.313	0.764	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.875
	0.914				0.752												

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & New Hope Baptist Church S Dwy
City: Deltona
Control: No Control

Project ID: 24-130025-002
Date: 1/18/2024

Data - HT

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				New Hope Baptist Church S Dwy				New Hope Baptist Church S Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6
7:30 AM	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6
7:45 AM	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	8
8:00 AM	0	4	0	0	1	3	0	0	0	0	0	0	0	0	0	0	8
8:15 AM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
8:30 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
8:45 AM	0	3	0	0	0	6	0	0	0	0	0	0	0	0	0	0	9
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	23	0	0	1	22	0	0	0	0	0	0	0	0	0	0	46
	0.00%	100.00%	0.00%	0.00%	4.35%	95.65%	0.00%	0.00%									
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	13	0	0	0	9	0	0	0	0	0	0	0	0	0	0	22
PEAK HR FACTOR :	0.000	0.813	0.000	0.000	0.000	0.563	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.688
	0.813				0.563												
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6
4:15 PM	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6
4:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
5:00 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	7
5:30 PM	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	7
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	15	0	0	0	19	0	0	0	0	0	0	0	0	0	0	34
	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	5	0	0	0	11	0	0	0	0	0	0	0	0	0	0	16
PEAK HR FACTOR :	0.000	0.625	0.000	0.000	0.000	0.550	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.571
	0.625				0.550												

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & New Hope Baptist Church S Dwy
City: Deltona
Control: No Control

Project ID: 24-130025-002
Date: 1/18/2024

Data - Bikes

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				New Hope Baptist Church S Dwy				New Hope Baptist Church S Dwy			
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU
APPROACH %'s :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR :	07:00 AM - 08:00 AM				0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU
APPROACH %'s :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR :	05:00 PM - 06:00 PM				0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & New Hope Baptist Church S Dwy
City: Deltona

Project ID: 24-130025-002
Date: 1/18/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Lake Helen Osteen Rd	Lake Helen Osteen Rd	New Hope Baptist Church S Dwy	New Hope Baptist Church S Dwy	
AM	NORTH LEG		SOUTH LEG		
	EB	WB	EB	WB	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES : APPROACH %'s :	EB 0	WB 0	EB 0	WB 0	TOTAL 0
PEAK HR :	07:00 AM - 08:00 AM				TOTAL
PEAK HR VOL :	0	0	0	0	0
PEAK HR FACTOR :					

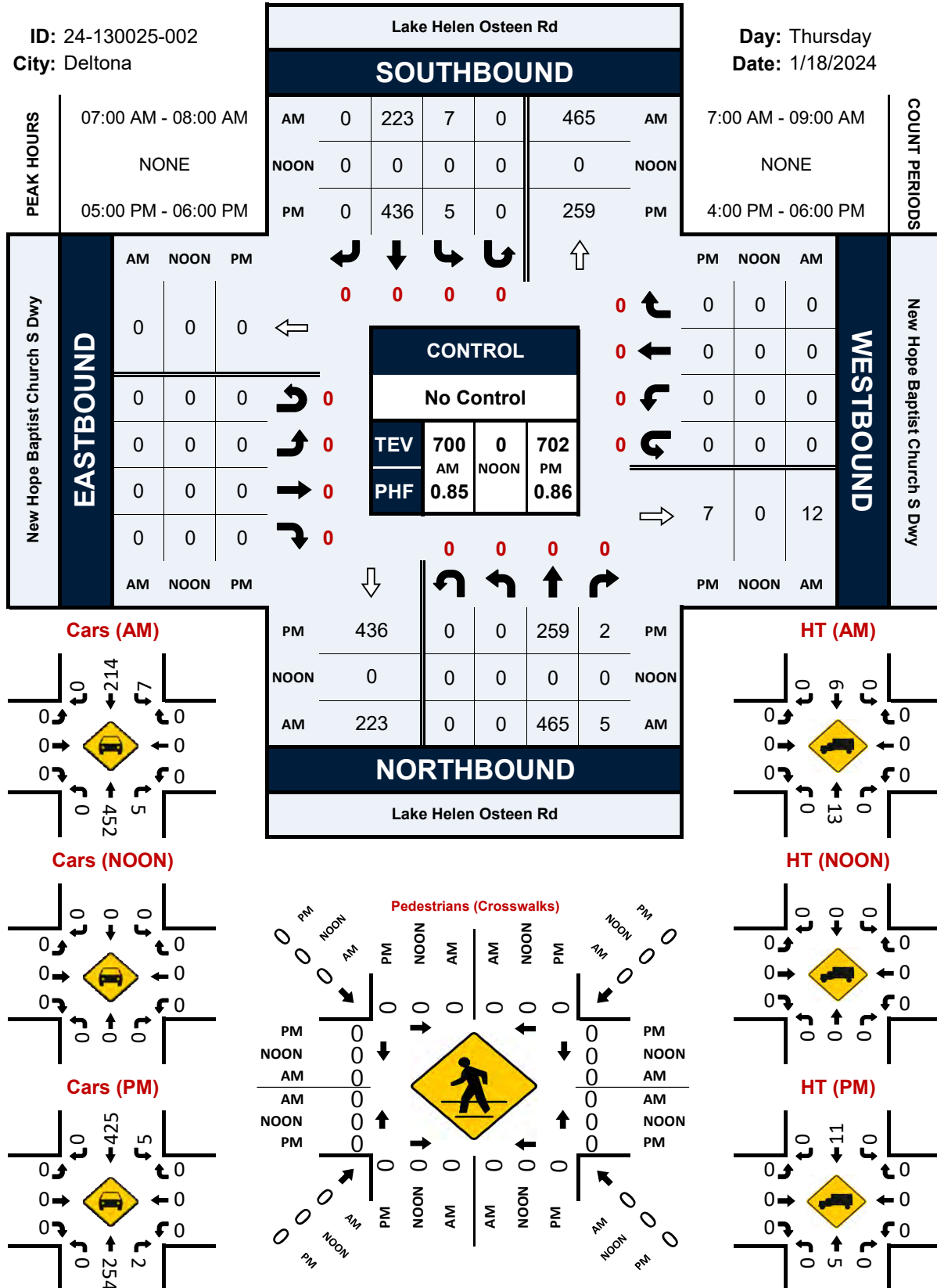
PM	NORTH LEG		SOUTH LEG		
	EB	WB	EB	WB	
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES : APPROACH %'s :	EB 0	WB 0	EB 0	WB 0	TOTAL 0
PEAK HR :	05:00 PM - 06:00 PM				TOTAL
PEAK HR VOL :	0	0	0	0	0
PEAK HR FACTOR :					

Lake Helen Osteen Rd & New Hope Baptist Church S Dwy

Peak Hour Turning Movement Count

ID: 24-130025-002
City: Deltona

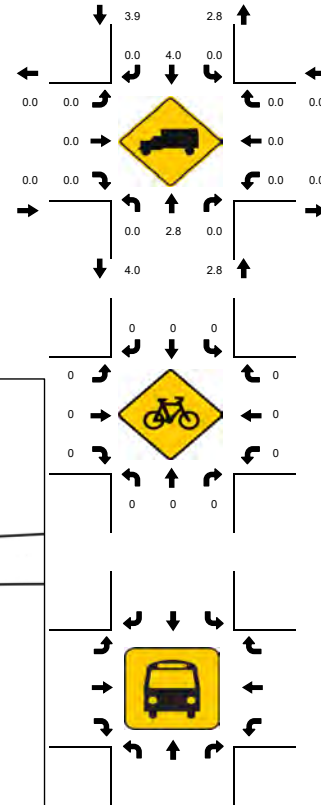
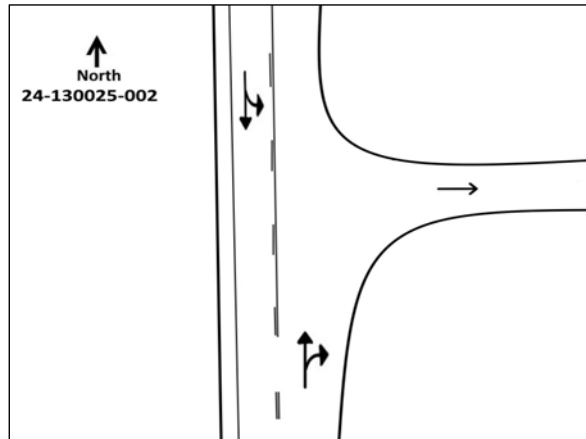
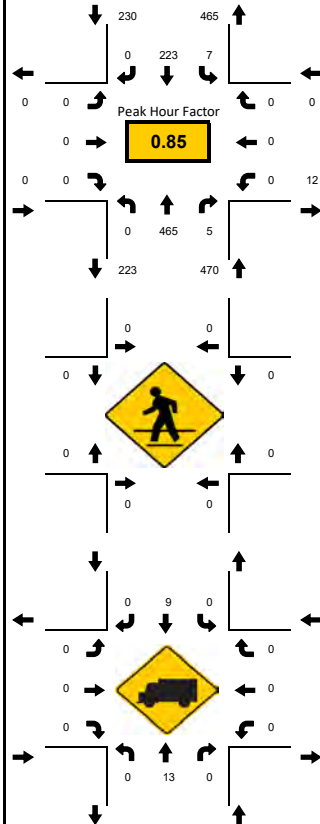
Day: Thursday
Date: 1/18/2024



LOCATION: Lake Helen Osteen Rd & New Hope Baptist Church S Dwy
CITY/STATE: Deltona, FL

PROJECT ID: 24-130025-002
DATE: Thu, Jan 18, 2024

Peak-Hour: 07:00 AM - 08:00 AM
Peak 15-Minute: 07:30 AM - 07:45 AM

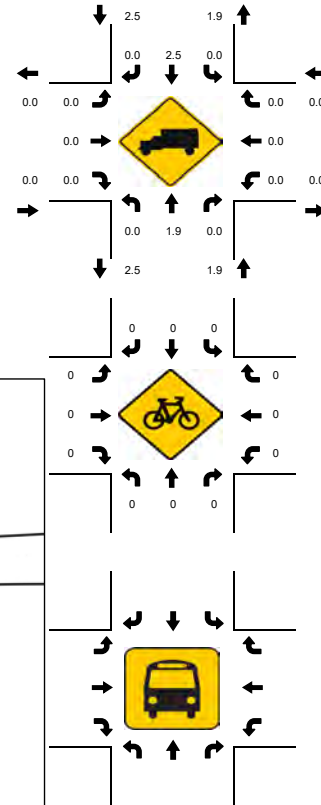
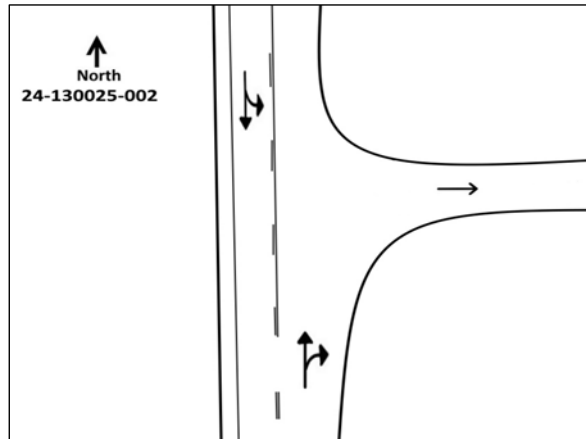
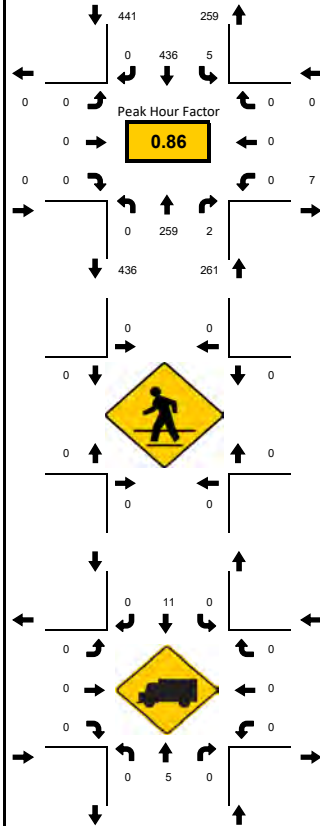


15-Min Count Period Beginning At	Lake Helen Osteen Rd Northbound					Lake Helen Osteen Rd Southbound					New Hope Baptist Church S Dwy Eastbound					New Hope Baptist Church S Dwy Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
7:00 AM	0	109	1	0		0	39	0	0		0	0	0	0		0	0	0	0		149	700
7:15 AM	0	119	1	0		1	40	0	0		0	0	0	0		0	0	0	0		161	678
7:30 AM	0	139	1	0		5	62	0	0		0	0	0	0		0	0	0	0		207	637
7:45 AM	0	98	2	0		1	82	0	0		0	0	0	0		0	0	0	0		183	546
8:00 AM	0	80	0	0		2	45	0	0		0	0	0	0		0	0	0	0		127	463
8:15 AM	0	57	6	0		7	50	0	0		0	0	0	0		0	0	0	0		120	336
8:30 AM	0	67	2	0		0	47	0	0		0	0	0	0		0	0	0	0		116	216
8:45 AM	0	61	1	0		1	37	0	0		0	0	0	0		0	0	0	0		100	100
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	0	556	8	0		20	328	0	0		0	0	0	0		0	0	0	0		912	
Heavy Trucks	0	16	0	0		0	16	0	0		0	0	0	0		0	0	0	0		32	
Pedestrians	0					0	0				0					0					0	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	
Buses																						
Stopped Buses																						

LOCATION: Lake Helen Osteen Rd & New Hope Baptist Church S Dwy
CITY/STATE: Deltona, FL

PROJECT ID: 24-130025-002
DATE: Thu, Jan 18, 2024

Peak-Hour: 05:00 PM - 06:00 PM
Peak 15-Minute: 05:15 PM - 05:30 PM



15-Min Count Period Beginning At	Lake Helen Osteen Rd Northbound					Lake Helen Osteen Rd Southbound					New Hope Baptist Church S Dwy Eastbound					New Hope Baptist Church S Dwy Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	0	68	1	0		0	71	0	0		0	0	0	0		0	0	0	0		140	630
4:15 PM	0	69	1	0		3	109	0	0		0	0	0	0		0	0	0	0		182	647
4:30 PM	0	67	1	0		3	82	0	0		0	0	0	0		0	0	0	0		153	668
4:45 PM	0	63	1	0		0	91	0	0		0	0	0	0		0	0	0	0		155	699
5:00 PM	0	68	1	0		1	87	0	0		0	0	0	0		0	0	0	0		157	702
5:15 PM	0	54	1	0		4	144	0	0		0	0	0	0		0	0	0	0		203	545
5:30 PM	0	72	0	0		0	112	0	0		0	0	0	0		0	0	0	0		184	342
5:45 PM	0	65	0	0		0	93	0	0		0	0	0	0		0	0	0	0		158	158
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	0	288	4	0		16	576	0	0		0	0	0	0		0	0	0	0		884	
Heavy Trucks	0	8	0	0		0	20	0	0		0	0	0	0		0	0	0	0		28	
Pedestrians	0					0		0			0					0					0	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	
Buses																						
Stopped Buses																						

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & Elkcam Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-001
Date: 1/18/2024

Data - Total

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				Elkcam Blvd				Elkcam Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	3	45	2	0	2	34	26	0	21	17	0	0	24	64	4	0	242
7:15 AM	5	67	8	0	0	42	21	0	19	21	3	0	39	77	6	0	308
7:30 AM	0	61	11	0	2	60	32	0	18	22	3	0	22	63	2	0	296
7:45 AM	1	50	12	0	1	79	18	0	19	37	3	0	25	46	4	0	295
8:00 AM	1	24	15	0	3	43	25	0	26	44	5	0	22	67	4	0	279
8:15 AM	3	28	13	0	3	39	15	0	20	35	1	0	22	51	5	0	235
8:30 AM	3	34	9	0	1	42	17	0	14	32	4	0	15	51	2	0	224
8:45 AM	4	30	15	0	0	33	24	0	16	31	2	0	20	63	8	0	246
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	20	339	85	0	12	372	178	0	153	239	21	0	189	482	35	0	2125
	4.50%	76.35%	19.14%	0.00%	2.14%	66.19%	31.67%	0.00%	37.05%	57.87%	5.08%	0.00%	26.77%	68.27%	4.96%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	7	202	46	0	6	224	96	0	82	124	14	0	108	253	16	0	1178
PEAK HR FACTOR :	0.350	0.754	0.767	0.000	0.500	0.709	0.750	0.000	0.788	0.705	0.700	0.000	0.692	0.821	0.667	0.000	0.956
	0.797				0.832				0.733				0.773				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	5	44	33	0	6	54	19	0	25	83	4	0	21	60	7	0	361
4:15 PM	1	47	28	0	7	57	33	0	36	81	6	0	27	46	3	0	372
4:30 PM	5	64	31	0	6	47	29	0	45	62	7	0	15	46	3	0	360
4:45 PM	5	52	30	0	6	35	40	0	42	82	5	0	20	53	1	0	371
5:00 PM	5	56	27	0	10	67	27	0	40	82	4	0	17	59	6	0	400
5:15 PM	6	57	35	0	4	73	26	0	32	108	2	0	25	46	3	0	417
5:30 PM	2	57	33	0	10	76	36	0	47	81	1	0	26	52	3	0	424
5:45 PM	6	57	40	0	8	64	23	0	35	79	7	0	19	49	2	0	389
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	35	434	257	0	57	473	233	0	302	658	36	0	170	411	28	0	3094
	4.82%	59.78%	35.40%	0.00%	7.47%	61.99%	30.54%	0.00%	30.32%	66.06%	3.61%	0.00%	27.91%	67.49%	4.60%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	19	227	135	0	32	280	112	0	154	350	14	0	87	206	14	0	1630
PEAK HR FACTOR :	0.792	0.996	0.844	0.000	0.800	0.921	0.778	0.000	0.819	0.810	0.500	0.000	0.837	0.873	0.583	0.000	0.961
	0.925				0.869				0.912				0.936				
	0%	3%	4%	#DIV/0!	0%	4%	4%	#DIV/0!	2%	2%	21%	#DIV/0!	3%	2%	6%	#DIV/0!	
	0%	2%	1%	#DIV/0!	3%	1%	2%	#DIV/0!	0%	1%	0%	#DIV/0!	0%	1%	0%	#DIV/0!	

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & Elkcam Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-001
Date: 1/18/2024

Data - Cars

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				Elkcam Blvd				Elkcam Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	2	44	2	0	1	33	26	0	21	17	0	0	24	63	3	0	236
7:15 AM	5	66	7	0	0	40	21	0	19	21	2	0	39	75	6	0	301
7:30 AM	0	61	11	0	2	58	28	0	17	22	3	0	22	62	2	0	288
7:45 AM	1	46	11	0	1	76	18	0	19	34	3	0	24	46	4	0	283
8:00 AM	1	22	15	0	3	41	25	0	25	44	3	0	20	66	3	0	268
8:15 AM	3	26	11	0	2	37	14	0	18	31	1	0	22	48	5	0	218
8:30 AM	3	33	8	0	1	39	17	0	14	30	4	0	14	49	1	0	213
8:45 AM	4	29	13	0	0	30	23	0	16	30	1	0	19	60	8	0	233
TOTAL VOLUMES :	NL 19	NT 327	NR 78	NU 0	SL 10	ST 354	SR 172	SU 0	EL 149	ET 229	ER 17	EU 0	WL 184	WT 469	WR 32	WU 0	TOTAL 2040
APPROACH %'s :	4.48%	77.12%	18.40%	0.00%	1.87%	66.04%	32.09%	0.00%	37.72%	57.97%	4.30%	0.00%	26.86%	68.47%	4.67%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	7	195	44	0	6	215	92	0	80	121	11	0	105	249	15	0	1140
PEAK HR FACTOR :	0.350	0.739	0.733	0.000	0.500	0.707	0.821	0.000	0.800	0.688	0.917	0.000	0.673	0.830	0.625	0.000	0.947
	0.788				0.824				0.736				0.769				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	5	43	33	0	6	52	19	0	25	83	3	0	20	59	7	0	355
4:15 PM	1	46	27	0	6	57	32	0	35	79	6	0	26	44	3	0	362
4:30 PM	5	62	30	0	6	47	29	0	45	60	6	0	15	46	3	0	354
4:45 PM	5	51	29	0	4	34	40	0	40	81	5	0	19	52	1	0	361
5:00 PM	5	55	26	0	9	67	27	0	40	81	4	0	17	58	6	0	395
5:15 PM	6	55	35	0	4	70	24	0	32	108	2	0	25	45	3	0	409
5:30 PM	2	56	32	0	10	75	36	0	47	79	1	0	26	52	3	0	419
5:45 PM	6	57	40	0	8	64	23	0	35	78	7	0	19	49	2	0	388
TOTAL VOLUMES :	NL 35	NT 425	NR 252	NU 0	SL 53	ST 466	SR 230	SU 0	EL 299	ET 649	ER 34	EU 0	WL 167	WT 405	WR 28	WU 0	TOTAL 3043
APPROACH %'s :	4.92%	59.69%	35.39%	0.00%	7.08%	62.22%	30.71%	0.00%	30.45%	66.09%	3.46%	0.00%	27.83%	67.50%	4.67%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	19	223	133	0	31	276	110	0	154	346	14	0	87	204	14	0	1611
PEAK HR FACTOR :	0.792	0.978	0.831	0.000	0.775	0.920	0.764	0.000	0.819	0.801	0.500	0.000	0.837	0.879	0.583	0.000	0.961
	0.910				0.862				0.905				0.941				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & Elkcam Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-001
Date: 1/18/2024

Data - HT

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				Elkcam Blvd				Elkcam Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	1	1	0	0	1	1	0	0	0	0	0	0	0	1	1	0	6
7:15 AM	0	1	1	0	0	2	0	0	0	0	1	0	0	2	0	0	7
7:30 AM	0	0	0	0	0	2	4	0	1	0	0	0	0	1	0	0	8
7:45 AM	0	4	1	0	0	3	0	0	0	3	0	0	1	0	0	0	12
8:00 AM	0	2	0	0	0	2	0	0	1	0	2	0	2	1	1	0	11
8:15 AM	0	2	2	0	1	2	1	0	2	4	0	0	0	3	0	0	17
8:30 AM	0	1	1	0	0	3	0	0	0	2	0	0	1	2	1	0	11
8:45 AM	0	1	2	0	0	3	1	0	0	1	1	0	1	3	0	0	13
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	1	12	7	0	2	18	6	0	4	10	4	0	5	13	3	0	85
	5.00%	60.00%	35.00%	0.00%	7.69%	69.23%	23.08%	0.00%	22.22%	55.56%	22.22%	0.00%	23.81%	61.90%	14.29%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	7	2	0	0	9	4	0	2	3	3	0	3	4	1	0	38
PEAK HR FACTOR :	0.000	0.438	0.500	0.000	0.000	0.750	0.250	0.000	0.500	0.250	0.375	0.000	0.375	0.500	0.250	0.000	0.792
			0.450				0.542				0.667				0.500		
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	1	0	0	0	2	0	0	0	0	1	0	1	1	0	0	6
4:15 PM	0	1	1	0	1	0	1	0	1	2	0	0	1	2	0	0	10
4:30 PM	0	2	1	0	0	0	0	0	0	2	1	0	0	0	0	0	6
4:45 PM	0	1	1	0	2	1	0	0	2	1	0	0	1	1	0	0	10
5:00 PM	0	1	1	0	1	0	0	0	0	1	0	0	0	1	0	0	5
5:15 PM	0	2	0	0	0	3	2	0	0	0	0	0	0	1	0	0	8
5:30 PM	0	1	1	0	0	1	0	0	0	2	0	0	0	0	0	0	5
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	9	5	0	4	7	3	0	3	9	2	0	3	6	0	0	51
	0.00%	64.29%	35.71%	0.00%	28.57%	50.00%	21.43%	0.00%	21.43%	64.29%	14.29%	0.00%	33.33%	66.67%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	4	2	0	1	4	2	0	0	4	0	0	0	2	0	0	19
PEAK HR FACTOR :	0.000	0.500	0.500	0.000	0.250	0.333	0.250	0.000	0.000	0.500	0.000	0.000	0.000	0.500	0.000	0.000	0.594
			0.750				0.350				0.500				0.500		

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & Elkcam Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-001
Date: 1/18/2024

Data - Bikes

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				Elkcam Blvd				Elkcam Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	1	0	0	0	0	0	1	0	0	0	0	0	0	2	1	0	5
8:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL 1	NT 0	NR 0	NU 0	SL 0	ST 0	SR 2	SU 0	EL 0	ET 0	ER 0	EU 0	WL 0	WT 3	WR 1	WU 0	TOTAL 7
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	75.00%	25.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL 0
PEAK HR VOL :	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	
PEAK HR FACTOR :																	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL 0	NT 0	NR 0	NU 0	SL 0	ST 0	SR 1	SU 0	EL 0	ET 0	ER 1	EU 0	WL 0	WT 0	WR 0	WU 0	TOTAL 3
APPROACH %'s :	05:00 PM - 06:00 PM				0.00% 0.00% 100.00% 0.00%				50.00% 50.00% 0.00% 0.00%				0.00% 0.00% 0.00% 0.00%				
PEAK HR :	05:00 PM - 06:00 PM																TOTAL 0
PEAK HR VOL :	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	
PEAK HR FACTOR :																	

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & Elkcam Blvd
City: Deltona

Project ID: 24-130025-001
Date: 1/18/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Lake Helen Osteen Rd		Lake Helen Osteen Rd		Elkcam Blvd		Elkcam Blvd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	0	0	0	0	0	0	1
8:30 AM	1	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	1	1	0	0	0	0	0	0	2
PEAK HR :	07:15 AM - 08:15 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

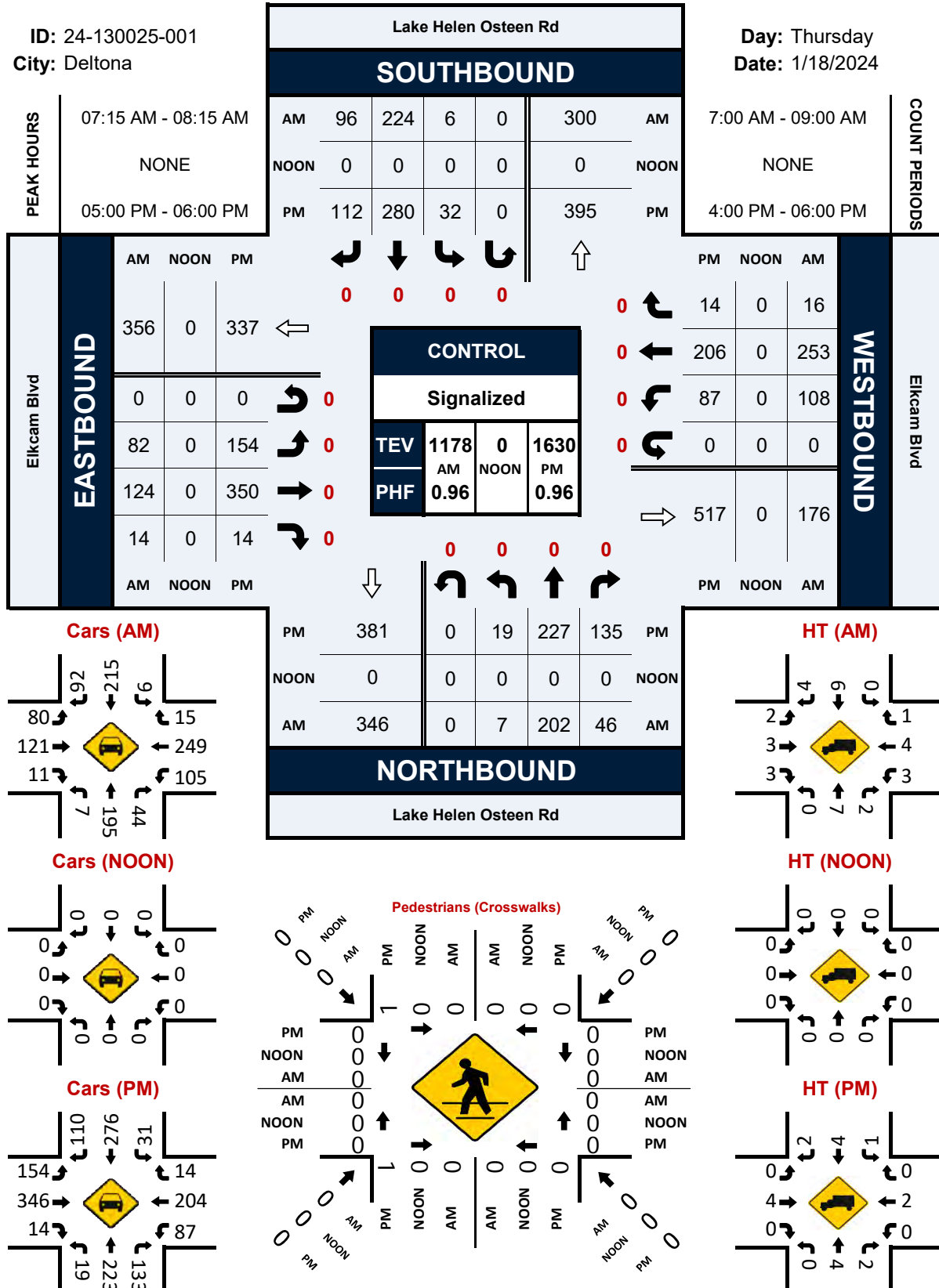
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	1	1
4:45 PM	0	0	0	0	0	0	1	0	1
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	1	0	0	0	0	0	0	0	1
5:45 PM	0	0	1	0	0	0	0	0	1
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	1	0	1	0	0	0	1	1	4
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	1	0	1	0	0	0	0	0	2
PEAK HR FACTOR :	0.250		0.250						0.500
		0.250		0.250					

Lake Helen Osteen Rd & Elkcarn Blvd

Peak Hour Turning Movement Count

ID: 24-130025-001
City: Deltona

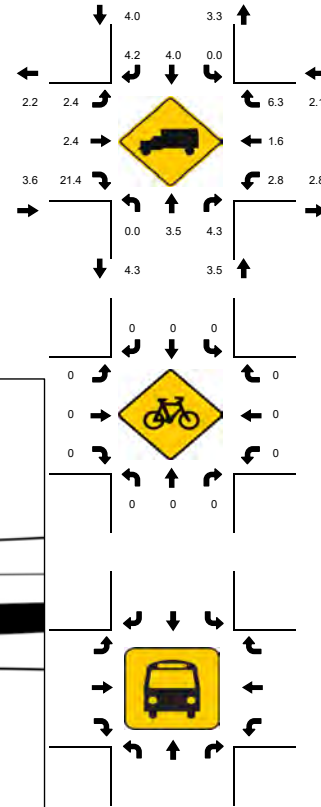
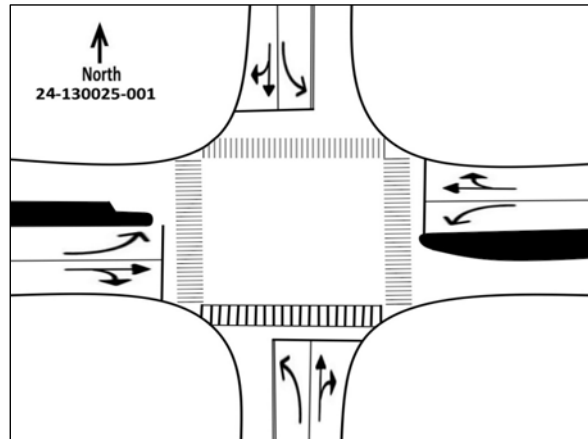
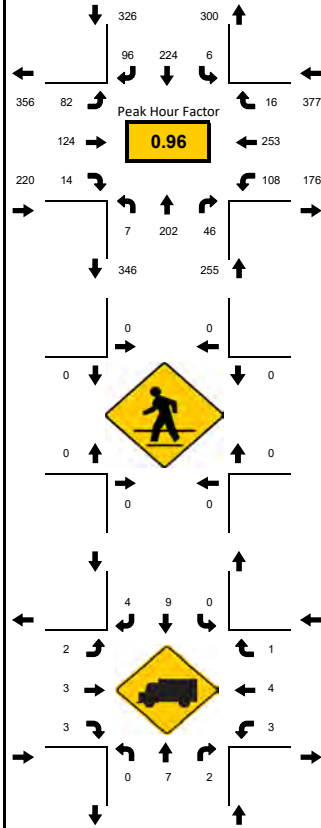
Day: Thursday
Date: 1/18/2024



LOCATION: Lake Helen Osteen Rd & Elkcam Blvd
CITY/STATE: Deltona, FL

PROJECT ID: 24-130025-001
DATE: Thu, Jan 18, 2024

Peak-Hour: 07:15 AM - 08:15 AM
Peak 15-Minute: 07:15 AM - 07:30 AM

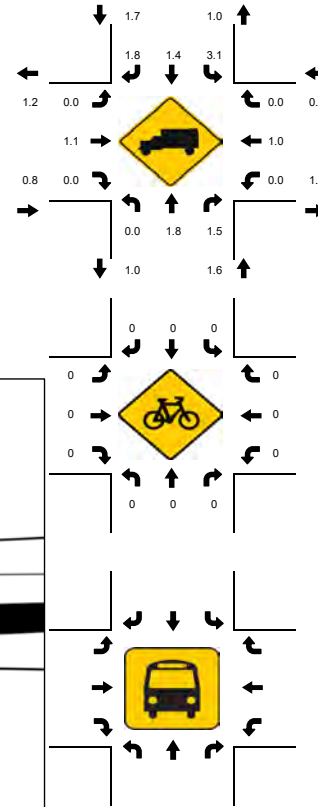
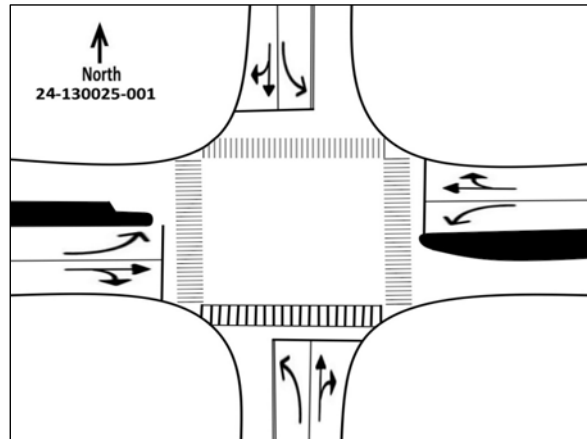
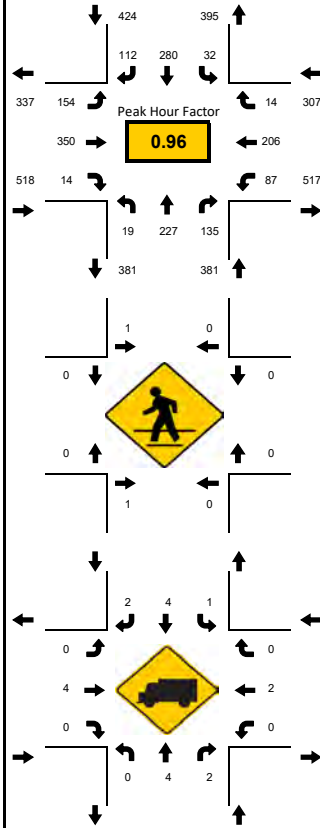


15-Min Count Period Beginning At	Lake Helen Osteen Rd Northbound					Lake Helen Osteen Rd Southbound					Elkcam Blvd Eastbound					Elkcam Blvd Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
7:00 AM	3	45	2	0		2	34	26	0		21	17	0	0		24	64	4	0		242	1141
7:15 AM	5	67	8	0		0	42	21	0		19	21	3	0		39	77	6	0		308	1178
7:30 AM	0	61	11	0		2	60	32	0		18	22	3	0		22	63	2	0		296	1105
7:45 AM	1	50	12	0		1	79	18	0		19	37	3	0		25	46	4	0		295	1033
8:00 AM	1	24	15	0		3	43	25	0		26	44	5	0		22	67	4	0		279	984
8:15 AM	3	28	13	0		3	39	15	0		20	35	1	0		22	51	5	0		235	705
8:30 AM	3	34	9	0		1	42	17	0		14	32	4	0		15	51	2	0		224	470
8:45 AM	4	30	15	0		0	33	24	0		16	31	2	0		20	63	8	0		246	246
Peak 15-Min Flowrates	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Total	
All Vehicles	20	268	60	0		12	316	128	0		104	176	20	0		156	308	24	0		1592	
Heavy Trucks	0	16	4	0		0	12	16	0		4	12	8	0		8	8	4	0		92	
Pedestrians	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	
Buses	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	
Stopped Buses	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	

LOCATION: Lake Helen Osteen Rd & Elkcam Blvd
CITY/STATE: Deltona, FL

PROJECT ID: 24-130025-001
DATE: Thu, Jan 18, 2024

Peak-Hour: 05:00 PM - 06:00 PM
Peak 15-Minute: 05:30 PM - 05:45 PM



15-Min Count Period Beginning At	Lake Helen Osteen Rd Northbound					Lake Helen Osteen Rd Southbound					Elkcam Blvd Eastbound					Elkcam Blvd Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	5	44	33	0		6	54	19	0		25	83	4	0		21	60	7	0		361	1464
4:15 PM	1	47	28	0		7	57	33	0		36	81	6	0		27	46	3	0		372	1503
4:30 PM	5	64	31	0		6	47	29	0		45	62	7	0		15	46	3	0		360	1548
4:45 PM	5	52	30	0		6	35	40	0		42	82	5	0		20	53	1	0		371	1612
5:00 PM	5	56	27	0		10	67	27	0		40	82	4	0		17	59	6	0		400	1630
5:15 PM	6	57	35	0		4	73	26	0		32	108	2	0		25	46	3	0		417	1230
5:30 PM	2	57	33	0		10	76	36	0		47	81	1	0		26	52	3	0		424	813
5:45 PM	6	57	40	0		8	64	23	0		35	79	7	0		19	49	2	0		389	389
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	24	228	160	0		40	304	144	0		188	432	28	0		104	236	24	0		1912	
Heavy Trucks	0	8	4	0		4	12	8	0		0	8	0	0		0	4	0	0		48	
Pedestrians		4					4					0					0				8	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	
Buses																						
Stopped Buses																						

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

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

* PEAK SEASON

23-FEB-2023 09:11:23

830UPD

5_7900_PKSEASON.TXT

Appendix D

Existing Conditions Synchro Printouts

Timings

101: Catalina Blvd & Howland Blvd

02/29/2024



Lane Group	SEL	SET	NWL	NWT	NEL	NET	SWL	SWT	SWR
Lane Configurations									
Traffic Volume (vph)	118	523	30	997	108	108	126	99	497
Future Volume (vph)	118	523	30	997	108	108	126	99	497
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Perm	NA	Perm
Protected Phases	1	6	5	2	7	4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	7	4	8	8	8
Switch Phase									
Minimum Initial (s)	5.0	11.0	5.0	11.0	5.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.5	19.5	13.5	19.5	12.0	14.0	14.0	14.0	14.0
Total Split (s)	24.0	65.0	18.0	59.0	24.0	67.0	43.0	43.0	43.0
Total Split (%)	16.0%	43.3%	12.0%	39.3%	16.0%	44.7%	28.7%	28.7%	28.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.5	8.5	8.5	8.5	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None	None
Act Effect Green (s)	69.5	62.1	58.2	51.4	49.3	49.3	28.9	28.9	28.9
Actuated g/C Ratio	0.51	0.46	0.43	0.38	0.36	0.36	0.21	0.21	0.21
v/c Ratio	0.59	0.38	0.08	0.86	0.25	0.23	0.51	0.26	0.93
Control Delay	33.1	28.2	19.9	48.4	30.5	27.8	55.1	46.8	47.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.1	28.2	19.9	48.4	30.5	27.8	55.1	46.8	47.5
LOS	C	C	B	D	C	C	E	D	D
Approach Delay		29.0		47.6		29.0		48.7	
Approach LOS		C		D		C		D	

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 136

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 41.6

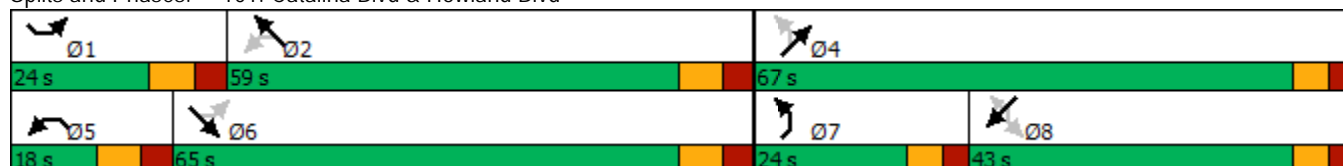
Intersection LOS: D

Intersection Capacity Utilization 85.5%

ICU Level of Service E

Analysis Period (min) 15






















Splits and Phases: 101: Catalina Blvd & Howland Blvd



HCM 6th Signalized Intersection Summary

101: Catalina Blvd & Howland Blvd

02/29/2024

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	118	523	32	30	997	77	108	108	35	126	99	497
Future Volume (veh/h)	118	523	32	30	997	77	108	108	35	126	99	497
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1826	1856	1870	1856	1856	1885	1885	1856	1870	1870	1870
Adj Flow Rate, veh/h	124	551	34	32	1049	81	114	114	37	133	104	472
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	5	3	2	3	3	1	1	3	2	2	2
Cap, veh/h	205	1388	86	350	1282	99	349	515	167	383	498	422
Arrive On Green	0.06	0.42	0.42	0.03	0.39	0.39	0.06	0.38	0.38	0.27	0.27	0.27
Sat Flow, veh/h	1753	3319	204	1781	3316	256	1795	1363	442	1236	1870	1585
Grp Volume(v), veh/h	124	288	297	32	557	573	114	0	151	133	104	472
Grp Sat Flow(s),veh/h/ln	1753	1735	1789	1781	1763	1809	1795	0	1806	1236	1870	1585
Q Serve(g_s), s	5.7	15.6	15.7	1.5	38.3	38.4	6.0	0.0	7.7	11.9	5.8	36.0
Cycle Q Clear(g_c), s	5.7	15.6	15.7	1.5	38.3	38.4	6.0	0.0	7.7	11.9	5.8	36.0
Prop In Lane	1.00		0.11	1.00		0.14	1.00		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	205	726	748	350	681	699	349	0	683	383	498	422
V/C Ratio(X)	0.61	0.40	0.40	0.09	0.82	0.82	0.33	0.00	0.22	0.35	0.21	1.12
Avail Cap(c_a), veh/h	305	726	748	430	681	699	468	0	802	383	498	422
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.7	27.4	27.4	24.3	37.2	37.2	31.6	0.0	28.5	40.7	38.5	49.5
Incr Delay (d2), s/veh	2.9	1.6	1.6	0.1	10.5	10.3	0.5	0.0	0.2	0.5	0.2	79.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	6.6	6.8	0.6	17.9	18.3	2.7	0.0	3.4	3.7	2.7	23.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.6	29.0	29.0	24.4	47.7	47.5	32.1	0.0	28.7	41.3	38.7	129.2
LnGrp LOS	C	C	C	C	D	D	C	A	C	D	D	F
Approach Vol, veh/h	709				1162				265			
Approach Delay, s/veh	29.6				47.0				30.1			
Approach LOS	C				D				C			
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.3	60.7		58.1	12.0	65.0	15.1	43.0				
Change Period (Y+Rc), s	8.5	8.5		7.0	8.5	8.5	7.0	7.0				
Max Green Setting (Gmax), s	15.5	50.5		60.0	9.5	56.5	17.0	36.0				
Max Q Clear Time (g_c+I1), s	7.7	40.4		9.7	3.5	17.7	8.0	38.0				
Green Ext Time (p_c), s	0.2	4.8		1.0	0.0	3.4	0.2	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	54.2											
HCM 6th LOS	D											

Timings

102: Lake Helen Osteen & Catalina Blvd

02/29/2024



Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	55	109	426	392	203
Future Volume (vph)	55	109	426	392	203
Turn Type	Prot	Prot	pm+pt	NA	NA
Protected Phases	8	8	1	6	2
Permitted Phases			6		
Detector Phase	8	8	1	6	2
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	15.0	15.0
Minimum Split (s)	11.5	11.5	11.5	21.5	21.5
Total Split (s)	26.5	26.5	26.5	63.0	36.5
Total Split (%)	29.6%	29.6%	29.6%	70.4%	40.8%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effect Green (s)	8.0	8.0	41.7	43.9	20.9
Actuated g/C Ratio	0.13	0.13	0.70	0.74	0.35
v/c Ratio	0.25	0.38	0.71	0.32	0.67
Control Delay	30.9	10.8	12.3	5.0	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	30.9	10.8	12.3	5.0	22.2
LOS	C	B	B	A	C
Approach Delay	17.5			8.8	22.2
Approach LOS	B			A	C

Intersection Summary

Cycle Length: 89.5

Actuated Cycle Length: 59.7

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 13.6

Intersection LOS: B

Intersection Capacity Utilization 65.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 102: Lake Helen Osteen & Catalina Blvd



HCM 6th Signalized Intersection Summary

102: Lake Helen Osteen & Catalina Blvd

02/29/2024






Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	55	109	426	392	203	183
Future Volume (veh/h)	55	109	426	392	203	183
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1856	1870	1856	1826	1870
Adj Flow Rate, veh/h	60	120	468	431	223	201
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	3	2	3	5	2
Cap, veh/h	197	174	591	1199	275	248
Arrive On Green	0.11	0.11	0.21	0.65	0.31	0.31
Sat Flow, veh/h	1781	1572	1781	1856	885	798
Grp Volume(v), veh/h	60	120	468	431	0	424
Grp Sat Flow(s),veh/h/ln	1781	1572	1781	1856	0	1682
Q Serve(g_s), s	1.7	3.9	8.3	5.7	0.0	12.4
Cycle Q Clear(g_c), s	1.7	3.9	8.3	5.7	0.0	12.4
Prop In Lane	1.00	1.00	1.00			0.47
Lane Grp Cap(c), veh/h	197	174	591	1199	0	523
V/C Ratio(X)	0.30	0.69	0.79	0.36	0.00	0.81
Avail Cap(c_a), veh/h	667	589	878	1963	0	945
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.9	22.9	9.9	4.4	0.0	17.0
Incr Delay (d2), s/veh	0.9	4.8	3.0	0.2	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.5	2.3	1.0	0.0	4.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.7	27.7	12.9	4.5	0.0	20.0
LnGrp LOS	C	C	B	A	A	C
Approach Vol, veh/h	180			899	424	
Approach Delay, s/veh	26.0			8.9	20.0	
Approach LOS	C			A	C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	17.9	23.1			41.0	12.4
Change Period (Y+Rc), s	6.5	6.5			6.5	6.5
Max Green Setting (Gmax), s	20.0	30.0			56.5	20.0
Max Q Clear Time (g_c+I1), s	10.3	14.4			7.7	5.9
Green Ext Time (p_c), s	1.1	2.2			2.6	0.4

Intersection Summary

HCM 6th Ctrl Delay	14.1
HCM 6th LOS	B




HCM 6th TWSC
103: Lake Helen Osteen & Driveway #1

02/29/2024

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	7	473	0	0	235
Future Vol, veh/h	3	7	473	0	0	235
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	3	2	2	4
Mvmt Flow	4	8	556	0	0	276
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	832	556	0	-	-	-
Stage 1	556	-	-	-	-	-
Stage 2	276	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	339	531	-	0	0	-
Stage 1	574	-	-	0	0	-
Stage 2	771	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	339	531	-	-	-	-
Mov Cap-2 Maneuver	339	-	-	-	-	-
Stage 1	574	-	-	-	-	-
Stage 2	771	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	13.1	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	-		454			
HCM Lane V/C Ratio	-		0.026			
HCM Control Delay (s)	-		13.1			
HCM Lane LOS	-		B			
HCM 95th %tile Q(veh)	-		0.1			

HCM 6th TWSC
104: Lake Helen Osteen & Driveway #2

02/29/2024

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	474	5	7	227
Future Vol, veh/h	0	0	474	5	7	227
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	3	2	2	4
Mvmt Flow	0	0	558	6	8	267
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	844	561	0	0	564	0
Stage 1	561	-	-	-	-	-
Stage 2	283	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	334	527	-	-	1008	-
Stage 1	571	-	-	-	-	-
Stage 2	765	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	331	527	-	-	1008	-
Mov Cap-2 Maneuver	331	-	-	-	-	-
Stage 1	571	-	-	-	-	-
Stage 2	758	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	0	0		0.3		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-		1008	-	
HCM Lane V/C Ratio	-	-		0.008	-	
HCM Control Delay (s)	-	-		0	8.6	
HCM Lane LOS	-	-		A	A	
HCM 95th %tile Q(veh)	-	-		0	-	

Timings

105: Elkcarn Blvd & Lake Helen Osteen

02/29/2024



Lane Group	SEL	SET	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations								
Traffic Volume (vph)	6	228	7	206	84	126	110	258
Future Volume (vph)	6	228	7	206	84	126	110	258
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	3	8	7	4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	16.0	5.0	16.0	5.0	6.0	5.0	6.0
Minimum Split (s)	14.0	25.0	14.0	25.0	13.5	13.0	13.5	13.0
Total Split (s)	29.0	49.0	29.0	49.0	28.5	32.0	28.5	32.0
Total Split (%)	20.9%	35.4%	20.9%	35.4%	20.6%	23.1%	20.6%	23.1%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	4.0	5.5	4.0
All-Red Time (s)	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	9.0	9.0	9.0	9.0	8.5	7.0	8.5	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effect Green (s)	22.3	21.4	22.3	21.4	22.6	16.2	28.2	22.0
Actuated g/C Ratio	0.30	0.28	0.30	0.28	0.30	0.22	0.37	0.29
v/c Ratio	0.02	0.68	0.02	0.52	0.23	0.38	0.24	0.54
Control Delay	18.5	32.2	18.6	28.0	16.9	30.2	16.3	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.5	32.2	18.6	28.0	16.9	30.2	16.3	30.9
LOS	B	C	B	C	B	C	B	C
Approach Delay		31.9		27.7		25.2		26.7
Approach LOS		C		C		C		C

Intersection Summary

Cycle Length: 138.5

Actuated Cycle Length: 75.3

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 28.1

Intersection LOS: C

Intersection Capacity Utilization 57.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 105: Elkcarn Blvd & Lake Helen Osteen





















Ø1	Ø2	Ø3	Ø4
29 s	49 s	28.5 s	32 s
Ø5	Ø6	Ø7	Ø8
29 s	49 s	28.5 s	32 s

Existing Conditions - AM Peak 3:34 pm 02/26/2024 Baseline

Synchro 11 Report
Page 7

HCM 6th Signalized Intersection Summary 105: Elkcarn Blvd & Lake Helen Osteen



















02/29/2024

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	6	228	98	7	206	47	84	126	14	110	258	16
Future Volume (veh/h)	6	228	98	7	206	47	84	126	14	110	258	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1841	1841	1870	1856	1841	1870	1870	1604	1856	1870	1811
Adj Flow Rate, veh/h	6	240	103	7	217	49	88	133	15	116	272	17
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	4	4	2	3	4	2	2	20	3	2	6
Cap, veh/h	247	299	128	184	360	81	263	298	34	372	342	21
Arrive On Green	0.01	0.24	0.24	0.01	0.25	0.25	0.06	0.18	0.18	0.08	0.20	0.20
Sat Flow, veh/h	1781	1222	524	1781	1465	331	1781	1651	186	1767	1742	109
Grp Volume(v), veh/h	6	0	343	7	0	266	88	0	148	116	0	289
Grp Sat Flow(s),veh/h/ln	1781	0	1746	1781	0	1796	1781	0	1837	1767	0	1851
Q Serve(g_s), s	0.2	0.0	12.6	0.2	0.0	9.0	2.7	0.0	4.9	3.6	0.0	10.2
Cycle Q Clear(g_c), s	0.2	0.0	12.6	0.2	0.0	9.0	2.7	0.0	4.9	3.6	0.0	10.2
Prop In Lane	1.00		0.30	1.00		0.18	1.00		0.10	1.00		0.06
Lane Grp Cap(c), veh/h	247	0	427	184	0	442	263	0	332	372	0	364
V/C Ratio(X)	0.02	0.00	0.80	0.04	0.00	0.60	0.33	0.00	0.45	0.31	0.00	0.79
Avail Cap(c_a), veh/h	755	0	1022	689	0	1051	679	0	672	756	0	677
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.7	0.0	24.3	20.3	0.0	22.8	21.4	0.0	25.0	20.4	0.0	26.1
Incr Delay (d2), s/veh	0.0	0.0	3.6	0.1	0.0	1.3	0.7	0.0	0.9	0.5	0.0	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	5.2	0.1	0.0	3.7	1.1	0.0	2.1	1.4	0.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.8	0.0	27.8	20.4	0.0	24.1	22.2	0.0	25.9	20.9	0.0	30.1
LnGrp LOS	B	A	C	C	A	C	C	A	C	C	A	C
Approach Vol, veh/h		349			273			236			405	
Approach Delay, s/veh		27.7			24.0			24.5			27.5	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	25.7	12.6	20.4	9.5	25.8	13.7	19.3				
Change Period (Y+Rc), s	9.0	9.0	8.5	7.0	9.0	9.0	8.5	7.0				
Max Green Setting (Gmax), s	20.0	40.0	20.0	25.0	20.0	40.0	20.0	25.0				
Max Q Clear Time (g_c+I1), s	2.2	14.6	4.7	12.2	2.2	11.0	5.6	6.9				
Green Ext Time (p_c), s	0.0	2.1	0.2	1.3	0.0	1.6	0.2	0.6				
Intersection Summary												
HCM 6th Ctrl Delay			26.2									
HCM 6th LOS			C									

Timings

101: Catalina Blvd & Howland Blvd

02/29/2024

									
Lane Group	SEL	SET	NWL	NWT	NEL	NET	SWL	SWT	SWR
Lane Configurations									
Traffic Volume (vph)	408	1111	46	623	46	87	126	87	243
Future Volume (vph)	408	1111	46	623	46	87	126	87	243
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Perm	NA	Perm
Protected Phases	1	6	5	2	7	4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	7	4	8	8	8
Switch Phase									
Minimum Initial (s)	5.0	11.0	5.0	11.0	5.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.5	19.5	13.5	19.5	12.0	14.0	14.0	14.0	14.0
Total Split (s)	30.0	65.0	20.0	55.0	20.0	60.0	45.0	45.0	45.0
Total Split (%)	20.0%	43.3%	13.3%	36.7%	13.3%	40.0%	30.0%	30.0%	30.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.5	8.5	8.5	8.5	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None	None
Act Effect Green (s)	77.3	65.2	54.0	47.0	31.4	31.4	18.7	18.7	18.7
Actuated g/C Ratio	0.62	0.52	0.43	0.38	0.25	0.25	0.15	0.15	0.15
v/c Ratio	0.85	0.67	0.21	0.55	0.16	0.24	0.69	0.33	0.57
Control Delay	33.1	28.2	17.0	33.9	34.4	33.3	69.8	51.0	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.1	28.2	17.0	33.9	34.4	33.3	69.8	51.0	10.6
LOS	C	C	B	C	C	C	E	D	B
Approach Delay		29.4		32.9		33.6		34.7	
Approach LOS		C		C		C		C	

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 124.4

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 31.3

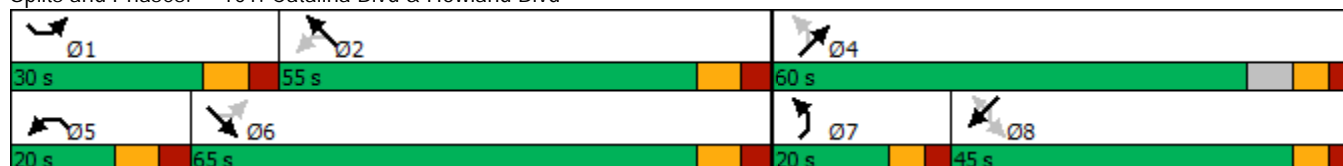
Intersection LOS: C

Intersection Capacity Utilization 75.6%

ICU Level of Service D

Analysis Period (min) 15






















Splits and Phases: 101: Catalina Blvd & Howland Blvd



HCM 6th Signalized Intersection Summary

101: Catalina Blvd & Howland Blvd

02/29/2024

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	408	1111	61	46	623	67	46	87	19	126	87	243
Future Volume (veh/h)	408	1111	61	46	623	67	46	87	19	126	87	243
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1826	1870	1870	1870	1870	1870	1870	1870	1870	1856
Adj Flow Rate, veh/h	429	1169	64	48	656	71	48	92	20	133	92	205
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	5	2	2	2	2	2	2	2	2	3
Cap, veh/h	514	1767	97	240	1265	137	242	371	81	261	293	246
Arrive On Green	0.16	0.52	0.52	0.03	0.39	0.39	0.03	0.25	0.25	0.16	0.16	0.16
Sat Flow, veh/h	1781	3426	187	1781	3235	350	1781	1489	324	1281	1870	1572
Grp Volume(v), veh/h	429	606	627	48	360	367	48	0	112	133	92	205
Grp Sat Flow(s),veh/h/ln	1781	1777	1837	1781	1777	1807	1781	0	1812	1281	1870	1572
Q Serve(g_s), s	16.4	29.8	29.9	1.9	18.4	18.5	2.6	0.0	5.9	11.6	5.2	15.0
Cycle Q Clear(g_c), s	16.4	29.8	29.9	1.9	18.4	18.5	2.6	0.0	5.9	11.6	5.2	15.0
Prop In Lane	1.00		0.10	1.00		0.19	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	514	917	947	240	695	707	242	0	451	261	293	246
V/C Ratio(X)	0.83	0.66	0.66	0.20	0.52	0.52	0.20	0.00	0.25	0.51	0.31	0.83
Avail Cap(c_a), veh/h	554	917	947	352	695	707	378	0	808	470	598	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.0	21.2	21.2	21.3	27.7	27.7	38.7	0.0	35.8	47.2	44.5	48.6
Incr Delay (d2), s/veh	10.1	3.7	3.6	0.4	2.8	2.7	0.4	0.0	0.3	1.5	0.6	7.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	12.4	12.8	0.8	8.0	8.2	1.2	0.0	2.7	3.8	2.5	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	24.9	24.8	21.7	30.4	30.4	39.1	0.0	36.0	48.7	45.1	55.8
LnGrp LOS	C	C	C	C	C	C	D	A	D	D	D	E
Approach Vol, veh/h	1662			775			160			430		
Approach Delay, s/veh	25.9			29.9			36.9			51.3		
Approach LOS	C			C			D			D		
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.3	55.0		36.6	12.5	69.8	11.0	25.6				
Change Period (Y+Rc), s	8.5	8.5		7.0	8.5	8.5	7.0	7.0				
Max Green Setting (Gmax), s	21.5	46.5		53.0	11.5	56.5	13.0	38.0				
Max Q Clear Time (g_c+I1), s	18.4	20.5		7.9	3.9	31.9	4.6	17.0				
Green Ext Time (p_c), s	0.5	4.3		0.7	0.0	8.4	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay				31.1								
HCM 6th LOS				C								

Timings

102: Lake Helen Osteen & Catalina Blvd

02/29/2024



Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	172	343	199	169	362
Future Volume (vph)	172	343	199	169	362
Turn Type	Prot	Prot	pm+pt	NA	NA
Protected Phases	8	8	1	6	2
Permitted Phases			6		
Detector Phase	8	8	1	6	2
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	15.0	15.0
Minimum Split (s)	11.5	11.5	11.5	21.5	21.5
Total Split (s)	26.5	26.5	26.5	63.0	36.5
Total Split (%)	29.6%	29.6%	29.6%	70.4%	40.8%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effect Green (s)	12.6	12.6	39.4	39.4	23.1
Actuated g/C Ratio	0.19	0.19	0.60	0.60	0.35
v/c Ratio	0.54	0.61	0.49	0.16	0.77
Control Delay	31.8	8.1	10.3	6.6	28.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	31.8	8.1	10.3	6.6	28.1
LOS	C	A	B	A	C
Approach Delay	16.0			8.6	28.1
Approach LOS	B			A	C

Intersection Summary

Cycle Length: 89.5

Actuated Cycle Length: 65.5

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 18.1

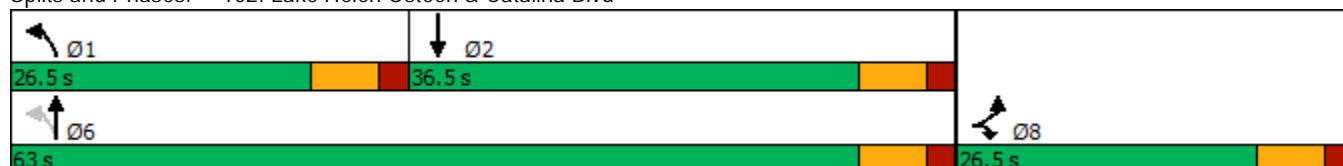
Intersection LOS: B

Intersection Capacity Utilization 61.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 102: Lake Helen Osteen & Catalina Blvd



HCM 6th Signalized Intersection Summary

102: Lake Helen Osteen & Catalina Blvd




02/29/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	172	343	199	169	362	95
Future Volume (veh/h)	172	343	199	169	362	95
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1826	1870	1856	1841
Adj Flow Rate, veh/h	185	369	214	182	389	102
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	5	2	3	4
Cap, veh/h	473	421	362	997	456	120
Arrive On Green	0.27	0.27	0.11	0.53	0.32	0.32
Sat Flow, veh/h	1781	1585	1739	1870	1417	372
Grp Volume(v), veh/h	185	369	214	182	0	491
Grp Sat Flow(s),veh/h/ln	1781	1585	1739	1870	0	1789
Q Serve(g_s), s	5.5	14.4	4.9	3.2	0.0	16.6
Cycle Q Clear(g_c), s	5.5	14.4	4.9	3.2	0.0	16.6
Prop In Lane	1.00	1.00	1.00			0.21
Lane Grp Cap(c), veh/h	473	421	362	997	0	575
V/C Ratio(X)	0.39	0.88	0.59	0.18	0.00	0.85
Avail Cap(c_a), veh/h	552	491	708	1637	0	831
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.4	22.7	14.0	7.8	0.0	20.5
Incr Delay (d2), s/veh	0.5	14.7	1.5	0.1	0.0	6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	6.5	1.6	1.0	0.0	6.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.0	37.4	15.6	7.9	0.0	26.5
LnGrp LOS	B	D	B	A	A	C
Approach Vol, veh/h	554			396	491	
Approach Delay, s/veh	31.6			12.0	26.5	
Approach LOS	C			B	C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	13.7	27.3			40.9	23.6
Change Period (Y+Rc), s	6.5	6.5			6.5	6.5
Max Green Setting (Gmax), s	20.0	30.0			56.5	20.0
Max Q Clear Time (g_c+I1), s	6.9	18.6			5.2	16.4
Green Ext Time (p_c), s	0.5	2.2			1.0	0.7
Intersection Summary						
HCM 6th Ctrl Delay			24.5			
HCM 6th LOS			C			




HCM 6th TWSC
103: Lake Helen Osteen & Driveway #1

02/29/2024

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	6	263	0	0	445
Future Vol, veh/h	5	6	263	0	0	445
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	17	2	2	2	3
Mvmt Flow	6	7	306	0	0	517
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	823	306	0	-	-	-
Stage 1	306	-	-	-	-	-
Stage 2	517	-	-	-	-	-
Critical Hdwy	6.42	6.37	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.453	-	-	-	-
Pot Cap-1 Maneuver	343	700	-	0	0	-
Stage 1	747	-	-	0	0	-
Stage 2	598	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	343	700	-	-	-	-
Mov Cap-2 Maneuver	343	-	-	-	-	-
Stage 1	747	-	-	-	-	-
Stage 2	598	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.8	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	-		475			
HCM Lane V/C Ratio	-		0.027			
HCM Control Delay (s)	-		12.8			
HCM Lane LOS	-		B			
HCM 95th %tile Q(veh)	-		0.1			

HCM 6th TWSC
104: Lake Helen Osteen & Driveway #2

02/29/2024

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	264	2	5	445
Future Vol, veh/h	0	0	264	2	5	445
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	3
Mvmt Flow	0	0	303	2	6	511
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	827	304	0	0	305	0
Stage 1	304	-	-	-	-	-
Stage 2	523	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	341	736	-	-	1256	-
Stage 1	748	-	-	-	-	-
Stage 2	595	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	339	736	-	-	1256	-
Mov Cap-2 Maneuver	339	-	-	-	-	-
Stage 1	748	-	-	-	-	-
Stage 2	591	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	0	0	0.1			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	1256	-	
HCM Lane V/C Ratio	-	-	-	0.005	-	
HCM Control Delay (s)	-	-	0	7.9	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Timings

105: Elkcarn Blvd & Lake Helen Osteen

02/29/2024



Lane Group	SEL	SET	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations	LT	RT	LT	RT	LT	RT	LT	RT
Traffic Volume (vph)	33	286	19	232	157	357	89	210
Future Volume (vph)	33	286	19	232	157	357	89	210
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	3	8	7	4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	16.0	5.0	16.0	5.0	6.0	5.0	6.0
Minimum Split (s)	14.0	25.0	14.0	25.0	13.5	13.0	13.5	13.0
Total Split (s)	29.0	49.0	29.0	49.0	28.5	32.0	28.5	32.0
Total Split (%)	20.9%	35.4%	20.9%	35.4%	20.6%	23.1%	20.6%	23.1%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	4.0	5.5	4.0
All-Red Time (s)	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	9.0	9.0	9.0	9.0	8.5	7.0	8.5	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effect Green (s)	33.2	30.7	30.7	27.3	35.7	28.0	29.0	21.1
Actuated g/C Ratio	0.35	0.32	0.32	0.29	0.38	0.30	0.31	0.22
v/c Ratio	0.12	0.72	0.07	0.75	0.40	0.71	0.31	0.57
Control Delay	19.4	36.9	18.9	40.8	23.9	44.0	24.3	43.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.4	36.9	18.9	40.8	23.9	44.0	24.3	43.1
LOS	B	D	B	D	C	D	C	D
Approach Delay		35.6		39.7		38.1		37.7
Approach LOS		D		D		D		D

Intersection Summary

Cycle Length: 138.5

Actuated Cycle Length: 94.9

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 37.7

Intersection LOS: D

Intersection Capacity Utilization 72.4%

ICU Level of Service C

Analysis Period (min) 15





















Splits and Phases: 105: Elkcarn Blvd & Lake Helen Osteen

Ø1	Ø2	Ø3	Ø4
29 s	49 s	28.5 s	32 s
Ø5	Ø6	Ø7	Ø8
29 s	49 s	28.5 s	32 s

HCM 6th Signalized Intersection Summary

105: Elkcarn Blvd & Lake Helen Osteen

02/29/2024

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	33	286	114	19	232	138	157	357	14	89	210	14
Future Volume (veh/h)	33	286	114	19	232	138	157	357	14	89	210	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1870	1870	1870	1870	1870	1885	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	301	120	20	244	145	165	376	15	94	221	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	2	2	2	2	2	2	1	2	2	2	2
Cap, veh/h	202	353	141	178	293	174	356	430	17	230	349	24
Arrive On Green	0.03	0.28	0.28	0.02	0.27	0.27	0.10	0.24	0.24	0.06	0.20	0.20
Sat Flow, veh/h	1767	1272	507	1781	1099	653	1781	1800	72	1781	1732	118
Grp Volume(v), veh/h	35	0	421	20	0	389	165	0	391	94	0	236
Grp Sat Flow(s),veh/h/ln	1767	0	1779	1781	0	1753	1781	0	1872	1781	0	1849
Q Serve(g_s), s	1.2	0.0	18.7	0.7	0.0	17.5	6.0	0.0	16.8	3.4	0.0	9.7
Cycle Q Clear(g_c), s	1.2	0.0	18.7	0.7	0.0	17.5	6.0	0.0	16.8	3.4	0.0	9.7
Prop In Lane	1.00		0.29	1.00		0.37	1.00		0.04	1.00		0.06
Lane Grp Cap(c), veh/h	202	0	494	178	0	467	356	0	447	230	0	372
V/C Ratio(X)	0.17	0.00	0.85	0.11	0.00	0.83	0.46	0.00	0.87	0.41	0.00	0.63
Avail Cap(c_a), veh/h	567	0	853	565	0	840	610	0	561	551	0	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.7	0.0	28.5	23.3	0.0	28.8	23.3	0.0	30.5	25.3	0.0	30.5
Incr Delay (d2), s/veh	0.4	0.0	4.3	0.3	0.0	3.9	0.9	0.0	12.1	1.2	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	8.1	0.3	0.0	7.4	2.5	0.0	8.7	1.5	0.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	0.0	32.8	23.5	0.0	32.8	24.2	0.0	42.6	26.5	0.0	32.3
LnGrp LOS	C	A	C	C	A	C	C	A	D	C	A	C
Approach Vol, veh/h		456			409			556			330	
Approach Delay, s/veh		32.0			32.3			37.1			30.6	
Approach LOS		C			C			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.9	32.2	16.6	23.8	11.8	31.2	13.5	26.9				
Change Period (Y+Rc), s	9.0	9.0	8.5	7.0	9.0	9.0	8.5	7.0				
Max Green Setting (Gmax), s	20.0	40.0	20.0	25.0	20.0	40.0	20.0	25.0				
Max Q Clear Time (g_c+I1), s	2.7	20.7	8.0	11.7	3.2	19.5	5.4	18.8				
Green Ext Time (p_c), s	0.0	2.5	0.3	1.0	0.0	2.3	0.2	1.2				
Intersection Summary												
HCM 6th Ctrl Delay			33.5									
HCM 6th LOS			C									

Volusia County, FL



MOVING TRAFFIC FORWARD

400 - Lake Helen Osteen @ Catalina Blvd. - ASC - [REDACTED] - Econolite Type - ASC/3

Controller Timing Plan (MM) 2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction																
Min Green	5	15	0	0	0	15	0	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	0	0	0	0	0	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	15	0	0	0	0	0	0	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	0.0	0.0	0.0	5.0	0.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	20	30	0	0	0	30	0	20	35	35	35	35	35	35	35	35
Max2	0	0	0	0	0	0	0	0	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.5	4.5	0.0	0.0	0.0	4.5	0.0	4.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	2.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Volusia County, FL

MOVING TRAFFIC FORWARD

400 - Lake Helen Osteen @ Catalina Blvd. - ASC - [REDACTED] - Econolite Type - ASC/3

Time Base Day Plan/Schedule**Day Plan (MM) 5-3****Day Plan #1**

Event	Action Plan	Start Time
1	11	00:00

Schedule (MM) 5-4**Schedule Number - 1**

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X	X	X	X	X	X	X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Volusia County, FL



MOVING TRAFFIC FORWARD

339 - Elkcam @ Lake Helen Osteen - ASC-3 - [REDACTED] - Econolite Type - Cobalt

Controller Timing Plan (MM) 2-1

Plan 1 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	N-L	S-T	E-L	W-T	S-L	N-T	W-L	E-T	N	N	N	N	N	N	N	N
Min Green	5	16	5	6	5	16	5	6	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	24	0	20	0	24	0	20	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	20	40	20	25	20	40	20	25	35	35	35	35	35	35	35	35
Max2	0	0	0	0	0	0	0	0	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	60	0	60	0	60	0	60	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.5	5.5	5.5	4.0	5.5	5.5	5.5	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	3.5	3.5	3.0	3.0	3.5	3.5	3.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Volusia County, FL

MOVING TRAFFIC FORWARD

339 - Elkcarn @ Lake Helen Osteen - ASC-3 - [REDACTED] - Econolite Type - Cobalt

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Schedule (MM) 5-4

Volusia County, FL



MOVING TRAFFIC FORWARD

250 -Howland Blvd @ Catalina Blvd. - ASC/3 - [REDACTED] - Econolite Type - ASC/3

Controller Timing Plan (MM) 2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction																
Min Green	5	11	0	7	5	11	5	7	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	23	0	23	0	23	0	26	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	4.0	0.0	3.0	3.0	4.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	30	45	0	25	20	45	20	35	35	35	35	35	35	35	35	35
Max2	30	45	0	25	20	45	20	20	20	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	90	0	0	0	0	0	50	0	0	0	0	0	0	0	0
Dym Step	0.0	10.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	5.0	0.0	4.0	5.0	5.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	3.5	3.5	0.0	3.0	3.5	3.5	3.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Volusia County, FL



MOVING TRAFFIC FORWARD

250 -Howland Blvd @ Catalina Blvd. - ASC/3 - [REDACTED] - Econolite Type - ASC/3

Coordination Options**Options (MM) 3-1**

Manual Pattern	Auto	ECPI Coord	Yes
System Source	SYS	System Format	PTN
Splits In	Seconds	Offsets In	Seconds
Transition	Smooth	Max Select	MAXINH
Dwell / Add Time	0		
Delay Coord Wk-LZ	No	Force Off	Float
Offset Reference	Yellow	Use Ped Time	Yes
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Ini Green	No
Re-sync Count	0	Multisync	No

Auto Perm Minimum Green (Seconds) (MM) 3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM) 3-5

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

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

Volusia County, FL



MOVING TRAFFIC FORWARD

250 -Howland Blvd @ Catalina Blvd. - ASC/3 - [REDACTED] - Econolite Type - ASC/3

Coordination Pattern Data**Coordinator Pattern Data (MM) 3-2****Coordinator Pattern # 1**

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits In	Seconds
Cycle	150	Std (COS)	9	Offsets In	Seconds
Offset Value	0s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reserve	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 1)	24	59	0	67	18	65	24	43	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	150s	150s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Function Outputs																

Coordinator Pattern # 2

Split Pattern	2	TS2 (Pat-Off)	0-2	Splits In	Seconds
Cycle	150	Std (COS)	17	Offsets In	Seconds
Offset Value	0s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 2)	31	59	0	60	20	65	25	40	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	150s	150s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Function Outputs																

Coordinator Pattern # 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits In	Seconds
Cycle	150	Std (COS)	25	Offsets In	Seconds
Offset Value	0s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 3)	30	60	0	60	20	65	20	45	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	150s	150s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Function Outputs																

Volusia County, FL



MOVING TRAFFIC FORWARD

250 -Howland Blvd @ Catalina Blvd. - ASC/3 - [REDACTED] - Econolite Type - ASC/3

Coordination Split Pattern**Split Pattern Data (MM) 3-3****Split Pattern # 1**

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Split (seconds)	24	59	0	67	18	65	24	43	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	150s	150s	0s	0s

Split Pattern # 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Split (seconds)	31	59	0	60	20	65	25	40	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	150s	150s	0s	0s

Split Pattern # 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Split (seconds)	30	60	0	60	20	65	20	45	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	150s	150s	0s	0s



Volusia County, FL

MOVING TRAFFIC FORWARD

250 -Howland Blvd @ Catalina Blvd. - ASC/3 - [REDACTED] - Econolite Type - ASC/3

Time Base Day Plan/Schedule**Day Plan (MM) 5-3****Day Plan #1**

Event	Action Plan	Start Time
1	1	06:30
2	11	09:00
3	3	14:30
4	11	19:00

Day Plan #2

Event	Action Plan	Start Time
1	11	00:00

Schedule (MM) 5-4**Schedule Number - 1**

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X	X	X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 3

Day Plan No.: 3

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	12	13	14	15	16	17	18	19	20	21	22
	23	24	25	26	27	28	29	30	31		

Appendix E

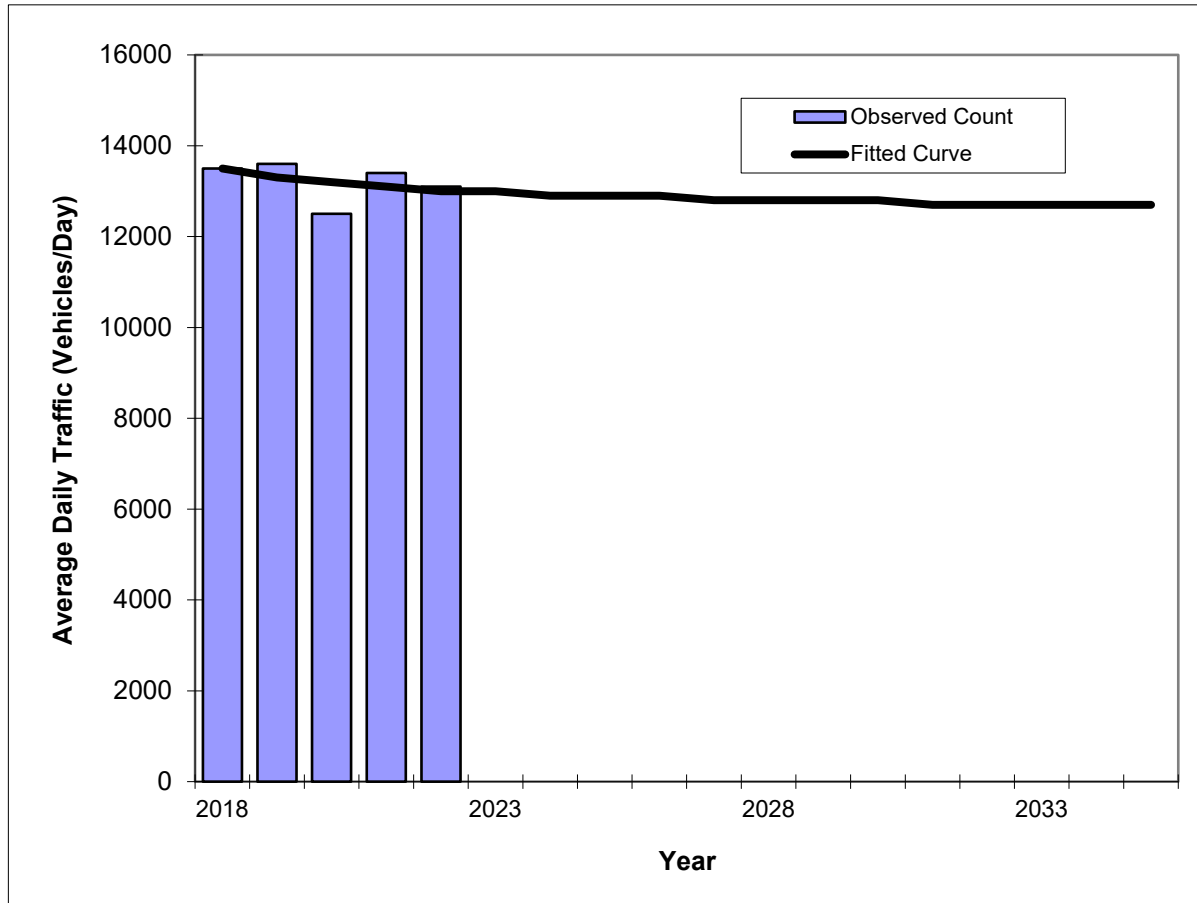
Historical Data/Trends & Applied Annual Growth Rates

Traffic Trends - V03.a

Providence Blvd, Ft. Smith to Elkcarn --

FIN#	
Location	

County:	Volusia
Station #:	1541
Highway:	Providence Blvd, Ft. Smith to Elkcarn



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2018	13500	13500
2019	13600	13300
2020	12500	13200
2021	13400	13100
2022	13100	13000
2025 Opening Year Trend		
2025	N/A	12900
2027 Mid-Year Trend		
2027	N/A	12800
2029 Design Year Trend		
2029	N/A	12800
TRANPLAN Forecasts/Trends		

Trend R-squared:	17.44%
Compounded Annual Historic Growth Rate:	-0.94%
Compounded Growth Rate (2022 to Design Year):	-0.22%
Printed:	26-Feb-24
Decaying Exponential Growth Option	

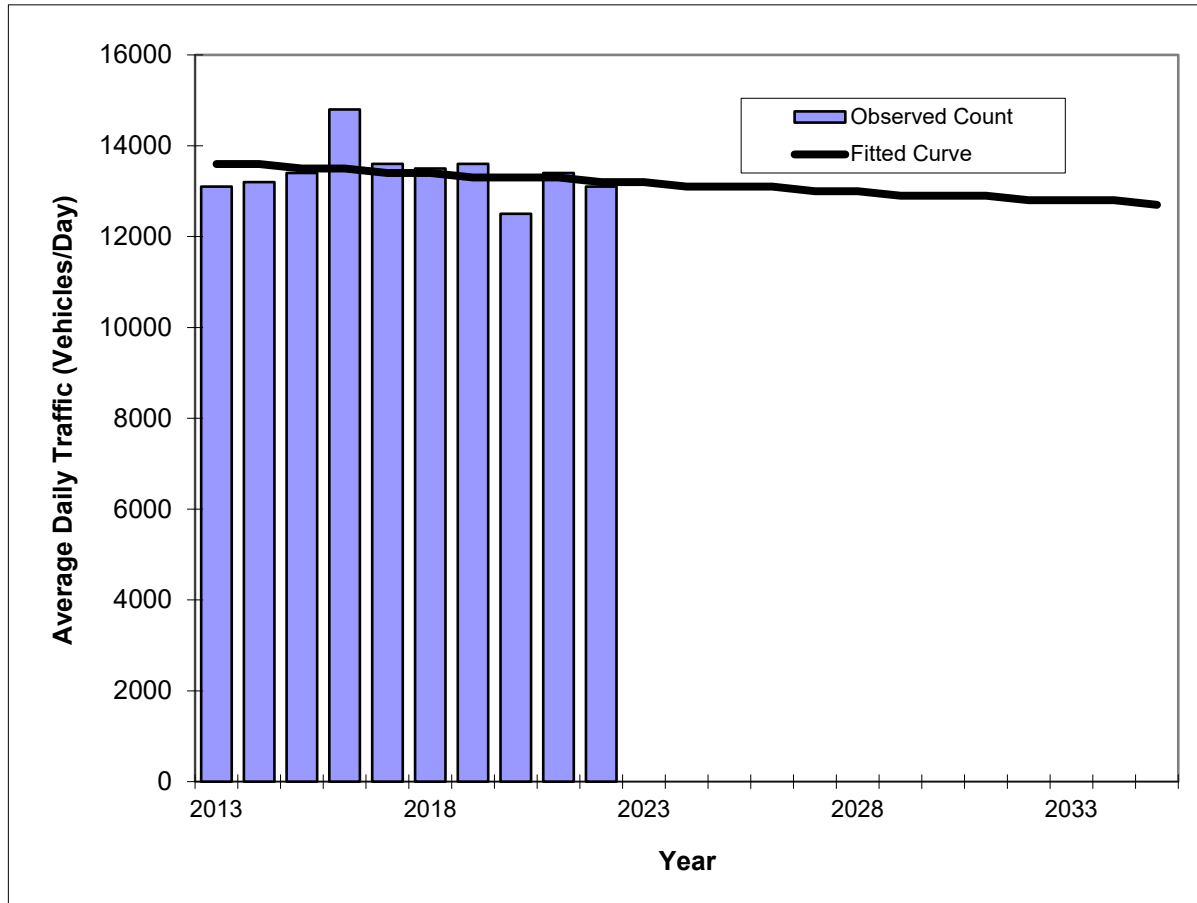
*Axle-Adjusted

Traffic Trends - V03.a

Providence Blvd, Ft. Smith to Elkcam --

FIN#	
Location	

County:	Volusia
Station #:	1541
Highway:	Providence Blvd, Ft. Smith to Elkcam



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2013	13100	13600
2014	13200	13600
2015	13400	13500
2016	14800	13500
2017	13600	13400
2018	13500	13400
2019	13600	13300
2020	12500	13300
2021	13400	13300
2022	13100	13200
2025 Opening Year Trend		
2025	N/A	13100
2027 Mid-Year Trend		
2027	N/A	13000
2029 Design Year Trend		
2029	N/A	12900
TRANPLAN Forecasts/Trends		

Trend R-squared:	4.67%
Compounded Annual Historic Growth Rate:	-0.33%
Compounded Growth Rate (2022 to Design Year):	-0.33%
Printed:	26-Feb-24
Exponential Growth Option	

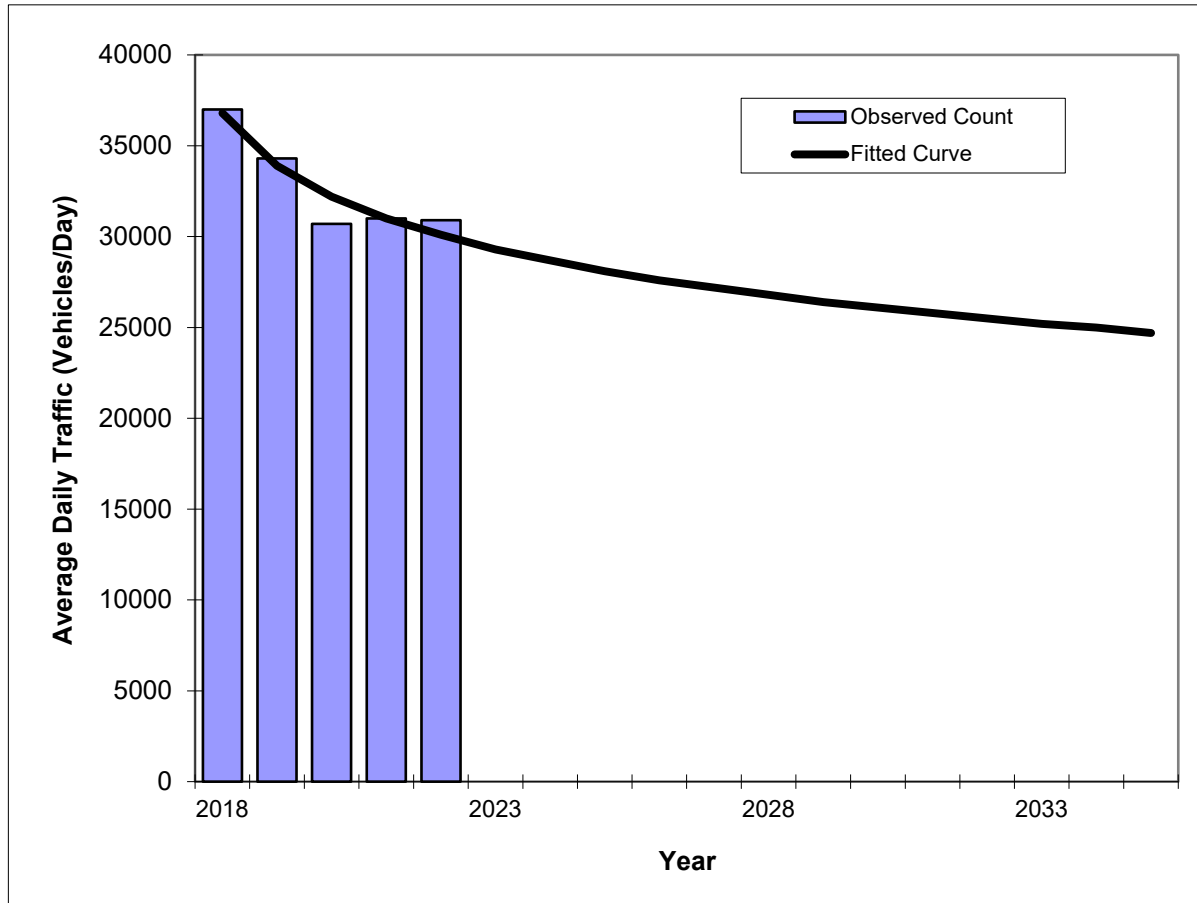
*Axle-Adjusted

Traffic Trends - V03.a

Howland Blvd, I-4 to Wolf Pack Run --

FIN#	
Location	

County:	Volusia
Station #:	901
Highway:	Howland Blvd, I-4 to Wolf Pack Run



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2018	37000	36800
2019	34300	33900
2020	30700	32200
2021	31000	31000
2022	30900	30100
2025 Opening Year Trend		
2025	N/A	28100
2027 Mid-Year Trend		
2027	N/A	27200
2029 Design Year Trend		
2029	N/A	26400
TRANPLAN Forecasts/Trends		

Trend R-squared:	89.87%
Compounded Annual Historic Growth Rate:	-4.90%
Compounded Growth Rate (2022 to Design Year):	-1.86%
Printed:	23-Feb-24
Decaying Exponential Growth Option	

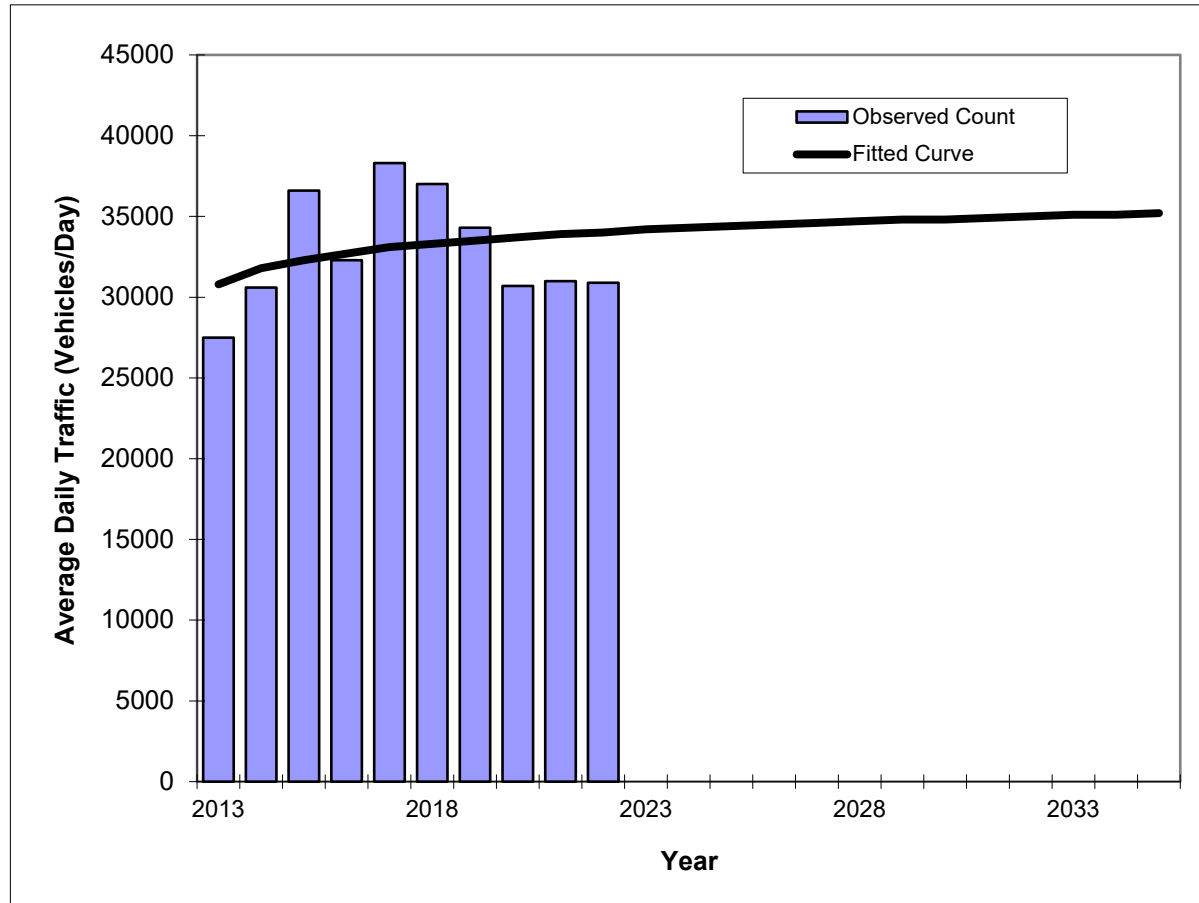
*Axle-Adjusted

Traffic Trends - V03.a

Howland Blvd, I-4 to Wolf Pack Run --

FIN#	
Location	

County:	Volusia
Station #:	901
Highway:	Howland Blvd, I-4 to Wolf Pack Run



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2013	27500	30800
2014	30600	31800
2015	36600	32300
2016	32300	32700
2017	38300	33100
2018	37000	33300
2019	34300	33500
2020	30700	33700
2021	31000	33900
2022	30900	34000
2025 Opening Year Trend		
2025	N/A	34400
2027 Mid-Year Trend		
2027	N/A	34600
2029 Design Year Trend		
2029	N/A	34800
TRANPLAN Forecasts/Trends		

Trend R-squared:	8.64%
Compounded Annual Historic Growth Rate:	1.10%
Compounded Growth Rate (2022 to Design Year):	0.33%
Printed:	23-Feb-24
Decaying Exponential Growth Option	

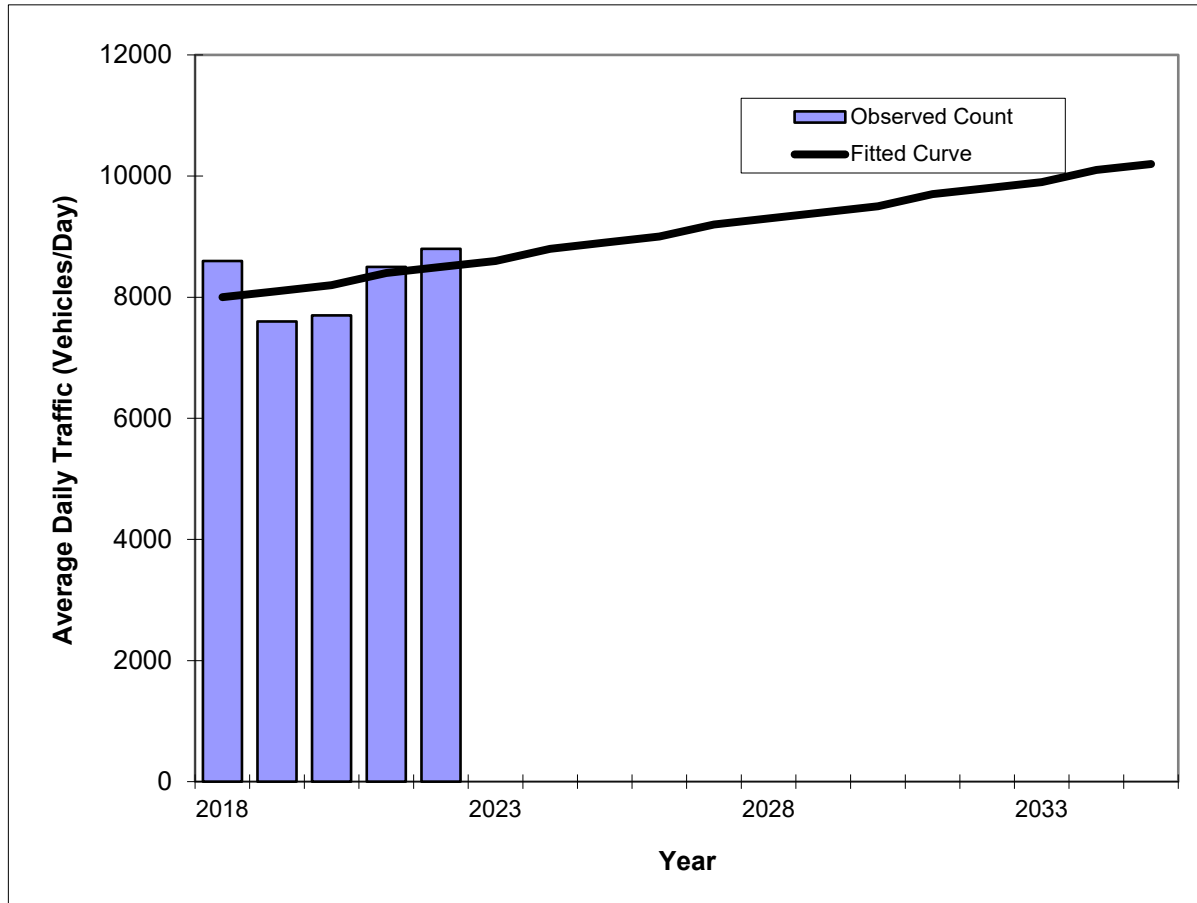
*Axle-Adjusted

Traffic Trends - V03.a

Lake Helen Osteen, Catalina to Captain --

FIN#	
Location	

County:	Volusia
Station #:	1073
Highway:	Lake Helen Osteen, Catalina to Captain



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2018	8600	8000
2019	7600	8100
2020	7700	8200
2021	8500	8400
2022	8800	8500
2025 Opening Year Trend		
2025	N/A	8900
2027 Mid-Year Trend		
2027	N/A	9200
2029 Design Year Trend		
2029	N/A	9400
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	130
Trend R-squared:	13.94%
Trend Annual Historic Growth Rate:	1.56%
Trend Growth Rate (2022 to Design Year):	1.51%
Printed:	23-Feb-24
Straight Line Growth Option	

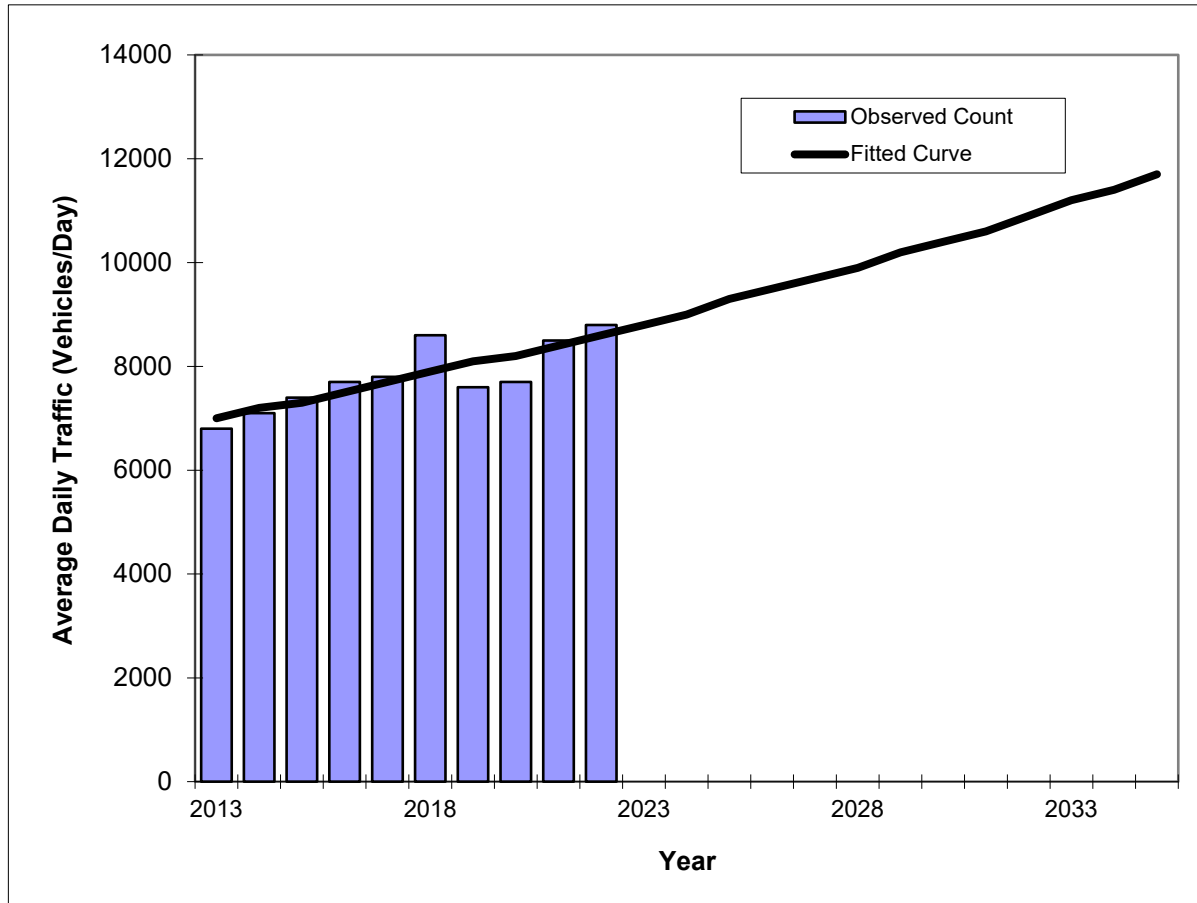
*Axle-Adjusted

Traffic Trends - V03.a

Lake Helen Osteen, Catalina to Captain --

FIN#	
Location	

County:	Volusia
Station #:	1073
Highway:	Lake Helen Osteen, Catalina to Captain



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2013	6800	7000
2014	7100	7200
2015	7400	7300
2016	7700	7500
2017	7800	7700
2018	8600	7900
2019	7600	8100
2020	7700	8200
2021	8500	8400
2022	8800	8600
2025 Opening Year Trend		
2025	N/A	9300
2027 Mid-Year Trend		
2027	N/A	9700
2029 Design Year Trend		
2029	N/A	10200
TRANPLAN Forecasts/Trends		

Trend R-squared:	71.04%
Compounded Annual Historic Growth Rate:	2.31%
Compounded Growth Rate (2022 to Design Year):	2.47%
Printed:	23-Feb-24
Exponential Growth Option	

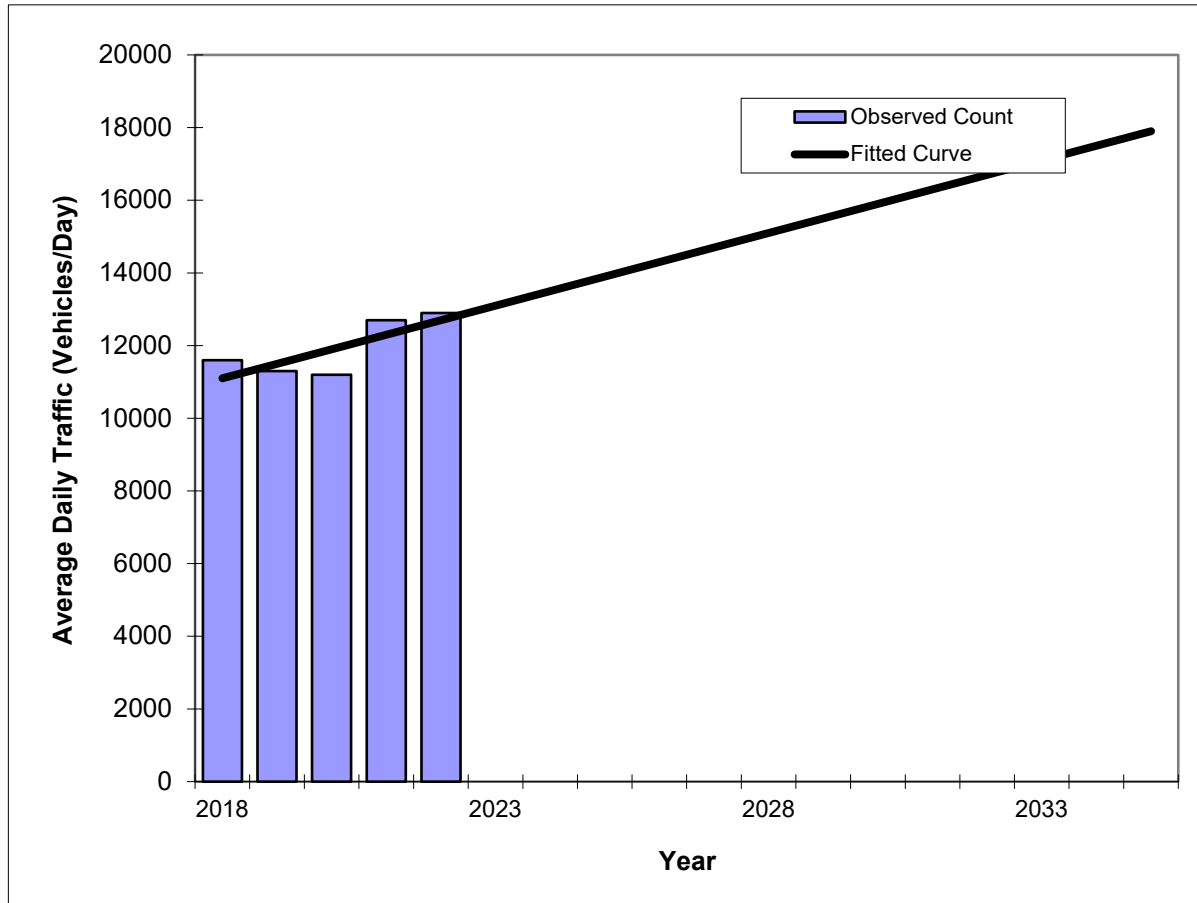
*Axle-Adjusted

Traffic Trends - V03.a

Lake Helen Osteen, Haulover to Catalina --

FIN#	
Location	

County:	Volusia
Station #:	1072
Highway:	Lake Helen Osteen, Haulover to Catalina



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2018	11600	11100
2019	11300	11500
2020	11200	11900
2021	12700	12300
2022	12900	12700
2025 Opening Year Trend		
2025	N/A	13900
2027 Mid-Year Trend		
2027	N/A	14700
2029 Design Year Trend		
2029	N/A	15500
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	400
Trend R-squared:	62.21%
Trend Annual Historic Growth Rate:	3.60%
Trend Growth Rate (2022 to Design Year):	3.15%
Printed:	23-Feb-24
Straight Line Growth Option	

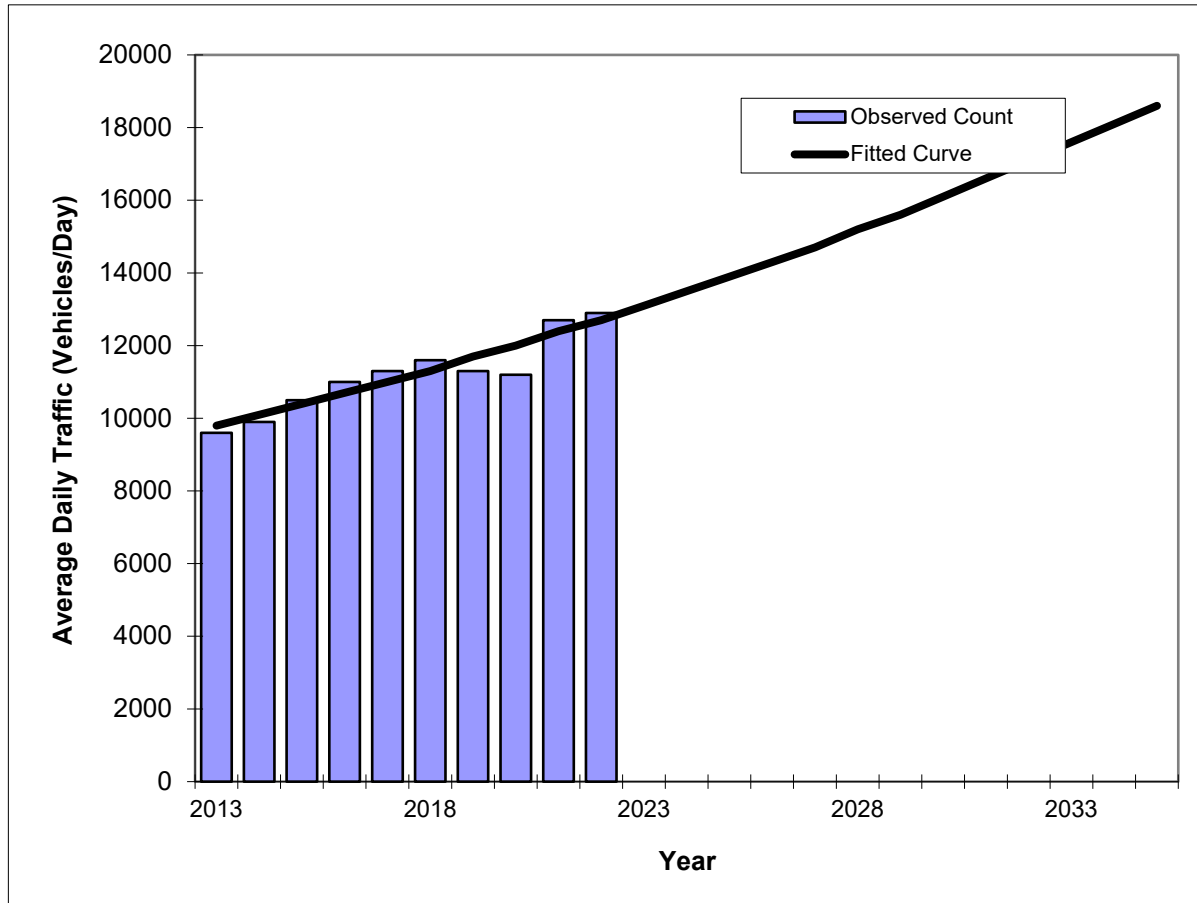
*Axle-Adjusted

Traffic Trends - V03.a

Lake Helen Osteen, Haulover to Catalina --

FIN#	
Location	

County:	Volusia
Station #:	1072
Highway:	Lake Helen Osteen, Haulover to Catalina



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2013	9600	9800
2014	9900	10100
2015	10500	10400
2016	11000	10700
2017	11300	11000
2018	11600	11300
2019	11300	11700
2020	11200	12000
2021	12700	12400
2022	12900	12700
2025 Opening Year Trend		
2025	N/A	13900
2027 Mid-Year Trend		
2027	N/A	14700
2029 Design Year Trend		
2029	N/A	15600
TRANPLAN Forecasts/Trends		

Trend R-squared:	87.93%
Compounded Annual Historic Growth Rate:	2.92%
Compounded Growth Rate (2022 to Design Year):	2.98%
Printed:	23-Feb-24
Exponential Growth Option	

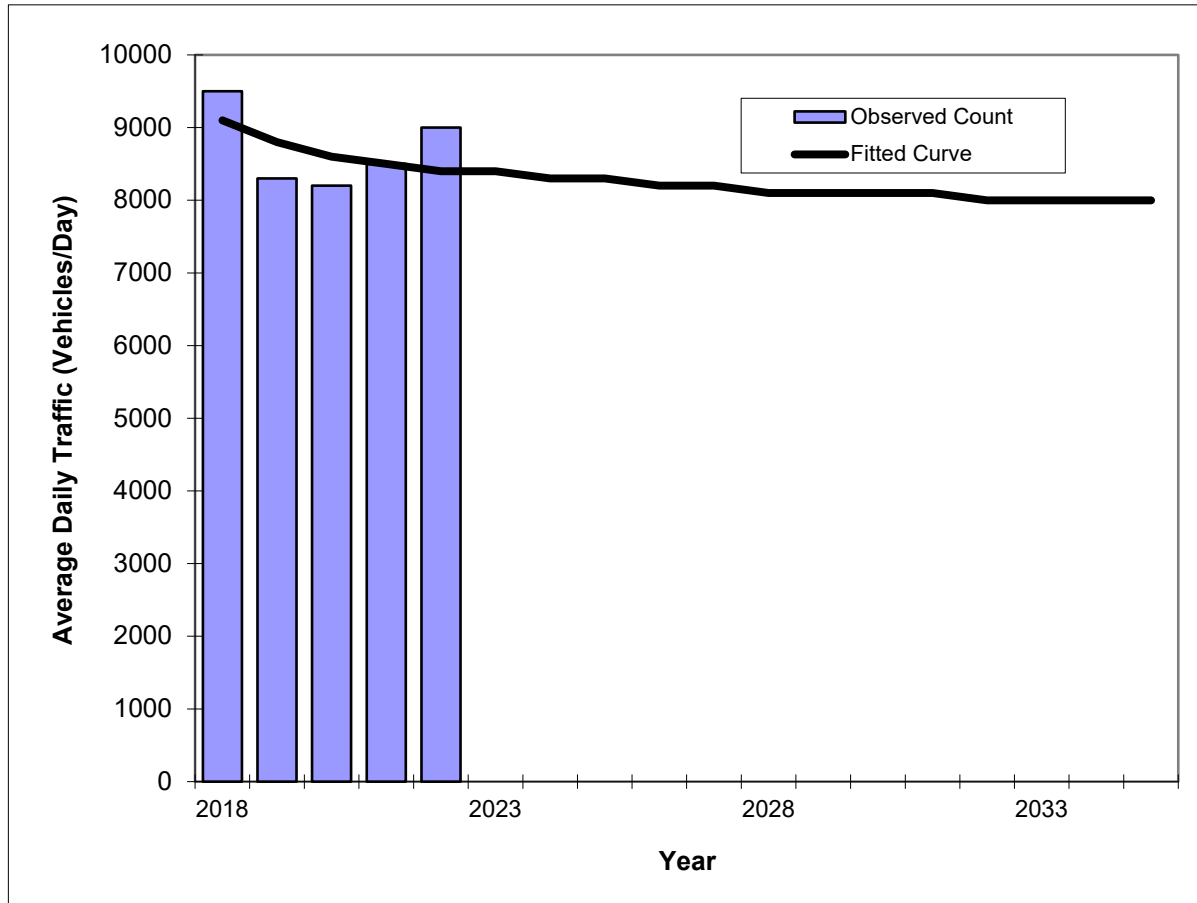
*Axle-Adjusted

Traffic Trends - V03.a

Lake Helen Osteen, Elkcam to Haulover --

FIN#	
Location	

County:	Volusia
Station #:	1071
Highway:	Lake Helen Osteen, Elkcam to Haulover



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2018	9500	9100
2019	8300	8800
2020	8200	8600
2021	8500	8500
2022	9000	8400
2025 Opening Year Trend		
2025	N/A	8300
2027 Mid-Year Trend		
2027	N/A	8200
2029 Design Year Trend		
2029	N/A	8100
TRANPLAN Forecasts/Trends		

Trend R-squared:	20.23%
Compounded Annual Historic Growth Rate:	-1.98%
Compounded Growth Rate (2022 to Design Year):	-0.52%
Printed:	23-Feb-24
Decaying Exponential Growth Option	

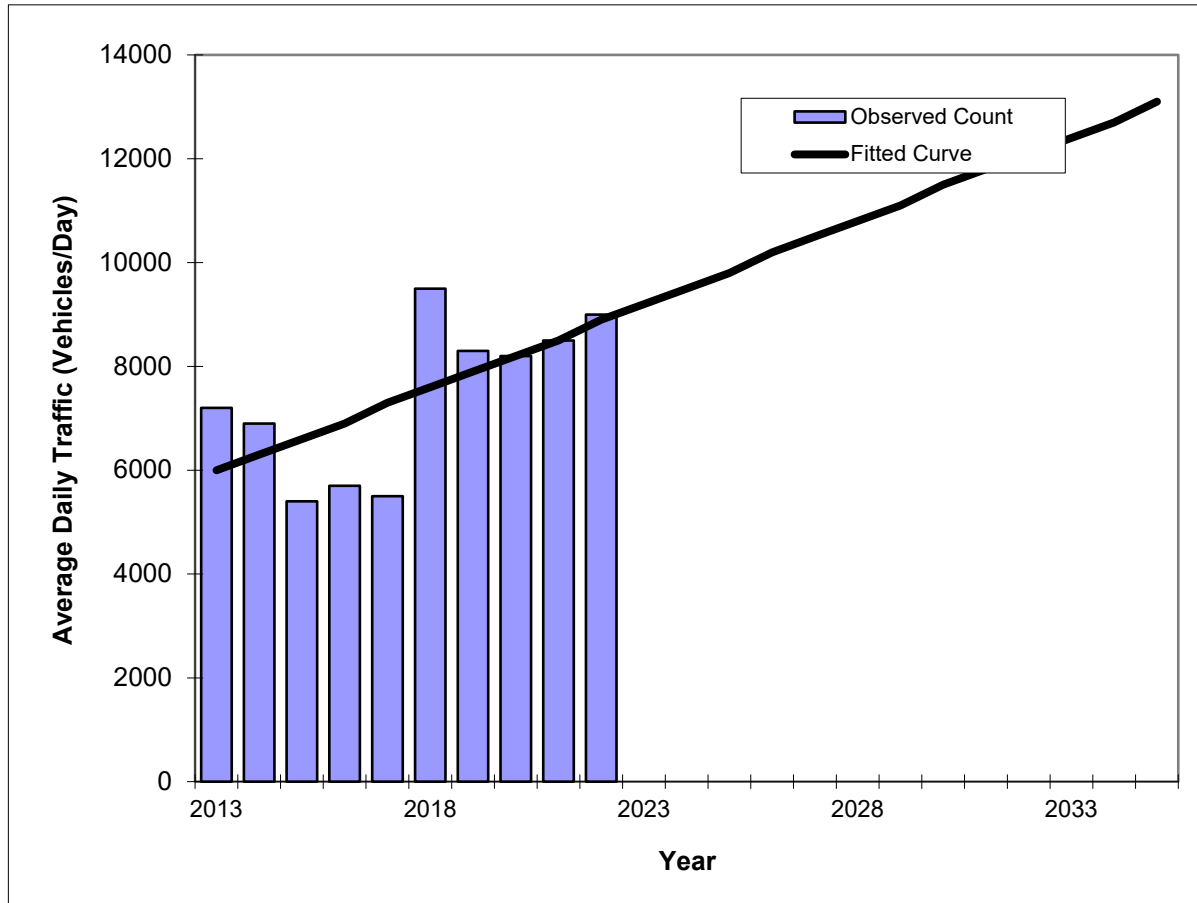
*Axle-Adjusted

Traffic Trends - V03.a

Lake Helen Osteen, Elkcarn to Haulover --

FIN#	
Location	

County:	Volusia
Station #:	1071
Highway:	Lake Helen Osteen, Elkcarn to Haulover



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2013	7200	6000
2014	6900	6300
2015	5400	6600
2016	5700	6900
2017	5500	7300
2018	9500	7600
2019	8300	7900
2020	8200	8200
2021	8500	8500
2022	9000	8900
2025 Opening Year Trend		
2025	N/A	9800
2027 Mid-Year Trend		
2027	N/A	10500
2029 Design Year Trend		
2029	N/A	11100
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	322
Trend R-squared:	42.01%
Trend Annual Historic Growth Rate:	5.37%
Trend Growth Rate (2022 to Design Year):	3.53%
Printed:	23-Feb-24
Straight Line Growth Option	

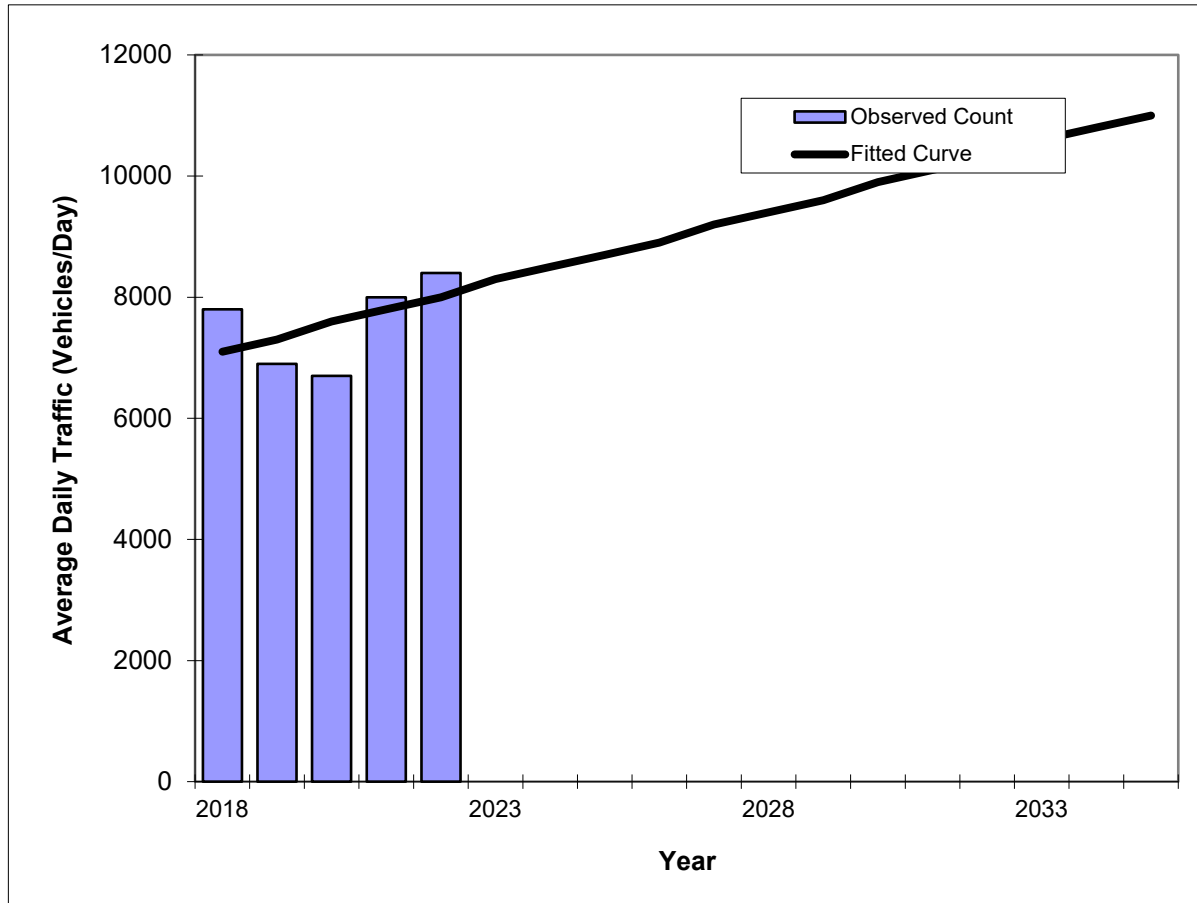
*Axle-Adjusted

Traffic Trends - V03.a

Lake Helen Osteen, Howland to Elkcam --

FIN#	
Location	

County:	Volusia
Station #:	1070
Highway:	Lake Helen Osteen, Howland to Elkcam



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2018	7800	7100
2019	6900	7300
2020	6700	7600
2021	8000	7800
2022	8400	8000
2025 Opening Year Trend		
2025	N/A	8700
2027 Mid-Year Trend		
2027	N/A	9200
2029 Design Year Trend		
2029	N/A	9600
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	230
Trend R-squared:	24.81%
Trend Annual Historic Growth Rate:	3.17%
Trend Growth Rate (2022 to Design Year):	2.86%
Printed:	23-Feb-24
Straight Line Growth Option	

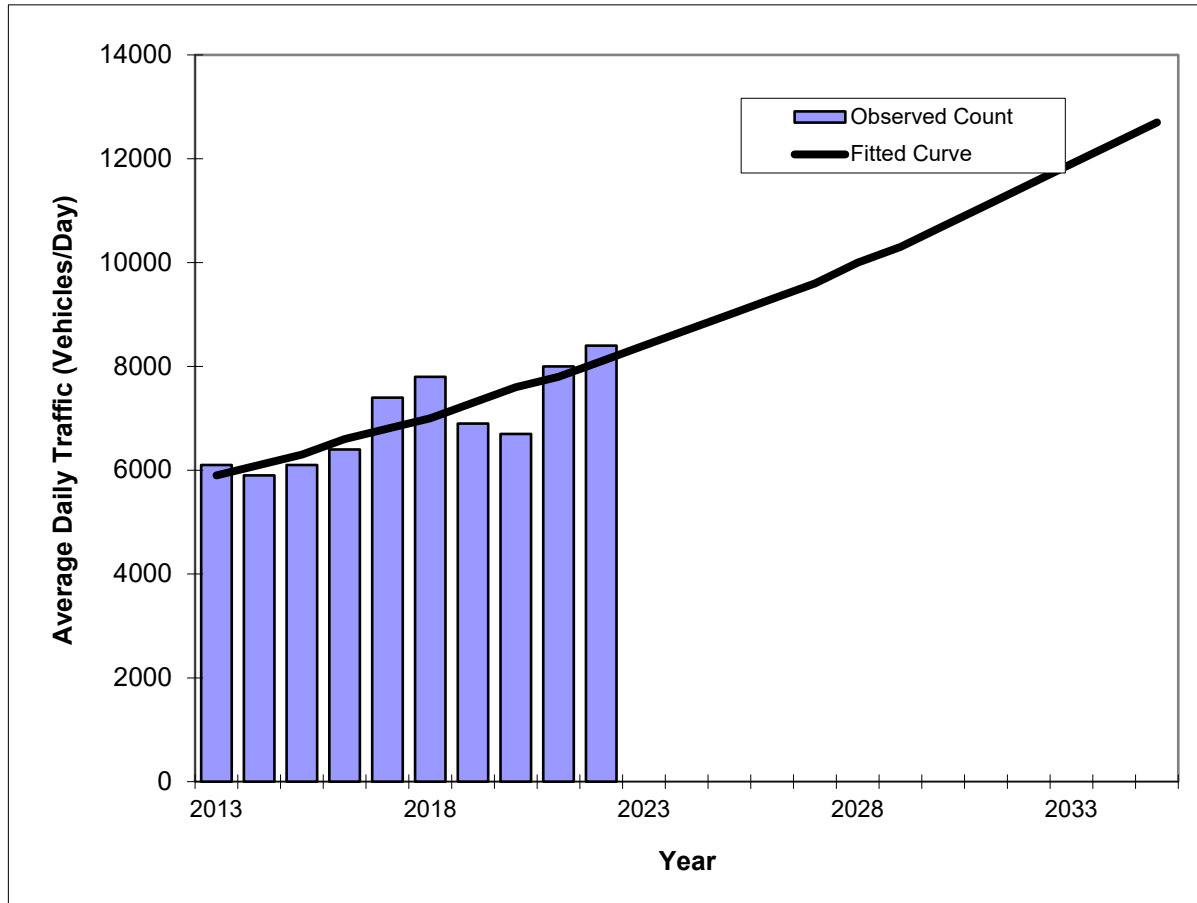
*Axle-Adjusted

Traffic Trends - V03.a

Lake Helen Osteen, Howland to Elkcam --

FIN#	
Location	

County:	Volusia
Station #:	1070
Highway:	Lake Helen Osteen, Howland to Elkcam



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2013	6100	5900
2014	5900	6100
2015	6100	6300
2016	6400	6600
2017	7400	6800
2018	7800	7000
2019	6900	7300
2020	6700	7600
2021	8000	7800
2022	8400	8100
2025 Opening Year Trend		
2025	N/A	9000
2027 Mid-Year Trend		
2027	N/A	9600
2029 Design Year Trend		
2029	N/A	10300
TRANPLAN Forecasts/Trends		

Trend R-squared:	70.85%
Compounded Annual Historic Growth Rate:	3.58%
Compounded Growth Rate (2022 to Design Year):	3.49%
Printed:	23-Feb-24
Exponential Growth Option	

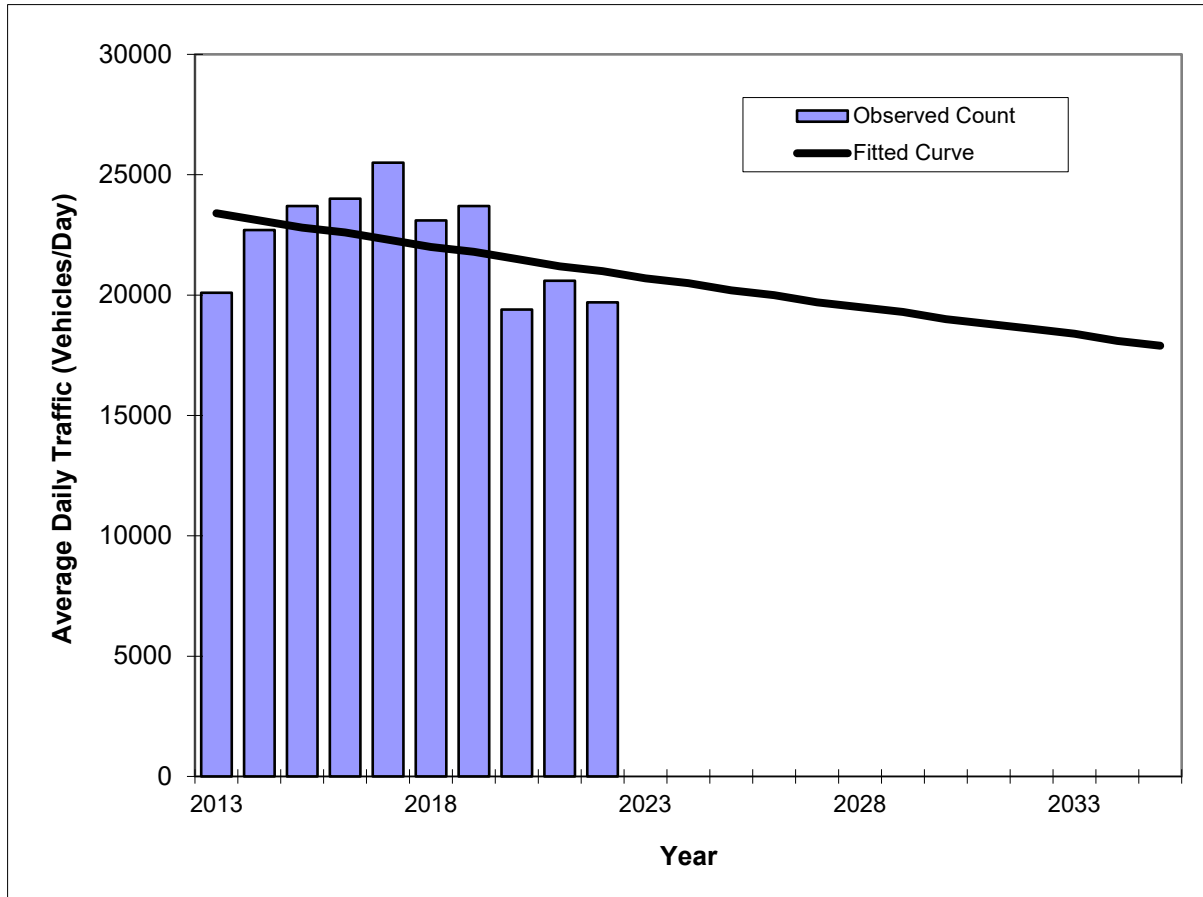
*Axle-Adjusted

Traffic Trends - V03.a

Howland Blvd, Catalina to Providence --

FIN#	
Location	

County:	Volusia
Station #:	905
Highway:	Howland Blvd, Catalina to Providence



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2013	20100	23400
2014	22700	23100
2015	23700	22800
2016	24000	22600
2017	25500	22300
2018	23100	22000
2019	23700	21800
2020	19400	21500
2021	20600	21200
2022	19700	21000
2025 Opening Year Trend		
2025	N/A	20200
2027 Mid-Year Trend		
2027	N/A	19700
2029 Design Year Trend		
2029	N/A	19300
TRANPLAN Forecasts/Trends		

Trend R-squared:	14.44%
Compounded Annual Historic Growth Rate:	-1.20%
Compounded Growth Rate (2022 to Design Year):	-1.20%
Printed:	23-Feb-24
Exponential Growth Option	

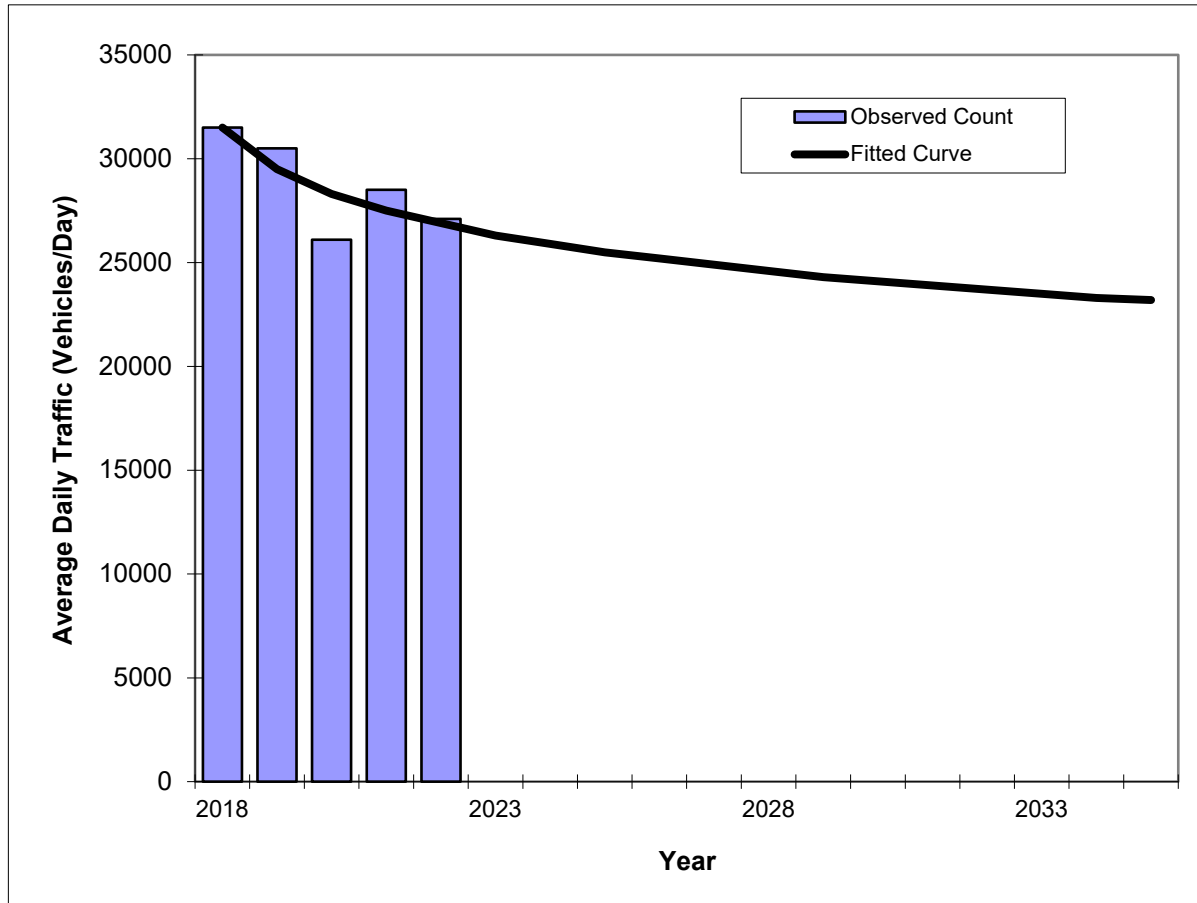
*Axle-Adjusted

Traffic Trends - V03.a

Howland Blvd, Wolf Pack Run to Catalina --

FIN#	
Location	

County:	Volusia
Station #:	903
Highway:	Howland Blvd, Wolf Pack Run to Catalina



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2018	31500	31500
2019	30500	29500
2020	26100	28300
2021	28500	27500
2022	27100	26900
2025 Opening Year Trend		
2025	N/A	25500
2027 Mid-Year Trend		
2027	N/A	24900
2029 Design Year Trend		
2029	N/A	24300
TRANPLAN Forecasts/Trends		

Trend R-squared:	65.58%
Compounded Annual Historic Growth Rate:	-3.87%
Compounded Growth Rate (2022 to Design Year):	-1.44%
Printed:	23-Feb-24
Decaying Exponential Growth Option	

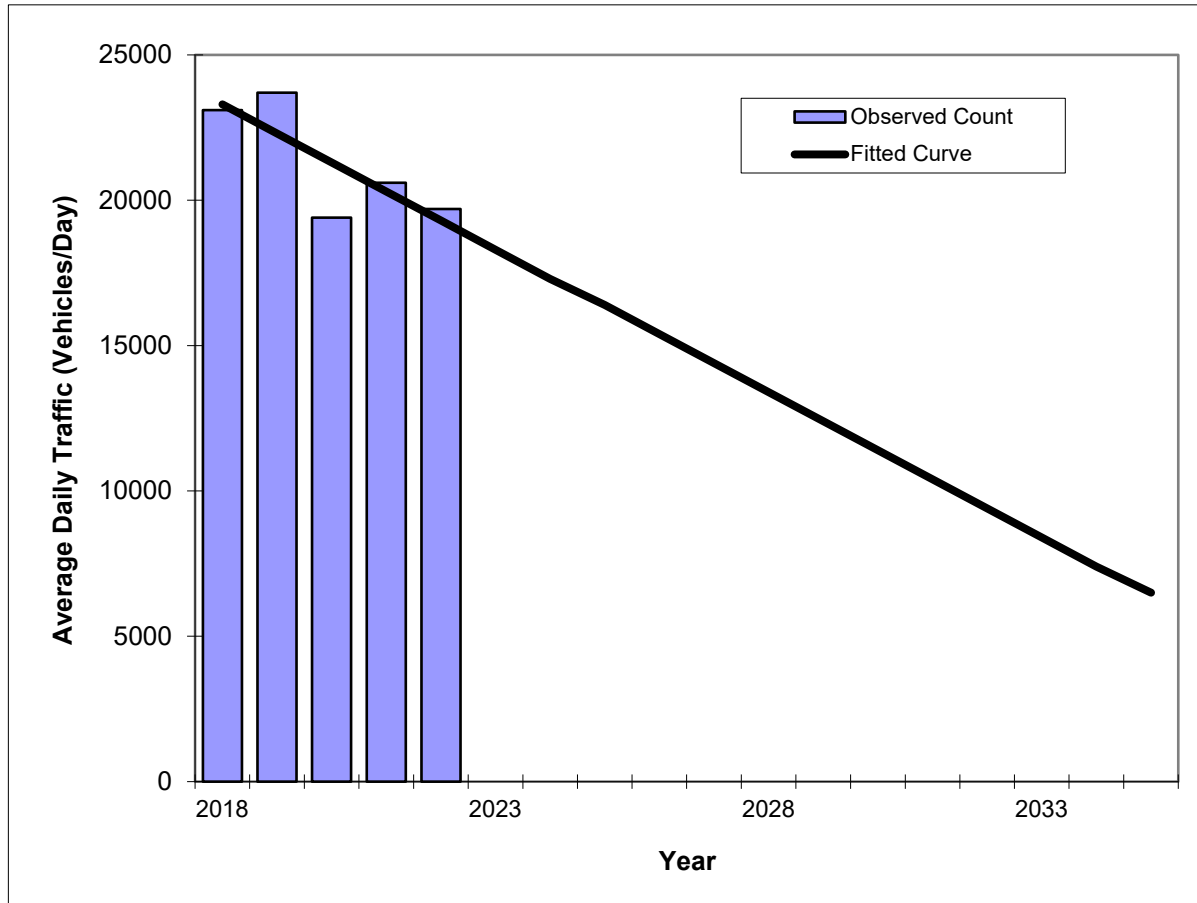
*Axle-Adjusted

Traffic Trends - V03.a

Howland Blvd, Catalina to Providence --

FIN#	
Location	

County:	Volusia
Station #:	905
Highway:	Howland Blvd, Catalina to Providence



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2018	23100	23300
2019	23700	22300
2020	19400	21300
2021	20600	20300
2022	19700	19300
2025 Opening Year Trend		
2025	N/A	16400
2027 Mid-Year Trend		
2027	N/A	14400
2029 Design Year Trend		
2029	N/A	12400
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	-990
Trend R-squared:	62.59%
Trend Annual Historic Growth Rate:	-4.29%
Trend Growth Rate (2022 to Design Year):	-5.11%
Printed:	23-Feb-24
Straight Line Growth Option	

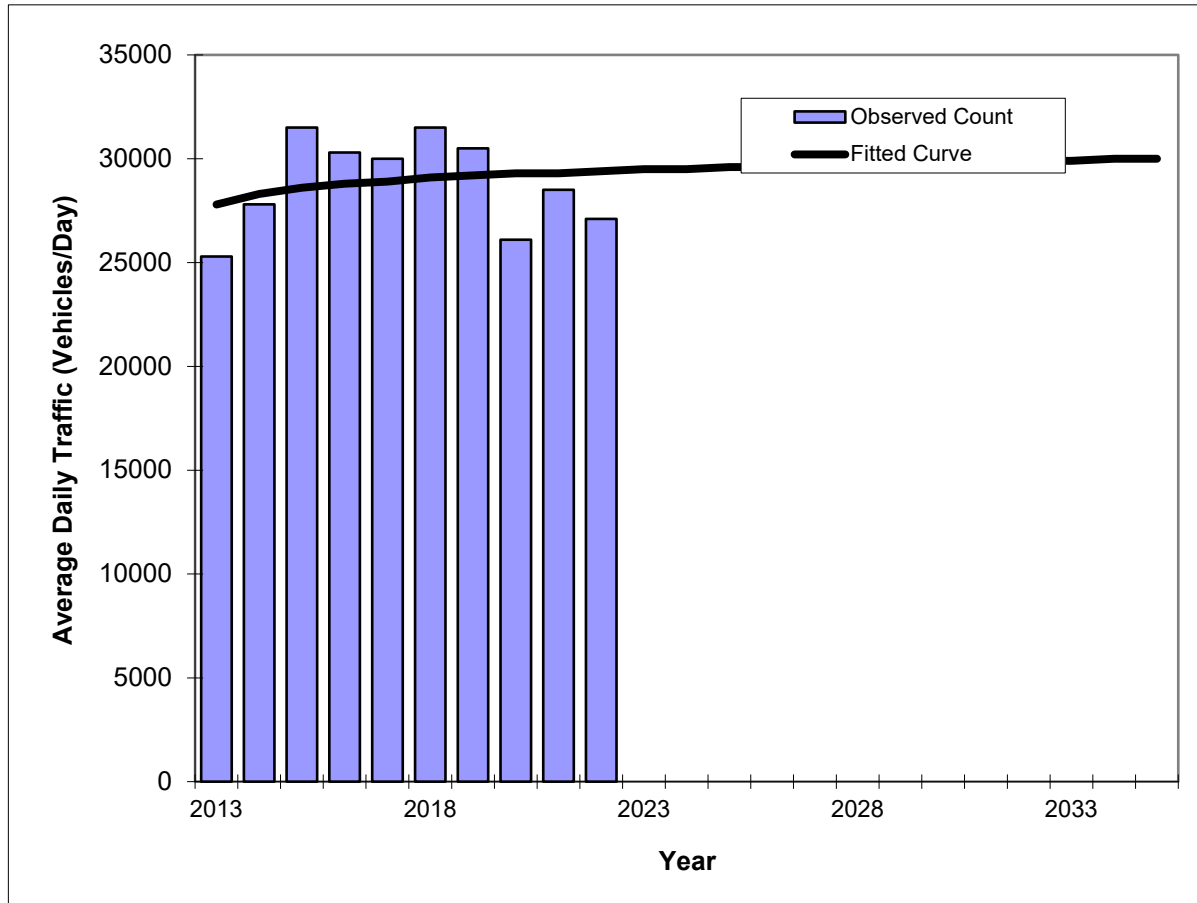
*Axle-Adjusted

Traffic Trends - V03.a

Howland Blvd, Wolf Pack Run to Catalina --

FIN#	
Location	

County:	Volusia
Station #:	903
Highway:	Howland Blvd, Wolf Pack Run to Catalina



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2013	25300	27800
2014	27800	28300
2015	31500	28600
2016	30300	28800
2017	30000	28900
2018	31500	29100
2019	30500	29200
2020	26100	29300
2021	28500	29300
2022	27100	29400
2025 Opening Year Trend		
2025	N/A	29600
2027 Mid-Year Trend		
2027	N/A	29700
2029 Design Year Trend		
2029	N/A	29800
TRANPLAN Forecasts/Trends		

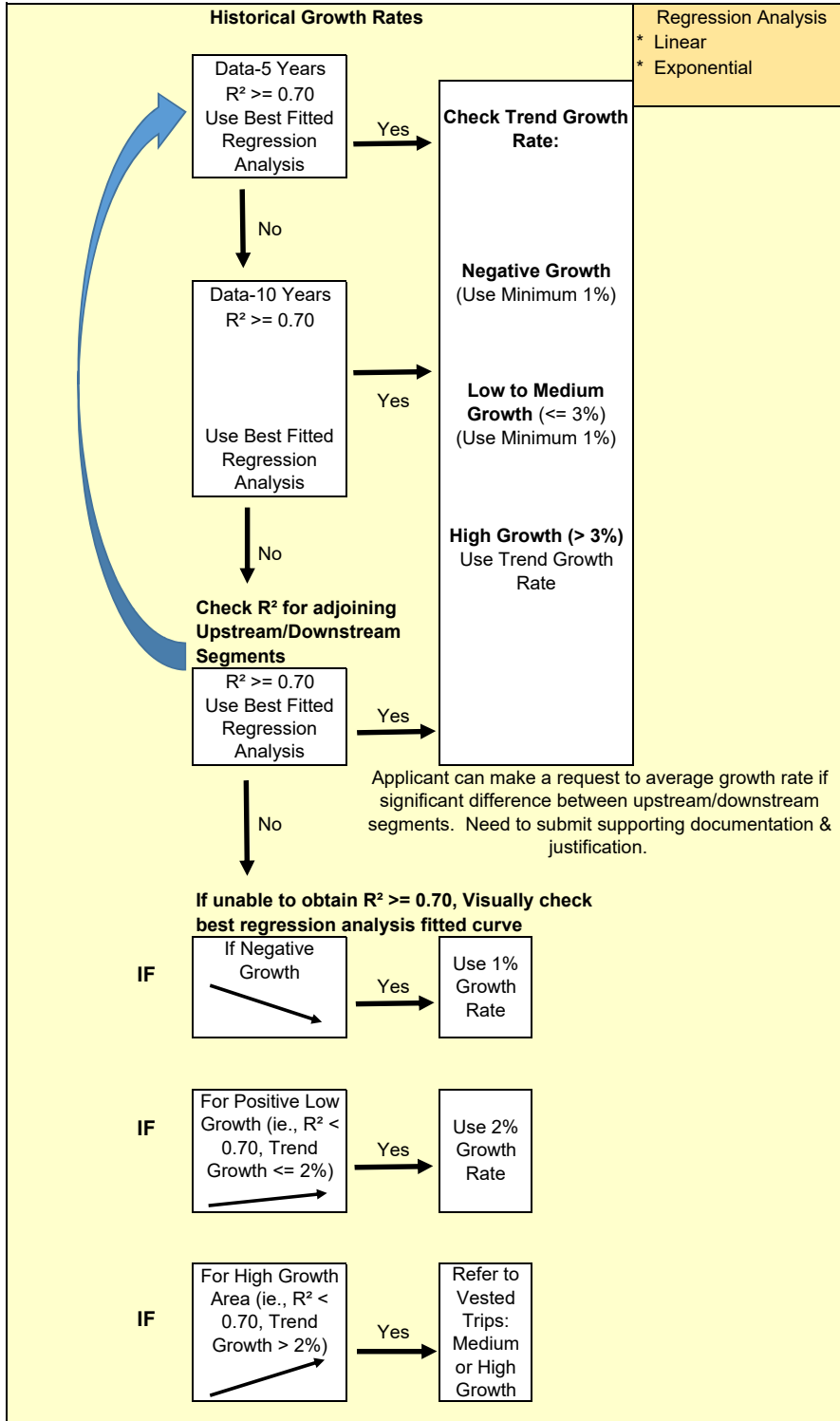
Trend R-squared:	5.15%
Compounded Annual Historic Growth Rate:	0.62%
Compounded Growth Rate (2022 to Design Year):	0.19%
Printed:	23-Feb-24
Decaying Exponential Growth Option	

*Axle-Adjusted

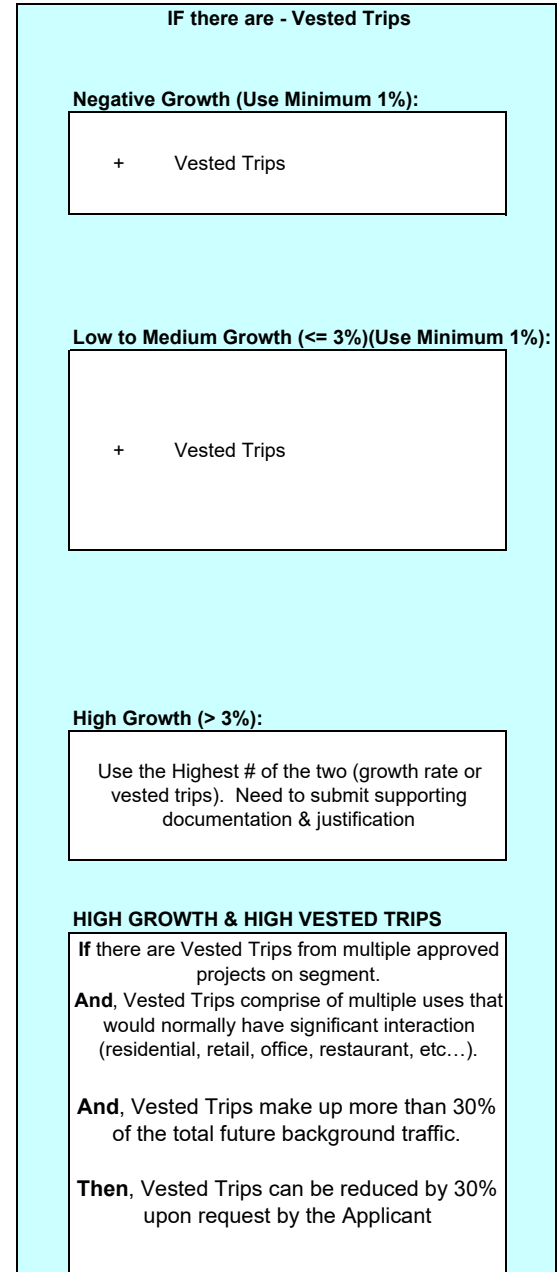
Background Growth Rate Determination Summary Table

Roadway Segment	Future Background Volumes									
	5 Year			10 Year			Applied Growth			
	Best Fit Regression	R ²	Historical Annual Growth Rate	Best Fit Regression	R ²	Historical Annual Growth Rate	Applied Growth Procedure	Applicable R ²	Applicable Annual Growth Rate	Applied Annual Growth Rate
Lake Helen Osteen Road										
Howland Blvd to Elkcaml Blvd	Straight Line	24.8%	2.9%	Exponential	70.9%	3.5%	Exponential	70.9%	3.5%	3.5%
Elkcaml Blvd to Project	Decay Exp	20.2%	-0.5%	Straight Line	42.0%	3.5%	Adjacent	87.9%	3.0%	1.0%
Project to Haulover Blvd	Decay Exp	20.2%	-0.5%	Straight Line	42.0%	3.5%	Adjacent	87.9%	3.0%	1.0%
Haulover Blvd to Catalina Blvd	Straight Line	62.2%	3.2%	Exponential	87.9%	3.0%	Exponential	87.9%	3.0%	1.0%
Catalina Blvd to Captain Dr	Straight Line	13.9%	1.5%	Exponential	71.0%	2.5%	Exponential	71.0%	2.5%	1.0%
Catalina Boulevard										
Eustace Ave to Howland Blvd	N/A	N/A	N/A	N/A	N/A	N/A	Adjacent	89.9%	-1.9%	1.0%
Howland Blvd to Lake Helen Osteen Rd	N/A	N/A	N/A	N/A	N/A	N/A	Adjacent	87.9%	3.0%	1.0%
Elkcaml Boulevard										
Howland Blvd to Lake Helen Osteen Rd	N/A	N/A	N/A	N/A	N/A	N/A	Adjacent	70.9%	3.5%	3.5%
Lake Helen-Osteen Rd to Courtland Blvd	N/A	N/A	N/A	N/A	N/A	N/A	Adjacent	70.9%	3.5%	3.5%
Howland Boulevard										
Providence Blvd to Catalina Blvd	Linear	62.6%	-5.1%	Exponential	14.4%	-1.2%	Adjacent	89.9%	-1.9%	1.0%
Catalina Blvd to Wolf Pack Run	Decay Exp	65.6%	-1.4%	Decay Exp	5.2%	0.2%	Adjacent	89.9%	-1.9%	1.0%
Wolf Pack Run to I-4	Decay Exp	89.9%	-1.9%	Decay Exp	8.6%	0.3%	Decay Exp	89.9%	-1.9%	1.0%
Providence Boulevard										
Fort Smith Blvd to Elkcaml Blvd	Decay Exp	17.4%	-0.2%	Exponential	4.7%	-0.3%	Decay Exp	17.4%	-0.2%	1.0%

Volusia County's Segment Growth Rates and Vested Trips Instructions Policy



AND



Signed: _____
Jon E. Cheney, P.E.

Date: _____

Appendix F

Turning Movement Worksheets

Howland Boulevard at Catalina Boulevard AM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	116	513	31	1	28	977	75	0	106	106	34	0	124	97	487
Date of Count	1/18/2024				SF				1.02							
Adjusted Count	0	118	523	32	1	29	997	77	0	108	108	35	0	126	99	497

	West Leg				East Leg				South Leg				North Leg			
Existing Approach & Departure Volumes	EB: 673				EB: 685				NB: 251				NB: 303			
	WB: 1,602				WB: 1,104				SB: 160				SB: 722			
Directional Factors Based on Existing Counts	EB: 0.30				EB: 0.38				NB: 0.61				NB: 0.30			
	WB: 0.70				WB: 0.62				SB: 0.39				SB: 0.70			

Future Background Year 2029

Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Simple Volume Growth	0	6	26	2	0	1	50	4	0	5	5	2	0	6	5	25
Applied Bckgrnd Growth	0	6	26	2	0	1	50	4	0	5	5	2	0	6	5	25
Total Bckgrnd Pk-Hr Vols	0	124	549	34	1	30	1,047	81	0	113	113	37	0	132	104	522

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	27.4%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	0.0%	0.0%	2.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	16	0	0	0	0	0	1	0	0	2	0	0	0	0	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	2.9%	27.4%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	18
Pass-By Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	16	0	0	0	0	0	1	0	0	2	0	0	1	2	18

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	140	549	34	1	30	1,047	82	0	113	115	37	0	133	106	540

Howland Boulevard at Catalina Boulevard PM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	400	1,089	60	2	43	611	66	0	45	85	19	0	124	85	238
Date of Count	1/18/2024				SF				1.02							
Adjusted Count	0	408	1,111	61	2	44	623	67	0	46	87	19	0	126	87	243

	West Leg				East Leg				South Leg				North Leg			
Existing Approach & Departure Volumes	EB: 1,580				EB: 1,258				NB: 152				NB: 562			
	WB: 912				WB: 736				SB: 192				SB: 456			
Directional Factors Based on Existing Counts	EB: 0.63				EB: 0.63				NB: 0.44				NB: 0.55			
	WB: 0.37				WB: 0.37				SB: 0.56				SB: 0.45			

Future Background Year 2029

Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Simple Volume Growth	0	20	56	3	0	2	31	3	0	2	4	1	0	6	4	12
Applied Bckgrnd Growth	0	20	56	3	0	2	31	3	0	2	4	1	0	6	4	12
Total Bckgrnd Pk-Hr Vols	0	428	1,167	64	2	46	654	70	0	48	91	20	0	132	91	255

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	27.4%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	0.0%	0.0%	2.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	17	0	0	0	0	0	1	0	0	2	0	0	0	0	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	2.9%	27.4%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	19
Pass-By Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	17	0	0	0	0	0	1	0	0	2	0	0	1	2	19

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	445	1,167	64	2	46	654	71	0	48	93	20	0	133	93	274

Lake Helen Osteen Road at Catalina Boulevard

AM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	54	0	107	0	0	0	0	0	418	384	0	0	0	199	179
Date of Count	1/18/2024				SF				1.02							
Adjusted Count	0	55	0	109	0	0	0	0	0	426	392	0	0	0	203	183

	West Leg				East Leg				South Leg				North Leg			
Existing Approach & Departure Volumes	EB: 164				EB: 0				NB: 818				NB: 447			
	WB: 609				WB: 0				SB: 312				SB: 386			
Directional Factors Based on Existing Counts	EB: 0.21				EB: #DIV/0!				NB: 0.72				NB: 0.54			
	WB: 0.79				WB: #DIV/0!				SB: 0.28				SB: 0.46			

Future Background Year 2029

Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	0.0%	0.0%	0.0%	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Simple Volume Growth	0	3	0	5	0	0	0	0	0	21	20	0	0	0	10	9
Applied Bckgrnd Growth	0	3	0	5	0	0	0	0	0	21	20	0	0	0	10	9
Total Bckgrnd Pk-Hr Vols	0	58	0	114	0	0	0	0	0	447	412	0	0	0	213	192

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	0.0%	0.0%	32.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	22.8%	0.0%
Volume	0	0	0	20	0	0	0	0	0	0	0	0	0	0	14	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	32.7%	22.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	21	15	0	0	0	0	0
Pass-By Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	20	0	0	0	0	0	21	15	0	0	0	14	0

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	58	0	134	0	0	0	0	0	468	427	0	0	0	227	192

Lake Helen Osteen Road at Catalina Boulevard

PM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	169	0	336	0	0	0	0	0	195	166	0	0	0	355	93
Date of Count	1/18/2024				SF				1.02							
Adjusted Count	0	172	0	343	0	0	0	0	0	199	169	0	0	0	362	95

	West Leg				East Leg				South Leg				North Leg			
Existing Approach & Departure Volumes	EB: 515				EB: 0				NB: 368				NB: 341			
	WB: 294				WB: 0				SB: 705				SB: 457			
Directional Factors Based on Existing Counts	EB: 0.64				EB: #DIV/0!				NB: 0.34				NB: 0.43			
	WB: 0.36				WB: #DIV/0!				SB: 0.66				SB: 0.57			

Future Background Year 2029

Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	0.0%	0.0%	0.0%	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Simple Volume Growth	0	9	0	17	0	0	0	0	0	10	8	0	0	0	18	5
Applied Bckgrnd Growth	0	9	0	17	0	0	0	0	0	10	8	0	0	0	18	5
Total Bckgrnd Pk-Hr Vols	0	181	0	360	0	0	0	0	0	209	177	0	0	0	380	100

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	0.0%	0.0%	32.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	22.8%	0.0%
Volume	0	0	0	20	0	0	0	0	0	0	0	0	0	0	14	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	32.7%	22.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	22	16	0	0	0	0	0
Pass-By Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	20	0	0	0	0	0	22	16	0	0	0	14	0

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	181	0	380	0	0	0	0	0	231	193	0	0	0	394	100

Lake Helen Osteen Road at Driveway #1

AM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	0	0	0	0	3	0	7	0	0	464	0	0	0	230	0
Date of Count	1/18/2024				SF				1.02							
Adjusted Count	0	0	0	0	0	3	0	7	0	0	473	0	0	0	235	0

	West Leg		East Leg		South Leg		North Leg	
Existing Approach & Departure Volumes	EB: 0		EB: 0		NB: 473		NB: 480	
	WB: 0		WB: 10		SB: 238		SB: 235	
Directional Factors Based on Existing Counts	EB: #DIV/0!		EB: 0.00		NB: 0.67		NB: 0.67	
	WB: #DIV/0!		WB: 1.00		SB: 0.33		SB: 0.33	

Future Background

Year 2029

Annual Growth Rate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.0%	0.0%	0.0%	1.0%	0.0%
Simple Volume Growth	0	0	0	0	0	0	0	0	0	0	24	0	0	0	12	0
Applied Bckgrnd Growth	0	0	0	0	0	0	0	0	0	0	24	0	0	0	12	0
Total Bckgrnd Pk-Hr Vols	0	0	0	0	0	3	0	7	0	0	497	0	0	0	247	0

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Westside Development																
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	61.2%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	61.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	28	0	0	0	0	0
Eastside Development																
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	61.2%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	11.0%	0.0%	25.0%	0.0%	0.0%	36.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	6	0	13	0	0	18	0	0	0	0	0
Pass-By Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Project Trips in Counts	0	0	0	0	0	-3	0	-7	0	0	0	0	0	0	0	0
Total New External Trips at Buildout	0	0	0	0	0	6	0	13	0	0	46	0	0	0	60	0
Total Pass-By Trips at Buildout	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Change in Project Trips	0	0	0	0	0	3	0	6	0	0	46	0	0	0	60	0

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	0	0	0	0	6	0	13	0	0	543	0	0	0	307	0

Lake Helen Osteen Road at Driveway #1

PM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	0	0	0	0	5	0	6	0	0	258	0	0	0	436	0
Date of Count	1/18/2024				SF				1.02							
Adjusted Count	0	0	0	0	0	5	0	6	0	0	263	0	0	0	445	0

	West Leg				East Leg				South Leg				North Leg			
Existing Approach & Departure Volumes	EB: 0				EB: 0				NB: 263				NB: 269			
	WB: 0				WB: 11				SB: 450				SB: 445			
Directional Factors Based on Existing Counts	EB: #DIV/0!				EB: 0.00				NB: 0.37				NB: 0.38			
	WB: #DIV/0!				WB: 1.00				SB: 0.63				SB: 0.62			

Future Background

Year 2029

Annual Growth Rate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.0%	0.0%	0.0%	1.0%	0.0%
Simple Volume Growth	0	0	0	0	0	0	0	0	0	0	13	0	0	0	22	0
Applied Bckgrnd Growth	0	0	0	0	0	0	0	0	0	0	13	0	0	0	22	0
Total Bckgrnd Pk-Hr Vols	0	0	0	0	0	5	0	6	0	0	276	0	0	0	467	0

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Westside Development																
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	61.2%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	61.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	0
Eastside Development																
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	61.2%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	6.0%	0.0%	15.0%	0.0%	0.0%	46.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	4	0	9	0	0	29	0	0	0	0	0
Pass-By Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	0.0%	20.0%	0.0%	0.0%	-20.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	4	0	4	0	0	-4	0	0	0	0	0
Existing Project Trips in Counts	0	0	0	0	0	-5	0	-6	0	0	0	0	0	0	0	0
Total New External Trips at Buildout	0	0	0	0	0	4	0	9	0	0	46	0	0	0	51	0
Total Pass-By Trips at Buildout	0	0	0	0	0	4	0	4	0	0	-4	0	0	0	0	0
Net Change in Project Trips	0	0	0	0	0	3	0	7	0	0	42	0	0	0	51	0

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	0	0	0	0	8	0	13	0	0	318	0	0	0	518	0

Lake Helen Osteen Road at Driveway #2

AM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	0	0	0	0	0	0	0	0	0	465	5	0	7	223	0
Date of Count	1/18/2024				SF				1.02							
Adjusted Count	0	0	0	0	0	0	0	0	0	0	474	5	0	7	227	0

	West Leg		East Leg		South Leg		North Leg	
Existing Approach & Departure Volumes	EB: 0		EB: 12		NB: 479		NB: 474	
	WB: 0		WB: 0		SB: 227		SB: 234	
Directional Factors Based on Existing Counts	EB: #DIV/0!		EB: 1.00		NB: 0.68		NB: 0.67	
	WB: #DIV/0!		WB: 0.00		SB: 0.32		SB: 0.33	

Future Background

Year 2029

Annual Growth Rate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.0%	0.0%	0.0%	1.0%	0.0%
Simple Volume Growth	0	0	0	0	0	0	0	0	0	0	24	0	0	0	11	0
Applied Bckgrnd Growth	0	0	0	0	0	0	0	0	0	0	24	0	0	0	11	0
Total Bckgrnd Pk-Hr Vols	0	0	0	0	0	0	0	0	0	0	498	5	0	7	238	0

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Westside Development																
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	38.8%	0.0%	0.0%	0.0%	0.0%	0.0%	61.2%
Volume	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	9
New Ext Outbound	0.0%	61.2%	0.0%	38.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	28	0	18	0	0	0	0	0	0	0	0	0	0	0	0
Eastside Development																
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	38.8%	0.0%	61.2%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	32	0	51	0	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	27.8%	0.0%	36.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.0%	0.0%
Volume	0	0	0	0	0	14	0	18	0	0	0	0	0	0	6	0
Pass-By Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Project Trips in Counts	0	0	0	0	0	0	0	0	0	0	0	-5	0	-7	0	0
Total New External Trips at Buildout	0	28	0	18	0	14	0	18	0	5	0	32	0	51	6	9
Total Pass-By Trips at Buildout	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Change in Project Trips	0	28	0	18	0	14	0	18	0	5	0	27	0	44	6	9

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	28	0	18	0	14	0	18	0	5	498	32	0	51	244	9

Lake Helen Osteen Road at Driveway #2

PM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	0	0	0	0	0	0	0	0	0	259	2	0	5	436	0
Date of Count	1/18/2024				SF				1.02							
Adjusted Count	0	0	0	0	0	0	0	0	0	0	264	2	0	5	445	0

	West Leg		East Leg		South Leg		North Leg	
Existing Approach & Departure Volumes	EB: 0		EB: 7		NB: 266		NB: 264	
	WB: 0		WB: 0		SB: 445		SB: 450	
Directional Factors Based on Existing Counts	EB: #DIV/0!		EB: 1.00		NB: 0.37		NB: 0.37	
	WB: #DIV/0!		WB: 0.00		SB: 0.63		SB: 0.63	

Future Background

Year 2029

Annual Growth Rate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.0%	0.0%	0.0%	1.0%	0.0%
Simple Volume Growth	0	0	0	0	0	0	0	0	0	0	13	0	0	0	22	0
Applied Bckgrnd Growth	0	0	0	0	0	0	0	0	0	0	13	0	0	0	22	0
Total Bckgrnd Pk-Hr Vols	0	0	0	0	0	0	0	0	0	0	277	2	0	5	467	0

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Westside Development																
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	38.8%	0.0%	0.0%	0.0%	0.0%	0.0%	61.2%
Volume	0	0	0	0	0	0	0	0	0	17	0	0	0	0	0	28
New Ext Outbound	0.0%	61.2%	0.0%	38.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	17	0	10	0	0	0	0	0	0	0	0	0	0	0	0
Eastside Development																
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	38.8%	0.0%	61.2%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	14	0	23	0	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	32.8%	0.0%	46.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.0%	0.0%
Volume	0	0	0	0	0	21	0	29	0	0	0	0	0	0	4	0
Pass-By Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-40.0%	40.0%	0.0%	60.0%	-60.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	-8	8	0	11	-11	0
Pass-By Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	40.0%	0.0%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	0.0%
Volume	0	0	0	0	0	8	0	4	0	0	0	0	0	0	4	0
Existing Project Trips in Counts	0	0	0	0	0	0	0	0	0	0	0	-2	0	-5	0	0
Total New External Trips at Buildout	0	17	0	10	0	21	0	29	0	17	0	14	0	23	4	28
Total Pass-By Trips at Buildout	0	0	0	0	0	8	0	4	0	0	-8	8	0	11	-7	0
Net Change in Project Trips	0	17	0	10	0	29	0	33	0	17	-8	20	0	29	-3	28

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	17	0	10	0	29	0	33	0	17	269	22	0	34	464	28

Lake Helen Osteen Road at Elkcarn Boulevard AM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	82	124	14	0	108	253	16	0	7	202	46	0	6	224	96
Date of Count	1/18/2024				SF				1.02							
Adjusted Count	0	84	126	14	0	110	258	16	0	7	206	47	0	6	228	98

	West Leg				East Leg				South Leg				North Leg			
Existing Approach & Departure Volumes	EB: 224				EB: 179				NB: 260				NB: 306			
	WB: 363				WB: 384				SB: 352				SB: 332			
Directional Factors Based on Existing Counts	EB: 0.38				EB: 0.32				NB: 0.42				NB: 0.48			
	WB: 0.62				WB: 0.68				SB: 0.58				SB: 0.52			

Future Background Year 2029

Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	1.0%	1.0%	1.0%	1.0%
Simple Volume Growth	0	15	22	2	0	19	45	3	0	1	36	8	0	0	11	5	
Applied Bckgrnd Growth	0	15	22	2	0	19	45	3	0	1	36	8	0	0	11	5	
Total Bckgrnd Pk-Hr Vols	0	99	148	16	0	129	303	19	0	8	242	55	0	6	239	103	

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	12.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	0.0%	0.0%	20.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	7	0	0	0	0	0	1	0	0	12	0	0	0	0	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	20.3%	12.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	1	13	8
Pass-By Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	7	0	0	0	0	0	1	0	0	12	0	0	1	13	8

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	106	148	16	0	129	303	20	0	8	254	55	0	7	252	111

Lake Helen Osteen Road at Elkcarn Boulevard PM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	154	350	14	0	87	206	14	0	19	227	135	0	32	280	112
Date of Count	1/18/2024				SF				1.02							
Adjusted Count	0	157	357	14	0	89	210	14	0	19	232	138	0	33	286	114

	West Leg				East Leg				South Leg				North Leg			
Existing Approach & Departure Volumes	EB: 528				EB: 528				NB: 389				NB: 403			
	WB: 343				WB: 313				SB: 389				SB: 433			
Directional Factors Based on Existing Counts	EB: 0.61				EB: 0.63				NB: 0.50				NB: 0.48			
	WB: 0.39				WB: 0.37				SB: 0.50				SB: 0.52			

Future Background Year 2029

Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	1.0%	1.0%	1.0%	1.0%
Simple Volume Growth	0	27	62	2	0	16	37	2	0	3	41	24	0	2	14	6
Applied Bckgrnd Growth	0	27	62	2	0	16	37	2	0	3	41	24	0	2	14	6
Total Bckgrnd Pk-Hr Vols	0	184	419	16	0	105	247	16	0	22	273	162	0	35	300	120

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	12.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	0.0%	0.0%	20.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	7	0	0	0	0	0	1	0	0	13	0	0	0	0	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	20.3%	12.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	1	14	8
Pass-By Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	7	0	0	0	0	0	1	0	0	13	0	0	1	14	8

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	191	419	16	0	105	247	17	0	22	286	162	0	36	314	128

Appendix G

Future Buildout (2029) Synchro Printouts

Timings

101: Catalina Blvd & Howland Blvd

03/01/2024



Lane Group	SEL	SET	NWL	NWT	NEL	NET	SWL	SWT	SWR
Lane Configurations									
Traffic Volume (vph)	140	549	31	1047	113	115	133	106	540
Future Volume (vph)	140	549	31	1047	113	115	133	106	540
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Perm	NA	Perm
Protected Phases	1	6	5	2	7	4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	7	4	8	8	8
Switch Phase									
Minimum Initial (s)	5.0	11.0	5.0	11.0	5.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.5	19.5	13.5	19.5	12.0	14.0	14.0	14.0	14.0
Total Split (s)	24.0	65.0	18.0	59.0	24.0	67.0	43.0	43.0	43.0
Total Split (%)	16.0%	43.3%	12.0%	39.3%	16.0%	44.7%	28.7%	28.7%	28.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.5	8.5	8.5	8.5	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None	None
Act Effect Green (s)	70.8	62.3	57.6	50.7	54.8	54.8	34.0	34.0	34.0
Actuated g/C Ratio	0.50	0.44	0.41	0.36	0.39	0.39	0.24	0.24	0.24
v/c Ratio	0.74	0.41	0.09	0.96	0.25	0.23	0.48	0.25	0.96
Control Delay	55.1	30.2	20.7	62.0	30.2	27.8	53.7	46.4	54.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.1	30.2	20.7	62.0	30.2	27.8	53.7	46.4	54.3
LOS	E	C	C	E	C	C	D	D	D
Approach Delay		35.0		60.9		28.8		53.1	
Approach LOS		D		E		C		D	

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 142

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 49.5

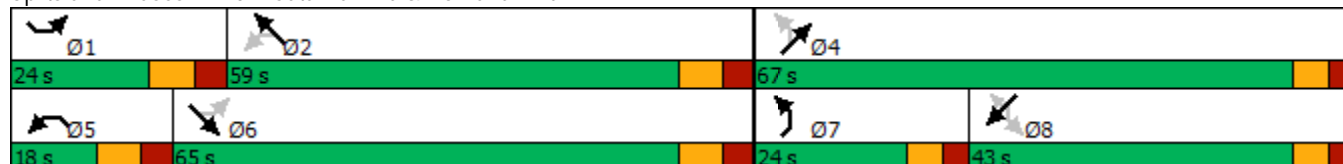
Intersection LOS: D

Intersection Capacity Utilization 90.0%

ICU Level of Service E

Analysis Period (min) 15






















Splits and Phases: 101: Catalina Blvd & Howland Blvd



HCM 6th Signalized Intersection Summary

101: Catalina Blvd & Howland Blvd

03/01/2024

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	140	549	34	31	1047	82	113	115	37	133	106	540
Future Volume (veh/h)	140	549	34	31	1047	82	113	115	37	133	106	540
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1826	1856	1870	1856	1856	1885	1885	1856	1870	1870	1870
Adj Flow Rate, veh/h	147	578	36	33	1102	86	119	121	39	140	112	517
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	5	3	2	3	3	1	1	3	2	2	2
Cap, veh/h	201	1384	86	337	1248	97	340	518	167	379	497	421
Arrive On Green	0.07	0.42	0.42	0.03	0.38	0.38	0.06	0.38	0.38	0.27	0.27	0.27
Sat Flow, veh/h	1753	3317	206	1781	3313	258	1795	1366	440	1226	1870	1585
Grp Volume(v), veh/h	147	302	312	33	586	602	119	0	160	140	112	517
Grp Sat Flow(s),veh/h/ln	1753	1735	1789	1781	1763	1809	1795	0	1806	1226	1870	1585
Q Serve(g_s), s	6.9	16.6	16.7	1.5	42.0	42.1	6.3	0.0	8.2	12.8	6.3	36.0
Cycle Q Clear(g_c), s	6.9	16.6	16.7	1.5	42.0	42.1	6.3	0.0	8.2	12.8	6.3	36.0
Prop In Lane	1.00		0.12	1.00		0.14	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	201	724	746	337	664	681	340	0	685	379	497	421
V/C Ratio(X)	0.73	0.42	0.42	0.10	0.88	0.88	0.35	0.00	0.23	0.37	0.23	1.23
Avail Cap(c_a), veh/h	284	724	746	416	664	681	454	0	800	379	497	421
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	27.9	27.9	25.1	39.4	39.4	31.7	0.0	28.6	41.2	38.8	49.7
Incr Delay (d2), s/veh	5.7	1.8	1.7	0.1	15.7	15.5	0.6	0.0	0.2	0.6	0.2	121.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	7.1	7.3	0.6	20.4	20.9	2.8	0.0	3.6	4.0	3.0	28.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.3	29.6	29.6	25.2	55.1	54.9	32.3	0.0	28.8	41.8	39.1	171.4
LnGrp LOS	D	C	C	C	E	D	C	A	C	D	D	F
Approach Vol, veh/h		761			1221			279			769	
Approach Delay, s/veh		31.1			54.2			30.3			128.5	
Approach LOS		C			D			C			F	
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.5	59.5		58.4	12.1	65.0	15.4	43.0				
Change Period (Y+Rc), s	8.5	8.5		7.0	8.5	8.5	7.0	7.0				
Max Green Setting (Gmax), s	15.5	50.5		60.0	9.5	56.5	17.0	36.0				
Max Q Clear Time (g_c+I1), s	8.9	44.1		10.2	3.5	18.7	8.3	38.0				
Green Ext Time (p_c), s	0.2	3.6		1.0	0.0	3.6	0.2	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			65.1									
HCM 6th LOS			E									

Timings

102: Lake Helen Osteen & Catalina Blvd

03/01/2024



Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	58	134	468	427	227
Future Volume (vph)	58	134	468	427	227
Turn Type	Prot	Prot	pm+pt	NA	NA
Protected Phases	8	8	1	6	2
Permitted Phases			6		
Detector Phase	8	8	1	6	2
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	15.0	15.0
Minimum Split (s)	11.5	11.5	11.5	21.5	21.5
Total Split (s)	26.5	26.5	26.5	63.0	36.5
Total Split (%)	29.6%	29.6%	29.6%	70.4%	40.8%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effect Green (s)	8.0	8.0	46.8	46.8	22.1
Actuated g/C Ratio	0.12	0.12	0.69	0.69	0.32
v/c Ratio	0.31	0.47	0.79	0.37	0.78
Control Delay	34.1	11.5	20.6	5.5	28.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	34.1	11.5	20.6	5.5	28.8
LOS	C	B	C	A	C
Approach Delay	18.4			13.4	28.8
Approach LOS	B			B	C

Intersection Summary

Cycle Length: 89.5

Actuated Cycle Length: 68.1

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 18.3

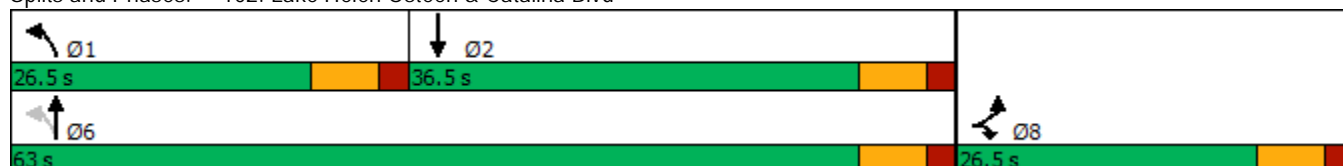
Intersection LOS: B

Intersection Capacity Utilization 70.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 102: Lake Helen Osteen & Catalina Blvd



Buildout Conditions - AM Peak 3:34 pm 02/26/2024 Baseline

Synchro 11 Report
Page 3

HCM 6th Signalized Intersection Summary

102: Lake Helen Osteen & Catalina Blvd

03/01/2024






Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	58	134	468	427	227	192
Future Volume (veh/h)	58	134	468	427	227	192
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1856	1870	1856	1826	1870
Adj Flow Rate, veh/h	64	147	514	469	249	211
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	3	2	3	5	2
Cap, veh/h	227	201	582	1215	296	251
Arrive On Green	0.13	0.13	0.22	0.65	0.32	0.32
Sat Flow, veh/h	1781	1572	1781	1856	913	774
Grp Volume(v), veh/h	64	147	514	469	0	460
Grp Sat Flow(s),veh/h/ln	1781	1572	1781	1856	0	1687
Q Serve(g_s), s	1.9	5.4	10.2	7.0	0.0	15.2
Cycle Q Clear(g_c), s	1.9	5.4	10.2	7.0	0.0	15.2
Prop In Lane	1.00	1.00	1.00			0.46
Lane Grp Cap(c), veh/h	227	201	582	1215	0	547
V/C Ratio(X)	0.28	0.73	0.88	0.39	0.00	0.84
Avail Cap(c_a), veh/h	596	526	782	1754	0	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.6	25.1	11.0	4.8	0.0	18.8
Incr Delay (d2), s/veh	0.7	5.1	9.2	0.2	0.0	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.1	3.9	1.4	0.0	5.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.3	30.2	20.2	5.0	0.0	23.4
LnGrp LOS	C	C	C	A	A	C
Approach Vol, veh/h	211			983	460	
Approach Delay, s/veh	28.4			12.9	23.4	
Approach LOS	C			B	C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	19.8	25.9			45.6	14.1
Change Period (Y+Rc), s	6.5	6.5			6.5	6.5
Max Green Setting (Gmax), s	20.0	30.0			56.5	20.0
Max Q Clear Time (g_c+I1), s	12.2	17.2			9.0	7.4
Green Ext Time (p_c), s	1.1	2.2			2.9	0.5

Intersection Summary

HCM 6th Ctrl Delay	17.8
HCM 6th LOS	B

HCM 6th TWSC
103: Lake Helen Osteen & Driveway #1

03/01/2024

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	13	543	0	0	307
Future Vol, veh/h	6	13	543	0	0	307
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	3	2	2	4
Mvmt Flow	7	15	639	0	0	361
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1000	639	0	-	-	-
Stage 1	639	-	-	-	-	-
Stage 2	361	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	270	476	-	0	0	-
Stage 1	526	-	-	0	0	-
Stage 2	705	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	270	476	-	-	-	-
Mov Cap-2 Maneuver	270	-	-	-	-	-
Stage 1	526	-	-	-	-	-
Stage 2	705	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	15	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	-		384			
HCM Lane V/C Ratio	-		0.058			
HCM Control Delay (s)	-		15			
HCM Lane LOS	-		C			
HCM 95th %tile Q(veh)	-		0.2			

HCM 6th TWSC
104: Lake Helen Osteen & Driveway #2

03/01/2024

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	28	0	18	14	0	18	5	498	32	51	244	9
Future Vol, veh/h	28	0	18	14	0	18	5	498	32	51	244	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	3	2	2	4	2
Mvmt Flow	33	0	21	16	0	21	6	586	38	60	287	11
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1041	1049	293	1040	1035	605	298	0	0	624	0	0
Stage 1	413	413	-	617	617	-	-	-	-	-	-	-
Stage 2	628	636	-	423	418	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	208	227	746	208	232	498	1263	-	-	957	-	-
Stage 1	616	594	-	477	481	-	-	-	-	-	-	-
Stage 2	471	472	-	609	591	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	187	209	746	189	213	498	1263	-	-	957	-	-
Mov Cap-2 Maneuver	187	209	-	189	213	-	-	-	-	-	-	-
Stage 1	612	549	-	474	478	-	-	-	-	-	-	-
Stage 2	448	469	-	547	547	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	22		19.3		0.1		1.5					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1263	-	-	265	290	957	-	-				
HCM Lane V/C Ratio	0.005	-	-	0.204	0.13	0.063	-	-				
HCM Control Delay (s)	7.9	0	-	22	19.3	9	0	-				
HCM Lane LOS	A	A	-	C	C	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.7	0.4	0.2	-	-				

Timings

105: Elkcarn Blvd & Lake Helen Osteen

03/01/2024



Lane Group	SEL	SET	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations								
Traffic Volume (vph)	7	252	8	254	106	148	129	303
Future Volume (vph)	7	252	8	254	106	148	129	303
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	3	8	7	4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	16.0	5.0	16.0	5.0	6.0	5.0	6.0
Minimum Split (s)	14.0	25.0	14.0	25.0	13.5	13.0	13.5	13.0
Total Split (s)	29.0	49.0	29.0	49.0	28.5	32.0	28.5	32.0
Total Split (%)	20.9%	35.4%	20.9%	35.4%	20.6%	23.1%	20.6%	23.1%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	4.0	5.5	4.0
All-Red Time (s)	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	9.0	9.0	9.0	9.0	8.5	7.0	8.5	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effect Green (s)	24.7	23.8	24.8	23.8	31.5	24.3	34.5	25.8
Actuated g/C Ratio	0.29	0.28	0.29	0.28	0.37	0.28	0.40	0.30
v/c Ratio	0.02	0.77	0.03	0.65	0.30	0.34	0.26	0.61
Control Delay	19.1	39.2	19.2	33.5	18.4	30.7	17.2	34.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	39.2	19.2	33.5	18.4	30.7	17.2	34.9
LOS	B	D	B	C	B	C	B	C
Approach Delay		38.8		33.2		25.8		29.8
Approach LOS		D		C		C		C

Intersection Summary

Cycle Length: 138.5

Actuated Cycle Length: 85.9

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 32.2

Intersection LOS: C

Intersection Capacity Utilization 63.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 105: Elkcarn Blvd & Lake Helen Osteen





















Ø1	Ø2	Ø3	Ø4
29 s	49 s	28.5 s	32 s
Ø5	Ø6	Ø7	Ø8
29 s	49 s	28.5 s	32 s

Buildout Conditions - AM Peak 3:34 pm 02/26/2024 Baseline

Synchro 11 Report
Page 7

HCM 6th Signalized Intersection Summary 105: Elkcarn Blvd & Lake Helen Osteen



















03/01/2024

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	7	252	111	8	254	55	106	148	16	129	303	20
Future Volume (veh/h)	7	252	111	8	254	55	106	148	16	129	303	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1841	1841	1870	1856	1841	1870	1870	1604	1856	1870	1811
Adj Flow Rate, veh/h	7	265	117	8	267	58	112	156	17	136	319	21
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	4	4	2	3	4	2	2	20	3	2	6
Cap, veh/h	217	318	141	169	390	85	264	341	37	390	380	25
Arrive On Green	0.01	0.26	0.26	0.01	0.26	0.26	0.07	0.21	0.21	0.08	0.22	0.22
Sat Flow, veh/h	1781	1210	534	1781	1477	321	1781	1657	181	1767	1736	114
Grp Volume(v), veh/h	7	0	382	8	0	325	112	0	173	136	0	340
Grp Sat Flow(s),veh/h/ln	1781	0	1745	1781	0	1798	1781	0	1838	1767	0	1850
Q Serve(g_s), s	0.2	0.0	15.8	0.3	0.0	12.4	3.7	0.0	6.3	4.5	0.0	13.5
Cycle Q Clear(g_c), s	0.2	0.0	15.8	0.3	0.0	12.4	3.7	0.0	6.3	4.5	0.0	13.5
Prop In Lane	1.00		0.31	1.00		0.18	1.00		0.10	1.00		0.06
Lane Grp Cap(c), veh/h	217	0	459	169	0	475	264	0	378	390	0	405
V/C Ratio(X)	0.03	0.00	0.83	0.05	0.00	0.68	0.42	0.00	0.46	0.35	0.00	0.84
Avail Cap(c_a), veh/h	667	0	911	616	0	939	604	0	600	703	0	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.4	0.0	26.6	22.0	0.0	25.3	22.6	0.0	26.7	21.2	0.0	28.6
Incr Delay (d2), s/veh	0.1	0.0	4.0	0.1	0.0	1.8	1.1	0.0	0.9	0.5	0.0	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	6.7	0.1	0.0	5.2	1.5	0.0	2.7	1.8	0.0	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.4	0.0	30.6	22.1	0.0	27.1	23.6	0.0	27.6	21.8	0.0	35.3
LnGrp LOS	C	A	C	C	A	C	C	A	C	C	A	D
Approach Vol, veh/h	389			333			285			476		
Approach Delay, s/veh	30.5			26.9			26.0			31.4		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.8	29.1	13.9	23.8	9.7	29.2	14.9	22.7				
Change Period (Y+Rc), s	9.0	9.0	8.5	7.0	9.0	9.0	8.5	7.0				
Max Green Setting (Gmax), s	20.0	40.0	20.0	25.0	20.0	40.0	20.0	25.0				
Max Q Clear Time (g_c+I1), s	2.3	17.8	5.7	15.5	2.2	14.4	6.5	8.3				
Green Ext Time (p_c), s	0.0	2.3	0.2	1.3	0.0	1.9	0.3	0.8				
Intersection Summary												
HCM 6th Ctrl Delay	29.1											
HCM 6th LOS	C											

Timings

101: Catalina Blvd & Howland Blvd

03/01/2024

									
Lane Group	SEL	SET	NWL	NWT	NEL	NET	SWL	SWT	SWR
Lane Configurations									
Traffic Volume (vph)	445	1167	48	654	48	93	133	93	274
Future Volume (vph)	445	1167	48	654	48	93	133	93	274
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Perm	NA	Perm
Protected Phases	1	6	5	2	7	4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	7	4	8	8	8
Switch Phase									
Minimum Initial (s)	5.0	11.0	5.0	11.0	5.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.5	19.5	13.5	19.5	12.0	14.0	14.0	14.0	14.0
Total Split (s)	30.0	65.0	20.0	55.0	20.0	60.0	45.0	45.0	45.0
Total Split (%)	20.0%	43.3%	13.3%	36.7%	13.3%	40.0%	30.0%	30.0%	30.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.5	8.5	8.5	8.5	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None	None
Act Effect Green (s)	77.4	65.1	54.1	47.0	32.4	32.4	19.6	19.6	19.6
Actuated g/C Ratio	0.62	0.52	0.43	0.37	0.26	0.26	0.16	0.16	0.16
v/c Ratio	0.96	0.71	0.25	0.58	0.17	0.25	0.71	0.34	0.59
Control Delay	53.7	30.0	18.3	35.3	34.2	33.7	70.5	50.9	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	30.0	18.3	35.3	34.2	33.7	70.5	50.9	10.4
LOS	D	C	B	D	C	C	E	D	B
Approach Delay		36.3		34.2		33.8		34.0	
Approach LOS		D		C		C		C	

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 125.5

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 35.3

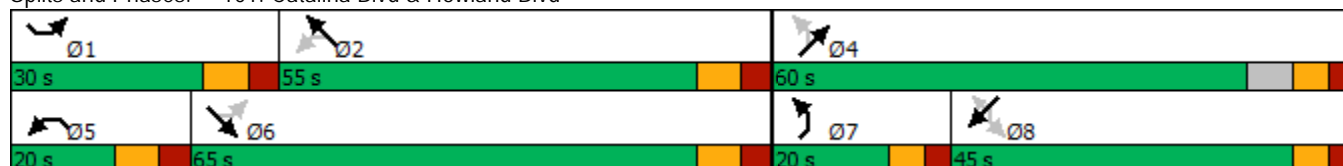
Intersection LOS: D

Intersection Capacity Utilization 79.0%

ICU Level of Service D

Analysis Period (min) 15






















Splits and Phases: 101: Catalina Blvd & Howland Blvd



HCM 6th Signalized Intersection Summary

101: Catalina Blvd & Howland Blvd

03/01/2024

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	445	1167	64	48	654	71	48	93	20	133	93	274
Future Volume (veh/h)	445	1167	64	48	654	71	48	93	20	133	93	274
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No				No			
Adj Sat Flow, veh/h/ln	1870	1870	1826	1870	1870	1870	1870	1870	1870	1870	1870	1856
Adj Flow Rate, veh/h	468	1228	67	51	688	75	51	98	21	140	98	237
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	5	2	2	2	2	2	2	2	2	3
Cap, veh/h	505	1748	95	217	1201	131	253	396	85	281	329	277
Arrive On Green	0.17	0.51	0.51	0.03	0.37	0.37	0.03	0.27	0.27	0.18	0.18	0.18
Sat Flow, veh/h	1781	3427	187	1781	3232	352	1781	1493	320	1273	1870	1572
Grp Volume(v), veh/h	468	636	659	51	378	385	51	0	119	140	98	237
Grp Sat Flow(s),veh/h/ln	1781	1777	1837	1781	1777	1807	1781	0	1813	1273	1870	1572
Q Serve(g_s), s	19.7	34.2	34.3	2.2	21.3	21.3	2.9	0.0	6.5	12.7	5.7	18.3
Cycle Q Clear(g_c), s	19.7	34.2	34.3	2.2	21.3	21.3	2.9	0.0	6.5	12.7	5.7	18.3
Prop In Lane	1.00		0.10	1.00		0.19	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	505	906	937	217	660	671	253	0	480	281	329	277
V/C Ratio(X)	0.93	0.70	0.70	0.23	0.57	0.57	0.20	0.00	0.25	0.50	0.30	0.86
Avail Cap(c_a), veh/h	505	906	937	322	660	671	379	0	768	444	568	477
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.1	23.4	23.4	24.1	31.4	31.4	38.9	0.0	36.2	47.8	44.9	50.0
Incr Delay (d2), s/veh	23.3	4.5	4.4	0.5	3.6	3.5	0.4	0.0	0.3	1.4	0.5	7.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	14.5	15.0	0.9	9.4	9.6	1.3	0.0	2.9	4.2	2.7	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	27.9	27.8	24.7	35.0	35.0	39.3	0.0	36.5	49.1	45.4	57.6
LnGrp LOS	D	C	C	C	C	C	D	A	D	D	D	E
Approach Vol, veh/h	1763				814				170			
Approach Delay, s/veh	32.5				34.3				37.3			
Approach LOS	C				C				D			
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	55.0		40.2	12.7	72.3	11.2	29.0				
Change Period (Y+Rc), s	8.5	8.5		7.0	8.5	8.5	7.0	7.0				
Max Green Setting (Gmax), s	21.5	46.5		53.0	11.5	56.5	13.0	38.0				
Max Q Clear Time (g_c+I1), s	21.7	23.3		8.5	4.2	36.3	4.9	20.3				
Green Ext Time (p_c), s	0.0	4.4		0.7	0.0	8.2	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay	36.2											
HCM 6th LOS	D											

Timings

102: Lake Helen Osteen & Catalina Blvd

03/01/2024



Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	181	380	231	193	394
Future Volume (vph)	181	380	231	193	394
Turn Type	Prot	Prot	pm+pt	NA	NA
Protected Phases	8	8	1	6	2
Permitted Phases			6		
Detector Phase	8	8	1	6	2
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	15.0	15.0
Minimum Split (s)	11.5	11.5	11.5	21.5	21.5
Total Split (s)	26.5	26.5	26.5	63.0	36.5
Total Split (%)	29.6%	29.6%	29.6%	70.4%	40.8%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effect Green (s)	13.3	13.3	42.9	42.9	25.2
Actuated g/C Ratio	0.19	0.19	0.62	0.62	0.36
v/c Ratio	0.58	0.65	0.57	0.18	0.81
Control Delay	34.7	8.5	12.2	6.6	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	34.7	8.5	12.2	6.6	32.5
LOS	C	A	B	A	C
Approach Delay	17.0			9.6	32.5
Approach LOS	B			A	C

Intersection Summary

Cycle Length: 89.5

Actuated Cycle Length: 69.7

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 20.1

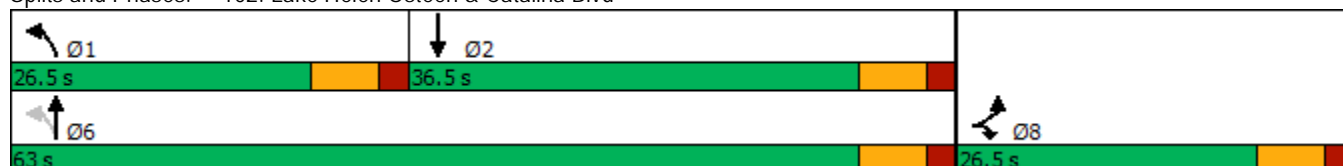
Intersection LOS: C

Intersection Capacity Utilization 65.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 102: Lake Helen Osteen & Catalina Blvd



Buildout Conditions - PM Peak 3:00 pm 02/29/2024

Synchro 11 Report
Page 3

HCM 6th Signalized Intersection Summary 102: Lake Helen Osteen & Catalina Blvd




03/01/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	181	380	231	193	394	100
Future Volume (veh/h)	181	380	231	193	394	100
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1826	1870	1856	1841
Adj Flow Rate, veh/h	195	409	248	208	424	108
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	5	2	3	4
Cap, veh/h	492	437	354	1019	478	122
Arrive On Green	0.28	0.28	0.12	0.54	0.33	0.33
Sat Flow, veh/h	1781	1585	1739	1870	1427	363
Grp Volume(v), veh/h	195	409	248	208	0	532
Grp Sat Flow(s),veh/h/ln	1781	1585	1739	1870	0	1790
Q Serve(g_s), s	6.5	18.3	6.2	4.1	0.0	20.4
Cycle Q Clear(g_c), s	6.5	18.3	6.2	4.1	0.0	20.4
Prop In Lane	1.00	1.00	1.00			0.20
Lane Grp Cap(c), veh/h	492	437	354	1019	0	600
V/C Ratio(X)	0.40	0.94	0.70	0.20	0.00	0.89
Avail Cap(c_a), veh/h	492	437	625	1458	0	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.3	25.6	15.7	8.5	0.0	22.8
Incr Delay (d2), s/veh	0.5	27.5	2.5	0.1	0.0	10.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	9.7	2.2	1.3	0.0	9.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.9	53.1	18.2	8.6	0.0	33.7
LnGrp LOS	C	D	B	A	A	C
Approach Vol, veh/h	604			456	532	
Approach Delay, s/veh	43.0			13.8	33.7	
Approach LOS	D			B	C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	15.2	30.8			46.0	26.5
Change Period (Y+Rc), s	6.5	6.5			6.5	6.5
Max Green Setting (Gmax), s	20.0	30.0			56.5	20.0
Max Q Clear Time (g_c+I1), s	8.2	22.4			6.1	20.3
Green Ext Time (p_c), s	0.5	1.9			1.1	0.0
Intersection Summary						
HCM 6th Ctrl Delay			31.5			
HCM 6th LOS			C			

HCM 6th TWSC
103: Lake Helen Osteen & Driveway #1

03/01/2024

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	13	318	0	0	518
Future Vol, veh/h	8	13	318	0	0	518
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	17	2	2	2	3
Mvmt Flow	9	15	370	0	0	602





Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	972	370	0	-	-	-
Stage 1	370	-	-	-	-	-
Stage 2	602	-	-	-	-	-
Critical Hdwy	6.42	6.37	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.453	-	-	-	-
Pot Cap-1 Maneuver	280	644	-	0	0	-
Stage 1	699	-	-	0	0	-
Stage 2	547	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	280	644	-	-	-	-
Mov Cap-2 Maneuver	280	-	-	-	-	-
Stage 1	699	-	-	-	-	-
Stage 2	547	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 431	-
HCM Lane V/C Ratio	- 0.057	-
HCM Control Delay (s)	- 13.9	-
HCM Lane LOS	- B	-
HCM 95th %tile Q(veh)	- 0.2	-

HCM 6th TWSC
104: Lake Helen Osteen & Driveway #2

03/01/2024

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	0	10	29	0	33	17	269	22	34	464	28
Future Vol, veh/h	17	0	10	29	0	33	17	269	22	34	464	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	3	2
Mvmt Flow	20	0	11	33	0	38	20	309	25	39	533	32
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	1008	1001	549	995	1005	322	565	0	0	334	0	0
Stage 1	627	627	-	362	362	-	-	-	-	-	-	-
Stage 2	381	374	-	633	643	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	219	243	535	224	241	719	1007	-	-	1225	-	-
Stage 1	471	476	-	657	625	-	-	-	-	-	-	-
Stage 2	641	618	-	468	468	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	196	226	535	207	224	719	1007	-	-	1225	-	-
Mov Cap-2 Maneuver	196	226	-	207	224	-	-	-	-	-	-	-
Stage 1	460	454	-	641	610	-	-	-	-	-	-	-
Stage 2	593	603	-	436	446	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	21		18.7			0.5			0.5			
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1007	-	-	256	333	1225	-	-				
HCM Lane V/C Ratio	0.019	-	-	0.121	0.214	0.032	-	-				
HCM Control Delay (s)	8.6	0	-	21	18.7	8	0	-				
HCM Lane LOS	A	A	-	C	C	A	A	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.8	0.1	-	-				

Timings

105: Elkcarn Blvd & Lake Helen Osteen

03/01/2024



Lane Group	SEL	SET	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations								
Traffic Volume (vph)	36	314	22	286	191	419	105	247
Future Volume (vph)	36	314	22	286	191	419	105	247
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	3	8	7	4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	16.0	5.0	16.0	5.0	6.0	5.0	6.0
Minimum Split (s)	14.0	25.0	14.0	25.0	13.5	13.0	13.5	13.0
Total Split (s)	29.0	49.0	29.0	49.0	28.5	32.0	28.5	32.0
Total Split (%)	20.9%	35.4%	20.9%	35.4%	20.6%	23.1%	20.6%	23.1%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	4.0	5.5	4.0
All-Red Time (s)	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	9.0	9.0	9.0	9.0	8.5	7.0	8.5	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effect Green (s)	38.5	34.4	37.6	34.0	40.5	28.4	34.0	25.2
Actuated g/C Ratio	0.36	0.32	0.35	0.32	0.38	0.27	0.32	0.24
v/c Ratio	0.16	0.80	0.10	0.82	0.52	0.92	0.47	0.64
Control Delay	20.6	44.9	20.0	46.9	27.9	66.8	30.2	48.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	44.9	20.0	46.9	27.9	66.8	30.2	48.7
LOS	C	D	B	D	C	E	C	D
Approach Delay		43.1		45.6		55.0		43.4
Approach LOS		D		D		D		D

Intersection Summary

Cycle Length: 138.5

Actuated Cycle Length: 107

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 47.6

Intersection LOS: D

Intersection Capacity Utilization 79.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 105: Elkcarn Blvd & Lake Helen Osteen

Ø1	Ø2	Ø3	Ø4
29 s	49 s	28.5 s	32 s
Ø5	Ø6	Ø7	Ø8
29 s	49 s	28.5 s	32 s





















Buildout Conditions - PM Peak 3:00 pm 02/29/2024

Synchro 11 Report
Page 7

HCM 6th Signalized Intersection Summary

105: Elkcarn Blvd & Lake Helen Osteen

03/01/2024

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	36	314	128	22	286	162	191	419	16	105	247	17
Future Volume (veh/h)	36	314	128	22	286	162	191	419	16	105	247	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1870	1870	1870	1870	1870	1870	1885	1870	1870	1870	1870
Adj Flow Rate, veh/h	38	331	135	23	301	171	201	441	17	111	260	18
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	2	2	2	2	2	2	1	2	2	2	2
Cap, veh/h	173	393	160	178	338	192	350	461	18	206	368	25
Arrive On Green	0.03	0.31	0.31	0.02	0.30	0.30	0.11	0.26	0.26	0.07	0.21	0.21
Sat Flow, veh/h	1767	1263	515	1781	1120	636	1781	1803	70	1781	1729	120
Grp Volume(v), veh/h	38	0	466	23	0	472	201	0	458	111	0	278
Grp Sat Flow(s),veh/h/ln	1767	0	1778	1781	0	1756	1781	0	1873	1781	0	1849
Q Serve(g_s), s	1.4	0.0	23.9	0.9	0.0	25.1	8.4	0.0	23.6	4.7	0.0	13.6
Cycle Q Clear(g_c), s	1.4	0.0	23.9	0.9	0.0	25.1	8.4	0.0	23.6	4.7	0.0	13.6
Prop In Lane	1.00		0.29	1.00		0.36	1.00		0.04	1.00		0.06
Lane Grp Cap(c), veh/h	173	0	553	178	0	530	350	0	479	206	0	393
V/C Ratio(X)	0.22	0.00	0.84	0.13	0.00	0.89	0.57	0.00	0.96	0.54	0.00	0.71
Avail Cap(c_a), veh/h	477	0	727	499	0	718	519	0	479	452	0	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.5	0.0	31.4	25.3	0.0	32.6	26.5	0.0	35.9	29.2	0.0	35.7
Incr Delay (d2), s/veh	0.6	0.0	6.9	0.3	0.0	10.5	1.5	0.0	30.3	2.2	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	10.9	0.4	0.0	11.8	3.6	0.0	14.4	2.1	0.0	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.1	0.0	38.4	25.6	0.0	43.1	27.9	0.0	66.2	31.4	0.0	39.5
LnGrp LOS	C	A	D	C	A	D	C	A	E	C	A	D
Approach Vol, veh/h	504			495			659			389		
Approach Delay, s/veh	37.4			42.3			54.5			37.2		
Approach LOS	D			D			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.3	39.4	19.2	27.8	12.2	38.5	15.0	32.0				
Change Period (Y+Rc), s	9.0	9.0	8.5	7.0	9.0	9.0	8.5	7.0				
Max Green Setting (Gmax), s	20.0	40.0	20.0	25.0	20.0	40.0	20.0	25.0				
Max Q Clear Time (g_c+I1), s	2.9	25.9	10.4	15.6	3.4	27.1	6.7	25.6				
Green Ext Time (p_c), s	0.0	2.5	0.4	1.0	0.0	2.4	0.2	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	44.1											
HCM 6th LOS	D											

Timings

101: Catalina Blvd & Howland Blvd

03/04/2024



Lane Group	SEL	SET	NWL	NWT	NEL	NET	SWL	SWT	SWR
Lane Configurations									
Traffic Volume (vph)	140	549	31	1047	113	115	133	106	540
Future Volume (vph)	140	549	31	1047	113	115	133	106	540
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Perm	NA	Perm
Protected Phases	1	6	5	2	7	4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	7	4	8	8	8
Switch Phase									
Minimum Initial (s)	5.0	11.0	5.0	11.0	5.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.5	19.5	13.5	19.5	12.0	14.0	14.0	14.0	14.0
Total Split (s)	19.0	65.0	13.6	59.6	14.0	71.4	57.4	57.4	57.4
Total Split (%)	12.7%	43.3%	9.1%	39.7%	9.3%	47.6%	38.3%	38.3%	38.3%
Yellow Time (s)	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.5	8.5	8.5	8.5	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None	None
Act Effect Green (s)	68.4	62.3	56.4	51.3	58.6	58.6	44.5	44.5	44.5
Actuated g/C Ratio	0.47	0.43	0.39	0.36	0.41	0.41	0.31	0.31	0.31
v/c Ratio	0.86	0.42	0.10	0.96	0.25	0.22	0.37	0.20	0.94
Control Delay	74.4	31.5	22.9	63.8	28.2	25.7	41.6	37.0	58.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.4	31.5	22.9	63.8	28.2	25.7	41.6	37.0	58.0
LOS	E	C	C	E	C	C	D	D	E
Approach Delay		39.8		62.7		26.8		52.3	
Approach LOS		D		E		C		D	

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 144.3

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 51.0

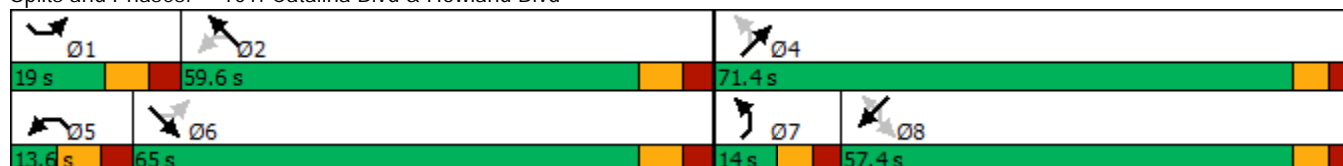
Intersection LOS: D

Intersection Capacity Utilization 90.0%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 101: Catalina Blvd & Howland Blvd
























Buildout Conditions - AM Peak 3:34 pm 02/26/2024 Baseline

Synchro 11 Report
Page 1

HCM 6th Signalized Intersection Summary

101: Catalina Blvd & Howland Blvd

03/04/2024

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	140	549	34	31	1047	82	113	115	37	133	106	540
Future Volume (veh/h)	140	549	34	31	1047	82	113	115	37	133	106	540
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1826	1856	1870	1856	1856	1885	1885	1856	1870	1870	1870
Adj Flow Rate, veh/h	147	578	36	33	1102	86	119	121	39	140	112	517
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	5	3	2	3	3	1	1	3	2	2	2
Cap, veh/h	173	1276	79	298	1134	88	368	587	189	460	628	532
Arrive On Green	0.07	0.38	0.38	0.02	0.34	0.34	0.05	0.43	0.43	0.34	0.34	0.34
Sat Flow, veh/h	1753	3317	206	1781	3313	258	1795	1366	440	1226	1870	1585
Grp Volume(v), veh/h	147	302	312	33	586	602	119	0	160	140	112	517
Grp Sat Flow(s),veh/h/ln	1753	1735	1789	1781	1763	1809	1795	0	1806	1226	1870	1585
Q Serve(g_s), s	8.1	19.4	19.4	1.8	48.9	49.0	6.4	0.0	8.3	12.8	6.3	48.0
Cycle Q Clear(g_c), s	8.1	19.4	19.4	1.8	48.9	49.0	6.4	0.0	8.3	12.8	6.3	48.0
Prop In Lane	1.00		0.12	1.00		0.14	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	173	667	688	298	603	619	368	0	776	460	628	532
V/C Ratio(X)	0.85	0.45	0.45	0.11	0.97	0.97	0.32	0.00	0.21	0.30	0.18	0.97
Avail Cap(c_a), veh/h	178	667	688	315	603	619	368	0	779	462	631	535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	34.2	34.3	31.1	48.4	48.4	29.4	0.0	26.6	37.2	35.0	48.9
Incr Delay (d2), s/veh	29.8	2.2	2.2	0.2	30.2	30.0	0.5	0.0	0.1	0.4	0.1	31.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	8.4	8.7	0.8	25.9	26.6	2.9	0.0	3.7	3.9	3.0	23.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.9	36.4	36.4	31.2	78.6	78.4	29.9	0.0	26.8	37.5	35.2	80.3
LnGrp LOS	E	D	D	C	E	E	C	A	C	D	D	F
Approach Vol, veh/h	761			1221			279			769		
Approach Delay, s/veh	42.3			77.3			28.1			65.9		
Approach LOS	D			E			C			E		
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.6	59.6		71.2	12.2	65.9	14.0	57.2				
Change Period (Y+Rc), s	8.5	8.5		7.0	8.5	8.5	7.0	7.0				
Max Green Setting (Gmax), s	10.5	51.1		64.4	5.1	56.5	7.0	50.4				
Max Q Clear Time (g_c+I1), s	10.1	51.0		10.3	3.8	21.4	8.4	50.0				
Green Ext Time (p_c), s	0.0	0.1		1.0	0.0	3.6	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay	61.1											
HCM 6th LOS	E											

Appendix H

Internal Queue Assessment

Appendix I

Signal Four Analytics Crash Summary Screenshot

Search Crashes



Crashes in Custom Area

From 1/1/2018 - 12/31/2023



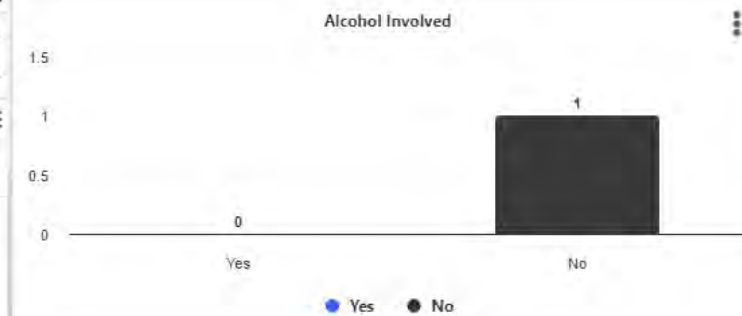
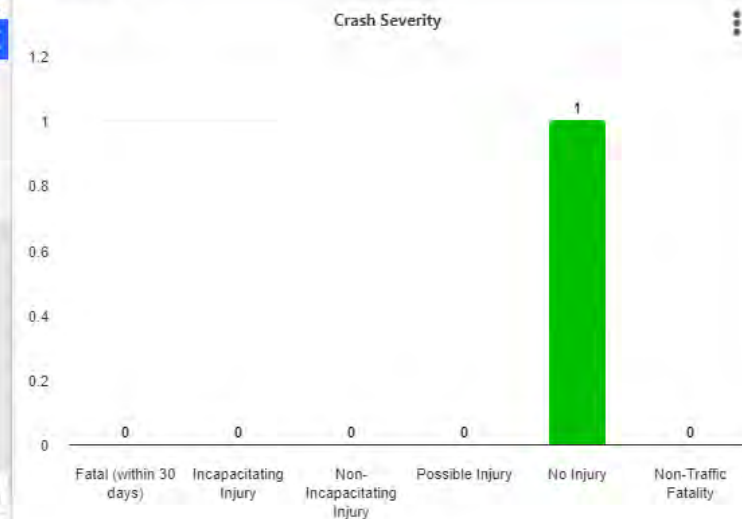
Injury Summary

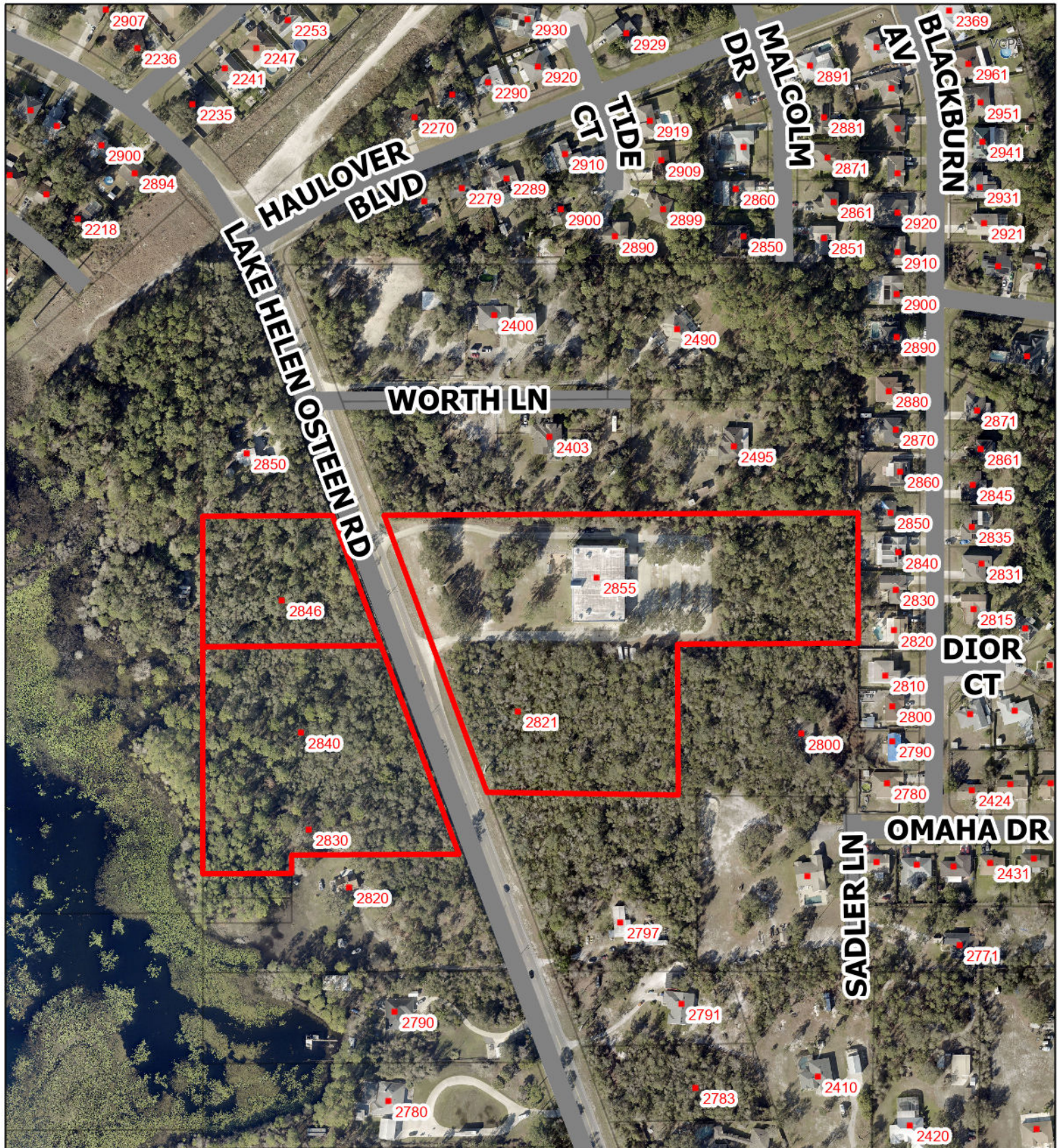
[Common Attributes](#)

[FDOT Attributes](#)

	Total	Fatal Crashes	Serious Injury Cras...	Injury Crashes	Property Damage ...
Crashes	1	0	0	0	1
Fatalities (within 30 Days)	0	0	0	0	0
Incapacitating Injuries	0	0	0	0	0
Non-Incapacitating Injuries	0	0	0	0	0

Charting





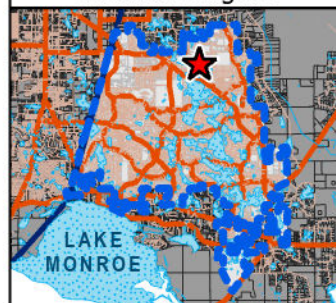
Location Map

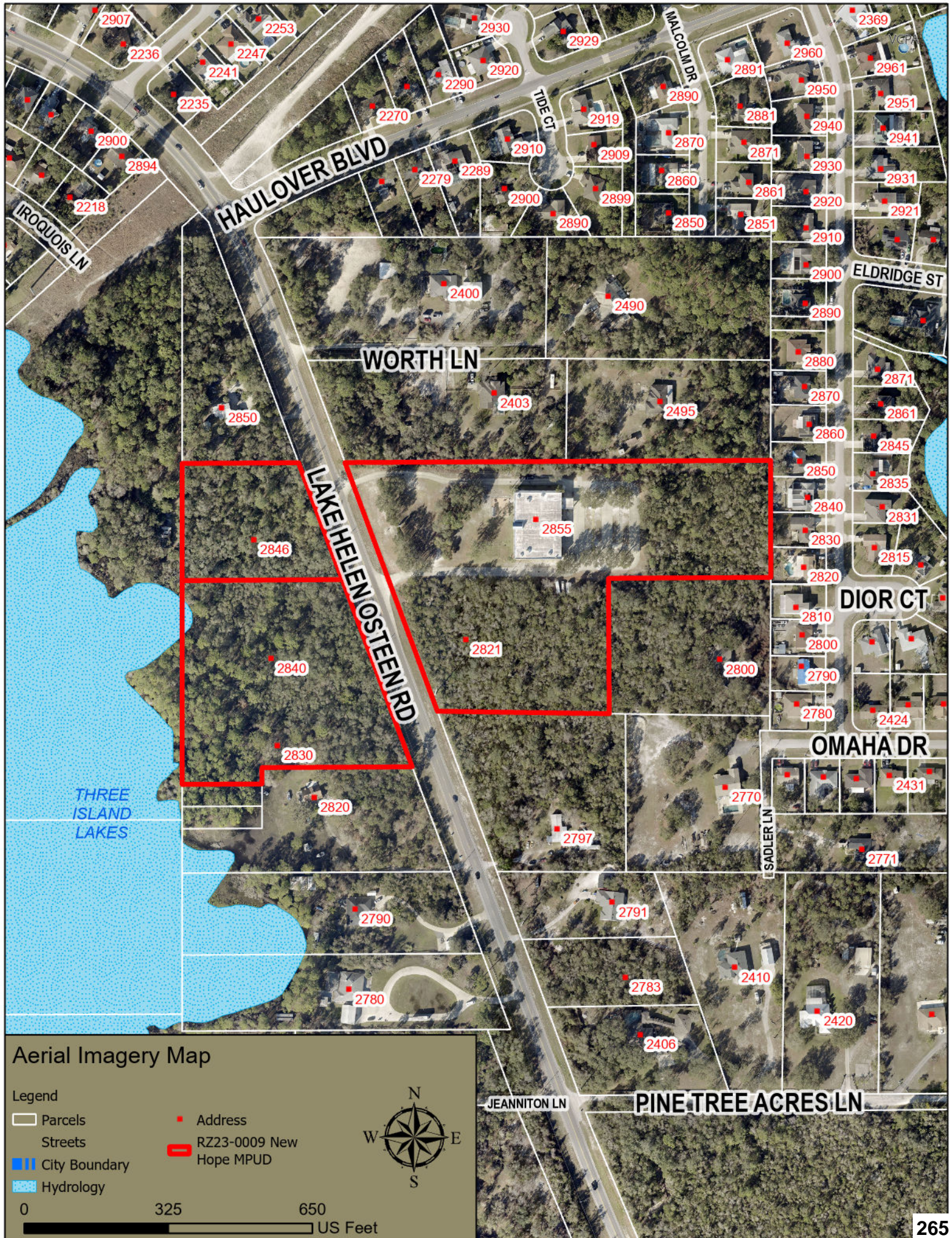
Legend

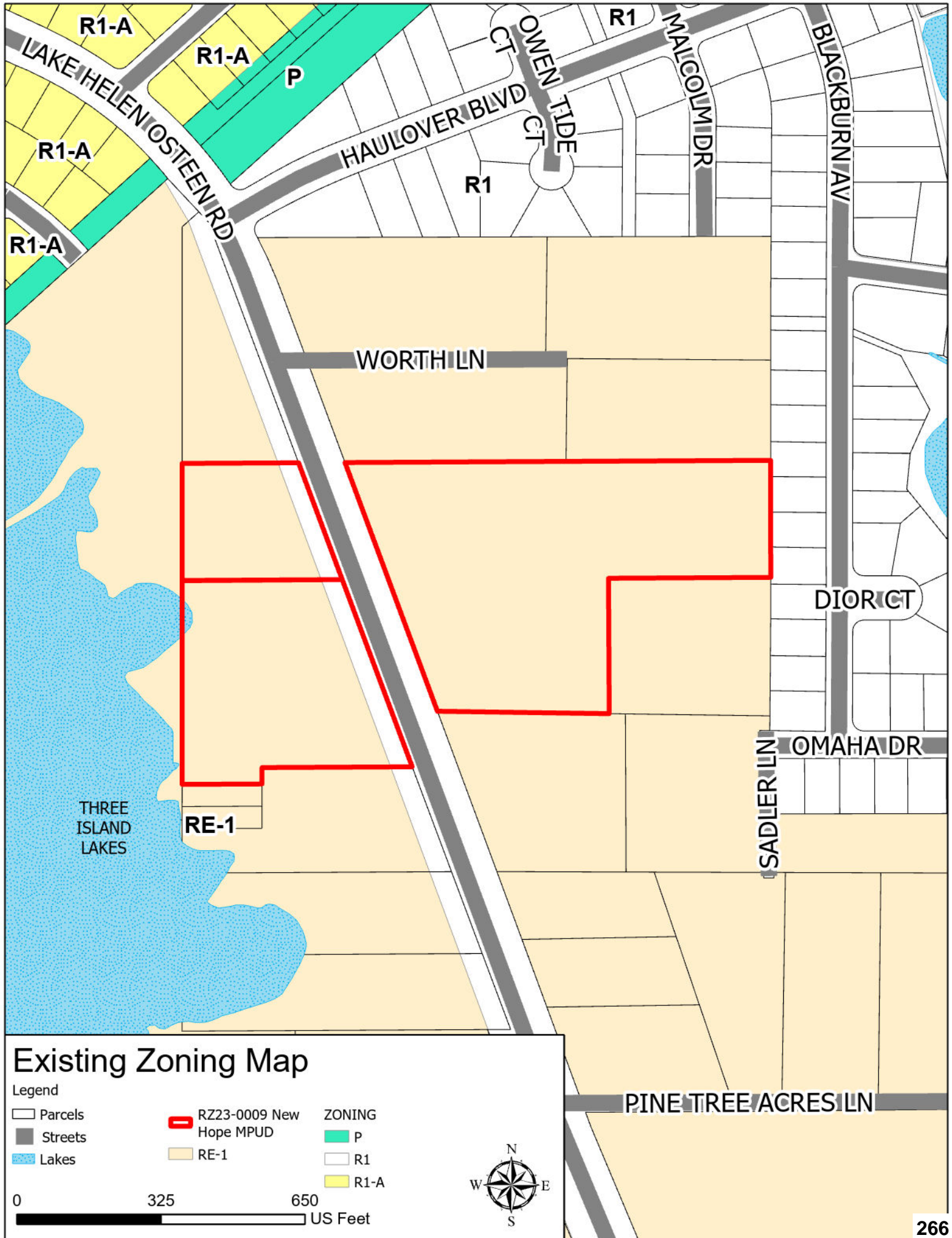
- Address
 - Parcels
 - City Boundary
 - Streets
 - RZ23-0009 New Hope MPUD
- 0 330 660 US Feet

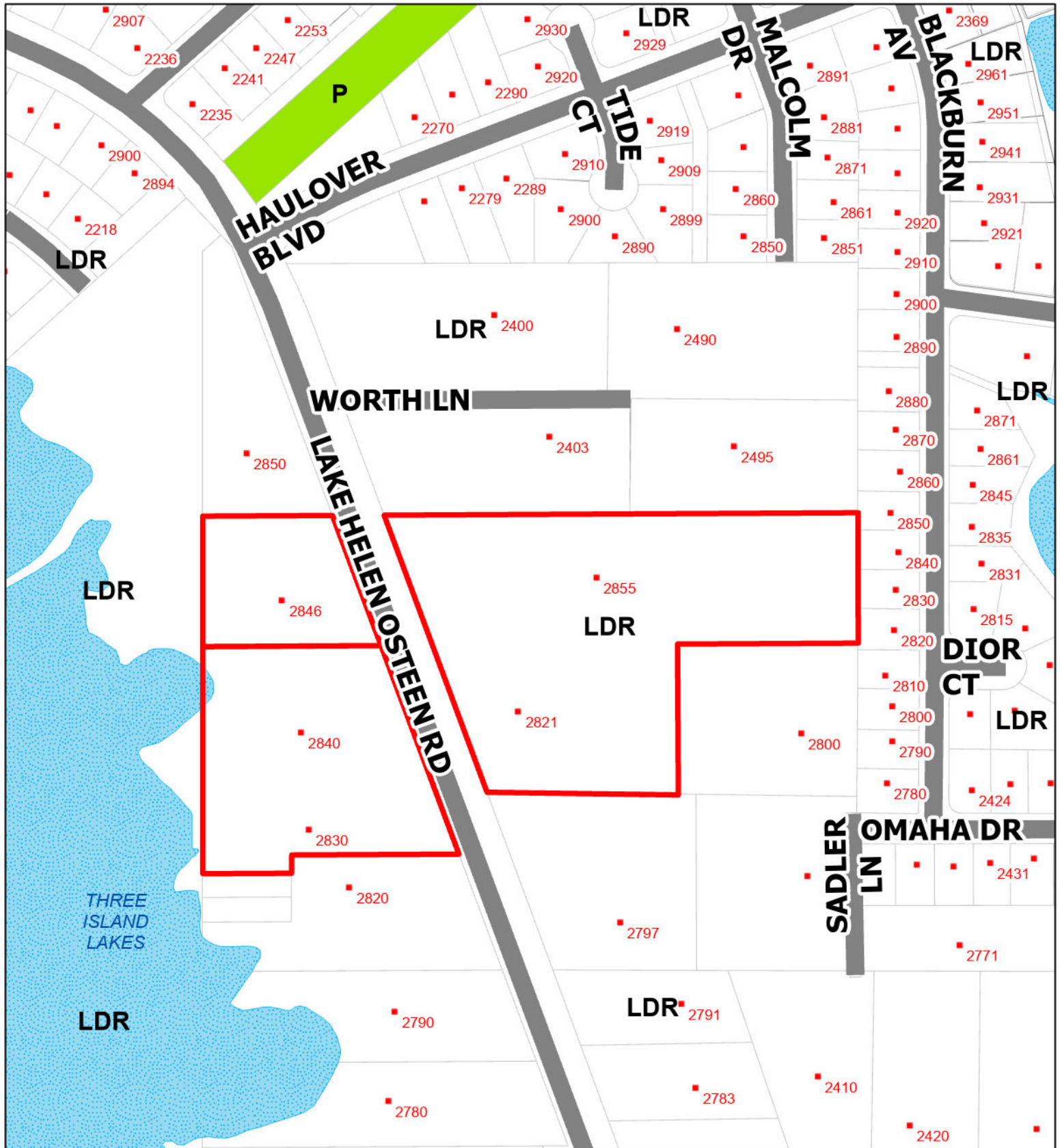


Location Diagram









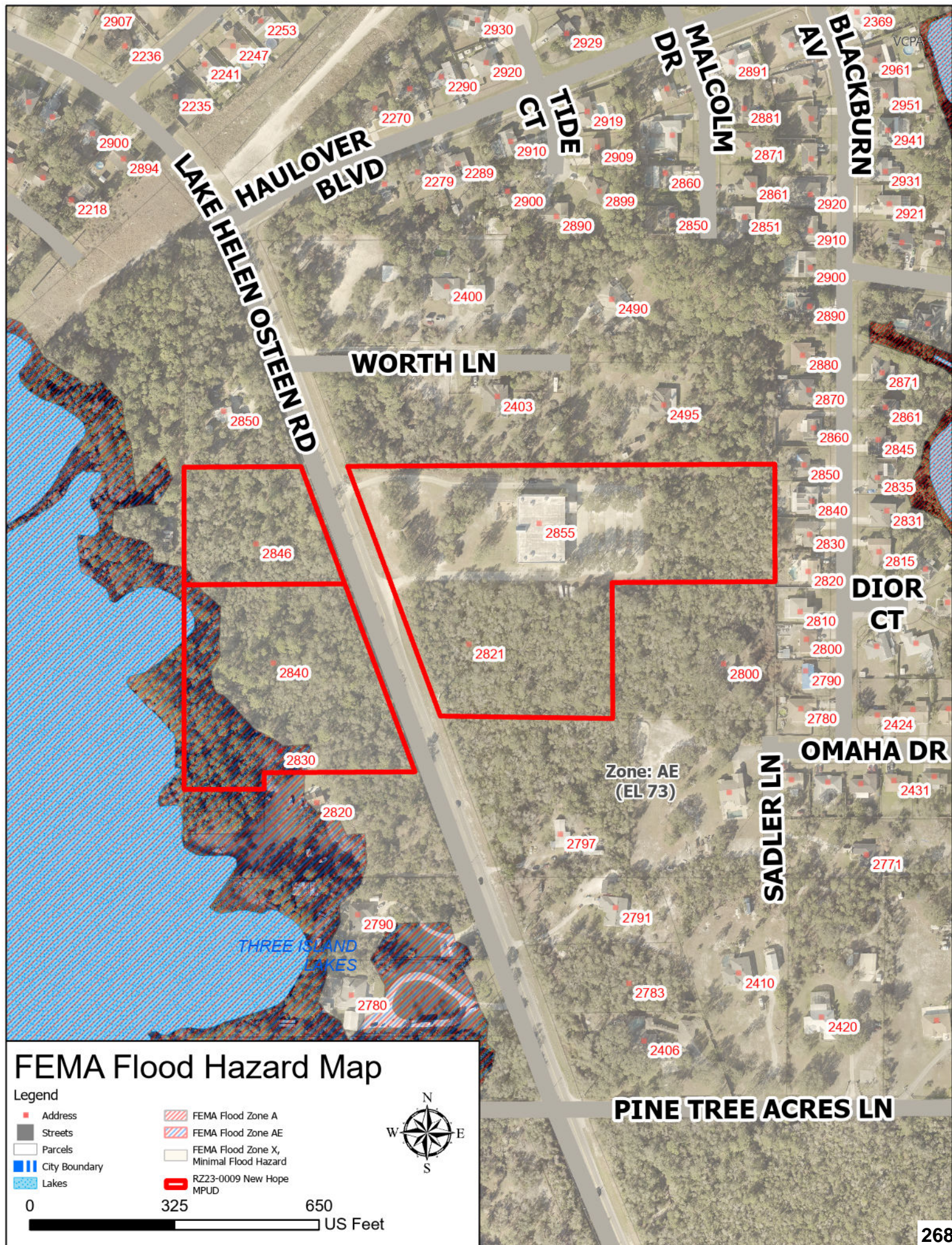
Future Land Use Map

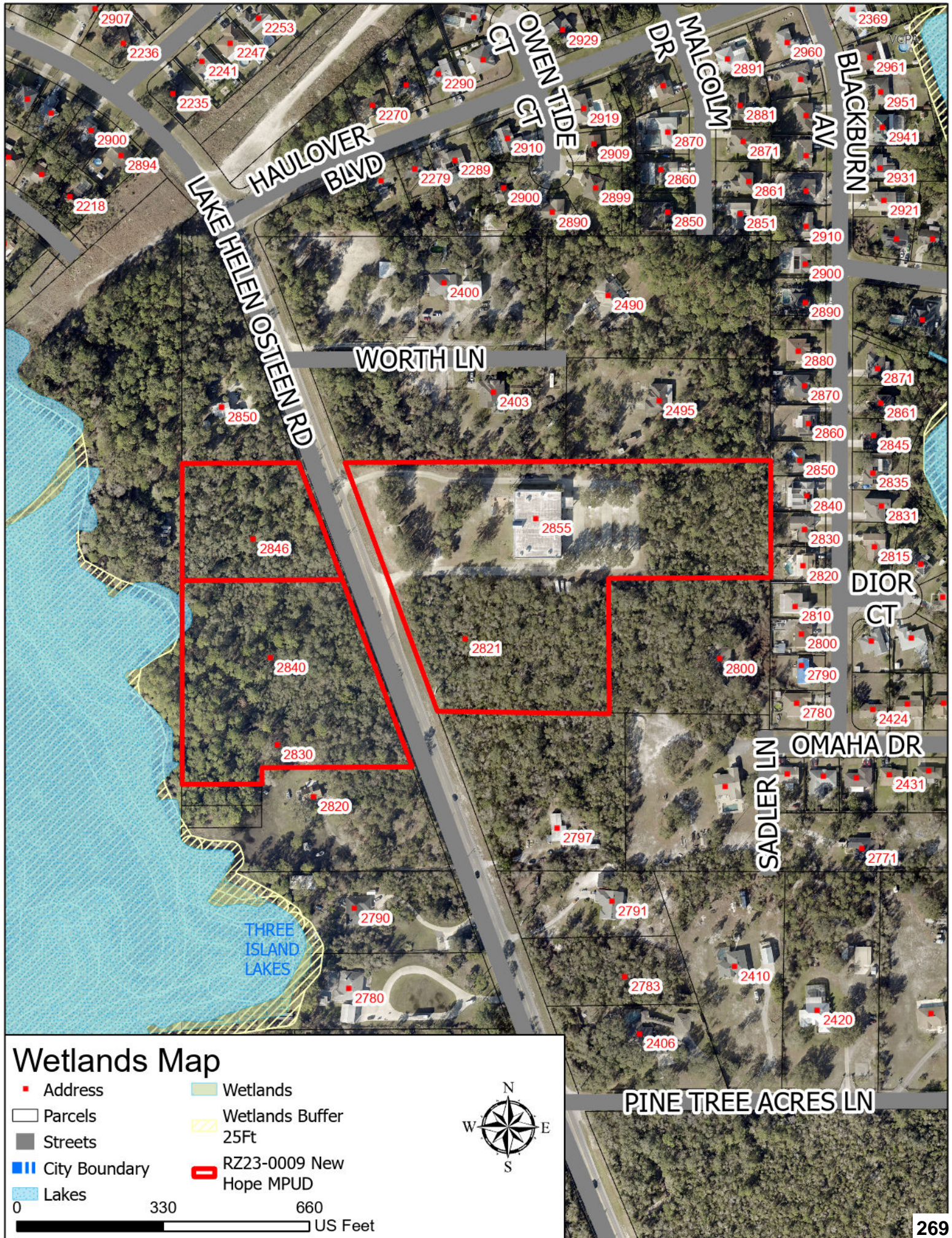
Legend

- Address
- Parcels
- Streets
- Lakes
- PUBLIC
- SEMIPUBLIC CONSERVATION
- RESIDENTIAL LOW
- RZ23-0009 New Hope MPUD



0 330 660 US Feet



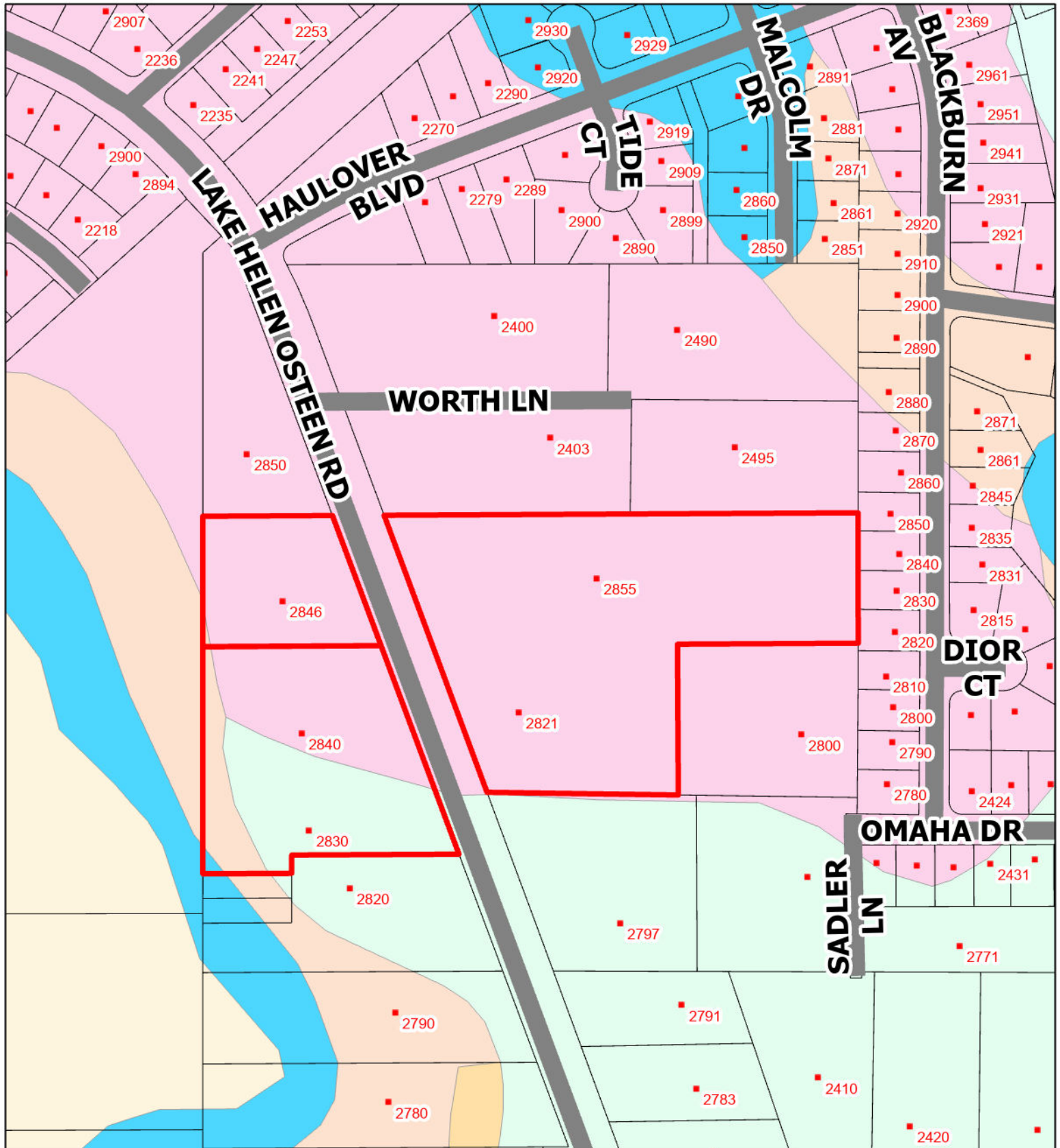


Wetlands Map

- Address
- Parcels
- Streets
- City Boundary
- Lakes
- Wetlands
- Wetlands Buffer 25Ft
- RZ23-0009 New Hope MPUD



0 330 660 US Feet



Soils Map

Legend

- Address
- Parcels
- Streets
- City Boundary

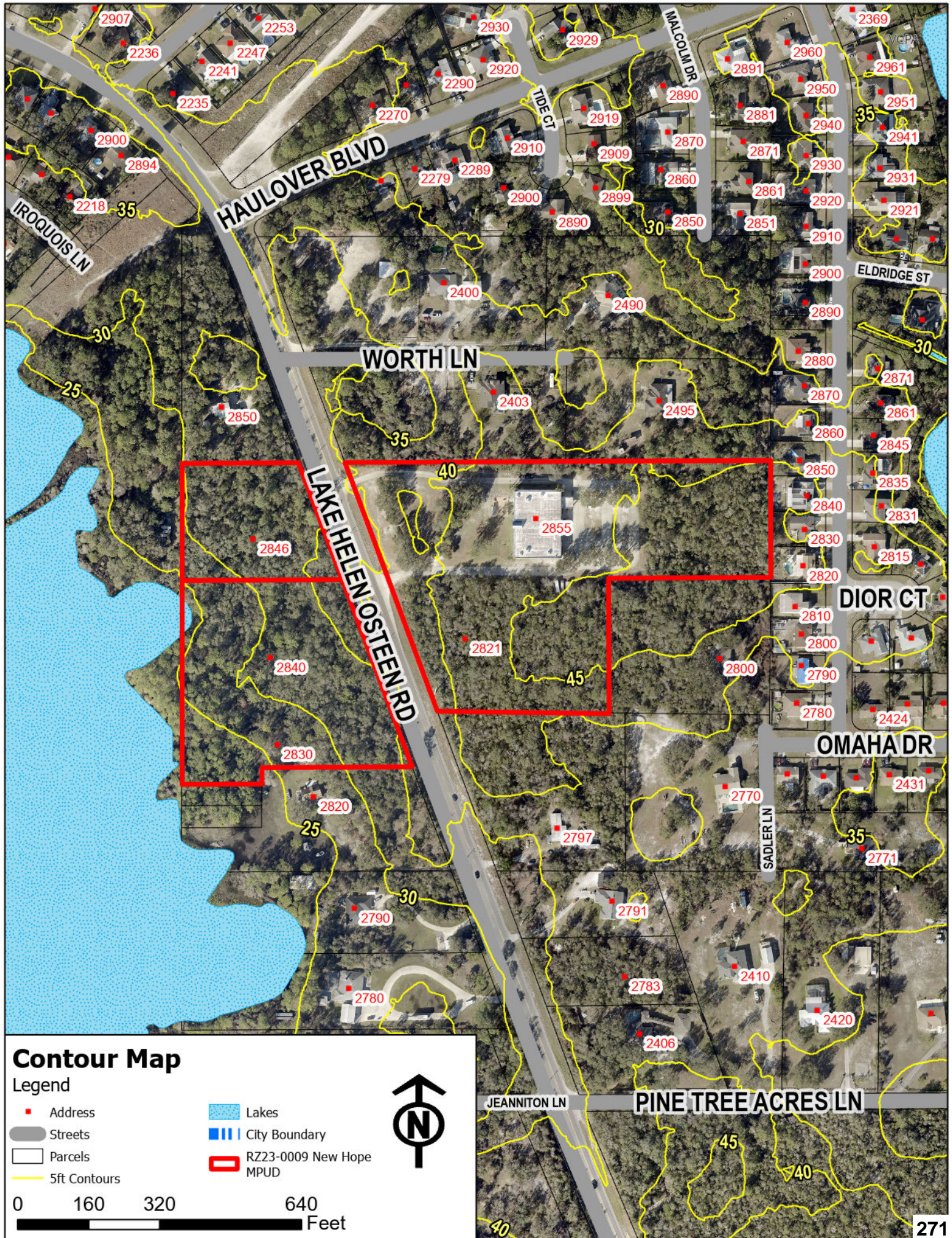
SOILS

- ASTATULA FINE SAND, 0 TO 8 PERCENT SLOPE
- DAYTONA FINE SAND, 0 TO 5 PERCENT SLOPE
- MYAKKA FINE SAND
- MYAKKA FINE SAND, DEPRESSIONAL
- OPEN WATER
- PAOLA FINE SAND, 0 TO 8 PERCENT SLOPE
- ST. JOHNS FINE SAND

RZ23-0009 New Hope MPUD



0 325 650 US Feet



Memorandum

To: Jessica Entwistle, Assistant Director, City of Deltona

From: Mark Watts, Cobb Cole

Date: January 5, 2026

Re: Summary of the 2nd Neighborhood Meeting for New Hope MPUD Project

On June 23, 2025 at 6:00pm, Cobb Cole hosted a 2nd neighborhood meeting at the New Hope Baptist Church of Deltona in connection with the above referenced project. A notice of the meeting was sent to approximately 35 surrounding parcel owners based on a list of all owners within 300 feet of the subject property received from the Volusia County Property Appraiser's office. A copy of the list of parcel owners provided with notice is attached.

Present for the meeting were Pastor Bradley of New Hope Baptist Church, the development team, and myself. Approximately 10-15 members of the public attended this meeting in addition to a similar number of church members. Discussion about the project was similar to the 1st neighborhood meeting.

The development team presented the updated details of the project, including increased wetland buffering along the shoreline, relocation of stormwater facilities away from wetland and shoreline areas and the reduction in overall density of the proposed residential portion of the project.

Concerns raised by the neighbors in attendance included the following general comments or areas of concern:

- Scheduling of the follow-up meeting on the same evening as a City Commission meeting and potential impacts on attendance;
- Traffic increases to Lake Helen Osteen Road;
- School capacity;
- Inconsistency of the proposed residential density with the character of the surrounding area.

Members of the development team present responded to the stated concerns and encouraged any members of the public that were interested to attend public hearings at the Planning and Zoning Board and City Commission.