



# City of Deltona

2345 Providence Blvd.  
Deltona, FL 32725

## Agenda

### Planning and Zoning Board

*Chair Tom Burbank*  
*Vice Chair Adam Walosik*  
*Member Noble Olasimbo*  
*Member Stony Sixma*  
*Member John Harper*  
*Member Donald Philpitt*  
*Member Michael Putkowski*

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Wednesday, May 18, 2016

7:00 PM

Deltona Commission Chambers

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**1. CALL TO ORDER:**

**2. ROLL CALL:**

**3. APPROVAL OF MINUTES & AGENDA:**

A. Minutes for March 16, 2016

**4. PRESENTATIONS/AWARDS/REPORTS:**

**5. PUBLIC FORUM:**

**6. OLD BUSINESS:**

**7. NEW BUSINESS:**

A. [Comprehensive Plan Amendment adding Tivoli Dr. between Saxon Blvd. and Providence Blvd. to the City's Thoroughfare Map as a principal arterial and recognizing said segment of Tivoli Dr. as a future four lane facility. Ordinance No. 12-2016.](#)

B. [VR16-002 Fence Variance - 3041 Bond St. Resolution 2016-21.](#)

C. [Project No. RZ15-006, Ordinance No. 24-2016, Vineland Reserve](#)

D. [VR16-001 Fence Variance - 1690 Panama Court. Resolution 2016-20.](#)

**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 Clerk, Joyce Raftery 48 hours in advance of the meeting date and time at (386) 878-8500.*



# City of Deltona

2345 Providence Blvd.  
Deltona, FL 32725

## DRAFT Minutes - Draft Planning and Zoning Board

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Wednesday, March 16, 2016

7:00 PM

Council Chambers

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### 1. CALL TO ORDER:

The meeting was called to order at 7:00 pm by Chairman Burbank.

### 2. ROLL CALL:

Also present: Ron Paradise, Planning and Development Services; Chris Bowley, Planning and Development Services and Kathrine Kyp, Planning and Development Services.

**Present:** 6 - Chair Tom Burbank  
Vice Chair Adam Walosik  
Member John Harper  
Member Noble Olasimbo  
Member Donald Philpitt  
Member Michael Putkowski

**Absent:** 1 - Member Stony Sixma

### 3. APPROVAL OF MINUTES & AGENDA:

#### A. Minutes for February 17, 2016.

**Motion by Member Olasimbo, seconded by Member Putkowski, to approve the minutes for February 17, 2016. The motion carried by the following vote:**

**For:** 6 - Chair Burbank, Vice Chair Walosik, Member Harper, Member Olasimbo, Member Philpitt and Member Putkowski

### 4. PRESENTATIONS/AWARDS/REPORTS:

### 5. PUBLIC FORUM:

### 6. OLD BUSINESS:

### 7. NEW BUSINESS:

#### A. Comprehensive Plan Amendment adding Tivoli Dr. between Saxon Blvd. and Providence Blvd. to the City's Thoroughfare Map as a principal arterial

**and recognizing said segment of Tivoli Dr. as a future four lane facility.**  
**Ordinance No. 12-2016.**

Mr. Paradise stated that Ordinance No. 12-2016 is a request to add a section of Tivoli Dr. between Saxon Blvd. and Providence Blvd. to the City's Thoroughfare Map as a principal arterial and recognizing said segment of Tivoli Dr. as a future four lane facility.

Discussion occurred between the Board and Mr. Paradise, regarding setbacks from the right of way and the constrained dimensions of the future four lane roadway when compared to the existing residential homes. Member Harper asked how the projected increase in traffic will affect the section of Tivoli Dr. Mr. Paradise stated that the section of the road acts as a connector between two existing thoroughfares and with the projected growth of the City, it will increase traffic.

Chairman Burbank asked if consideration was given for a three lane roadway scenerio. Mr. Paradise noted that, with the level of service E, the 14,000 trips noted for a three lane roadway scenerio the section of Tivoli Dr. would exceed capacity in 2019.

Chairman Burbank opened the public hearing.

Selina Williams, 1393 Tivoli Dr., Deltona, spoke against the project. She stated that she has lived here for 18 years and the traffic has not changed since when she moved here. She noted that it increases during peak hours and that it doesn't appear that there there will be enough space, as the street will be closer to her front door. She noted her concerns regarding the length of construction time and the diminished property values.

Joshua Cole, 1350 Woodbine Ave., Deltona, spoke regarding the project. He noted that the 2035 Long Range Transportation Plan Report (LRTP) is a plan generated between local municipalities, USDOT, Florida Department of Transportation and the River to Sea Transportation Planning Organization. These organizations participate in cooperation and continuous comprehensive transportation planning. Once the LRTP is adopted by the TPO it becomes the urban areas guide for transportation improvements. He noted that If a capacity enhancing transportation project is not part of the LRTP, then it is not available for federally aided funding. He stated that the expansion of Tivoli is currently not eligible for funding. He spoke regarding the cost behind transportation improvements and without federally aided funds, the cost would come from the tax payers.

Rob Griffith, 1384 Tivoli Dr., Deltona, spoke against the project. He noted his concerns regarding the children who walk and bike to school, his children's safety and the distance of the road from his front door. He stated that he spoke with Sheriff deputies and local fireman and they didn't have any traffic concerns. He suggested a dedicated right turn lane at the Saxon Blvd. intersection and two left turn lanes at the Providence Blvd. intersection. He noted that he drove several trips with minimal delay.

Richard Jardim, 1361 Saxon Blvd, Deltona, Fl., spoke against the project. He stated that the widening of Saxon Blvd. has caused exessive speeds throughout the years, damaged houses, property and cars driving off the road. He spoke about using the money for beautification and not widening the road. He suggested adding speed bumps

Michael Demmin, 1324 Tivoli Dr. Deltona, Fl spoke against the project. He stated that he has been there since 1984 and noted that another fire station could be installed by the Neighborhood Walmart on Saxon Blvd. and that it would help allivate the fire department. He noted that installing various speed bumps and stop signs could be a better solution to the traffic than widening it.

Gail Robinson, 1535 Tivoli Dr., Deltona Fl., spoke against the project. 23 year resident and spoke regarding the installation of speed bumps, peak hours traffic increase, excessive speeding, ruin property values, create additional noise and said that the money should be used somewhere else.

Chairman Burbank closed the public hearing. Chairman Burbank stated that he doesn't support the road being widened to four lanes, but that improvements are still needed.

Mr. Bowley added that the item before the Board is to decide on the comprehensive plan policy action and should be voted on that way.

Member Walosik stated that he understands and has been working in traffic engineering and construction management and has been driving Tivoli Dr. for 28 years and experienced traffic delays every day. He explained that traffic engineers have tools to model and study traffic and growth.

Member Philpitt stated that he reviewed the analysis but questioned the findings, but based on personal obsevation's founded that there is no need to improve the road.

Member Putkowski asked if Sheriff deputies can patrol for speeding radar. He stated that the right of way isn't conducive to support a four lane improvement and agrees that the City should find another option.

Member Olasimbo stated that he is a transportation professional and spoke regarding how the road functions, exceeding capacity, the timeline and cost of constructing a road. He noted that if you put in speed bumps, people will still drive on the road.

Member Harper stated that this policy action is premature. He noted that the traffic modeling used in the staff report isn't good, and needs more of a transportation impact analysis.

Chairman Burbank stated that this is strictly a policy decision, which will give the City the opportunity to address a potential problem in the future.

**Motion by Member Olasimbo, seconded by Vice Chair Walosik, to recommend for approval the Comprehensive Plan Amendment adding Tivoli Dr. between Saxon Blvd. and Providence Blvd. to the City's Thoroughfare Map as a principal arterial and recognizing said segment of Tivoli Dr. as a future four lane facility. Ordinance No. 12-2016. The motion failed by the following vote:**

**For:** 3 - Chair Burbank, Vice Chair Walosik and Member Olasimbo

**Against:** 3 - Member Harper, Member Philpitt and Member Putkowski

**B. Ordinance No. 09-2015, Amending Section 110-806, Fences, Walls And Hedges.**

Mr. Bowley provided a summary presentation regarding why the ordinance is before them today and the creation and mission of the Ordinance Review Committee (ORC). He noted that it began with a discussion regarding the hedges in the front yard and expanded into all screening material along entire property lines, heights and opacity percentage.

Discussion between the Board and Mr. Bowley occurred regarding fence height, visibility triangle and enforcing opacity percentage.

**Motion by Member Olasimbo, seconded by Vice Chair Walosik, to recommend for approval of Ordinance No. 09-2015, Amending Section 110-806, Fences, Walls And Hedges. The motion carried by the following vote:**

**For:** 6 - Chair Burbank, Vice Chair Walosik, Member Harper, Member Olasimbo, Member Philpitt and Member Putkowski

**C. Discussion re: Land Development Code, Chapter 96.**

Member Putkowski requested that the City increase radii to 50 feet instead of the current 40 feet. Member Walosik agreed to increase to 50 feet for fire, emergency and garbage trucks.

Discussion ensued regarding recommending the radii increase during development review, length of cul-de-sac street. Chairman Burbank recommended that Member Putkowski provide his concerns to the City Engineer. Member Putkowski discussed the protocol for road repairs with Chairman Burbank. Mr. Bowley advised Member Putkowski speak with Public Works and the City Engineer for proposed changes to City roadway specifications and standards.

**8. STAFF COMMENTS:**

**9. BOARD/COMMITTEE MEMBERS COMMENTS:**

**10. ADJOURNMENT:**

The meeting was adjourned at 8:28 pm.



# Staff Report

**To:** Planning and Zoning Board

**From:** Ron A. Paradise, Assistant Director Planning and Development Services

**Date:** February 24, 2016

**Re:** Comprehensive Plan Amendment, Ordinance No. 12-2016

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**A. Summary of Application:** The request to amend the City of Deltona Comprehensive Plan to add a 0.8 mile segment of Tivoli Dr. between Saxon Blvd. and Providence Blvd. on the City Thoroughfare Map as a Principal Arterial and recognize the road as a future four lane facility on both the Comprehensive Plan Number of Lanes Map and Roadways Number of Lanes Table.

**Applicant:** City of Deltona

**Request:**

**Property Location:** 0.8 mile segment of Tivoli Dr, located between Saxon Blvd. and Providence Blvd.

**B. Existing Zoning:** Most of the corridor of Tivoli Dr. is zoned R-1. There is a C-1 zoned area located at the intersection of Tivoli Dr. and Providence Blvd.

**C. Background:**

Tivoli Dr. is located in the center of the City and extends from Providence Blvd. to Normandy Blvd. However, this Comprehensive Plan amendment covers only the segment of Tivoli Dr. located between Saxon Blvd. and Providence Blvd. because of the existing volumes of traffic on that segment at certain times of the day. The subject segment of Tivoli Dr. was platted as part of Unit 7 and Unit 14 of the Deltona Lakes subdivision in the early 1960's. Tivoli Dr. was platted as a 70' wide right of way but a two lane roadway was constructed which is still in use today. The subject segment of Tivoli Dr. is depicted on the attached location map.

Most of the local roads in Deltona feature 60' right of way widths. The 70' right of way width indicates that the subject segment of Tivoli Dr. was intended to be improved/expanded to support future transportation needs as the community grew. Notwithstanding there was anticipation the subject segment of Tivoli Dr. would be improved beyond just a two lane facility, the majority of Tivoli Dr. is flanked by individual residential lots with individual driveway cuts onto the road. The only non-residential land uses along the subject segment of Tivoli Dr. are the commercial corners located at the Tivoli Drive and Providence Blvd. intersection.

Tivoli Dr., as platted, was contemplated as an east/west connection between two major thoroughfares – Saxon Blvd. and Providence Blvd. Originally, Tivoli Dr. provided access to I-4 via Deltona Blvd. for development occurring along the Providence and Ft. Smith Blvd. corridors. Currently, Tivoli Dr. represents a connection to shopping and service venues developed along Saxon Blvd. extending into the Orange City area. Tivoli Dr. is also used as an alternative access to Spirit Elementary School. Growth and development in the vicinity of the subject Tivoli Dr. segment has and will impact Tivoli Dr. Examples include the new Wal-Mart Neighborhood Center, ancillary retail space near the Wal-Mart, and the Florida Hospital medical clinic. Bethune Cookman University has established an auxiliary campus within an existing office complex located off of Saxon Blvd. near the Tivoli Dr. and Saxon Blvd. intersection. New residential activity such as Lake Baton Estates is also occurring near the Saxon Blvd. to Providence Blvd. segment of Tivoli Dr. In addition, there is other vacant land entitled for residential uses in the vicinity of the subject segment of Tivoli Dr. which will, when developed, generate additional trips onto Tivoli Dr.

In the 1990's, the Saxon Blvd./I-4 interchange was constructed providing another much needed Deltona outlet to the interstate. The interchange development was also associated with Saxon Blvd. being upgraded to five lanes between Tivoli Dr. and the interchange. The direct connection to Interstate 4 and greatly enhanced mobility afforded by the Saxon Blvd. lane expansion has led to an increased reliance on Tivoli Dr. for internal traffic circulation.

These dynamics, in conjunction with high population growth rates within the City has created a condition where traffic congestion, especially during am and pm peak hours is common, and typically manifests as lengthy traffic queues at the signalized intersections of Tivoli Dr. and Providence Blvd. and Saxon Blvd. Traffic congestion is further exacerbated by a plethora of residential driveway cuts and related turning maneuvers. Occurring at less frequent intervals, trash pick-up and mail delivery further complicate mobility along the subject segment of Tivoli Dr.

## **D. Support Information**

### **Public Facilities:**

- a. Potable Water: to be supplied by City of Deltona Utilities
- b. Sanitary Sewer: to be supplied by City of Deltona Utilities
- c. Fire Protection: Fire station on Providence Blvd. is the nearest fire station.
- d. Law Enforcement: Volusia County Sheriff's Office (VCSO)
- e. Electricity: N/A

## **E. Matters for Consideration:**

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

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

Recognizing the subject segment of Tivoli Dr. as a four lane thoroughfare facility is intended to maintain and improve mobility within the City and is consistent with the Comprehensive Plan. The following provisions are applicable:

#### **Policy T1-1.3**

*The City of Deltona shall maintain a City-wide network of thoroughfare and related transportation system corridors. 9J-5.019(4)(c)(4)*

The purpose of this amendment to recognize Tivoli Dr. between Saxon Blvd. and Providence Blvd. as a four lane thoroughfare is an effort to maintain the City transportation network. The Tivoli Dr. Thoroughfare designation is intended to help ensure the City road network continues to operate effectively and efficiently.

#### **OBJECTIVE T1-3**

*The City of Deltona shall continue to coordinate with other local governments, the MPO, and other entities to provide a coordinated system of arterials, collectors, and local streets.  
9J-5.019(4)(b)(3)*

The Federal Highway Administration considers the subject segment of Tivoli Dr. and as an 'Urban Major Collector' on the Federal Functional Highway Classification System. The "Urban Major Collector" designation implies the subject segment of Tivoli Dr. serves a greater function than just a local road. The

inclusion of the Tivoli Dr. segment between Saxon Blvd. to Providence Blvd. would further the above Objective.

**2. Its impact upon the environment or natural resources.**

The 0.8 mile segment of Tivoli Dr. proposed for inclusion as a thoroughfare extends through an area that is developed almost exclusively with detached dwellings on individual lots. Therefore, the impact on natural resources would be non-applicable.

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

Mobility is important to the economic well-being of any community. Recognizing the subject segment of Tivoli Dr. as a four lane thoroughfare will set the stage for improved access in the area which could enhance economic opportunity within various commercial nodes located within the City.

**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.**

**a. Schools:**

N/A

**b. Sewage Disposal:**

N/A

**c. Potable Water:**

N/A

**d. Drainage:**

All drainage will be designed and permitted consistent with City other applicable government regulations.

**e. Transportation Systems**

As has been mentioned, traffic along the subject segment of Tivoli Dr. has increased with much of the congestion driven by community population growth. According to 2015 traffic counts, the segment of Tivoli Dr. between Saxon Blvd. and Providence Blvd. supported 12,359 average annual daily trips (AADT). For comparison, in 2013 the same Tivoli Dr. segment was associated with 11,058 recorded AADT. The difference is represented by a 12% increase in trips.

Currently, the subject segment of Tivoli Dr. has almost exceeded the Comprehensive Plan level of service “D” for a local road (12,740 AADT) and will undoubtedly surpass the LOS “D” threshold in the very near future. This statement is predicated on City growth projections promulgated by the Shimberg Center for Housing, University of Florida. Table 1 below indicates future growth trends in the City through the 2025 planning horizon:

**Table 1**

<b>Year:</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>
<b>Total Population Deltona:</b>	87,367	92,995	98,018
<b>% Change from 2015 Population:</b>	-----	6.4	12.2

Source: Shimberg Center for Housing, University of Florida

The above population projections suggest more traffic not only on the study segment of Tivoli Dr., but throughout the City as a whole. Therefore, to quantify future traffic demands on Tivoli Dr. between Saxon Blvd. and Providence Blvd. the trip ends were projected for two year intervals until 2025 utilizing a traffic growth rate (multiplier of 1.117). The 1.117 multiplier was derived from the 11.7% growth rate of traffic along the subject segment of Tivoli Dr. observed between 2013 and 2015. Table 2 below illustrates the projected trips on Tivoli Dr.

**Table 2**

<b>Year:</b>	<b>2013</b>	<b>2015</b>	<b>2017</b>	<b>2019</b>	<b>2021</b>	<b>2023</b>	<b>2025</b>
Projected Trips on Tivoli (1.117 Multiplier)	11,058	12,359	13,805	15,420	17,224	19,240	21,491

Source: City of Deltona Planning and Development Services

Table 2 above indicates, that by 2017, the segment of Tivoli Dr. between Saxon Blvd. and Providence Blvd. will exceed the present LOS of “D” reserved for local roads. In addition, in 2017, the projected 13,805 trips will surpass the level of service “E” trip capacity (13,640 AADT) associated with

City two lane thoroughfare facilities. Furthermore, by 2025 over 21,000 trips are forecasted for the study segment of Tivoli Dr. and to support the 2025 trip projection, Tivoli Dr. would need to be improved to increase capacity. Such improvements will include, at minimum, lane mile expansion and intersection redesigns.

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

Changes in traffic rates associated with Tivoli Dr. between Saxon Blvd. and Providence Blvd. have been documented elsewhere in this report which clearly indicates changed conditions along the subject segment of Tivoli Dr.

**6. Any mistakes in the original classification.**

No known mistakes.

**7. Its effect upon the public health, welfare, safety, or morals.**

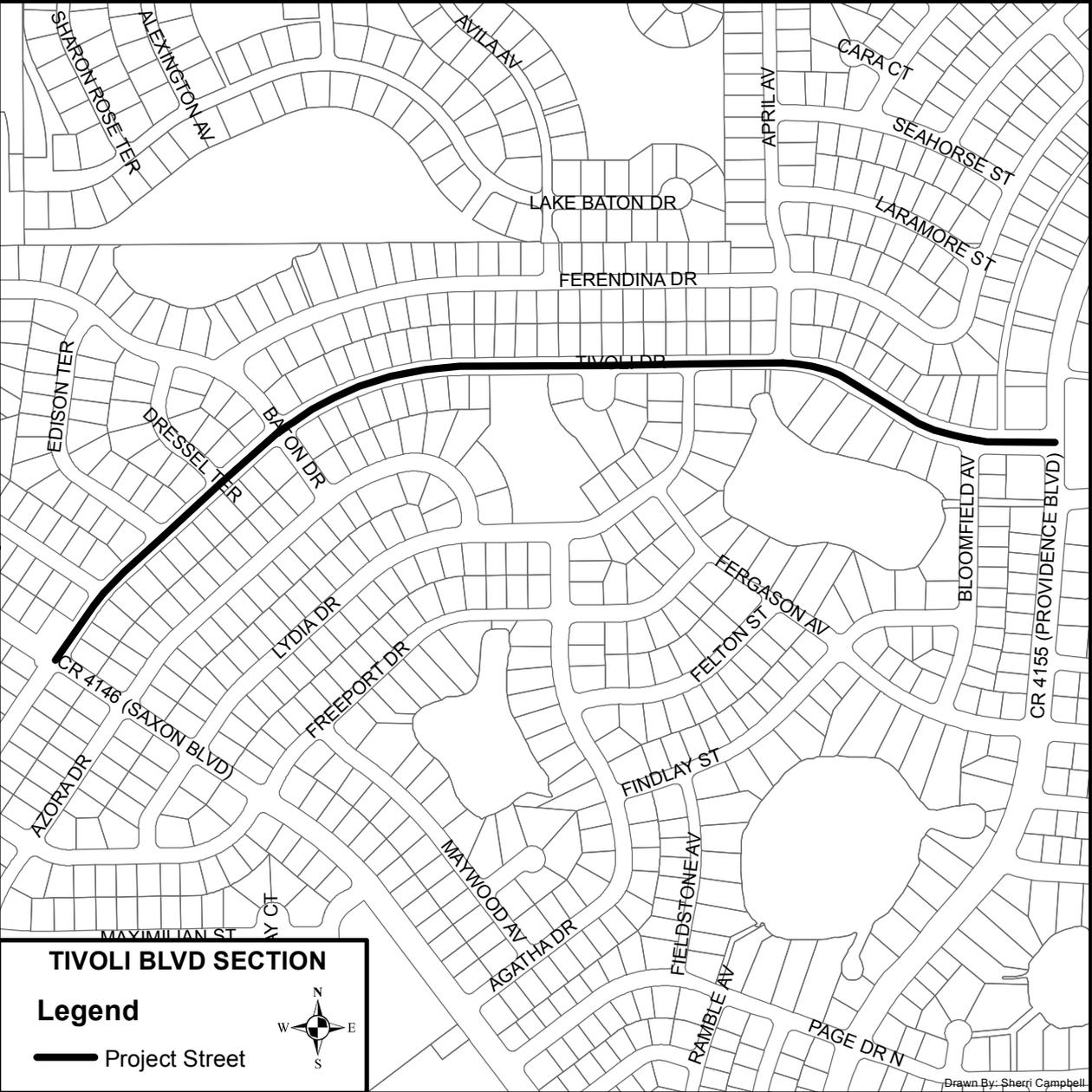
The proposal to recognize Tivoli Dr. from Saxon Blvd. to Providence Blvd. will not be counter to the public health, welfare, safety or morals of the City.

**CONCLUSION/STAFF RECOMMENDATION:**

Since Tivoli Dr. connects two Principal Arterials (Saxon Blvd. and Providence Blvd.) and is an essential part of the City transportation network, the subject segment of Tivoli Dr. needs to be considered a Principal Arterial on the City Thoroughfare Map. Based on the projected 2025 AADT of over 21,000 trips, the City is proposing that the segment of Tivoli Dr. between Saxon Blvd. and Providence Blvd. appear on the Comprehensive Plan Roadway Number of Lanes 2025 Map as a four lane facility.

From a planning perspective, recognizing Tivoli Dr. between Saxon Blvd. and Providence Blvd. as a Comprehensive Plan Thoroughfare establishes a linkage between City capital initiatives and established policy. Also, Tivoli Dr. is considered an Urban Major Collector under the Federal Highway Administration Classification nomenclature. The Federal designation certainly indicates Tivoli Dr. is more than a local road. The proposed amendment essentially recognizes the status of Tivoli Dr. as being a facility that carries high traffic volumes and is integral to meeting appropriate mobility expectations of the City and greater southwest Volusia area. Finally, the designation of the subject segment of Tivoli Dr. as a Thoroughfare facility will expand funding opportunities and options through grants.

City Staff recommends that the Planning and Zoning Board recommend the City Commission transmit the Comprehensive Plan that recognizes Tivoli Dr. between Saxon Blvd. and Providence Blvd. as a Principal Arterial on the Thoroughfare Map and also includes the subject segment of Tivoli Dr. as a four lane facility on the Roadway Number of Lanes Map and Roadway Number of Lanes Table.



**TIVOLI BLVD SECTION**

**Legend**

 Project Street



**ORDINANCE NO. 12-2016**

**AN ORDINANCE OF THE CITY OF DELTONA, FLORIDA, AMENDING THE THOROUGHFARE ROADWAY SYSTEM 2025 MAP, THE ROADWAY NUMBER OF LANES 2025 MAP, AND THE ROADWAY NUMBER OF LANES TABLE OF DELTONA'S COMPREHENSIVE PLAN BY ADDING THE SEGMENT OF TIVOLI DRIVE FROM PROVIDENCE BOULEVARD TO SAXON BOULEVARD AS A FOUR LANE THOROUGHFARE; FINDING CONFORMITY WITH STATE STATUTES AND THE COMPREHENSIVE PLAN OF THE CITY OF DELTONA; PROVIDING FOR CONFLICTS, SEVERABILITY AND AN EFFECTIVE DATE.**

**WHEREAS**, the City of Deltona has adopted a Comprehensive Plan through its Ordinance No. 32-98 and subsequent amendments thereto; and

**WHEREAS**, the Deltona Planning and Zoning Board acting as the local planning agency, held a public hearing on March 16, 2016, to consider said Comprehensive Plan amendment; and

**WHEREAS**, the transmittal and adoption public hearings on the proposed Comprehensive Plan Map amendment hereinafter described were duly advertised and held by the City Commission of the City of Deltona, and at such hearings interested parties and citizens for and against the proposed plan amendments were heard; and

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

**Section 1:** This Ordinance is adopted in conformity with and pursuant to the Local Government Comprehensive Planning and Land Development Regulation Act,

Sections 163.3161 et. seq., and the Municipal Home Rule Powers Act, Sections 166.011 et. seq.

**Section 2:** The Thoroughfare Roadway System 2025 Map of the City of Deltona is hereby amended to show Tivoli Drive from Providence Boulevard to Saxon Boulevard as thoroughfare, as depicted in **Exhibit A**.

**Section 3:** The Roadway Number of Lanes 2025 Map of the City of Deltona is hereby amended to show Tivoli Drive from Providence Boulevard to Saxon Boulevard as a four lane road, as depicted in **Exhibit B**.

**Section 4:** The Roadway Number of Lanes Table 1 is hereby amended to add Tivoli Drive as a four lane road from Providence Boulevard to Saxon Boulevard, as depicted in **Exhibit C**.

**Section 5:** Any and all Ordinances or parts of Ordinances in conflict herewith be and the same are hereby repealed.

**Section 6:** If any provisions of this Ordinance or the application thereof to any person or circumstance are held invalid, the invalidity shall not affect other, provisions or applications of the Ordinance which can be given effect without the invalid provision or application, and to this end the provisions of this Ordinance are declared severable.

**Section 7:** Effective Date. This Ordinance shall become effective immediately upon issuance of a certificate of consistency by the Volusia Growth Management Commission and by the issuance of a Notice of Intent by the Florida

Department of Economic Opportunity as provided in Sections 163.3184 and 163.3189,  
Florida Statutes.

**PASSED AND ADOPTED BY THE CITY COMMISSION OF THE CITY  
OF DELTONA, FLORIDA, THIS \_\_\_\_\_ DAY OF \_\_\_\_\_ 2016.**

FIRST READING: \_\_\_\_\_

ADVERTISED: \_\_\_\_\_

SECOND READING: \_\_\_\_\_

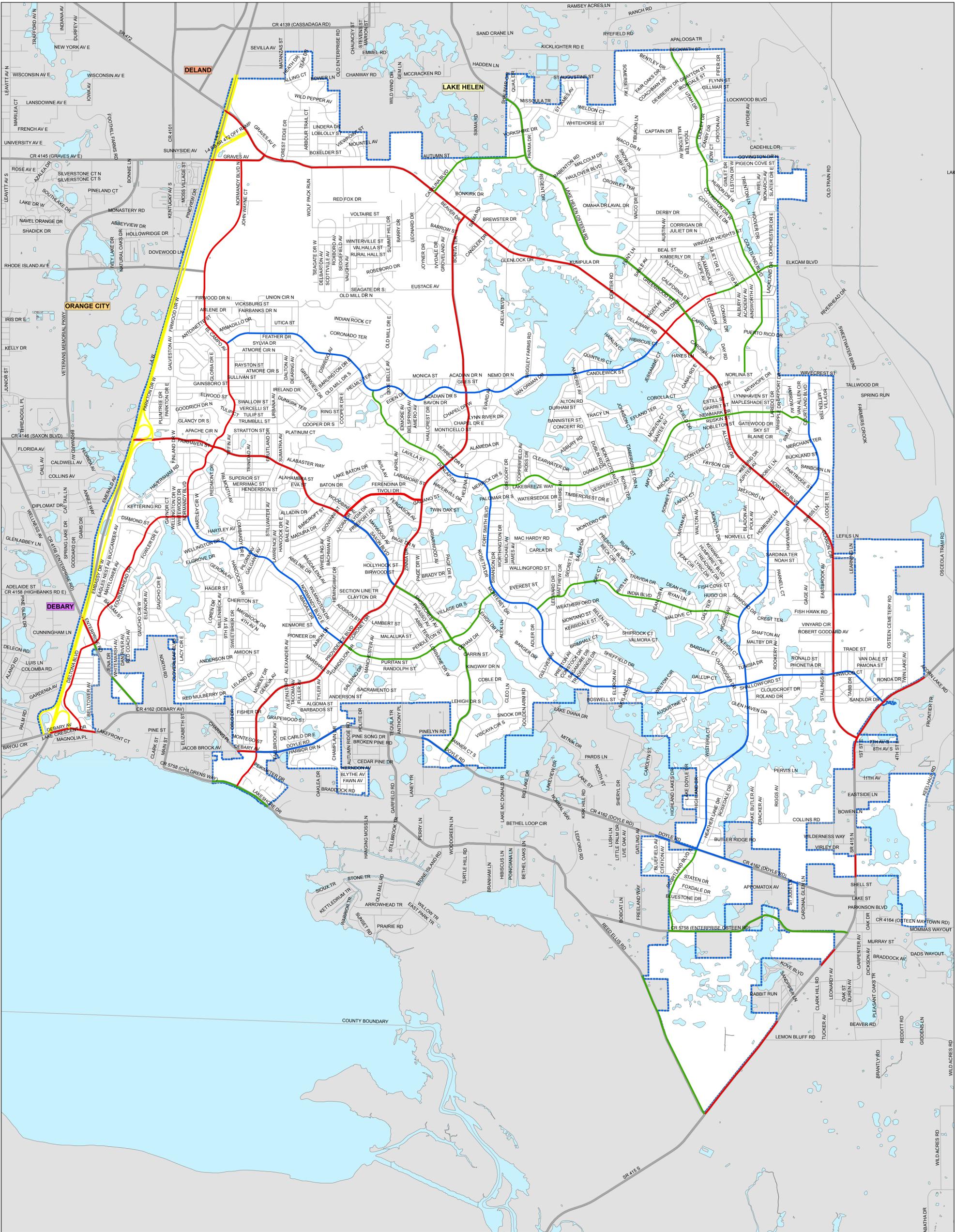
BY: \_\_\_\_\_  
JOHN C. MASIARCZYK, SR., Major

ATTEST:

\_\_\_\_\_  
JOYCE RAFTERY, CMC, MMC, City Clerk

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

\_\_\_\_\_  
GRETCHEN R.H. VOSE, City Attorney



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

**SHEET NO. 1 of 1**  
**DRAWN BY: SHERRI CAMPBELL**  
**UPDATED: 01/11/2016**

**APPROVED BY: CHRIS BOWLEY, AICP**  
**DIRECTOR PLANNING AND DEVELOPMENT SERVICES**

**Legend**

**CITY T-FARE DESIGNATIONS**

- Interstate
- Principal Arterial
- Minor Arterial
- Collector
- County
- Streets
- City Boundary
- Lakes

**GIS MAP DISCLAIMER:**  
 THIS MAP IS NOT TO BE USED FOR TRANSFER OF PROPERTY AND DOES NOT REPRESENT A SURVEY.  
 This map was created by the City of Deltona staff using data gathered by the City and Volusia County. No decision involving a risk of economic loss or physical injury should be made in reliance of this Map nor should it be used as a substitute for a survey. The information provided on this document should be used as a guide only. The City of Deltona shall not be held liable for any claim for any loss or damage as a result of reliance on the information contained in this document.  
 Please report any inaccuracies to the City of Deltona GIS department at 386-878-8609  
 Datum: State Plane, NAD83 HARN



# Roadway Number of Lanes 2025 Map

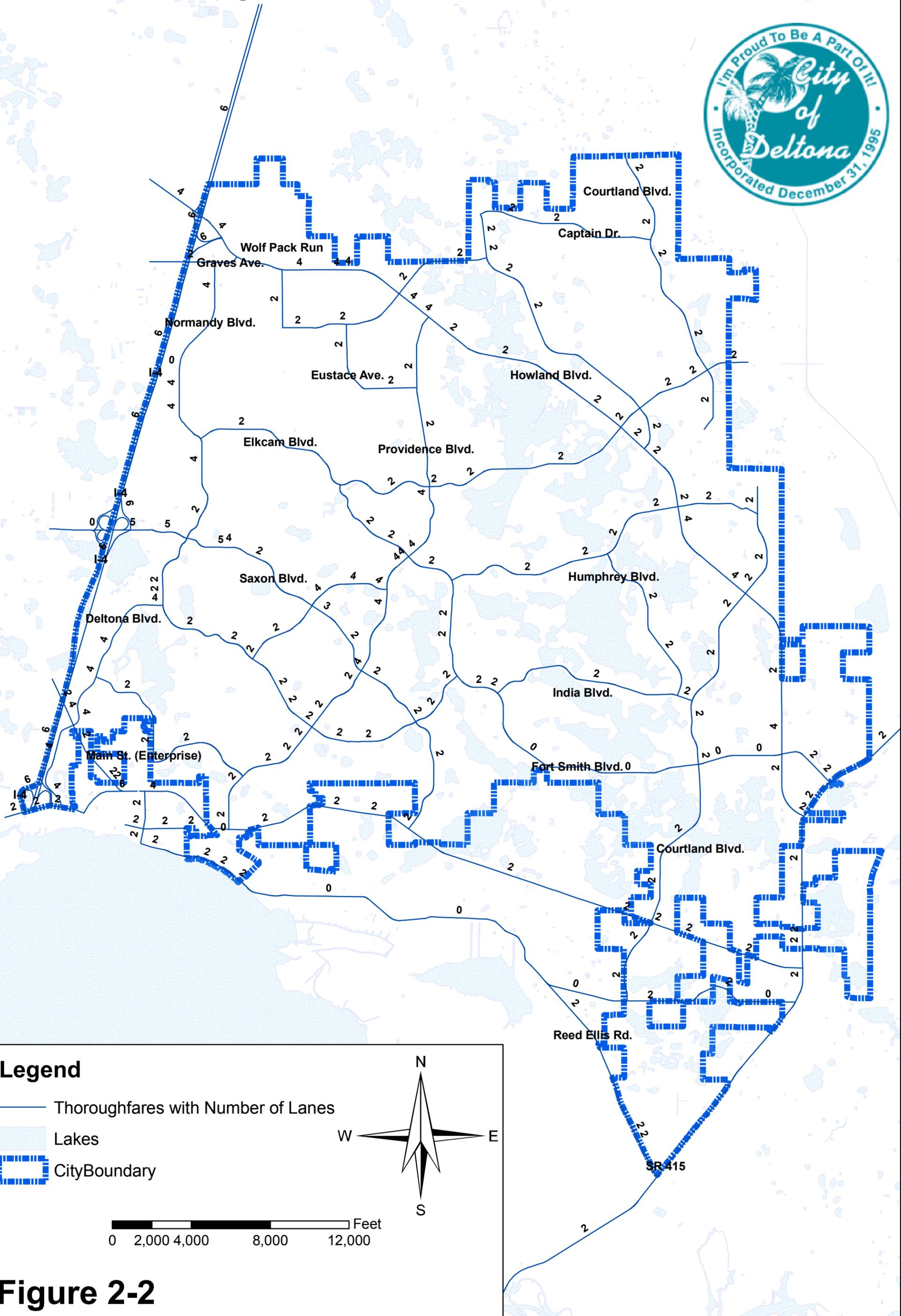
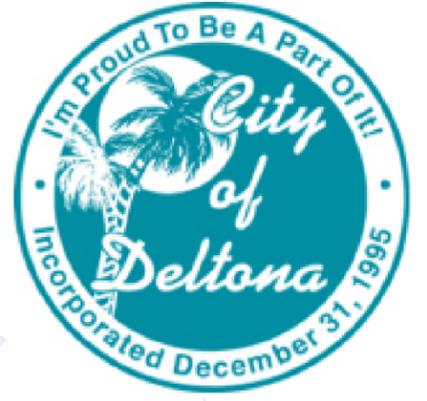


Figure 2-2

# EXHIBIT C

DRAFT  
1/11/2016

## ROADWAY NUMBER OF LANES

### TABLE 1

Street Segment	Current Number of Lanes	2025 Number of Lanes
Howland -I-4 to Graves	4	6
Howland - Graves to Providence	4	4
Howland - Providence to Elkcam	2	4
Howland - Elkcam to Courtland	4	4
Howland - Courtland to Tabb	2	4
Howland - Tabb to SR 415	4	4
Lake Helen Osteen - Captain to Elkcam	2	2
Lake Helen Osteen - Elkcam to Howland	2	3
India - Howland to Ft. Smith	2	2
Newmark - Howland to Ft Smith	2	2
Elkcam - Normandy to Howland	2	2
Elkcam - Howland to Lk Helen Osteen	2	4
Providence - Howland to Ft. Smith	2	4
Providence - Ft. Smith to Tivoli	4	4
Providence - Tivoli to Normandy	2	4
Providence - Normandy to Sacramento	3	4
Providence - Sacramento to Doyle	2	4
Saxon - I-4 to Normandy	5	5
Saxon - Normandy to Tivoli	5	5
Saxon - Tivoli to Providence	2	3
Saxon - Providence to E. Normandy	2	2
Saxon - E. Normandy to Doyle	2	2
N. Normandy - Graves to Firwood	2	5
N. Normandy - Firwood to Elkcam	4	4
N. Normandy - Elkcam to Saxon	4	4

Street Segment	Current Number of Lanes	2025 Number of Lanes
N. Normandy - Saxon to Deltona	2	3
E. Normandy - Deltona to Tivoli	2	3
E. Normandy - Tivoli to Providence	2	3
E. Normandy - Providence to Saxon	2	2
E. Normandy - Saxon to Ft. Smith	2	2
Ft. Smith - Elkcam to Providence	2	3
Ft. Smith - Providence to Newmark	2	3
Ft. Smith - Newmark to E. Normandy	2	3
Ft. Smith - E. Normandy to India	3	3
Ft. Smith - India to Courtland	3	3
Ft. Smith - Courtland to Howland	2	3
Ft. Smith - Howland to SR 415	2	3
Courtland - Beckwith to Chamberlain	2	2
Courtland - Wavecrest to Howland	2	2
Courtland - Howland to India	2	3
Courtland - India to Ft. Smith	2	5
Courtland - Ft. Smith to Doyle	2	4
Deltona - N. Normady to Enterprise	4	4
Deltona - Doyle/Dirkson to Enterprise	3	3
Doyle (Dirkson) - I-4 to Providence	4	4
Doyle - Providence to Saxon	2	4
Doyle - Saxon to SR 415	2	4
Enterprise - I-4 to Deltona	4	4
Enterprise - Deltona to Doyle	2	2
<u>Tivoli – Providence to Saxon</u>	<u>2</u>	<u>4</u>



# Staff Report

**To:** Planning and Zoning Board  
**From:** Scott McGrath  
**Date:** May 4, 2016  
**Re:** VR16-002, 3041 Bond Street, 6 foot fence in side street yard

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## A. Summary of Application:

**Applicant:** Angela and Todd Owen, property owners

**Request:** To allow a 6 foot tall privacy fence in the side street yard.

**Tax Parcel No.:** 8130-32-20-0110

**Property Acreage:** +/- 0.49

**Property Location:** 3041 Bond Street, Deltona. Generally located at the southern corner of the intersection of Bond Street and Albury Avenue, near the intersection of Elkcam and Courtland Boulevards.

**Legal Description:** Lot 11 Block 750 Deltona Lakes Unit 32 Map Book 27 Pages 101-118 of the Volusia County public records.

## B. Existing Zoning:

1. **Subject Property:** R-1 Single Family Residential

2. **Adjacent Properties:**

**North:** R-1 Single Family Residential

**South:** R-1 Single Family Residential

**East:** R-1 Single Family Residential

**West:** R-1 Single Family Residential

**C. Zoning Description:**

Sec. 110-307. - R1-AAA, AA, A, and R1, Single-Family classifications.

*Purpose and intent.* These classifications are established within the city to provide areas for single-family dwellings and customary accessory buildings. The regulations for this classification are designed to promote the construction and continued use of land for single-family dwellings, and to provide as conditional uses certain structures and uses required to serve the residents, such as churches and noncommercial recreational areas. Prohibited are uses of land that would create potential nuisances to residential areas, adversely affect residential property values, overburden public facilities or create potentially adverse individual or cumulative impacts to adjacent lakes that would diminish their water quality or aesthetic appeal.

**D. Background:**

The Owen family is seeking to vary from the Deltona Land Development Code Section 110-806(e)(4) to permit and build a six foot tall privacy fence in the side street yard. The Owen's son has physical and intellectual disabilities that require:

- Full support for avoiding health and safety hazards
- Full support maintaining physical health and fitness
- Full support protecting self from exploitation
- Full support advocating for self
- Partial support making choices and decisions

The son's disabilities limit his fitness and exercise activities to aqua therapy. To facilitate the aqua therapy, the family is currently having a pool constructed and are asking for a 6 foot privacy fence to be located in the side street yard to protect their physically and intellectually disadvantaged child.

**E. Matters for Consideration:**

**1. Special conditions and circumstances exist which are peculiar to the land, structure, sign, or building involved and which are not applicable to other lands, structures, signs, or buildings in the same zoning classification.**

The residential property owner faces special circumstances affecting the customary use of land in this case, because they have an especially vulnerable child who has disabilities.

**2. Special conditions and circumstances exist that do not result from the actions of the applicant.**

The Owens family was unable to prevent the disabilities that affect their child, and have done and continue to do everything in their power to improve the conditions for their son.

**3. Literal interpretation of the provisions of this chapter would deprive the applicant of rights commonly enjoyed by other properties in the same zoning classifications, under the terms of the chapter, and would work cause an unnecessary and undue hardship on the applicant.**

As noted in items 1 and 2 above, it is staff's opinion that a literal interpretation of this chapter would impose an unnecessary and undue hardship on the applicant, due to the need for this fence to provide safety, protection and welfare for their special needs child.

**4. The variance granted is the minimum variance that will make possible the reasonable use of the land, building, structure, or sign.**

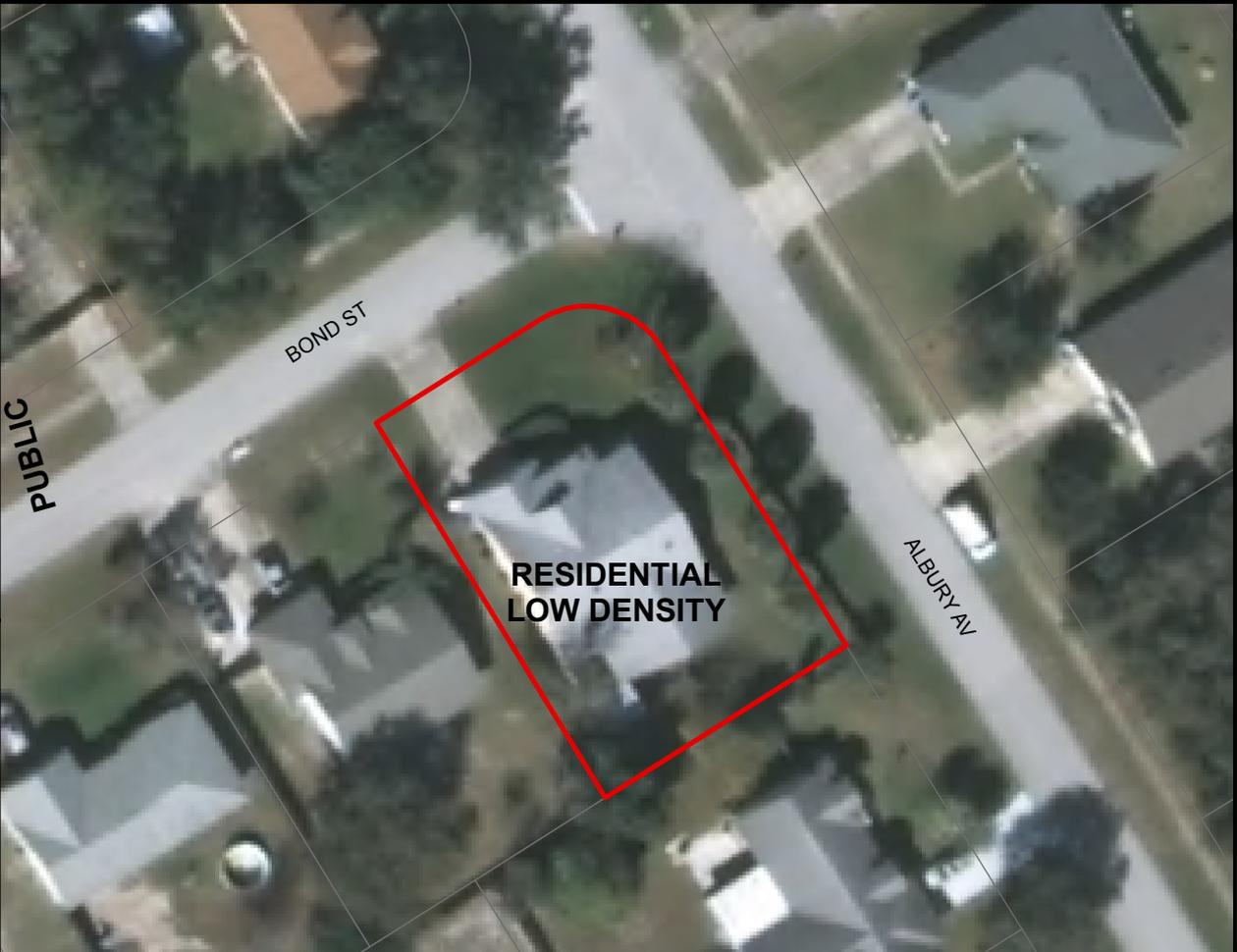
The variance is minimal and provides reasonable use of land, given the special circumstances relating to this application.

**5. The granting of the variance is in harmony with the general intent and purpose of this chapter and the City of Deltona Comprehensive Plan, as it may be amended from time to time, and that such variance will not be injurious to the area involved.**

Given the special circumstances warranting this variance, it aligns with the general intent and purpose of the City's Comprehensive Plan and the Land Development Code and will not be injurious to the area involved.

**CONCLUSION/STAFF RECOMMENDATION:**

Staff recommends approval of Resolution 2016-21, granting permission to erect a six foot privacy fence in the side street yard.



BOND ST

ALBURY AV

PUBLIC

RESIDENTIAL  
LOW DENSITY

# AERIAL PHOTO

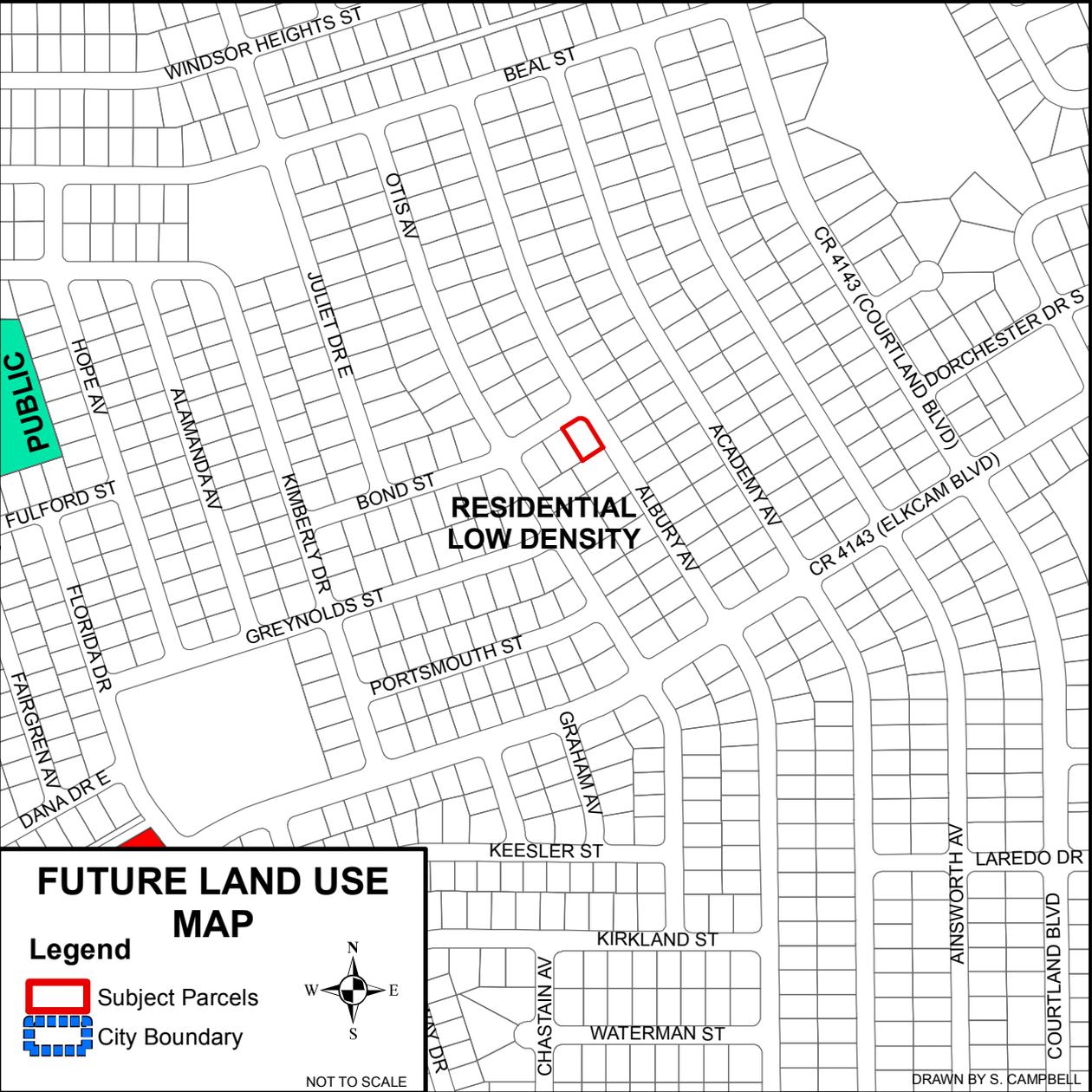
## Legend

-  Subject Parcels
-  City Boundary



NOT TO SCALE

DRAWN BY S. CAMPBELL



**PUBLIC**

**RESIDENTIAL  
LOW DENSITY**

### FUTURE LAND USE MAP

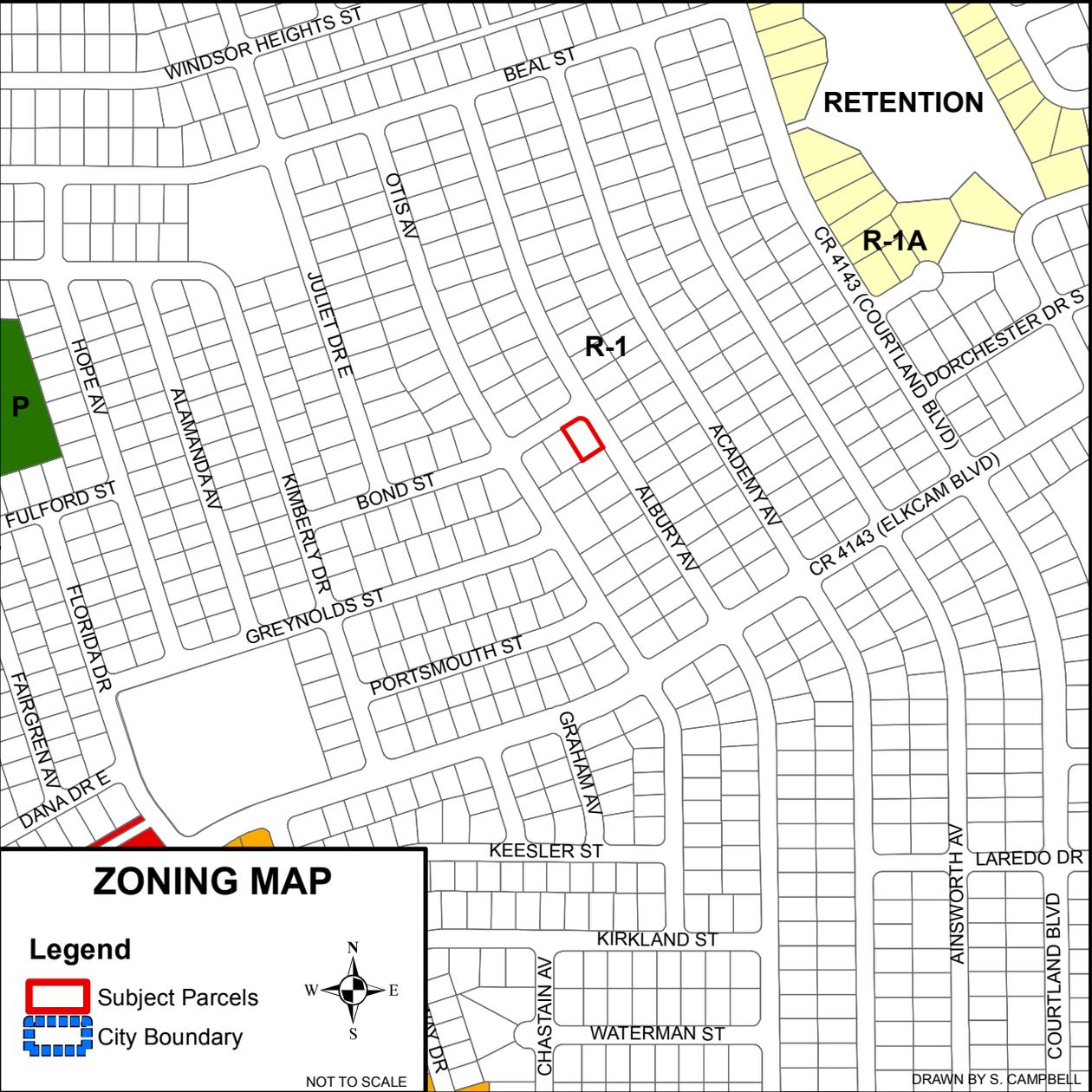
**Legend**

-  Subject Parcels
-  City Boundary

NOT TO SCALE







# ZONING MAP

## Legend

-  Subject Parcels
-  City Boundary



NOT TO SCALE

DRAWN BY S. CAMPBELL

Special Circumstances: 3041 Bond St. Deltona, FL 32738  
Variance application to replace 4' side yard fence with a 6' side yard fence

I ask the commission to approve a variance allowing the replacement of a 4' side yard fence with a 6' side yard fence due to the following special circumstances:

- The property owner has a son (James Lawrence) with physical and intellectual disabilities. James' 2016 SIS (supports intensity scale) report shows that among many other ratings, James requires (see document):
  - Full support for avoiding health and safety hazards
  - Full support maintaining physical health and fitness
  - Full support protecting self from exploitation
  - Full support advocating for self
  - Partial support making choices and decisions
- The owner is making plans to build an in-ground swimming pool for James' physical therapy (aqua therapy) as well as personal enjoyment. Excavation is scheduled to begin 4/26/16.
- Due to James physical limitations, aqua therapy is the only medically approved form of regular exercise he may engage in. (James had a cervical spinal fusion that did not heal properly and technically has a broken neck.) This medical issue prevents him from participating in Special Olympics or other adaptive activities.
- There are nine registered sex offenders living in close proximity (see attached). James is unable to protect himself from exploitation and would not advocate for himself if he were approached.
- The security of a fenced yard is the only outdoor area where James is able to be outdoors independently and without his wheelchair. Reducing the size of the space or limiting the privacy of the area will have a detrimental impact on James' quality of life.
- The current 4' fence allows pedestrians full view of the backyard. See attached photos. Allowing pedestrians full view of the proposed swimming pool (especially during physical therapy) will cause embarrassment to James impacting his emotional and physical well-being.
- The photos provided show that raising the fence from 4' to 6' will not impede sightlines or visibility that would harmfully impact pedestrians or motorists. Granting the variance does not interfere with the general intent of the ordinance.
- A similar request was approved at a City Commission meeting for a family with a special needs child residing at 1686 Hanover Ave. (See attached)



James Lawrence

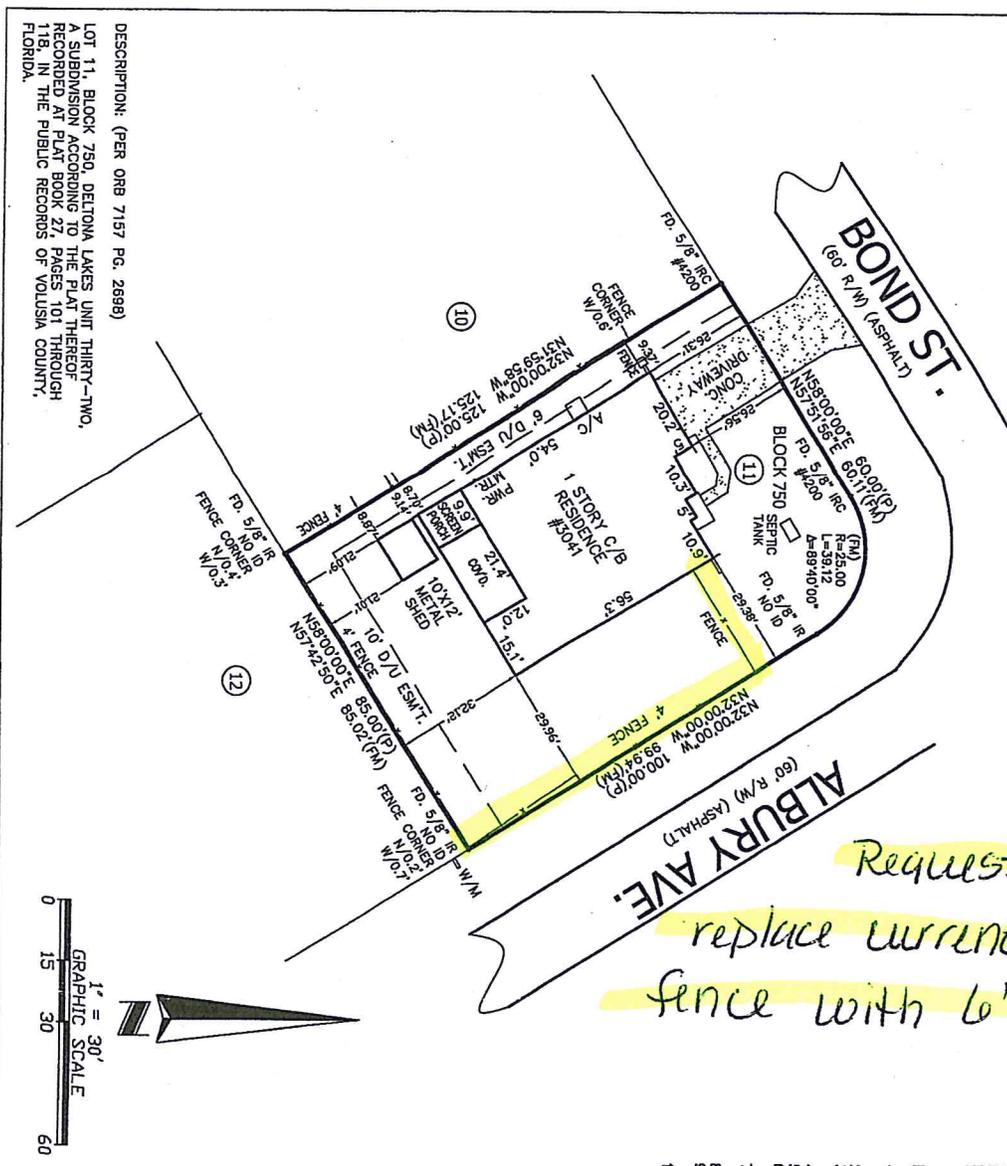
Hydrocephalus, Spina Bifida, Cerebral Palsy, Acoustic Neuroma (brain tumor), Epilepsy, Deaf left ear, Blind left eye, Cervical spinal stenosis, Scoliosis, Chiari Malformation, Syringomyelia, Intellectual disabilities, Social disabilities/spectrum disorder.

Brain surgery 19 times, spine surgery, orthopedic surgery, other random operations

Angela Owen – Chair for Florida Disability Advocacy Network, Full time 17 year employee for Corporate Bank of America, [Volunteer Special Olympics](#) WESH TV Interview, Diversity and inclusion leader, Annual testimonial speaker for United Way, relationship manager for UCP Florida.

Todd Owen – General Manager, Volusia County restaurant

SECTION 13, TOWNSHIP 18 SOUTH, RANGE 31 EAST  
 CITY OF DELTONA  
 VOLUSIA COUNTY, FLORIDA



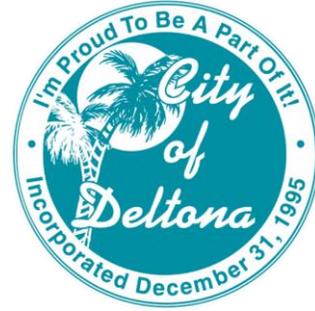
*Request to  
 replace current 4'  
 fence with 6' fence*



NOTE:

- THIS PLAT AND/OR SKETCH OF SURVEY IS CERTIFIED TO AND PREPARED FOR THE SOLE AND EXCLUSIVE BENEFIT OF THE ENTITIES AND/OR INDIVIDUALS SHOWN HEREON, ON THE MOST CURRENT DATE SHOWN, AND SHALL NOT BE RELIED UPON BY ANY OTHER ENTITY OR INDIVIDUAL, WHOSOEVER, THERE MAY BE ADDITIONAL RESTRICTIONS AND/OR OTHER MATTERS THAT ARE NOT SHOWN HEREON THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THE COUNTY. THIS SURVEY/SKETCH IS PREPARED WITHOUT BENEFIT OF ABSTRACT OR TITLE SEARCH. UNLESS OTHERWISE NOTED, ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THIS SURVEYOR AND MAPPER AND THE FIRM, WHICH WAS PREPARED UTILIZING THE BEST AVAILABLE INFORMATION AND AS SUCH DOES NOT CONSTITUTE A GUARANTEE OR WARRANTY, EITHER EXPRESSED OR IMPLIED. FURTHERMORE, THIS SURVEYOR AND FIRM DOES NOT ASSUME RESPONSIBILITY AND SHALL NOT BE HELD LIABLE FOR CLAIMS ARISING FROM ERRONEOUS OR INCORRECT INFORMATION FURNISHED TO THE SURVEYOR, WHICH WAS USED AS A BASIS IN THE PREPARATION OF THIS SURVEY DRAWING.
- NOTES:
1. NO INSTRUMENTS OF RECORD REFLECTING EASEMENTS, RIGHT OF WAY AND/OR OWNERSHIP WERE FURNISHED TO THIS SURVEYOR EXCEPT AS SHOWN.
  2. NO UNDERGROUND IMPROVEMENTS OR INSTALLATIONS OR OTHER INTERIOR IMPROVEMENTS HAVE BEEN LOCATED, EXCEPT AS SHOWN, AS PER THE REQUEST OF THE CLIENT.
  3. UNLESS NOTED LEGAL DESCRIPTIONS INDICATED BY CLIENT ARE NOT TO SCALE.
  4. THIS SURVEY WAS PERFORMED WITHOUT BENEFIT OF A TITLE SEARCH. A TITLE SEARCH MAY REVEAL ADDITIONAL INFORMATION AFFECTING THE PARCEL AS SHOWN.
  5. WHERE APPLICABLE, MONUMENT DIMENSIONS, ETC., AND/OR U.S. OR I.B. NUMBERS ARE SHOWN.
  6. NEAR RESPECTIVE SYMBOL ABOVE UNLESS SHOWN IN LEGEND.
  7. UNLESS SHOWN, ONLY THOSE VISIBLE FEATURES IN THE IMMEDIATE VICINITY OF THE ABOVE DESCRIBED PARCEL BOUNDARY HAVE BEEN LOCATED.
  8. SUBJECT PROPERTY LIES WITHIN ZONE "X" AREAS DETERMINED TO BE OUTSIDE 500 YEAR FLOOD PLAY AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP, CITY OF DELTONA COMMUNITY #120877, PANEL #121220845 D, DATED FEBRUARY 19, 2014.
  9. THIS FLOOD INSURANCE RATE MAP IS NOT A SURVEY AND NO RESPONSIBILITY IS TAKEN FOR THE ACCURACY OF SAID MAP.

ABBREVIATIONS	DESCRIPTION	SYMBOL	DESCRIPTION
BL	BLOCK	BL	BLOCK
CD	CENTERLINE	CD	CENTERLINE
CE	CORNER	CE	CORNER
CH	CHANGING	CH	CHANGING
CL	CORNER	CL	CORNER
CO	CORNER	CO	CORNER
CR	CORNER	CR	CORNER
CS	CONCRETE SLAB	CS	CONCRETE SLAB
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CU			



# Staff Report

**To:** Planning and Zoning Board  
**From:** Chris Bowley, AICP, Director of Planning and Development Services  
**Date:** May 4, 2016  
**Re:** Project No. RZ15-006, Ordinance No. 24-2016, Vineland Reserve

---

## A. Summary of Application:

**Applicant:** Michael J. Woods, Esq. representing Lake Disston Lands, LLC

**Request:** Rezone multiple parcels totaling approximately 102.7 acres from Residential Planned Unit Development (RPUD) to RPUD

**Tax Parcel No.:** 9112-00-00-0062, 0020, 0030, 0070, 0150, 0250, 0151, 0251, and 0061

**Property Acreage:** ± 102.7Acres

**Property Location:** The property is located in the southeastern section of the City between Doyle Road and Collins Road west of SR 415 near Osteen Elementary School.

**Legal Description:** See attached.

## B. Existing Zoning: Residential Planned Unit Development (RPUD)

**C. Background:** The subject property was annexed into the City in 2004 and was rezoned in 2007 to a Residential Planned Unit Development (RPUD). The 2007 RPUD approved under Ordinance No. 22-2007 featured 346 residential dwelling units. Of the 346 dwelling units, 128 were proposed to be multi-family townhomes. Notwithstanding the City approving Ordinance No. 22-2007, the applicant/developer never executed the Development Agreement. Shortly thereafter, the property went into receivership. Eventually, the property was bought by Lake Disston, LLC and an application has been made to the City to rezone the property. The new RPUD proposal is similar to the 2007 development plan. However, the number of units requested has increased from 346 to 407. Of the 407 units proposed 279 are planned to be detached single family lots and the remaining 128 are townhome multi-family

units. The overall density is a little under four units per acre. Note: when the property was annexed, the City never changed the County Future Land Use Designation of Urban Low Intensity (ULI). Under F.S. 171.062, County Future Land Use Designations remain in effect for annexed land until a City changes the land use. In the case of the Vineland Reserve project, the development is still consistent with the County ULI designation. Finally, there is an inholding within the property proposed for rezoning. The inholding is a cell tower site that is not owned by the applicant.

#### **D. Support Information**

##### **Public Facilities:**

- a. Potable Water: Deltona Water
- b. Sanitary Sewer: Deltona Water
- c. Reuse Water: Deltona Water
- d. Fire Protection: Deltona Fire. Station 64 is the closest City fire station
- e. Law Enforcement: Volusia County Sheriff's Office (VCSO)
- f. Electricity: Florida Power and Light

#### **E. Matters for Consideration:**

Section 110-1101, 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.**

As has been stated, the property is designated with a County Future Land Use category – Urban Low Intensity (ULI). According to State Law (F.S. 171) there is no preclusion of a municipality utilizing a County Future Land Use classification to approve zoning and/or land development proposals. According to the County Comprehensive Plan, the density range for the ULI is 0.2 to 4 dwelling units per acre. The 407 units proposed on the 102.7 acres of land is just below the 4 dwelling units per acre threshold and within the density range of the ULI.

The most comparable City Land Use designation to the County ULI is Low Density Residential (LDR). The LDR Land Use designation has a density range of 0 to 6 dwelling units per acre and recognizing the suburban nature of the City is the most widely applied Land Use designation. Therefore, the requested four dwelling units per acre density is well within the range of the City LDR designation and comports with City density expectations as articulated within the City Comprehensive Plan. Finally, the LDR designation while recognizing the dominate detached single family dwelling unit on an individual lot development pattern, still allows for a range of housing types including attached units like the townhomes planned.

The following Comprehensive Plan provisions are applicable in light of the RPUD rezoning request:

***Policy FLUI-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.*

*9J-5.006(3)(c)(1,3,6)*

There is adequate public service capacity to support the Vineland RPUD at the density proposed. Public services include central water and sewer, transportation and school workstation capacity.

***Policy FLUI-1.5***

*Densities or intensified new development shall not exceed the capacity of the existing transportation system or the capacity of improvements as programmed in the Transportation and Capital Improvements elements unless the City proceeds with implementing a transportation concurrency exception area (TCEA).*

*9J-5.006(3)(c)(3,4,7)*

The applicant has submitted a traffic impact analysis which indicates the City transportation network has adequate capacity to service the 3,497 trips generated from the project. However, there have been improvements identified to facilitate safe and efficient flow of traffic. The improvements include both left and right turn lanes associated with the intersection of the project entrance road and Doyle Road. The owner/applicant will be required to finance and construct the aforementioned improvements. The City did have the transportation findings reviewed and the City review determined the applicant traffic impact analysis and related improvements were appropriate. Finally, none of the traffic modeling and related review was predicated on the project utilizing Collins Road as access to SR 415.

***OBJECTIVE FLUI-5***

*The City of Deltona shall protect natural, archaeological, and historic resources from any adverse development impacts. This will be accomplished through the implementation of the land development regulations and coordination with appropriate permitting agencies.*

*9J-5.006(3)(b)(4)*

The property proposed for development has historically been used for agricultural production including citrus, hay and cattle grazing. Soils on site are sandy and well drained. None of the property is located within the 100 year floodplain. Therefore, the property is suitable to support development. The property does support gopher tortoises.

Tortoises will need to be protected on site and/or relocated as per State permitting requirements.

***Policy FLUI-7.9***

*The residential density guidelines for each Future Land Use category represent an acceptable range and the allowable density shall be based upon the following minimum criteria:*

- a. Reducing sprawl by providing options for higher residential densities in appropriate locations;*
- b. Environmental constraints, as established in the Conservation Element;*
- c. Land use compatibility;*
- d. Availability of public facilities and services at acceptable levels of service;*
- e. Character of an area;*
- f. Energy efficient design such as the provision of pedestrian and transit oriented access and options, and the use of efficient subdivision and construction standards;*  
*and*
- g. Other policies of this Comprehensive Plan or Land Development Code, which establish more stringent density requirements.*

The proposed density range of 4 units per acre is well within the City land use density guidelines for residential development (Low Density Residential – 0 to 6 units per acre). In addition, the proposed townhome format and smaller lot sizes represent a more compact development pattern and a more efficient use of land.

***Policy FLUI-7.22***

*The City of Deltona shall use and enforce appropriate Volusia County density/intensity standards on annexed properties, as an interim density/intensity limit, until such time the City Commission amends the City's Comprehensive Plan to apply City land uses to such annexed lands. Such City density/intensity standards shall be consistent with the City's Comprehensive Plan.*

As has been mentioned, the City is processing the RPUD rezoning under the County Urban Low Intensity (ULI) Land Use category. The RPUD density, as proposed, is consistent with the County ULI designation. Therefore, the RPUD density is consistent with the above referenced policy.

***Policy FLUI-7.13***

*New residential development shall afford a buffer to non-residential land uses. 9J-5.006(3)(c)(2)*

The project is located in the southeastern section of the City near SR 415 and Osteen. The RPUD property has traditionally been on the eastern periphery of the Deltona Lakes plat.

Some of the existing land uses in the vicinity of the Vineland RPUD have been more rural in character including large lot subdivisions accessed by unpaved roads. However, notwithstanding some of the rural elements in the area, the RPUD property and surrounding area have been earmarked through both the County and City of Deltona planning programs for urban uses. Even though there is an urban expectation for the area articulated by both the City and County Comprehensive Plans, compatibility is important. Consistent with the above referenced policy, buffers will be used to provide an appropriate transition between the proposed urban development and other less urban land uses in the vicinity.

***Policy FLUI-8.1***

*The Future Land Use Map shall contain adequate residential land to accommodate the projected population. 9J-5.006(3)(c)(1,2,7)*

City population projections are illustrated in the below table:

<b>Year</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>
Population	85,182	87,367	92,995	98,018
Source: Shimberg Center for Housing, University of Florida				

The table above clearly indicates population growth within the City within the current planning window. In fact, there is an approximately 11% population increase forecasted between 2015 and 2025. There is anticipation the City can accommodate the expected 2025 population with existing vacant land resources. The 102.7 acre tract is part of the City vacant land inventory and the rezoning request represents an efficient use of land. In addition, the Vineland project, as proposed, will ensure the City can still grow without having to expand its jurisdictional borders into rural and/or ecologically sensitive areas away from public services.

**2. Its impact upon the environment or natural resources.**

The majority of the property has been or is being used for agricultural endeavors. Historically, portions of the property were planted in citrus and produced hay. Currently the property is used for cattle grazing. The approximately west 425 feet of the property south of Collins Road is natural. The natural area is forested with a mixture of pines and oaks. The soils on site are well drained and sandy. None of the property is located within the 100 year floodplain. There are no wetlands on site. Topography can be described as gentle and rolling. However there is a depression located along the southern end of the property. The declivity accounts for about 1.5 acres of land. The property does support a population of gopher tortoises. The site will need to be surveyed for tortoises before land development to determine the

tortoise population and the location of burrows. The options to manage gopher tortoises include:

- 1) On-site preservation;
- 2) Relocation; or
- 3) A combination of methods.

All tortoise management will need to be permitted with the Florida Fish and Wildlife Conservation Commission.

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

The project is a residential development of the property will result in short term construction jobs only.

**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.**

**a. Schools:**

The applicant will be required to work with the Volusia County School District with regard to workstation spaces. The Owner may be required by the School District to mitigate if there is a workstation deficiency identified. Currently, there is high school and elementary school capacity within southwest Volusia. However, middle school capacity may be deficient. Staff will have an update on the status of school workstation space and any actions required of the Owner, if any, to address lack of school space.

**b. Sewage Disposal:**

The project will generate about 115,588 gallons of wastewater a day. The wastewater will be treated at the City's new eastern wastewater treatment plant by Deltona Water. There is plenty of treatment capacity available to treat wastewater flows from the project.

**c. Potable Water:**

The demand for potable water will be about 122,100 gallons a day. Deltona Water will serve the development and has both the physical and permitted capacity to provide potable water.

**d. Drainage:**

Stormwater management will be required to comply with St. Johns River Water Management District permitting requirements and the City Land Development Code.

**e. Transportation Systems:**

The project will generate 3,497 new trips on the City transportation network. These trips are forecasted to enter and exit exclusively onto Doyle Rd. While there are no roadway segments or intersections the project will cause to fail, there are improvements needed to ensure appropriate roadway function. More specifically, turn lanes off of Doyle Rd. to the project entrance road. The turn lanes will ensure cars entering the project will not impede the Doyle Rd. travel lanes. In addition, the design speed of the subject segment of Doyle Rd. warrants turn lanes of sufficient length and design to promote safe and efficient traffic flow. Therefore, at minimum, an eastbound left turn lane of 235 feet (both storage and transition) from Doyle Road to the project entrance road and a 185 foot (both storage and transition) right turn lane off of Doyle Rd. to the project entrance are suggested by City Staff. In addition, the travel lanes associated with the segment of Doyle Rd. where the site is located, will need to be modified to accommodate the turn lanes. The modification of the travel lane alignment needs to occur in a manner where traffic flows in a smooth, seamless manner.

Vineland Reserve is planned with access points to Collins Road. Collins Rd is not designed or improved to a standard to support traffic that will be associated with Vineland Reserve. Therefore, the access points to Collins Rd. will be gated and at this point reserved for emergency access only. If in the future Collins Rd. is improved to a paved, urban street standard, general access for Vineland Reserve will be granted to Collins Rd.

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

None.

**6. Any mistakes in the original classification.**

No known mistakes.

**7. Its effect upon the public health, welfare, safety, or morals.**

All planned unit development zoning classifications are associated with a written Development Agreement (DA). A DA is intended to address a myriad of development related issues including but not limited to dimensional requirements, density/intensity, traffic, aesthetics, infrastructure etc.

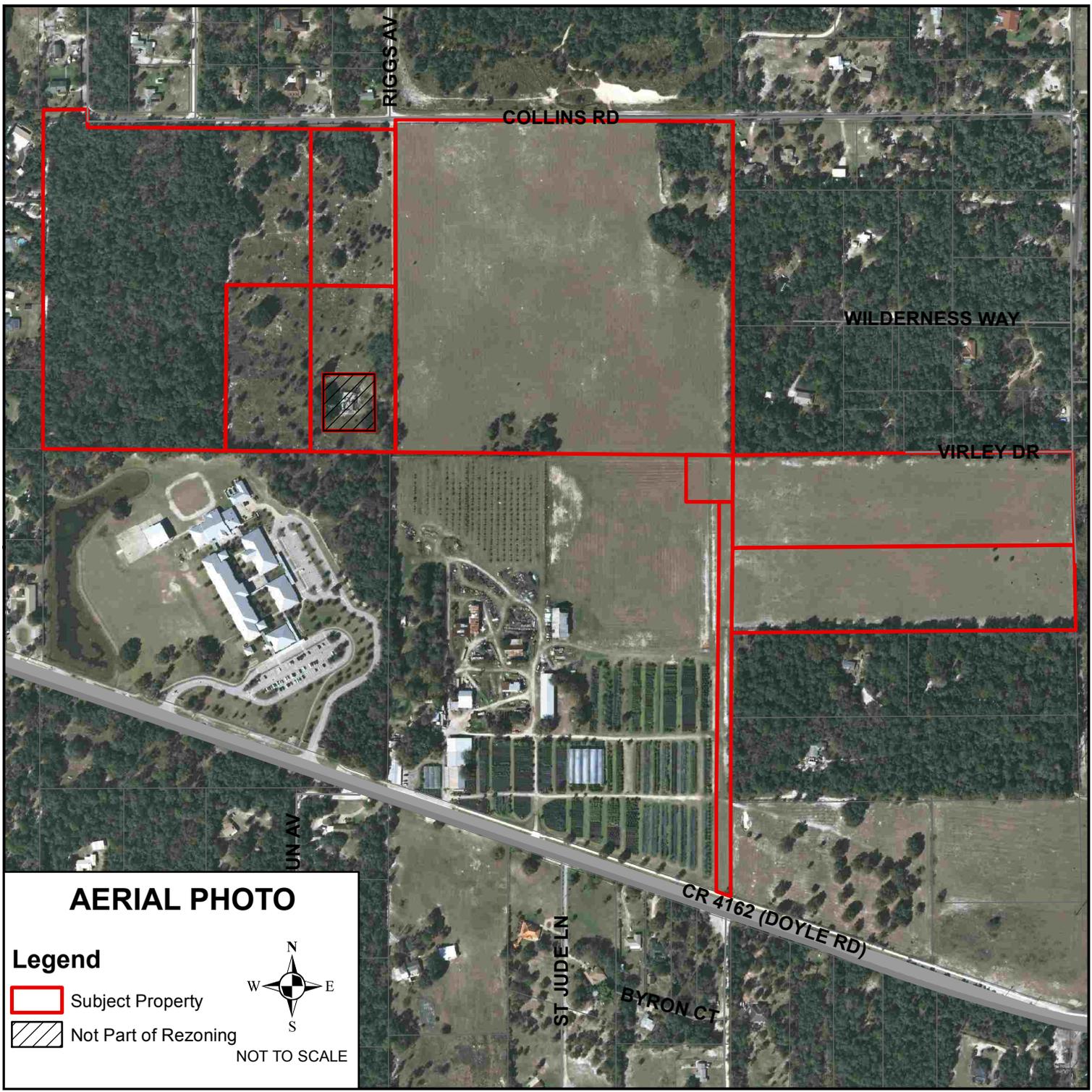
The DA for Vineland Reserve has been reviewed by City staff and staff has suggested changes to the document. The goal is to ensure development within the project is well designed and functional. Major changes to the DA recommended by staff involve the following:

- 1) Housing types and related amenities;
- 2) Entrance signage;
- 3) Dimensional requirements;
- 4) Transportation improvements;
- 5) Common open space;
- 6) Public facilities; and
- 7) Recognizing the City of Deltona Cell tower separation distance and fall radius requirements

For more information regarding staff recommended changes to the DA, see the attached DA presented in an underline and strike through format.

**CONCLUSION/STAFF RECOMMENDATION:**

The project is residential oriented. While the majority of the project is comprised of single family lots a portion of the project is proposed for townhome type development. The mixture of housing types within one project is not common within the City. The townhome format provides a housing product that would appeal to buyers not interested in yard work and other maintenance activities typically associated with detached dwellings on individual lots. The Vineland Reserve project, when compared to the Deltona Lakes plat, is a more dense development product. However, density and development quality are not mutually exclusive concepts. The project will have amenities such as a club house, buffers and a forested open space area. In addition, the developed forms within the project will be subject to aesthetic standards. A homeowners association required for the project is anticipated to promote long term quality within the development. From a planning perspective, Vineland Reserve, as proposed, represents a more compact development pattern and an efficient use of existing land resources within the City. Therefore, City staff recommends approval of Ordinance No. 24-2016 with the staff suggested changes to the Development Agreement.



RIGGS AV

COLLINS RD

WILDERNESS WAY

VIRLEY DR

UN AV

ST JUDE LN

BYRON CT

CR 4162 (DOYLE RD)

# AERIAL PHOTO

## Legend

-  Subject Property
-  Not Part of Rezoning



NOT TO SCALE

**PUBLIC SEMIPUBLIC CONSERVATION**

**COLLINS RD**

**BUTLER RIDGE RD**

**WILDERNESS WAY**

**VIRLEY DR**

**URBAN LOW DENSITY (VC)**

**LL RUN AV**

**ST JUDE LN**

**CARDINAL GLEN LN**

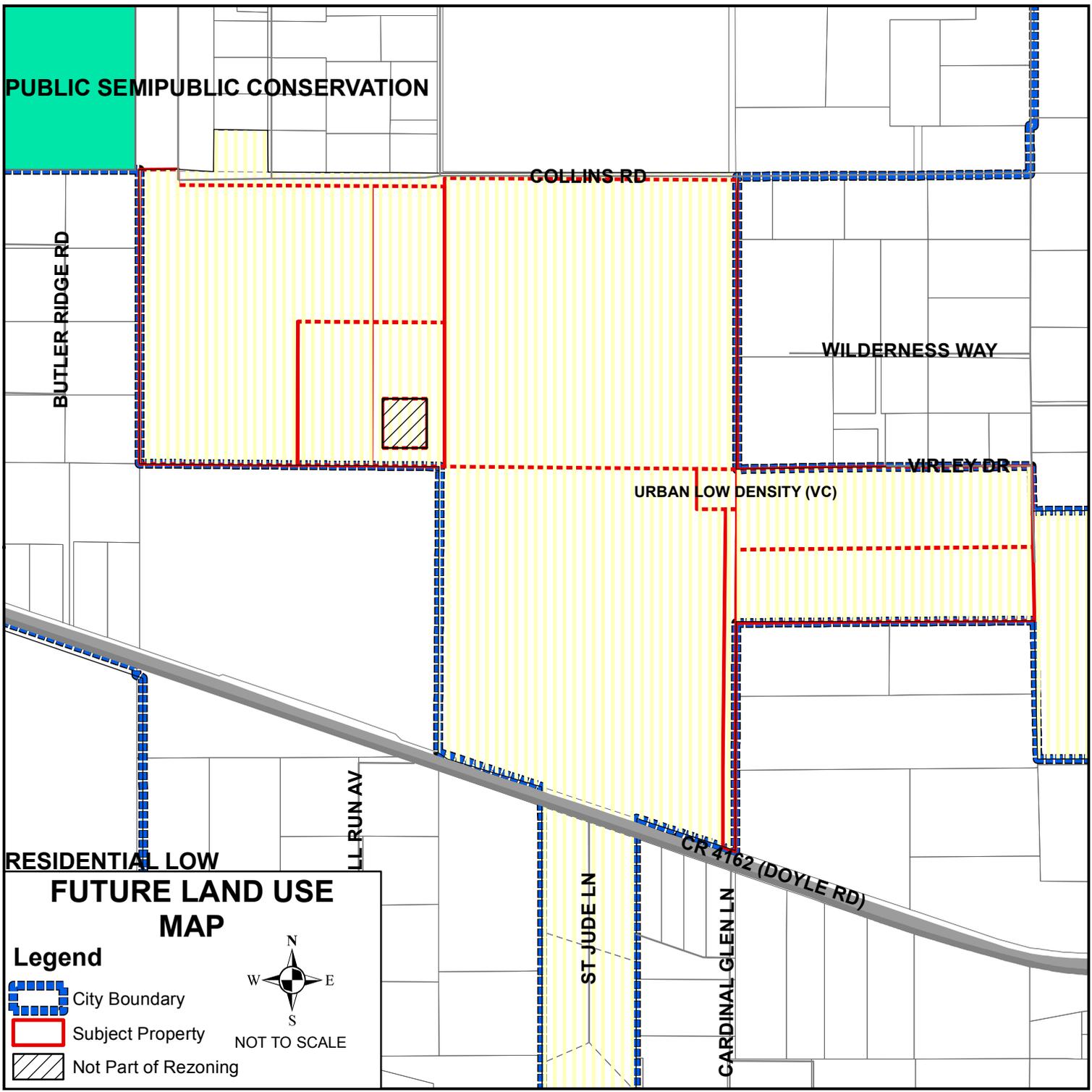
**CR 4762 (DOYLE RD)**

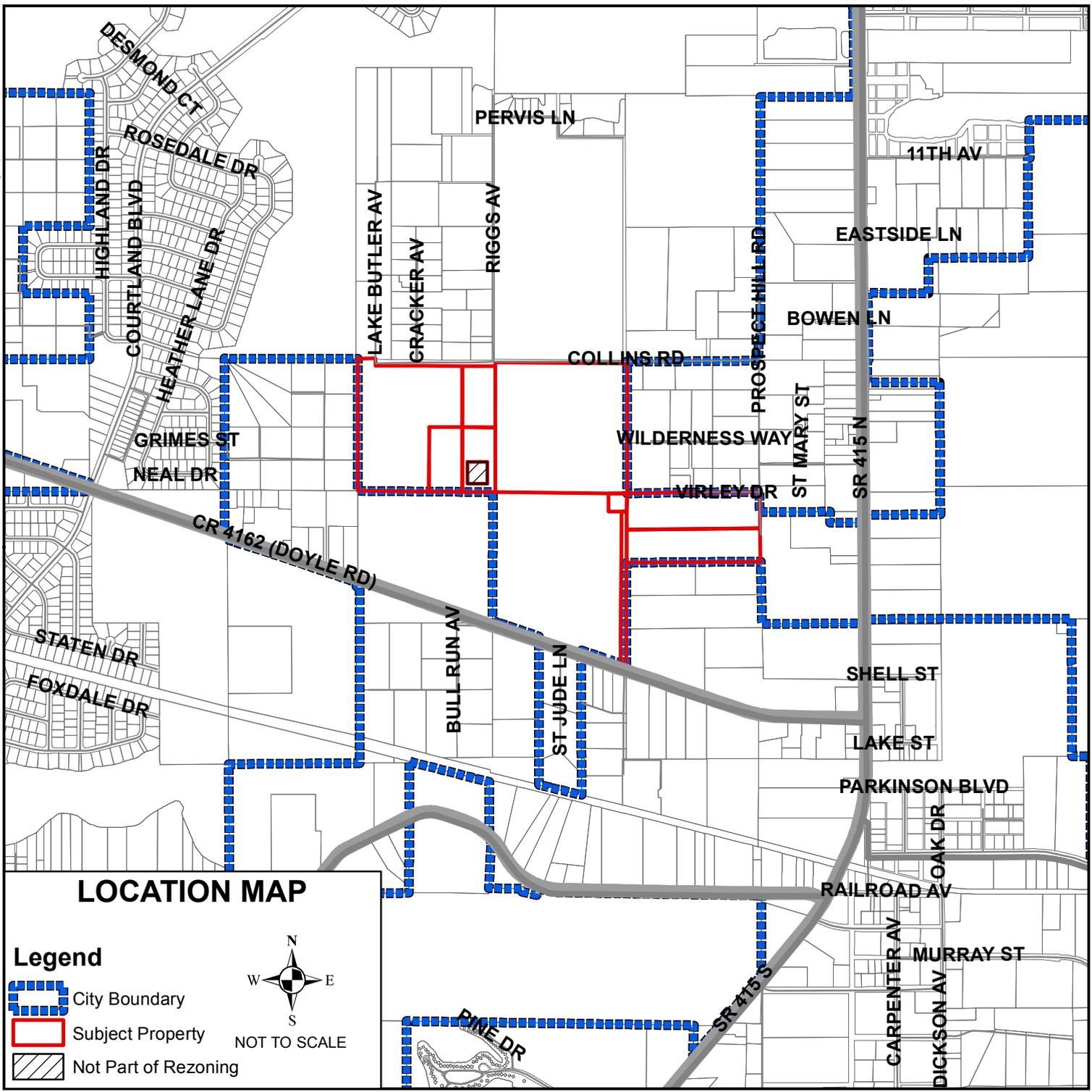
**RESIDENTIAL LOW**

# **FUTURE LAND USE MAP**

## **Legend**

-  City Boundary
-  Subject Property
-  Not Part of Rezoning

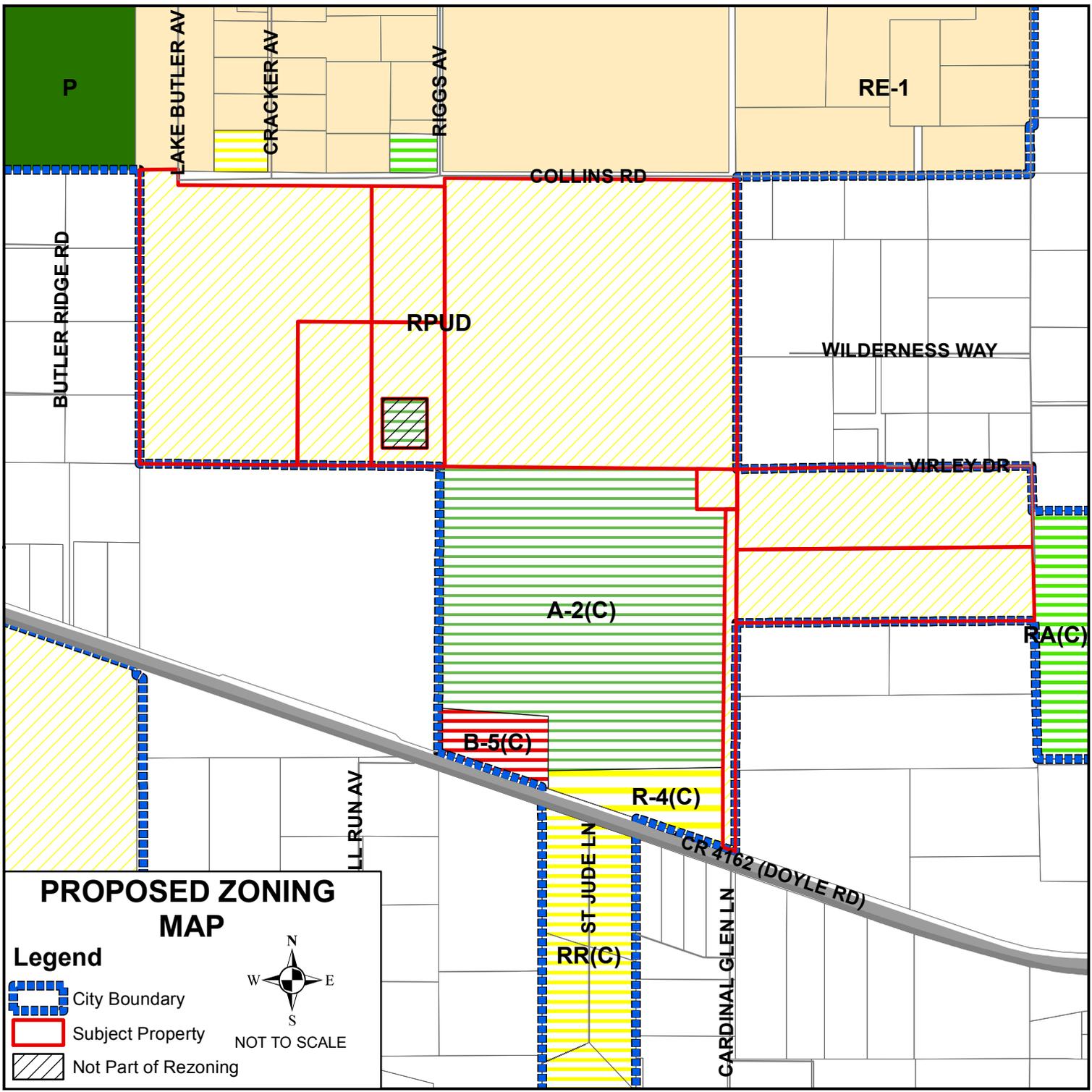




# LOCATION MAP

- Legend**
-  City Boundary
  -  Subject Property
  -  Not Part of Rezoning



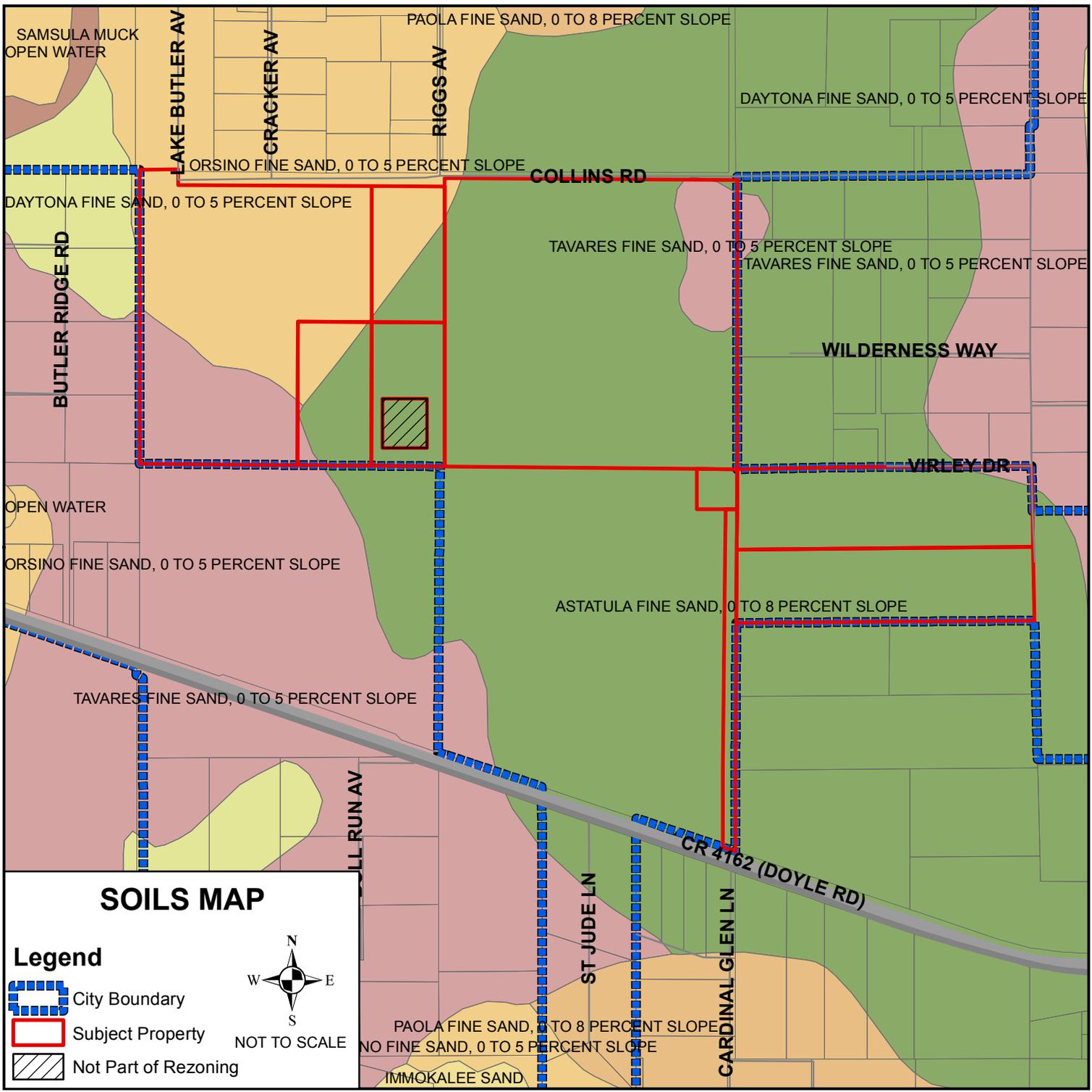


# PROPOSED ZONING MAP

## Legend

-  City Boundary
-  Subject Property
-  Not Part of Rezoning



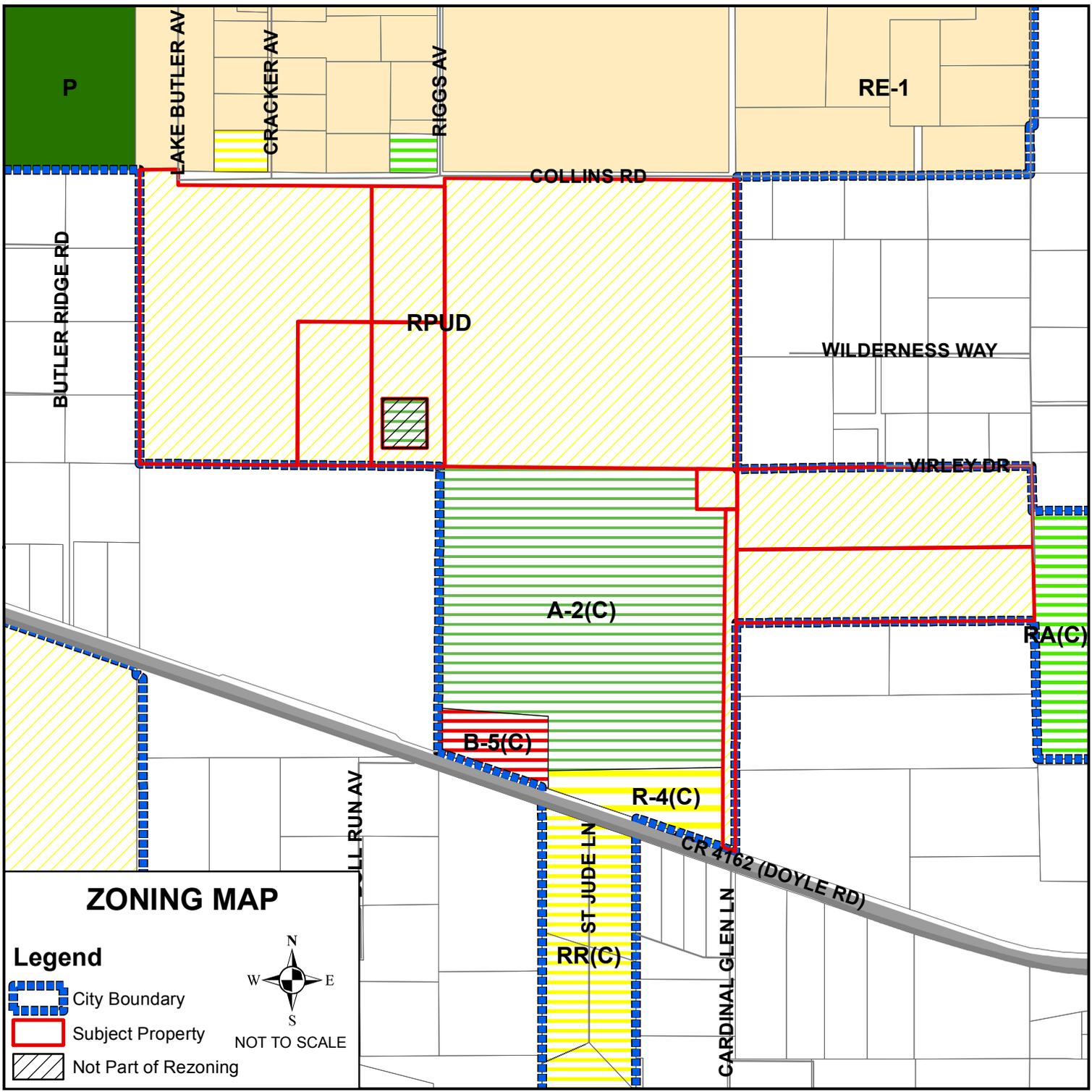


# SOILS MAP

## Legend

-  City Boundary
  -  Subject Property
  -  Not Part of Rezoning
- 

NOT TO SCALE



# ZONING MAP

## Legend

-  City Boundary
-  Subject Property
-  Not Part of Rezoning



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

Gretchen R. H. Vose, Esq.  
City Attorney  
City of Deltona  
2345 Providence Boulevard  
Deltona, Florida 32725

<p><b>For Recording Purposes Only</b></p> <p>Signature of Notary</p>
--

**Exhibit "A" to Ordinance No. 24-2016**

**DEVELOPMENT AGREEMENT**

for the project known as Vineland Reserve Planned Unit Development (PUD) located at 450 Doyle Road (FKA Pell Place and Vineyard Reserve) (hereinafter referred to as the "Subject Property").

THIS DEVELOPMENT AGREEMENT (hereinafter referred to as the "Agreement") is entered into and made as of the \_\_\_ day of \_\_\_\_\_, 2016, 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 Lake Disston Lands LLC, a Florida Limited Liability Company with a mailing address of 230 North Woodland Boulevard, Suite 304, DeLand, Florida 32720 (hereinafter referred to as the "Owner").

**WITNESSETH**

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

**WHEREAS**, the Owner has clear title of the Subject Property; and

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

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

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

**WHEREAS**, the Owner has sought the City's approval to develop the Subject Property, and the City approved Ordinance No. 24-2016, through rezoning the Subject Property to a ~~form~~ of Residential Planned Unit Development (RPUD), as defined under the City's Land Development Code on \_\_\_\_\_. The RPUD shall consist of this Agreement as the Written Agreement of the RPUD and an Exhibit "C", Master Development Plan (MDP), attached hereto and by this reference made a part hereof as the Preliminary Plan, subject to the covenants, restrictions, and easements offered by the Owner and contained herein, (hereinafter the "Master Development Plan"). Where more detailed criteria for City required submittals exceed the criteria required for a Master Development Plan, the more detailed criteria applies.

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

1. **Recitals and Definitions.** The recitals 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 owner of the Subject Property is: Lake Disston Lands LLC., a Florida Limited Liability Company.

3. **Title Opinion/Certification.** The Owner will provide to the City, in advance of the City's execution and recordation of this Agreement, a title opinion from a licensed attorney in the state of Florida, or a certification by an abstractor or title company authorized to do business in the state of Florida, verifying marketable title to the Subject Property to be in the name of the Owner 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 join in this Agreement. It shall be the responsibility of the Owner to promptly obtain the said subordination or joinder, in form and substance that is acceptable to the City Attorney, prior to the execution and recordation of this Agreement.

5. **Duration.** The duration of this Agreement is binding and runs with the land in perpetuity, unless amended.

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

- A. The Vineland Reserve RPUD is consistent with the Comprehensive Plan Policies specific to this Subject Property.
- B. Permitted principal uses allowable on the Subject Property:
- 1a. Residential – Single Family Residential, detached, not to exceed 279 units;
  - 1b. Residential – Townhomes not to exceed 128 units;
  2. Residential – Alternative to Townhome Development: The MDP contemplates a section of Townhomes within the eastern portion of the Subject Property. In lieu of the 128 Townhomes illustrated on the MDP, Owners may develop ~~an~~ additional ~~84~~ Single Family Residential lots. However, consistent with Sec. 110-319(k)(5)d of the City Land Development Code, the change shall be processed via a ~~minor~~ major amendment to the this Agreement. and all If the major amendment is approved, all Single Family Residential lots shall be subject to the development criteria provided herein. If Owner avails itself to this option, the total number of Single Family Residential lots for the Subject Property shall not exceed 360 units;
  3. Amenity Center Serving Vineland Reserve residents may shall be provided and will consist, at minimum, of the following: swimming pool, club house of no less than 2,000 square feet of climate controlled space; related decking to integrate the pool with the club house, and other amenities as deemed appropriate by the owner/developer. Parking shall be afforded in accordance with section M of this Agreement. All structures and amenities shall be setback at minimum 20 feet from property or lot lines;
  4. Home Occupations, as restricted by Section 110-807 of the City's Land Development Code as it may be amended from time to time;
  5. ~~Temporary~~ Signage – All signs shall be consistent with Chapter 102 as it may be

amended from time to time. According to Sec. 102-76, subdivision entrance signs can be administratively approved. The main entrance to Vineland Reserve is planned to be off of Doyle Road. Therefore, the City shall allow entrance signage at the Doyle Rd. driveway cut. The entrance sign shall be a free standing monument sign of no more than six feet high with an 18 inch base. The copy area shall feature no more than 75 square feet. The sign shall not contain any electronic messaging. Foundation landscaping will be a required element of the sign. The entrance sign shall be permitted separately and must be approved by the Director of Planning and Development Services. An elevation of the sign, including color renditions, landscaping and other design elements shall be part of the submittal to the Director; and A two-sided sign, with a copy area on each side not to exceed 100 square feet, shall be permitted at the intersection of Doyle Road and the main spine road servicing the Subject Property, as depicted on the Master Development Plan. The sign shall be utilized to direct home buyers to the Subject Property from Doyle Road and shall be permitted so long as a builder or master developer has homes for sale on the Subject Property; and

6. Infrastructure and support uses for above listed uses.

C. Prohibited principal uses, if any:

1. ~~THERE ARE NO EXPRESSLY PROHIBITED USES.~~ Uses that are not customary residential;
2. Mobile/manufactured homes defined by the United States Department of Housing and Urban Development.

D. Proposed minimum density (~~in number of dwelling units per acre~~): ~~0~~ 3 units/ac

E. Proposed maximum density (~~in number of dwelling units per acre~~): 4 units/ac

F. Impervious surface ratio is not to exceed ~~70~~60% of the gross square footage for the Subject Property.

G. Maximum lot coverage (~~in %~~) (~~dry retention systems can be used towards open space~~): ~~65~~40%

H. Landscaping and bufferyard requirements meet or exceed the standards provided in Section 110-808 of the City's Land Development Code. A minimum of a 20 foot perimeter buffer shall be afforded around residential nodes of the project. Other areas of the project proposed for landscaping shall be depicted on the MDP. A Landscape Plan, illustrating the perimeter buffer yard widths, landscape materials, opacity of screening for adjacent land uses, internal landscape buffers between parcels, within parcels and any common areas shall be provided. Stormwater management facilities shall not be placed within bufferyards.

- I. Minimum lot size area (~~in acreage or square footage~~):**
1. Single Family Residential Lots: 5,750 sq. ft.
  2. Townhome Residential Lots: 2520 sq. ft.
- J. Minimum lot width (~~in feet~~):**
1. Single Family Residential Lots: 50 ft.
  2. Townhome Residential Lots: 24 ft.
- K. Minimum yard setbacks:**
1. Single Family Residential Lots
    - a) Front yard: 20 ft.
    - b) Side yard: ~~7.5~~ 5 ft. (~~Minimum separation of eleven (11) feet required between eaves of adjacent buildings~~)
    - c) Street side yard: 10 ft.
    - d) Rear yard: ~~20~~ 10 ft.
    - e) Minimum floor area: 1,200 square ft.
  2. Townhome Residential Lots
    - a) Front yard: ~~25~~ 20 ft.
    - b) Side yard: N/A
    - c) Street side yard: N/A
    - d) Rear yard: ~~20~~ 10 ft.
    - e) Minimum floor area: 1,000 square ft. per unit
- L. Accessory Structures: Accessory structures shall be allowed for single family residential lots only; comply with all applicable City supplementary regulations as amended from time to time; located outside of any easements; and comply with the following setbacks:**
- a) Rear yard: 5 ft.
  - b) Side yard: 5 ft.
  - c) Street side yard: 10 ft.
- M. Maximum building height (~~in feet~~): 35 ft.**
- N. Cell tower: There is a parcel of land contained within the property proposed to be rezoned not owned/controlled by the Owner. This parcel, totaling approximately 0.50 acre in size, is developed with a 59.4 foot high monopole cell tower. The cell tower is not camouflaged. Residential lots within the subdivision shall be designed so no single family dwelling unit is located within the separation distance requirements of Chapter 82 of the City Land Development Code. However, no residential lots shall be plated/created within the design fall radius of the subject tower.**

- O. Minimum parking standards are per Sections. 110-828 and 110-829 of the City's Land Development Code. However, each townhome unit shall feature an enclosed two car garage.
- P. Minimum lighting standards per the City's Land Development Code shall be included on a separate Illumination Plan to be provided at the time of site plan and/or plat submittal.
- Q. Architectural controls and development on the Subject Property:
1. Single Family Residential Lots.
    - a) All structures shall complement one another and shall convey a sense of quality and permanence. Nothing contained herein shall require, nor preclude, a uniform architectural style or design aesthetic within the single family residential neighborhood. This shall permit, but not require, a diversification of architectural styles or designs available to homebuilders within the single family residential neighborhood. A homeowners association shall be formed to determine and enforce architectural expectations of the community. The City shall not be responsible for implementing architectural controls unless otherwise specified in this Agreement or other applicable City codes.
    - ~~b) Exterior walls facing public rights of way 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.~~
    - c) Utility boxes, Air conditioning condensers, pool pumps and similar mechanicals/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.
    - ~~d) All controls and variations shall be defined by a Homeowners Association or Property Owners Association, as defined within this Agreement.~~
  2. Townhome Residential Lots.
    - a) All structures shall complement one another and shall convey a sense of quality and permanence. All structures shall follow a common architectural theme by harmoniously coordinating the general appearance of all buildings and accessory structures which may be visible

from a public right of way. This includes ~~an~~ the amenity center ~~if one is constructed~~. The purpose is to provide visual compatibility and functional continuity between the townhomes located within the Townhome Residential Lots. For purposes of this subparagraph, general appearance includes, but is not limited to, exterior wall finishes, construction materials, roof styles, slopes, architectural details and ornamentation.

- b) 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.
- c) The architectural elements of amenities, accessory structures and signage shall be consistent.
- d) All service areas and mechanical equipment visible from public rights-of-way (ground or roof) including but not limited to, air conditioning condensers, heating units, electric meters, irrigation pumps, ice machines, vending machines and other mechanicals, shall be screened using architectural features consistent with the structure, or landscaping of sufficient density and maturity at planting to provide opaque screening. Nothing contained herein shall be applied in violation of federal, state or local laws regarding the use of satellite television.
- e) All controls and variations shall be defined by a Homeowners Association ~~or Property Owners Association~~, as defined within this Agreement.

3. All utility distribution lines shall be located underground.

**R.** Utility provision and dedication: ~~The project will need to be served by central water, sewer and reuse water.~~ The Owner shall connect to the City of Deltona's central utility systems, ~~when available, or to Volusia County's central utility systems, where applicable,~~ and construct the required water, reuse and wastewater utility network 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, both on site and off site, are to be designed, permitted, and constructed to ~~the respective service provider~~ City specifications and dedicated to the ~~respective service provider~~ City upon final inspection, clearance, and acceptance by the service provider.

**S.** Stormwater and environmental: ~~Per parcel stormwater systems or master~~ The ponds associated with the stormwater system shall be owned and maintained by an

established Homeowners Association ~~or 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 property shall conform to all federal, state, and local permits/requirements, shall be the sole responsibility of the owner of the Homeowners Association or Property Owners Association, and shall be maintained by the Homeowners Association in good condition/standing with the applicable permitting authorities. Best Management Practices and conformance to National Pollutant Discharge Elimination System (NPDES) criteria are required. Finally, the stormwater system and related drainage will need to be sized/designed to manage flows from all impervious surfaces including a lot coverage allowance of 40%.

- T. Transportation, site access, and traffic devices: The Owner is responsible for all transportation improvements within the Subject Property 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. 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. The MDP depicts an 80 foot wide access way from Doyle Road to the development nodes of the project. The 80 foot access road is depicted on the MDP intersecting with Doyle Rd. at right angles. However, to accommodate the right angle intersection the access way curves to the west off of the property owned/controlled by the Owner. The off-site property is triangular and accounts for approximately 25,000 square feet. Before a plat and/or site plan application is approved by the DRC for the subject property, the ownership/use of the aforementioned 25,000 square foot area needs to be secured through either fee simple acquisition or a legal instrument acceptable to the City Attorney. The project will generate 3,497 trips per day. These trips are projected to be distributed on Doyle Road via an 80 foot wide ingress/egress road. The following improvements will be required to accommodate access onto Doyle Road:

1) A 235-foot (storage and transition) eastbound left-turn lane from Doyle Rd. to the access road.

2) A 185-foot (storage and transition) westbound right-turn lane from Doyle Rd. to the access road.

3) Doyle Road westbound travel lane transition of no less than 405 feet east of the Doyle Rd./Vineland entrance road intersection and 300 feet west of the aforementioned intersection.

As per item 3 above the design of the turn lanes shall also include appropriate Doyle Road travel lane taper rates so travel lane functionality is not diminished. The above

improvements must be financed and constructed solely by the Owner and approved by the County before the first building permit is issued within the project. The above design requirements represent the minimum standard. The actual design requirements will be determined through the County Use Permit review process.

Sidewalks of a minimum of five feet of width shall be provided along both sides of all roadways within the project. The Vineland Preserve property abuts Osteen Elementary School. Therefore, the sidewalk network shall be connected to the school through a common boundary (in addition to a Doyle Rd. connection). The design and location of the pedestrian connection shall be determined between the Owner and the Volusia County School District.

The property abuts Collins Road along the northern terminus. The status of Collins Rd. involves both prescriptive and private elements. In addition, Collins Rd. does provide access to SR 415 but is not suitable to accommodate traffic associated with the Vineland Preserve project because of design limitations and lack of paving/stabilization. Vineland Preserve is designed with two outlets to Collins Rd. These outlets may be appropriate in the future as Collins Rd. may be improved. However, until Collins Rd. is improved to City specifications all access to Collins Rd. needs to be limited for emergency purposes only. Therefore, the access points on Collins Rd. need to be gated or otherwise impeded to only allow emergency access.

Finally, the medians associated with the entrance road shall be landscaped and irrigated with reuse water. The landscaping will include grass and other materials as deemed appropriate by the Owner and/or Homeowner's Association. The Homeowner's Association shall be responsible for the irrigation and maintenance of the landscape area.

The owner shall ensure full access to the cell tower site that is situated as an inholding within the Vineland Reserve project. The access configuration shall be addressed with the owner of the cell tower property and reflected on the plat as part of the plat process.

- U. Development Phases: The Subject Property may be developed at one time or in phases. If developed in phases, each phase must comply with and satisfy the terms and conditions provided for herein and the plat process as applicable per Chapter 106 of the City Land Development Code.
- V. Common Open Space: No less than 25% of the RPUD will be considered common open space. The common open space area shall be open for all residents for recreation and/or other leisure uses. Examples of common open space shall be the amenity center associated with the multi-family node and a trail system that extends through the natural vegetation retention area.

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 Property

are, as follows:

- A. All rights of way shall be designed, constructed and dedicated to the public as per City or as applicable County requirements. pending review and acceptance by the City.
- B. All on site and off site lift stations, water/sewer lines and related infrastructure shall be designed, constructed, and dedicated to the public as per City requirements. pending review and acceptance by the City.
- C. Collins Road as it may exist on the on property.
- D. ~~No additional facilities or lands are to be dedicated to the public.~~ Other dedications as deemed appropriate by the City which may arise during the plat and/or site plan review process.

8. **Development Permits/Fees.** The Owner is responsible for obtaining, permitting, and the payment of all fees for facilities and services ~~to ensure for~~ associated with the development and maintenance of the Subject Property. 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 City, surrounding 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 City impact fees. Owner is responsible for County impact fees and at the discretion of the County may be required to engage in proportionate fair share activities or a similar type of arrangement.

9. **Site Plan/Plat Approval.** Exhibit "C", the Master Development Plan, is the ~~Preliminary Plan of the~~ graphic for this RPUD and this Agreement. The Master Development Plan shall not replace, supersede, or absolve the Owner from approvals for any 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 applies.

10. **Indemnification.** The Owner shall indemnify 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 Property, except those claims or liabilities caused by or arising from the negligence or intentional acts of the City, or its employees or agents. It is specifically understood that the City is not guaranteeing the appropriateness, efficiency, quality or legality of the use or development of the Subject Property, including but not limited to, drainage or water/sewer plans, fire safety, or quality of construction, whether or not inspected, approved, or permitted by the City.

11. **Compliance.** The Owner agrees that it, and its successors and assigns, will abide

by the provisions of this Agreement, the City's Comprehensive Plan and the City's Code of Ordinances, including but not limited to, the site plan regulations of the City as amended from time to time, which are incorporated herein by reference and such subsequent amendments hereto as may be applicable. Further, all required improvements, including landscaping, shall be continuously maintained by the Owner, or its successors and assigns, in accordance with the City's Code of Ordinances. The City may, without prejudice to any other legal or equitable right or remedy it may have, withhold permits, Certificates of Occupancy or plan/plat approvals to the Subject Property, should the Owner fail to comply with the terms of this Agreement. In the event of a conflict between this Development Agreement and the City's Land Development Code, the more restrictive regulations shall govern the development of the Subject Property.

12. **Obligations for Improvements.** Any surface improvement as described and required hereunder included, but not limited to such as signalization, walls, stormwater management facilities, medians, and utilities, or any other surface improvement shall be performed, prior to the issuance of the first Certificate of Occupancy on that portion of the Subject Property that the surface improvement(s) relates or is otherwise scheduled in this Agreement. Should the Owner fail to undertake and complete its obligations as described in this Agreement and to the City's specifications, then the City shall give the Owner thirty (30) days written notice to commence and ninety (90) days to complete said required obligation at the sole expense of the Owner. If the Owner fails to complete the obligations within the ninety (90) day period, then the City, without further notice to the Owner and their successors and assigns in interest, may but shall not be required to, perform such obligations at the expense of the Owner or their successors and assigns in interest, without prejudice to any other rights or remedies the City may have under this Agreement. Further, the City is hereby authorized to immediately recover the actual and verified cost of completing the obligations required under this Agreement and any legal fees from the Owner in an action at law for damages, as well as record a lien against the Subject Property in that amount. The lien of such assessments shall be superior to all others, and all existing lienholders and mortgagees, by their execution of the subordination or joinder documents, agree to subordinate their liens or mortgages to the City's said liens or assessments. Notice to the Owner and its successors and assigns in interest shall be deemed to have been given upon the mailing of notice as provided in paragraph (19) of this Agreement.

13. **Concurrency and Vested Rights.** The Owner acknowledges and agrees that prior to the issuance of any development orders for the Property, the Owner must have received and be in the possession of a valid unexpired certificate of capacity/concurrency management system approval consistent with the City's Land Development Code. The capacity certificate/approval verifies the availability of infrastructure and service capacity sufficient to permit the proposed development of the Subject Property without causing a reduction in the levels of service adopted in the City's Comprehensive Plan. The certificate of capacity/approval shall be effective for a term, as defined in the City's Code of Ordinances. Neither this Agreement nor the approved Master Development Plan shall create or result in a vested right or rights to develop the Subject Property, as cited in Section 86-34 of the City's Land Development

Code.

14. **Environmental and Tree Preservation.** The Owner is responsible to obtain all site related permits and approval prior to any development activity on or for the Subject Property. This may involve mitigation for 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 Owner from any permitting and mitigation obligations needed to develop a Subject Property. The property contains gopher tortoise habitat. The site needs to be surveyed and if deemed necessary, tortoises relocated. Any relocation of tortoises needs to be consistent with applicable permitting agencies.

15. **Homeowners Association or Property Owners Association.** The charter and by-laws of ~~any~~ a Homeowners Association (“HOA”) ~~or Property Owners Association (“POA”)~~ for the Subject Property and any deed restrictions related thereto shall be furnished to the City for approval by the City Attorney prior to the recording thereof in the Public Records of Volusia County, Florida. Such recording shall take place before a Certificate of Occupancy is issued for the first development project on land covered by this Agreement. ~~The HOA or POA~~ shall at a minimum be responsible for maintaining the common open space, stormwater ponds, amenities, any common utility systems, such as for irrigation, landscaping and site lighting, and project signage and implementing the architectural and aesthetic requirements. The Owner shall be responsible for establishing the HOA ~~or POA~~ and recording said information in the Public Records of Volusia County, Florida. The City is not responsible for the enforcement of any agreements or deed restrictions entered into between property owners or occupiers of the Subject Property. If maintenance for the Subject Property is not maintained following issuance of a Certificate of Occupancy, the City ~~has~~ will engage Code Enforcement services.

16. **Enforcement and Venue.** 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 Owner shall be responsible for the payment of all of the City’s costs and expenses, including attorney fees, whether or not litigation is necessary and, if necessary, both at trial and on appeal. Such costs, expenses and fees shall also be a lien upon the Subject Property superior to all others. Should this Agreement require the payment of any monies to the City, the recording of this Agreement shall constitute a lien upon the Subject Property for said monies, until said are paid, in addition to such other obligations as this Agreement may impose upon the Subject Property and the Owner. 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.

17. **Utility Easements.** For any easement not established on a plat for the Subject Property, the Owner shall provide to the City such easements and other legal documentation, in form mutually acceptable to the City Attorney and the Owner, 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.

18. **Periodic Review.** The City reserves the right to review the Subject Property subject in relation to this Agreement periodically to determine if there has been demonstrated good faith compliance with the terms of this Agreement. If the City finds that on the basis of substantial competent evidence that there has been a failure to comply with the terms of this Agreement, the City may not issue development orders or permits until compliance with this Agreement has been established.

19. **Notices.** Where notice is herein required to be given, it shall be by certified mail return receipt requested, hand delivery or nationally recognized courier, such as Federal Express or UPS. E-mail delivery of documents shall not replace or be in lieu of the aforementioned process. Said notice shall be sent to the following, as applicable:

**OWNER REPRESENTATIVES:**

James Skinner  
Lake Disston Lands LLC  
230 North Woodland Boulevard, Suite 304  
DeLand, Florida 32720

**WITH A COPY TO:**

Michael J. Woods, Esquire  
CobbCole  
351 East New York Avenue; Suite 200  
DeLand, Florida 32724

**CITY'S REPRESENTATIVES:**

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

**WITH A COPY TO:**

Director, Planning & Development Services  
City of Deltona  
2345 Providence Boulevard  
DeLand, 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.

20. **Compliance with the Law.** The failure of this Agreement to address a particular permit, condition, term, or restriction shall not relieve the Owner of the Subject Property from the necessity of complying with the law governing said permitting requirements, conditions, terms, or restrictions.

21. **Captions.** The captions used herein are for convenience only and shall not be relied upon in construing this Agreement.

22. **Binding Effect.** This Agreement shall run with the Subject Property, shall be binding upon and inure to the benefit of the Owner and its successors and assigns in interest, and the City and their successor and assigns in interest. This Agreement shall become effective upon its execution and recordation with the Public Records of Volusia County, Florida. This Agreement does not, and is not intended to, prevent or impede the City from exercising its legislative authority as the same may affect the Subject Property.

23. **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.

24. **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.

25. **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.

26. **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 shall execute this Agreement within ten (10) business days of City Commission adoption of Ordinance No. \_\_\_\_; and agrees to pay the cost of recording this document in the Public Records of Volusia County, Florida. Failure to execute this Agreement within ten (10) 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.

27. **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.

28. **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 PAGE INTENTIONALLY BLANK]**

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

**OWNER**

Lake Disston Lands LLC

**By:**

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

\_\_\_\_\_  
Signature

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

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

**As:**

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

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

**ATTEST:**

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

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print or Type Name

**As:**

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

**STATE OF FLORIDA**  
**COUNTY OF** \_\_\_\_\_

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 201\_\_, 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.

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

(NOTARY SEAL)

\_\_\_\_\_  
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 this \_\_\_\_ day of \_\_\_\_\_, 201\_\_, 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

\_\_\_\_\_  
Gretchen R. H. Vose, Esq.  
City Attorney

**EXHIBIT B**  
**LEGAL DESCRIPTION**

OR 6801, PAGE 3579

A portion of the North 1/2 of Section 12, Township 19 South, Range 31 East, Volusia County, Florida, more particularly described as follows:

Commence at the North 1/4 comer of said Section 12; thence South 00°12'06" East, 35.00 feet to the point of beginning; thence North 89°59'16" East, 1333.40 feet; thence South 00°24'06" East, 1285.85 feet; thence North 89°57'56" East, 1337.92 feet, to a point on the East line of the Northeast 1/4 of said Section 12; thence South 00°35'15" East, along said line 660.18 feet; thence South 89°57'15" West, 1340.18 feet; thence North 00°32'09" West, 480.44 feet; thence South 89°59'40" West, 178.79 feet; thence North 00°23'29" West, 180.04 feet; thence South 89°59'36" West, 1440.94 feet to a point on the East line of the West 31.0 acres of the Northeast 1/4 of the Northwest 1/4 of said Section 12; thence North 00°26'19" West, along said line, 1285.77 feet; thence South 89°59'21" East, 288.37 feet to the Point of Beginning Said lands lying in Volusia County, Florida.

Less

A portion of the North 1/2 of Section 12, Township 19 South, Range 31 East, Volusia County, Florida more particularly described as follows:

Commence at the Northeast comer of said Section 12; thence South 89°59'26" West, along the North line of the Northeast 1/4 of said Section 12, a distance of 2622.03 feet; thence South 00°12'15" East, 1004.55 feet; thence South 89°47'45" West, 104.82 feet to the Point of Beginning; thence South 00°12'15" East, a distance of 220.00 feet; thence South 89°47'45" West, 200.00 feet; thence North 00°12'15" West, 220.00 feet; thence North 89°47'45" East, 200.00 feet to the Point of Beginning. Said lands lying in Volusia County, Florida.

TOGETHER WITH:

A portion of Section 12, Township 19 South, Range 31 East, Volusia County, Florida, more particularly described as follows:

Commence at the Northwest comer of the Southwest one-quarter of the Northeast one-quarter of said Section 12; thence South 89°47'05" East along the North line of said Southwest one-quarter, 1257.97 FEET; thence South 00°03'57" East, 180.00 feet to the point of beginning; thence South 89°47'05" East, 80.00 feet, to a point on the West line of the Southeast one-quarter, of the Northeast one-quarter of said Section 12; thence South 00°03'57" East, along said line, 1532.84 feet to a point on the North right-of-way Line of Doyle Road; thence North 71°58'36" West, along said line, 84.16 feet; thence North 00°03'57" West, 1507.10 feet to the point of beginning.

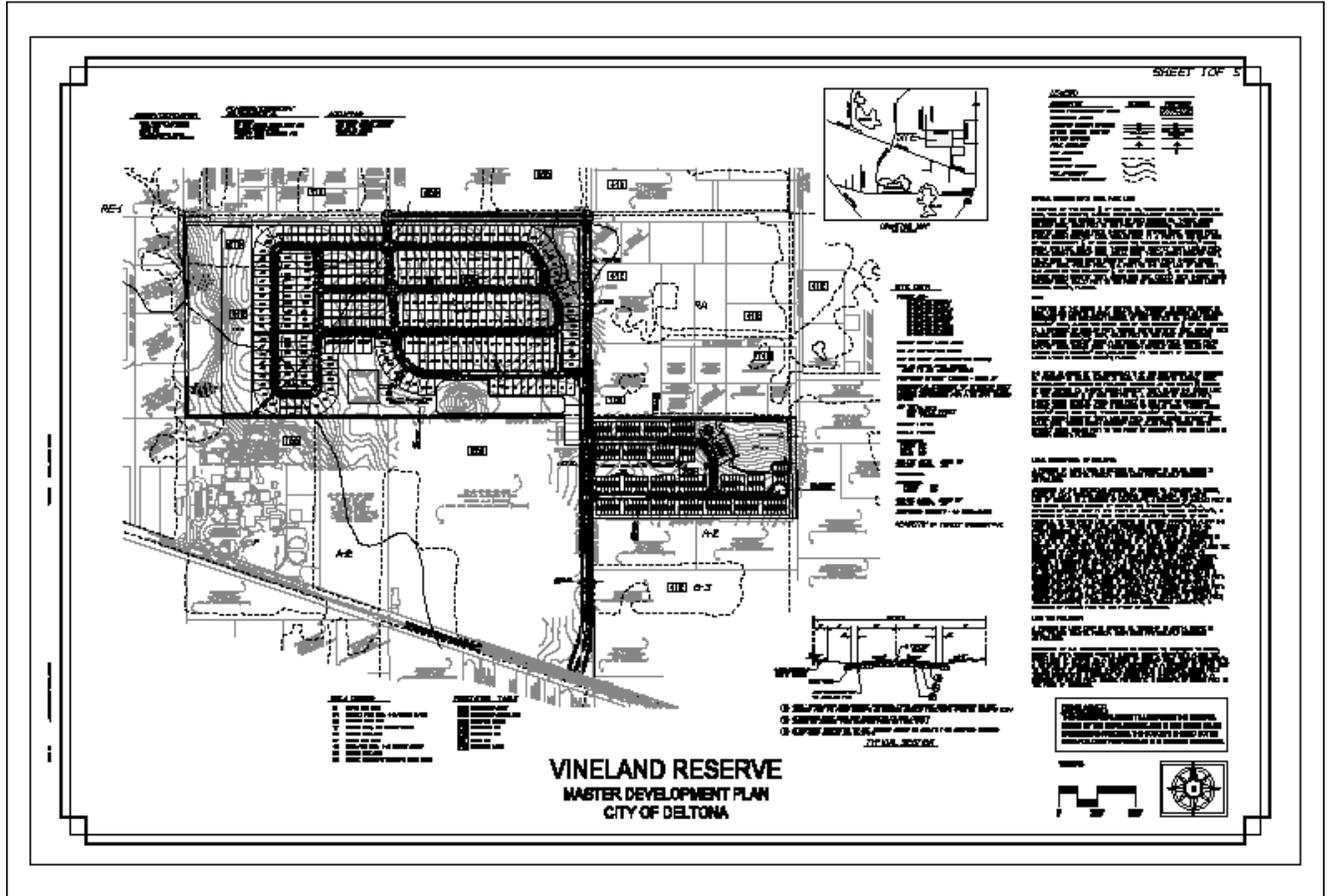
AND TOGETHER WITH

OR 6969, PAGE 3583

THE WEST 31 ACRES OF THE NORTHEAST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE NORTH ONE-QUARTER CORNER OF SAID SECTION 12;  
THENCE NORTH 89°59'21" WEST, ALONG THE NORTH LINE OF THE NORTHWEST ONE-QUARTER OF SAID SECTION 12, A DISTANCE OF 288.63 FEET; THENCE SOUTH 00°26'19" WEST, 35.00 FEET TO THE POINT OF BEGINNING; THENCE SOUTH 00°26'19" EAST, A DISTANCE OF 1283.10 FEET; THENCE SOUTH 00°26'19" EAST, 2.68 FEET; THENCE SOUTH 89°59'40" WEST, 1045.57 FEET; THENCE NORTH 00°26'19" WEST, 1321.08 FEET; THENCE SOUTH 89°59'21" EAST, 167.56 FEET; THENCE SOUTH 00°00'39" WEST, 35.00 FEET; THENCE SOUTH 89°59'21" EAST, 878.28 FEET TO THE POINT OF BEGINNING SAID LANDS LYING IN VOLUSIA COUNTY, FLORIDA.

# EXHIBIT C MASTER DEVELOPMENT PLAN









**ORDINANCE NO. 24-2016**

**AN ORDINANCE OF THE CITY OF DELTONA, FLORIDA, AMENDING THE OFFICIAL ZONING MAP TO REZONE APPROXIMATELY 102.7 ACRES OF LAND LOCATED BETWEEN DOYLE ROAD AND COLLINS ROAD NEAR OSTEEN ELEMENTARY SCHOOL FROM CITY OF DELTONA RESIDENTIAL PLANNED UNIT DEVELOPMENT (RPUD) TO RESIDENTIAL PLANNED UNIT DEVELOPMENT: PROVIDING FOR CONFLICTS, PROVIDING FOR SEVERABILITY AND PROVIDING FOR AN EFFECTIVE DATE.**

---

**WHEREAS**, the City of Deltona, Florida has received an application to rezone approximately 102.7 acres from Residential Planned Unit Development (RPUD) to Residential Planned Unit Development (RPUD); and

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

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

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

**Section 1.** Located in the City of Deltona, Florida the following property is hereby rezoned to RPUD:

OR 6801, PAGE 3579

A portion of the North 1/2 of Section 12, Township 19 South, Range 31 East, Volusia County, Florida, more particularly described as follows:

Commence at the North 1/4 corner of said Section 12; thence South 00°12'06" East. 35.00 feet to the point of beginning; thence North 89°59'16" East, 1333.40 feet; thence South 00°24'06" East,

1285.85 feet; thence North 89°57'56" East, 1337.92 feet, to a point on the East line of the Northeast 1/4 of said Section 12; thence South 00°35'15" East, along said line 660.18 feet; thence South 89°57'15" West, 1340.18 feet; thence North 00°32'09" West, 480.44 feet; thence South 89°59'40" West, 178.79 feet; thence North 00°23'29" West, 180.04 feet; thence South 89°59'36" West, 1440.94 feet to a point on the East line of the West 31.0 acres of the Northeast 1/4 of the Northwest 1/4 of said Section 12; thence North 00°26'19" West, along said line, 1285.77 feet; thence South 89°59'21" East, 288.37 feet to the Point of Beginning Said lands lying in Volusia County, Florida.

Less

A portion of the North 1/2 of Section 12, Township 19 South, Range 31 East, Volusia County, Florida more particularly described as follows:

Commence at the Northeast corner of said Section 12; thence South 89°59'26" West, along the North line of the Northeast 1/4 of said Section 12, a distance of 2622.03 feet; thence South 00°12'15" East, 1004.55 feet; thence South 89°47'45" West, 104.82 feet to the Point of Beginning; thence South 00°12'15" East, a distance of 220.00 feet; thence South 89°47'45" West, 200.00 feet; thence North 00°12'15" West, 220.00 feet; thence North 89°47'45" East, 200.00 feet to the Point of Beginning. Said lands lying in Volusia County, Florida.

TOGETHER WITH:

A portion of Section 12, Township 19 South, Range 31 East, Volusia County, Florida, more particularly described as follows:

Commence at the Northwest corner of the Southwest one-quarter of the Northeast one-quarter of said Section 12; thence South 89°47'05" East along the North line of said Southwest one-quarter. 1257.97 FEET; thence South 00°03'57" East. 180.00 feet to the point of beginning; thence South 89°47'05" East, 80.00 feet, to a point on the West line of the Southeast one-quarter, of the Northeast one-quarter of said Section 12; thence South 00°03'57" East, along said line, 1532.84 feet to a point on the North right-of-way Line of Doyle Road; thence North 71°58'36" West, along said line, 84.16 feet; thence North 00°03'57" West, 1507.10 feet to the point of beginning.

AND TOGETHER WITH

OR 6969, PAGE 3583

THE WEST 31 ACRES OF THE NORTHEAST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE NORTH ONE-QUARTER CORNER OF SAID SECTION 12;  
THENCE NORTH 89°59'21" WEST, ALONG THE NORTH LINE OF THE NORTHWEST ONE-QUARTER OF SAID SECTION 12, A DISTANCE OF 288.63 FEET; THENCE SOUTH 00°26'19" WEST, 35.00 FEET TO THE POINT OF BEGINNING; THENCE SOUTH 00°26'19" EAST, A DISTANCE OF 1283.10 FEET; THENCE SOUTH 00°26'19" EAST, 2.68 FEET;

THENCE SOUTH 89°59'40" WEST, 1045.57 FEET; THENCE NORTH 00°26'19" WEST, 1321.08 FEET; THENCE SOUTH 89°59'21" EAST, 167.56 FEET; THENCE SOUTH 00°00'39" WEST, 35.00 FEET; THENCE SOUTH 89°59'21" EAST, 878.28 FEET TO THE POINT OF BEGINNING SAID LANDS LYING IN VOLUSIA COUNTY, FLORIDA.

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

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

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

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

**PASSED AND ADOPTED BY THE CITY COMMISSION OF THE CITY OF DELTONA, FLORIDA THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2016.**

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

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

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

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

JOHN C. MASIARCZYK, SR., 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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GRETCHEN R. H. VOSE, ESQ, City Attorney

# TRAFFIC IMPACT STUDY

For  
Vineland Reserve

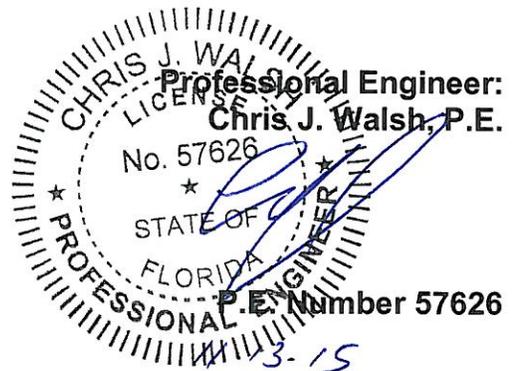
Deltona, Florida

Prepared for:

Pell Properties



Traffic Engineering Data Solutions, Inc.  
80 Spring Vista Drive  
DeBary, Florida 32713  
November 2015



## INTRODUCTION

Traffic Engineering Data Solutions, Inc. (TEDS) has been retained to conduct a traffic impact analysis for the Vineland Reserve development located on the north side of Doyle Road approximately 0.46 miles west of State Road 415 in the City of Deltona, Florida (see **Figure 1**). The proposed development will include 279 single-family residential units and 128 townhomes. A preliminary site plan of the proposed development is included in the **Appendix**. The proposed development is scheduled for build out in 2017.

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. This study was conducted in accordance with the methodology as provided in the **Appendix**.

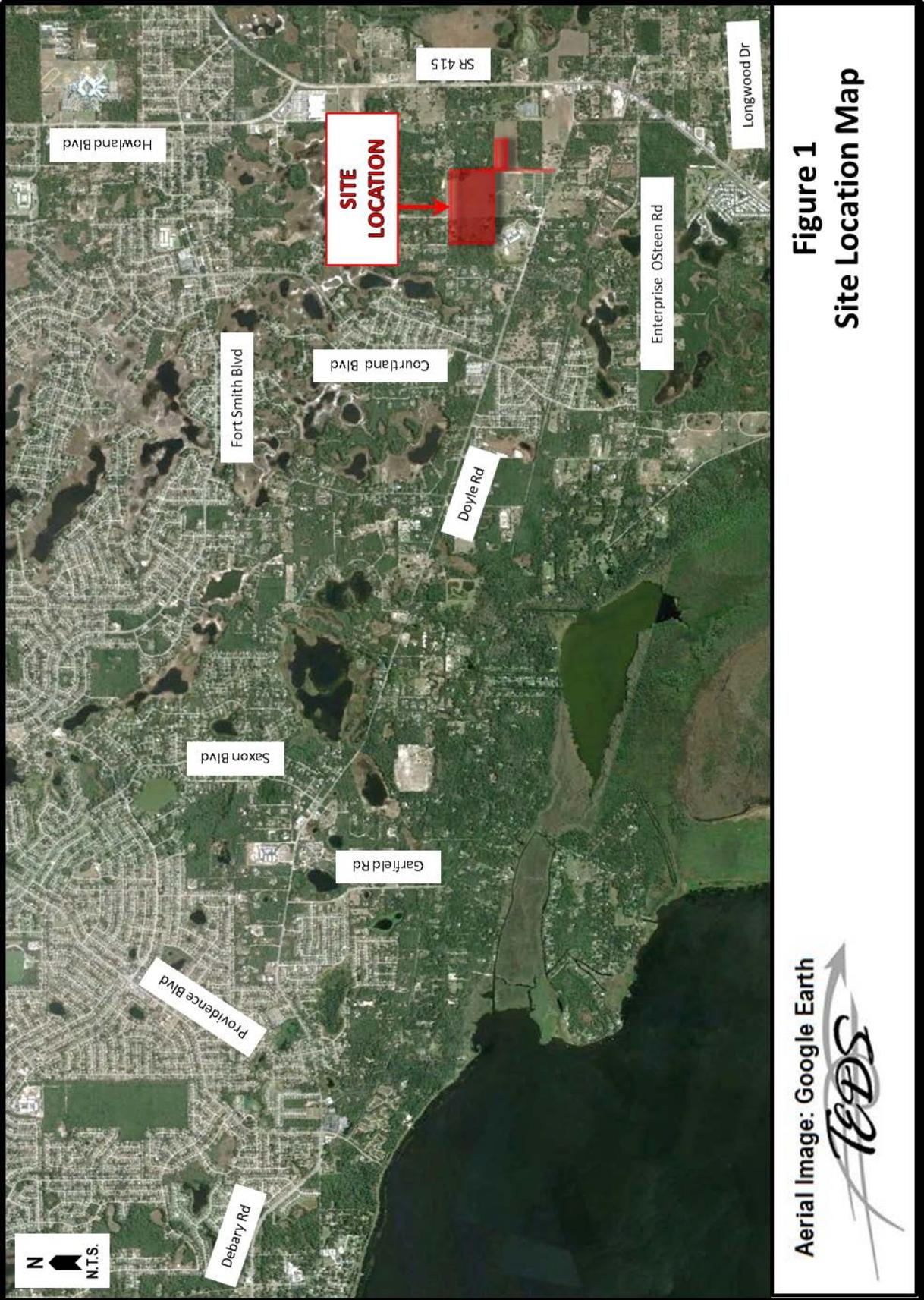
## PROJECT ACCESS

Access to the proposed development is proposed via one full access roadway off of Doyle Road approximately 1.06 miles east of Courtland Boulevard and 0.46 miles west of State Road 415.

## STUDY AREA

Because the proposed development is projected to generate more than 300 two-way peak hour external trips, the study area was determined based upon a five-percent level of significance as consistent with the River to Sea TPO Transportation Impact Analysis (TIA) Guidelines. Based on the methodology, Doyle Road, from Providence Boulevard to State Road 415, was determined to be the study roadway. The study intersections include the following:

- Doyle Road at Providence Boulevard
- Doyle Road at Saxon Boulevard
- Doyle Road at Courtland Boulevard
- Doyle Road at Proposed Development Roadway
- Doyle Road at State Road 415



**Figure 1**  
**Site Location Map**

Aerial Image: Google Earth  
*T&DS*

## EXISTING CONDITIONS

### Existing Volumes

For purposes of this study, PM peak-period turning movement counts, from 4:00 PM to 6:00 PM, were conducted at the study intersections. **Figure 2** summarizes the existing PM peak-hour turning movement volumes at the study intersections. Printouts of the traffic counts are provided in the **Appendix**.

### Roadway Segments

The PM peak-hour two-way volumes on the roadway segments were calculated by obtaining existing daily volumes (2014) from Volusia County and factoring the volumes to two-way PM peak-hour volumes by applying a K-factor of 0.091. 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 2014 Average Annual Daily Traffic & Historical Counts based on the adopted level of service standards from the City of Deltona's Comprehensive Plan. **Table 1** below 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, thereby indicating that all roadway segments currently have acceptable operating conditions.

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

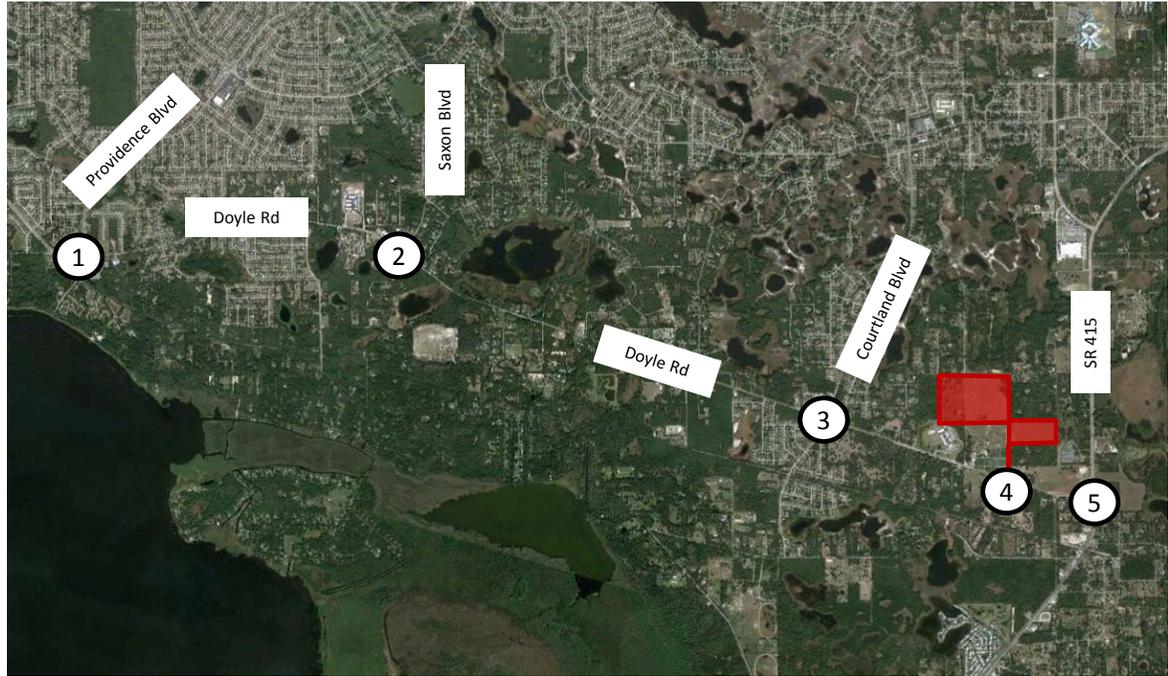
Roadway Segment	Existing Number of Lanes	Adopted Level of Service Standard <sup>1</sup>	Pk-Hr 2-Way Generalized Service Volume <sup>2</sup>	Existing AADT	Existing 2-Way PM Peak-Hour Volumes <sup>3</sup>	Year of Count	Existing Volume Exceeds Service Volume?
<b>Doyle Road</b>							
Providence Blvd to Garfield Road	2	E	1,230	11,950	1,087	2014	No
Garfield Road to Saxon Blvd	2	E	1,230	9,240	841	2014	No
Saxon Blvd to Courtland Blvd	2	E	1,230	7,670	698	2014	No
Courtland Blvd to Project Access Dwy	2	E	1,230	5,450	496	2014	No
Project Access Dwy to SR 415	2	E	1,230	5,450	496	2014	No

1 - Adopted levels of service obtained from City of Deltona's Comprehensive Plan

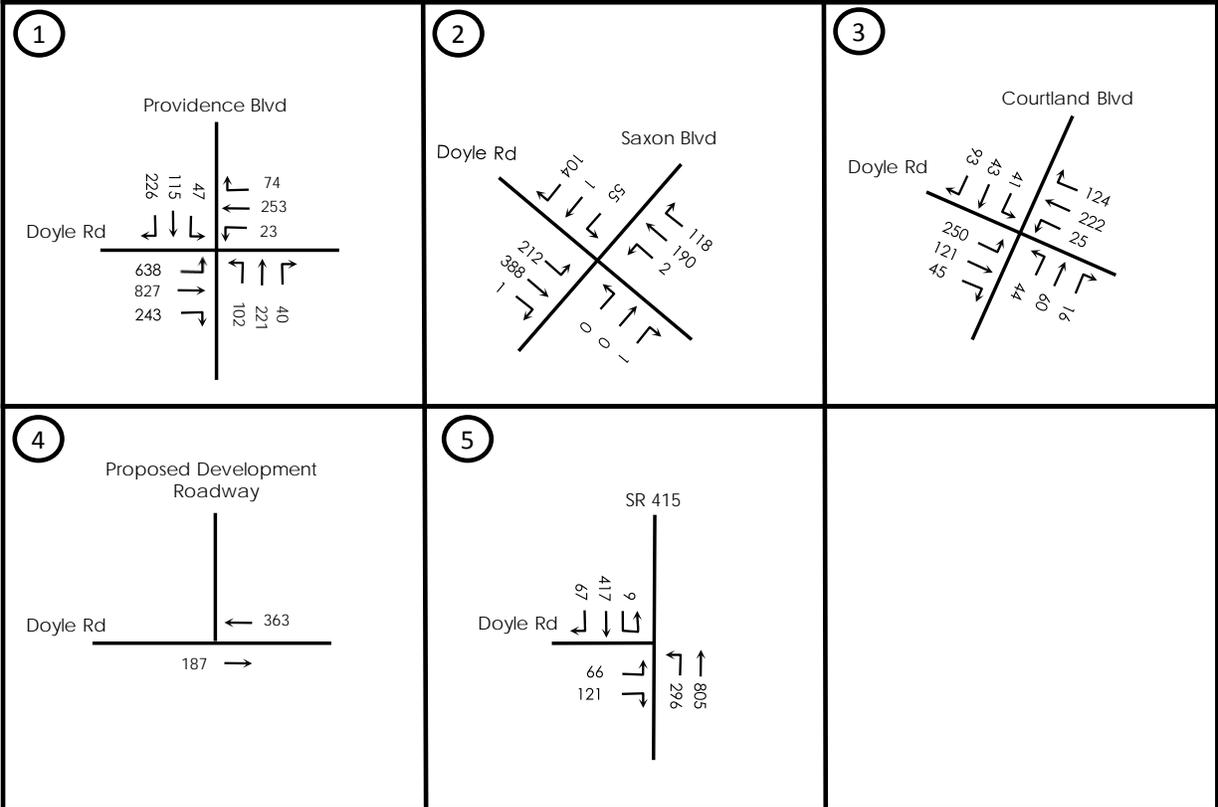
2 - Generalized service volumes for the adopted level of service were obtained from Volusia County.

3 - Existing PM peak-hour 2-way volumes calculated by applying a k-factor of 0.091 to the existing AADT volumes

Figure 2: Existing PM Peak-Hour Turning Movements



Aerial Image: Google Earth



*Intersections*

The PM peak-hour existing operating conditions of the study intersections were evaluated using the Highway Capacity Software (HCS) 2010 which utilizes analysis methodologies contained in the 2010 Highway Capacity Manual. The existing PM peak-hour turning movement volumes, existing roadway geometry, and existing signal timings were utilized in the analyses. Based on the HCS analyses, the existing overall level of service (LOS) and delay for the study intersections are as follows:

<u>Intersection</u>	<u>Overall LOS</u>	<u>Overall Delay (sec/veh)</u>
Doyle Road/Providence Boulevard	E	71.5
Doyle Road/Saxon Boulevard	B	10.1
Doyle Road/Courtland Boulevard	B	14.1
Doyle Road/State Road 415	B	16.3

HCS printouts are provided in the **Appendix**.

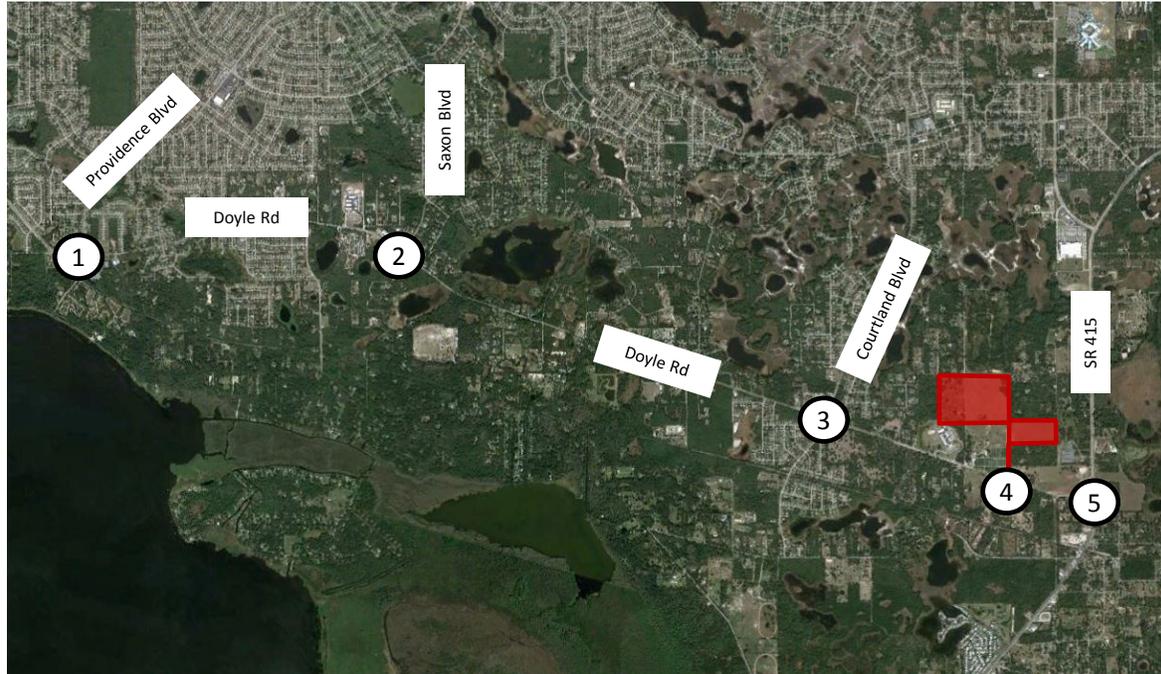
## FUTURE BACKGROUND TRAFFIC

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 calculated by applying an annual growth rate to existing PM peak-hour volumes to factor the volumes up to year 2017, the year the development is proposed to be open. The annual growth rates were based on historical annual growth rates calculated from historical traffic data as obtained from Volusia County. Upon using the Traffic Trends Analysis Tool, it was concluded that the historical annual growth rates for Doyle Road, from Providence Boulevard to State Road 415, for the 2004 to 2014 analysis period have been negative. For the purposes of providing a conservative analysis, a one-percent annual growth rate was applied to the existing volumes to factor them to year 2017 future background PM peak-hour volumes. **Figure 3** shows the future background PM peak-hour turning movements at the study intersections while **Table 2** shows the future background PM peak-hour two-way volumes on the study roadway segments. Traffic Trends Analysis Tool printouts are also provided in the **Appendix**.

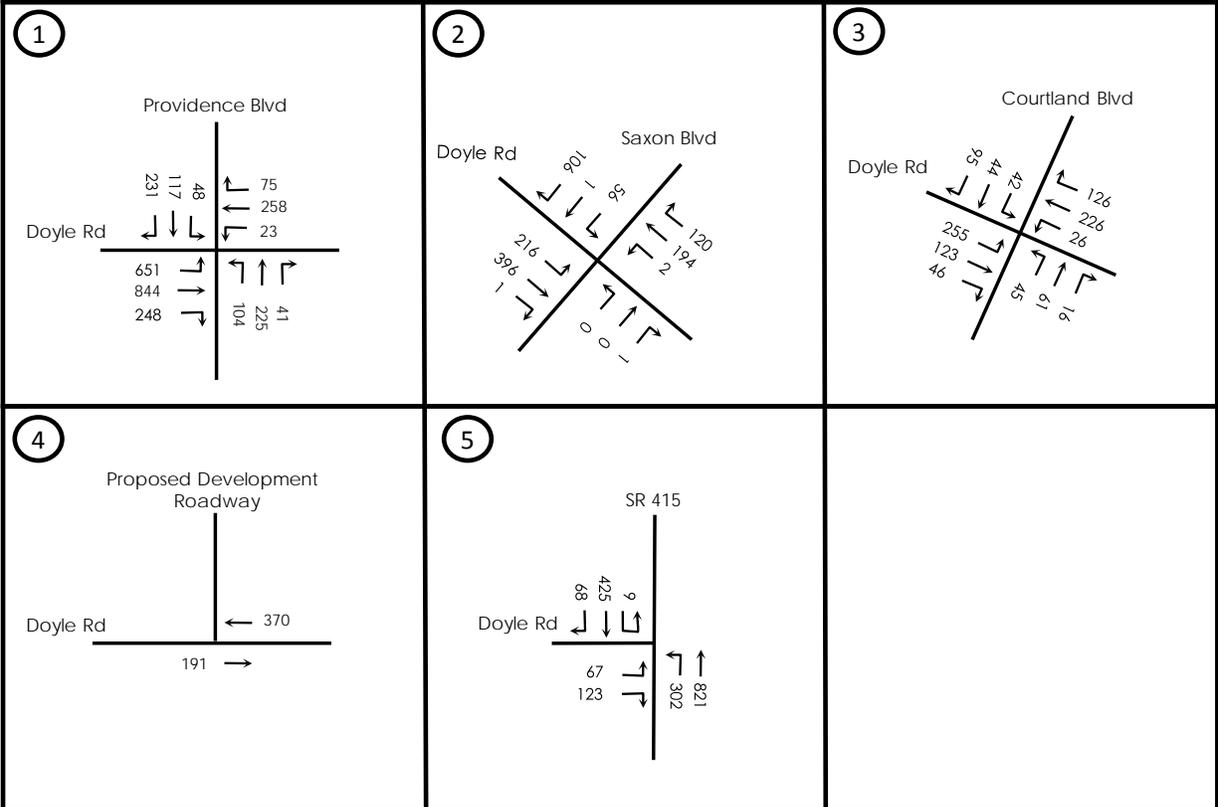
**Table 2**  
**Future Background Volumes for Roadway Segments (PM Peak Hour)**

Roadway Segment	Existing 2-Way PM Peak-Hour Volumes	Year of Count	Annual Growth Rate	Future Background PM Pk-Hr 2-Way Volume
<b>Doyle Road</b>				
Providence Blvd to Garfield Road	1,087	2014	1.0%	1,120
Garfield Road to Saxon Blvd	841	2014	1.0%	866
Saxon Blvd to Courtland Blvd	698	2014	1.0%	719
Courtland Blvd to Project Access Dwy	496	2014	1.0%	511
Project Access Dwy to SR 415	496	2014	1.0%	511

Figure 3: Future Background PM Peak-Hour Turning Movements



Aerial Image: Google Earth



## TRIP GENERATION

The number of vehicle trips that will originate from or are destined to a development is called trip generation and is dependent upon the type and size of the development. The total daily and PM peak-hour trip generation potential for the proposed development was determined based on trip generation equations and rates provided in the Institute of Transportation Engineer's (ITE) Informational Report, *Trip Generation, 9th Edition*. For the proposed development, ITE Land Use Code 210 (Single-Family Detached Housing) and ITE Land Use Code 230 (Residential Condominium/Townhouse) were used. As summarized in **Table 3**, the proposed development is projected to generate 3,497 total daily trips and 338 total PM peak-hour trips (216 in, 122 out).

**Table 3**  
**Trip Generation Projection for Proposed Development**

Land Use	Intensity	Units	Daily			PM Peak		
			In	Out	Total	In	Out	Total
Single-Family Detached Housing	279	Dwelling Units	1350	1,349	2,699	167	98	265
Residential Condominium/Townhouse	128	Dwelling Units	399	398	797	49	25	74
Net New External Trips			1,749	1,748	3,497	216	122	339

Single-Family Detached Housing (ITE 9th Edition - Land Use Code 210)

Daily LN (T) = 0.92 x LN (# of DU) + 2.72 50% In 50% Out

PM Peak Hour LN (T) = 0.90 x LN (# of DU) + 0.51 63% In 37% Out

Residential Condominium/Townhouse (ITE 9th Edition - Land Use Code 230)

Daily LN (T) = 0.87 x LN (# of DU) + 2.46 50% In 50% Out

PM Peak Hour LN (T) = 0.82 x LN (# of DU) + 0.32 67% In 33% Out

## TRIP DISTRIBUTION

The trip distribution pattern defines the primary corridors that will be traveled by the traffic generated by the project. The approved trip distribution, as included in the approved methodology, was developed based on applying engineering judgment and using local knowledge of typical travel patterns for residents within the area. The trip distribution is shown in **Figure 4**.

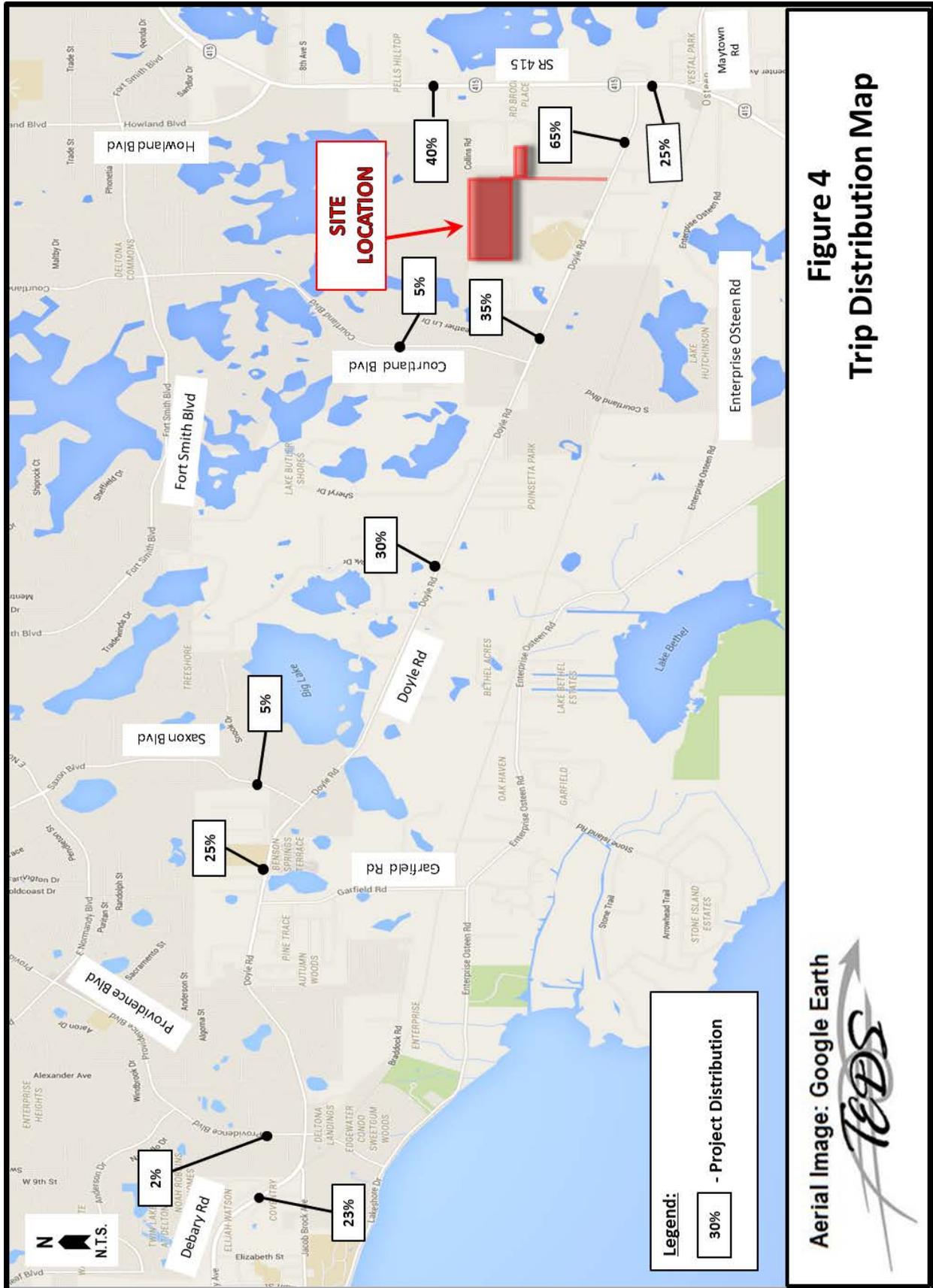
## TRIP ASSIGNMENT

The new external PM peak-hour project trips were assigned to the study roadways and intersections based on the trip distribution. **Figure 5** shows the PM peak-hour new external trips, assigned to the study intersections.

The project trips were then added to the future background traffic volumes to arrive at the total future PM peak-hour volumes for both the roadway segments and intersections. **Figure 6** shows the total (year 2017) PM peak-hour turning movement projections at the study intersections at build out of the development. Turning movement worksheets are provided in the **Appendix**. **Table 4** summarizes the total PM peak-hour two-way volumes in year 2017 on the roadway segments at build out of the development.

**Table 4**  
**Year 2017 Roadway Segment Volumes and Operating Conditions (PM Peak Hour Two-Way)**

Roadway Segment	# of Lanes	Future Background PM Pk-Hr 2-Way Volume	Percent Assignment	2-Way Pk-Hr Project Trips	Future Total 2-Way PM Pk-Hr Volume	Adopted Level of Service Standard	Pk-Hr 2-Way Generalized Service Volume	Future Total Volume Exceeds Service Volume?
<b>Doyle Road</b>								
Providence Blvd to Garfield Road	2	1,120	25.0%	85	1,205	E	1,230	No
Garfield Road to Saxon Blvd	2	866	25.0%	85	951	E	1,230	No
Saxon Blvd to Courtland Blvd	2	719	30.0%	101	820	E	1,230	No
Courtland Blvd to Project Access Dwy	2	511	35.0%	118	629	E	1,230	No
Project Access Dwy to SR 415	2	511	65.0%	220	731	E	1,230	No



**Figure 4**  
**Trip Distribution Map**

Aerial Image: Google Earth

Figure 5: Future New External PM Peak-Hour Turning Movements



Aerial Image: Google Earth

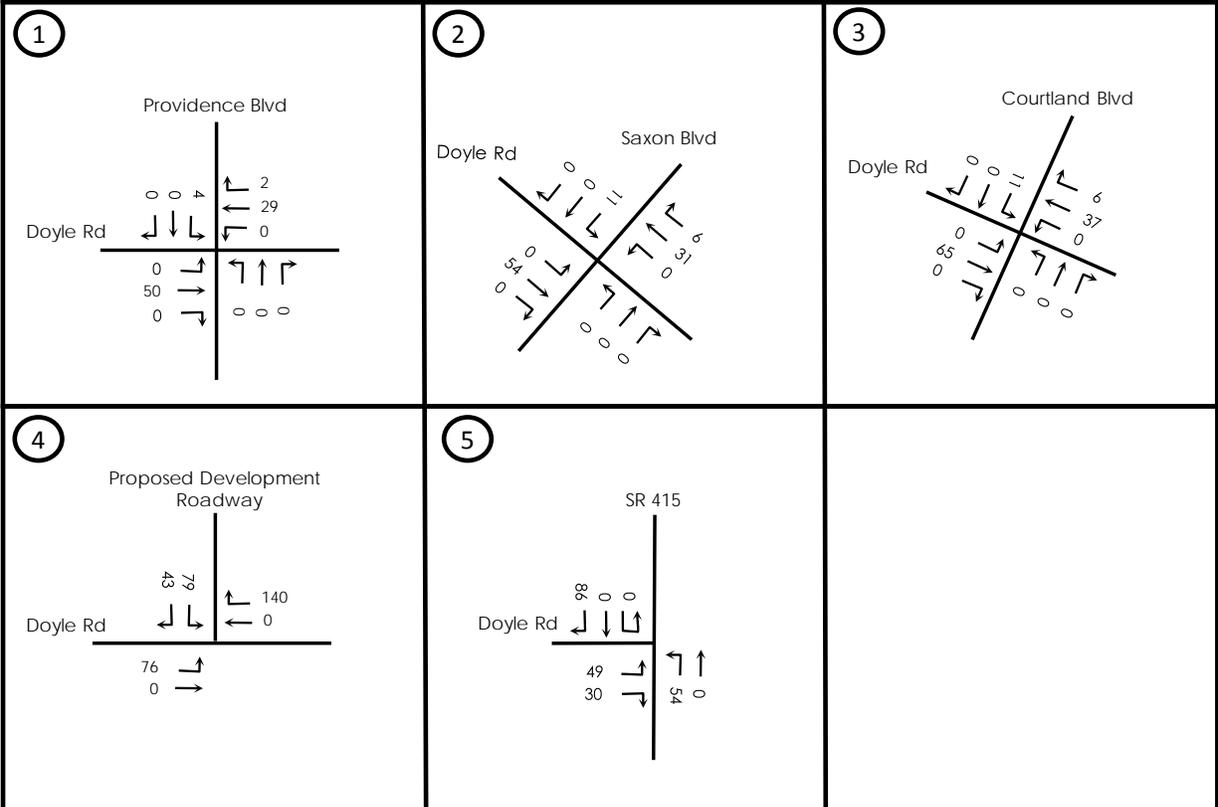
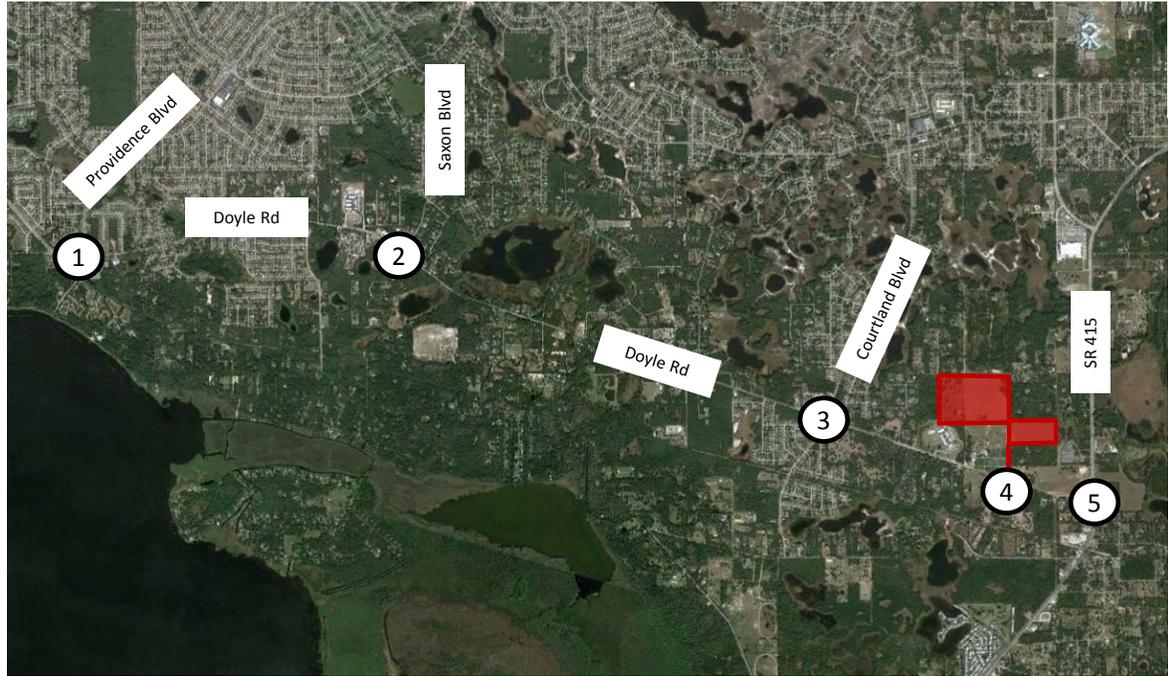
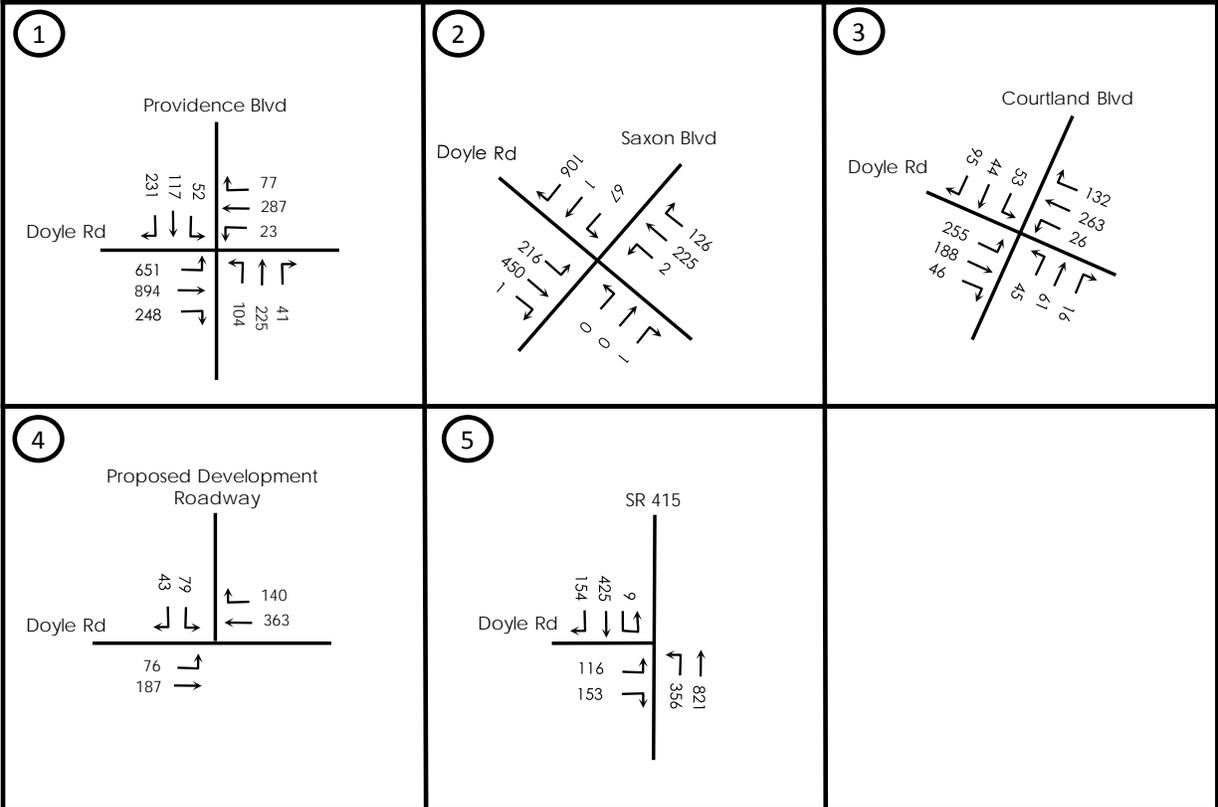


Figure 6: Future Total PM Peak-Hour Turning Movements



Aerial Image: Google Earth



## FUTURE CONDITIONS ANALYSIS

### *Roadway Segments*

The PM peak-hour operating conditions of the study roadway segments were analyzed by comparing total projected PM peak-hour two-way segment volumes to each roadway segment's generalized service volume. As summarized in **Table 4**, the projected volumes on all study roadway segments are below the generalized service volumes. Therefore, all study roadway segments are projected to have acceptable operating conditions in year 2017 at build out of the proposed Vineland Reserve development.

### *Intersections*

The PM peak-hour operating conditions for the study intersections along Doyle Road were analyzed at build out of the proposed development in year 2017 using HCS 2010 and the projected turning movements. Based on the HCS analyses, the projected overall level of service (LOS) and delay for the signalized study intersections, at buildout of the proposed development, are as follows:

Intersection	Overall LOS	Overall Delay (sec/veh)
Doyle Road/Providence Boulevard	F	133.8
Doyle Road/Saxon Boulevard	B	10.4
Doyle Road/Courtland Boulevard	B	14.3
Doyle Road/State Road 415	B	18.7

It should be noted that with optimized signal timings (increasing the Max green for the eastbound/westbound left-turn movements to 25 seconds and increasing the eastbound/westbound through movements to 65 seconds) the Doyle Road/Providence Boulevard intersection is projected to operate acceptably at LOS D (overall delay of 44.9 seconds/vehicle). The HCS printouts are provided in the **Appendix**.

Additionally, the intersection of the development road with Doyle Road was analyzed under two-way STOP control using HCS. Based on the HCS analyses, the eastbound left-turn movement is projected to operate acceptably at LOS A (average delay of 8.7 seconds/vehicle). The southbound approach is also projected to operate acceptably at LOS C (average delay of 15.5 seconds/vehicle).

It should be noted that the eastbound left-turn volume is projected to exceed 25 vehicles in the peak hour and thus a left-turn lane on Doyle Road will be required per Volusia County requirements. The 95<sup>th</sup> percentile queue is less than one vehicle, therefore, a turn-lane length of 205 feet is recommended (based on a 50-foot queue and 155 feet of deceleration per FDOT's 2016 Design Standards, Index 301).

Additionally, the westbound right-turn volume exceeds 100 vehicles per hour, thus a westbound right-turn lane on Doyle Road will also be needed per Volusia County requirements. Because the movement is free flow, there is no projected queue. Therefore, a turn-lane length of 155 feet is recommended (based on 155 feet of deceleration per FDOT's 2016 Design Standards, Index 301).

## 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 currently has no routes that pass by the site via Doyle Road, and no routes that pass by the site via State Road 415.

Pedestrian Facilities – Currently, sidewalk is provided on the north side of Doyle Road and along both sides of State Road 415 north of Doyle Road along the frontage of the project.

Bicycle Facilities – There are bike lanes along both sides of State Road 415 to the east of the site. There is also the East Central Regional Rail Trail shared-use path (running east-west), located approximately 1,800 feet south of Doyle Road.

## CONCLUSIONS

Traffic Engineering Data Solutions, Inc. (TEDS) was retained to analyze the projected traffic impact for the proposed Vineland Reserve development located on the north side of Doyle Road approximately 0.46 miles west of State Road 415 in the City of Deltona, Florida.

Based on the analyses, the existing PM peak-hour two-way volumes for all of the study roadway segments are below the generalized service volume, thereby indicating that all roadway segments currently have acceptable operating conditions. Additionally, all study intersections currently operate acceptably.

In 2017 at buildout of the proposed development, the projected PM peak-hour two-way volumes for all of the study roadway segments are below the generalized service volume, thereby indicating that all roadway segments are projected to have acceptable operating conditions. Additionally, all study intersections are projected to operate acceptably. However, the maximum green times for the eastbound/westbound left-turn movements and eastbound/westbound through movements will need to be adjusted.

Lastly, at the intersection of the development road with Doyle Road, a 205-foot eastbound left-turn lane and a 155-foot westbound right-turn lane are needed.

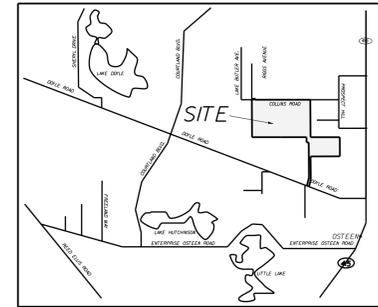
# Appendix

# **PRELIMINARY SITE PLAN**

**OWNER/DEVELOPER**  
 LAKE DISTON LANDS, LLC  
 300 E NEW YORK AVENUE  
 SUITE 300  
 DELAND, FLORIDA 32724  
 CONTACT: MR. JAMES SWINNER

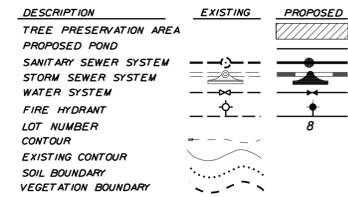
**PLANNER/ENGINEER/  
 ENVIRONMENTAL**  
 DEMBERRY  
 110 WEST INDIANA AVENUE, SUITE 202  
 DELAND, FLORIDA 32720  
 CONTACT: TAD W. KASBERG, P.E.  
 (386) 785-0468

**SURVEYOR**  
 BLACKWELL AND ASSOCIATES  
 995 WEST VOLUSIA AVENUE  
 DELAND, FL 32720  
 (386) 734-7660



LOCATION MAP  
 NOT TO SCALE

**LEGEND**



OFFICIAL RECORDS BOOK 5402, PAGE 1532

A PORTION OF THE NORTH 1/4 OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCE AT THE NORTH 1/4 CORNER OF SAID SECTION 12; THENCE SOUTH 00°12'06" EAST, 35.00 FEET TO THE POINT OF BEGINNING; THENCE NORTH 89°59'16" EAST, 1333.40 FEET; THENCE SOUTH 00°24'06" EAST, 1285.85 FEET; THENCE NORTH 89°57'56" EAST, 1337.92 FEET; TO A POINT ON THE EAST LINE OF THE NORTHEAST 1/4 OF SAID SECTION 12; THENCE SOUTH 00°35'15" EAST, ALONG SAID LINE, 660.18 FEET; THENCE SOUTH 89°57'15" WEST, 1340.18 FEET; THENCE NORTH 00°32'09" WEST, 480.44 FEET; THENCE SOUTH 89°59'15" WEST, 178.79 FEET; THENCE NORTH 00°23'29" WEST, 180.04 FEET; THENCE SOUTH 89°59'36" WEST, 1440.94 FEET; TO A POINT ON THE EAST LINE OF THE WEST 31.0 ACRES OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 12; THENCE NORTH 00°26'19" WEST, ALONG SAID LINE, 1285.77 FEET; THENCE SOUTH 89°59'21" EAST, 288.37 FEET TO THE POINT OF BEGINNING SAID LANDS LYING IN VOLUSIA COUNTY, FLORIDA.

LESS

A PORTION OF THE NORTH 1/4 OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCE AT THE NORTHEAST CORNER OF SECTION 12; THENCE SOUTH 89°59'26" WEST, ALONG THE NORTH LINE OF THE NORTHEAST 1/4 OF SAID SECTION 12, A DISTANCE OF 2622.03 FEET; THENCE SOUTH 00°12'15" EAST, 1004.55 FEET; THENCE SOUTH 89°47'45" WEST, 104.82 FEET TO THE POINT OF BEGINNING; THENCE SOUTH 00°12'15" EAST, A DISTANCE OF 220.00 FEET; THENCE SOUTH 89°47'45" WEST, 104.82 FEET TO THE POINT OF BEGINNING SAID LANDS LYING IN VOLUSIA COUNTY, FLORIDA.

THE WEST 31 ACRES OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA, MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCE AT THE NORTH 1/4 CORNER OF SAID SECTION 12; THENCE NORTH 89°59'21" WEST, ALONG THE NORTH LINE OF THE NORTHEAST 1/4 OF SAID SECTION 12, A DISTANCE OF 2883.63 FEET; THENCE SOUTH 00°26'19" WEST, 35.00 FEET TO THE POINT OF BEGINNING; THENCE SOUTH 00°26'19" EAST, A DISTANCE OF 1283.10 FEET; THENCE SOUTH 00°26'19" EAST, 2.68 FEET; THENCE SOUTH 89°59'40" WEST, 1045.57 FEET; THENCE NORTH 00°26'19" WEST, 1321.08 FEET; THENCE SOUTH 89°59'21" EAST, 167.56 FEET; THENCE SOUTH 00°07'39" WEST, 35.00 FEET; THENCE SOUTH 89°59'21" EAST, 878.28 FEET TO THE POINT OF BEGINNING SAID LANDS LYING IN VOLUSIA COUNTY, FLORIDA.

LEGAL DESCRIPTION: BY SURVEYOR

A PORTION OF LAND LYING IN SECTION 12, TOWNSHIP 19 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE NORTHEAST CORNER OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA; THENCE ALONG THE NORTH LINE OF SECTION 12 A BEARING OF N89°41'20"W, A DISTANCE OF 2667.07 FEET TO THE NORTH QUARTER CORNER OF SECTION 12; THENCE S00°07'18"W, A DISTANCE OF 35.00 FEET TO THE POINT OF BEGINNING; THENCE S89°41'20"E, A DISTANCE OF 1333.40 FEET, SAID LINE BEING 35.00 FEET SOUTH OF AND PARALLEL TO THE NORTH LINE OF SECTION 12; THENCE S00°04'42"E ALONG THE WEST LINE OF JOE SMITH PLACE AS RECORDED IN MAP BOOK 3, PAGE 32, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, A BEARING OF S89°42'42"E, AND A DISTANCE OF 1337.91 FEET; THENCE ALONG THE WEST LINE OF ASSESSORS SUBDIVISION OF THE R.D. BROOKE PLACE, AS RECORDED IN MAP BOOK 3, PAGE 68, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, A BEARING OF S00°15'27"E, A DISTANCE OF 660.18 FEET; THENCE ALONG THE NORTH LINE OF THE SOUTH HALF OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 12 A BEARING OF N89°43'23"W, A DISTANCE OF 1340.10 FEET; THENCE N00°12'45"W, A DISTANCE OF 480.44 FEET; THENCE N89°40'56"W, A DISTANCE OF 178.79 FEET; THENCE N00°04'05"W, A DISTANCE OF 180.04 FEET; THENCE N89°41'00"W, A DISTANCE OF 1440.94 FEET; THENCE N89°40'56"W, A DISTANCE OF 1045.57 FEET; THENCE N00°06'55"W, A DISTANCE OF 1321.08 FEET; THENCE S89°39'57"E, A DISTANCE OF 167.56 FEET; THENCE S00°20'03"W, A DISTANCE OF 35.00 FEET; THENCE S89°39'57"E, A DISTANCE OF 1166.66 FEET TO THE POINT OF BEGINNING.

LESS THE FOLLOWING:

A PORTION OF LAND LYING IN SECTION 12, TOWNSHIP 19 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE NORTHEAST CORNER OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA; THENCE N89°41'20"W ALONG THE NORTH LINE OF SECTION 12, A DISTANCE OF 2622.03 FEET; THENCE S00°06'59"W, A DISTANCE OF 1004.55 FEET; THENCE N89°55'01"W, A DISTANCE OF 104.82 FEET TO THE POINT OF BEGINNING; THENCE S00°06'59"W, A DISTANCE OF 220.00 FEET; THENCE N89°53'01"W, A DISTANCE OF 200.00 FEET; THENCE N00°06'59"E, A DISTANCE OF 220.00 FEET; THENCE S89°53'01"E, A DISTANCE OF 200.00 FEET TO THE POINT OF BEGINNING.

**DISCLAIMER**

THIS CONCEPTUAL EXHIBIT ILLUSTRATES THE GENERAL INTENT OF THE DEVELOPMENT, AND IS NOT BASED ON AN ENGINEERING ANALYSIS. THE CONCEPT SHOULD NOT BE USED FOR COST PURPOSES AS IT IS SUBJECT TO CHANGE.

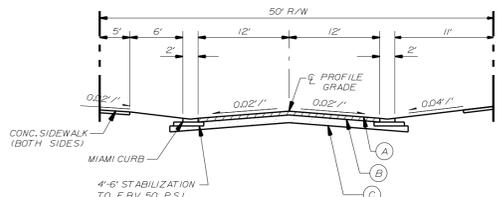
10/5/2015



0' 250' 500'

**SITE DATA**

- PARCEL I.D. -
- 12-19-31-00-00-0251
- 12-19-31-00-00-0151
- 12-19-31-00-00-0250
- 12-19-31-00-00-0250
- 12-19-31-00-00-0070
- 12-19-31-00-00-0061
- 12-19-31-00-00-0062
- 12-19-31-00-00-0020
- 12-19-31-00-00-0030
- 102.7 AC GROSS LAND AREA
- 12.4 AC RETENTION (12.1%)
- 21.2 AC TREE PRESERVATION (25.0%)
- 24.4 AC OPEN AREA (23.8%)
- (35% TO BE COMMON AREA)
- PROPOSED STREET LENGTH = 16,996 LF
- HORIZONTAL ALIGNMENT OF STREETS MEET FLORIDA DEPARTMENT OF TRANSPORTATION MINIMUM STANDARDS FOR A 20 MPH DESIGN SPEED
- 407 TOTAL LOTS
- 279 SINGLE FAMILY
- 128 TOWNHOME
- ZONING - RPUD
- SINGLE FAMILY:
- SETBACKS:
- FRONT 20'
- SIDE 15'
- REAR 20'
- MIN. LOT SIZE: 6,900 SF
- MIN. LOT WIDTH: 50'
- TOWNHOME:
- SETBACKS:
- FRONT 25'
- REAR 20'
- MIN. LOT SIZE: 2,520 SF
- MIN. LOT WIDTH: 24'
- PROPOSED DENSITY = 4.0 UNITS/ACRE
- GEOMETRY IS PURELY CONCEPTUAL



TYPICAL SECTION

**SOILS LEGEND**

- 01 APOPKA FINE SAND
- 04 ASTATULA FINE SAND, 0-8 PERCENT SLOPES
- 05 ASTATULA FINE SAND
- 11 DAYTONA SAND, 0-5 PERCENT SLOPES
- 22 ELECTRA FINE SAND
- 37 ORSIND FINE SAND
- 42 PAOLA FINE SAND, 8-17 PERCENT SLOPES
- 63 TAVARES FINE SAND
- 99 NATURAL VEGETATION RETENTION AREAS WATER

**VEGETATION TABLE**

- 100 GENERALIZED URBAN
- 200 GENERALIZED AGRICULTURE
- 300 ABANDONED FIELDS
- 412 PINE/SLIC OAK
- 414 PINE/SLIC OAK
- 421 XERIC OAK
- 700 DISTURBED LANDS

VINELAND RESERVE  
 MASTER DEVELOPMENT PLAN  
 CITY OF DELTONA

10/27/2015  
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**LEGEND**

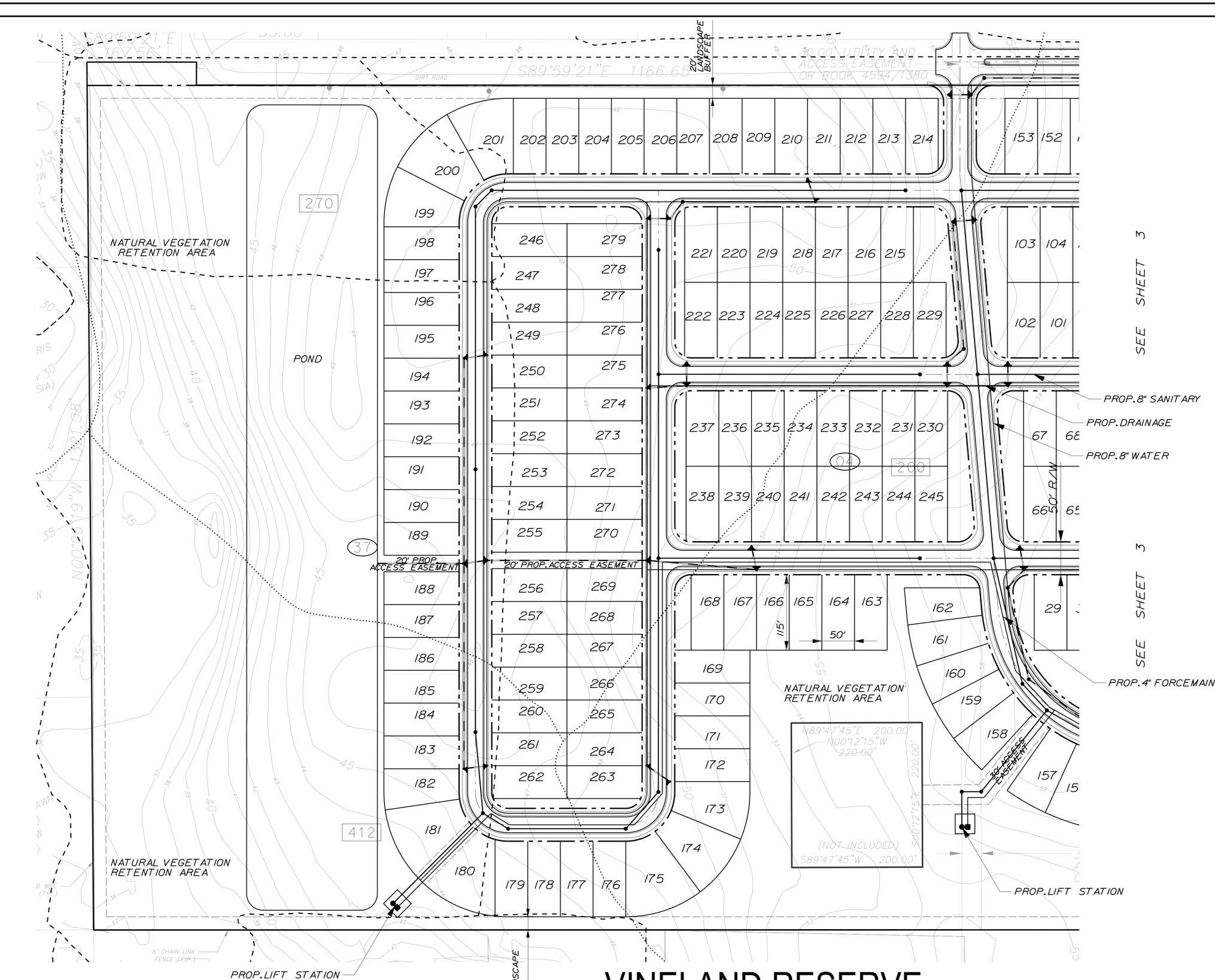
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TREE PRESERVATION AREA	(Symbol)	(Symbol)
PROPOSED POND	(Symbol)	(Symbol)
SANITARY SEWER SYSTEM	(Symbol)	(Symbol)
STORM SEWER SYSTEM	(Symbol)	(Symbol)
WATER SYSTEM	(Symbol)	(Symbol)
FIRE HYDRANT	(Symbol)	(Symbol)
LOT NUMBER	(Symbol)	(Symbol)
CONTOUR	(Symbol)	(Symbol)
EXISTING CONTOUR	(Symbol)	(Symbol)
SOIL BOUNDARY	(Symbol)	(Symbol)
VEGETATION BOUNDARY	(Symbol)	(Symbol)

**SOILS LEGEND**

01	APOPKA FINE SAND
04	ASTATULA FINE SAND, 0-8 PERCENT SLOPES
05	ASTATULA FINE SAND
17	DAYTONA SAND, 0-5 PERCENT SLOPES
22	ELECTRA FINE SAND
37	ORSINO FINE SAND
42	PAOLA FINE SAND, 8-17 PERCENT SLOPES
63	TAVARES FINE SAND
99	OPEN WATER

**VEGETATION TABLE**

100	GENERALIZED URBAN
200	GENERALIZED AGRICULTURE
270	ABANDONED FIELDS
412	PINE/XERIC OAK
414	PINE/MESIC OAK
421	XERIC OAK
740	DISTURBED LANDS



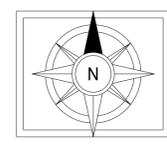
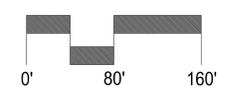
SEE SHEET 3

SEE SHEET 3

**VINELAND RESERVE**  
 MASTER DEVELOPMENT PLAN  
 CITY OF DELTONA

**DISCLAIMER**  
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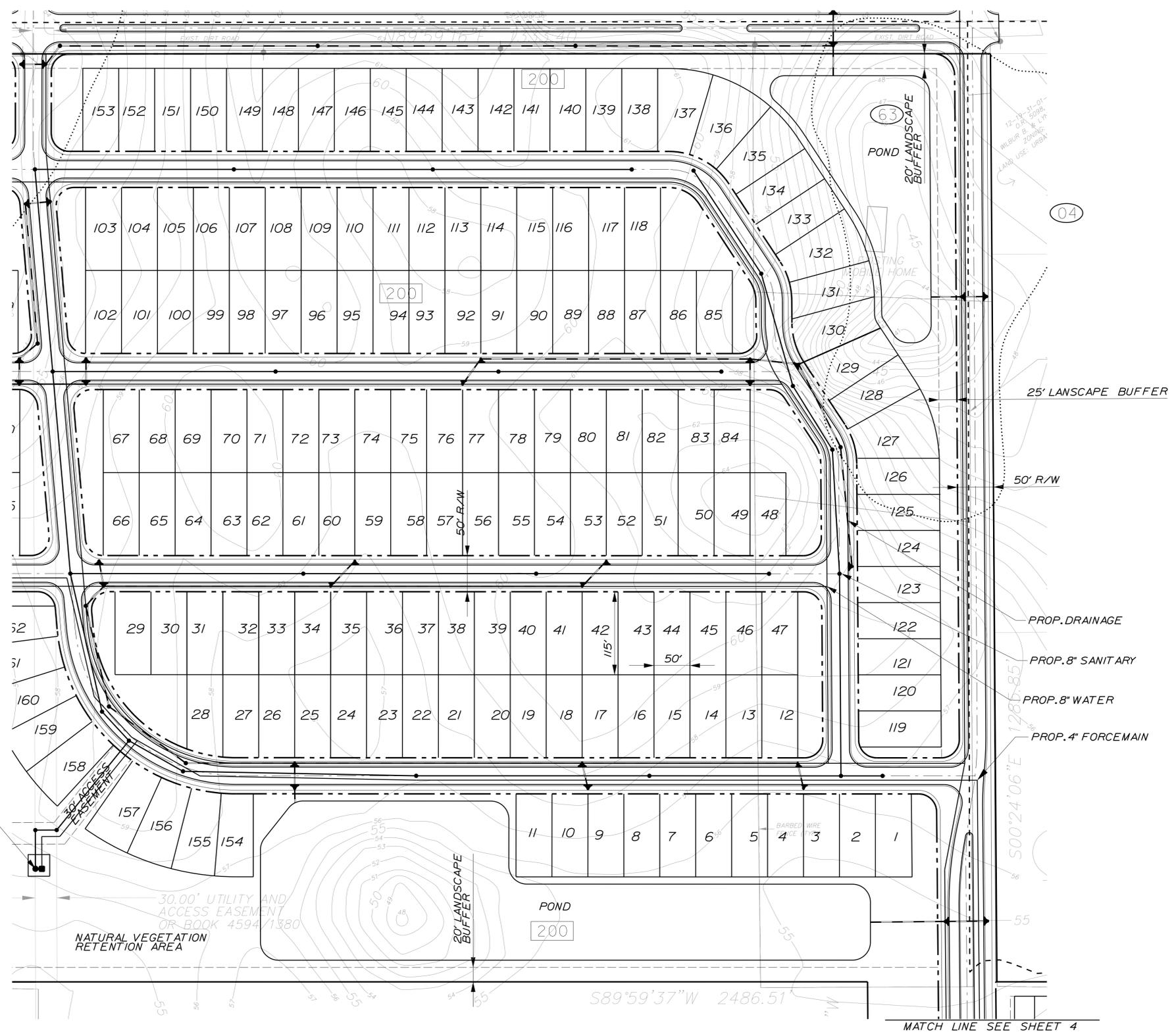
10/5/2015



10/5/2015  
 1:35 PM  
 \\vineland\corkery\vineland\mfp.dgn  
 Fuller - D:\MKT\105176

SEE SHEET 2

SEE SHEET 2



**LEGEND**

DESCRIPTION	EXISTING	PROPOSED
TREE PRESERVATION AREA		
PROPOSED POND		
SANITARY SEWER SYSTEM		
STORM SEWER SYSTEM		
WATER SYSTEM		
FIRE HYDRANT		
LOT NUMBER		
CONTOUR		
EXISTING CONTOUR		
SOIL BOUNDARY		
VEGETATION BOUNDARY		

**SOILS LEGEND**

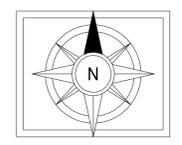
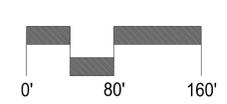
01	APOPKA FINE SAND
04	ASTATULA FINE SAND, 0-8 PERCENT SLOPES
05	ASTATULA FINE SAND
17	DAYTONA SAND, 0-5 PERCENT SLOPES
22	ELECTRA FINE SAND
37	ORSINO FINE SAND
42	PAOLA FINE SAND, 8-17 PERCENT SLOPES
63	TAVARES FINE SAND
99	OPEN WATER

**VEGETATION TABLE**

100	GENERALIZED URBAN
200	GENERALIZED AGRICULTURE
270	ABANDONED FIELDS
412	PINE/XERIC OAK
414	PINE/MESIC OAK
421	XERIC OAK
740	DISTURBED LANDS

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10/5/2015



**VINELAND RESERVE**  
 MASTER DEVELOPMENT PLAN  
 CITY OF DELTONA

**LEGEND**

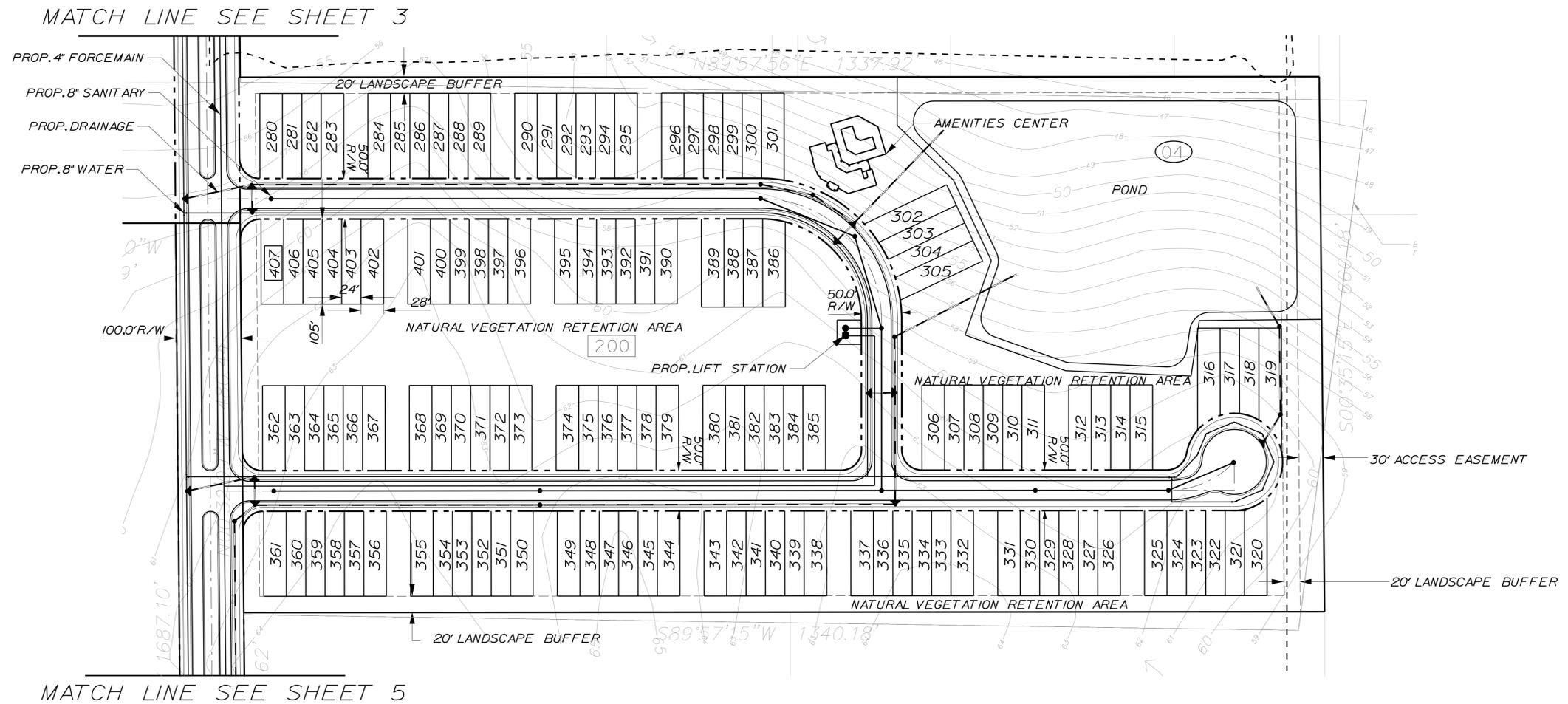
DESCRIPTION	EXISTING	PROPOSED
TREE PRESERVATION AREA		
PROPOSED POND		
SANITARY SEWER SYSTEM		
STORM SEWER SYSTEM		
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FIRE HYDRANT		
LOT NUMBER		
CONTOUR		
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**SOILS LEGEND**

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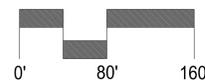
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10/5/2015



**VINELAND RESERVE**  
 MASTER DEVELOPMENT PLAN  
 CITY OF DELTONA

**LEGEND**

DESCRIPTION	EXISTING	PROPOSED
TREE PRESERVATION AREA		
PROPOSED POND		
SANITARY SEWER SYSTEM		
STORM SEWER SYSTEM		
WATER SYSTEM		
FIRE HYDRANT		
LOT NUMBER		
CONTOUR		
EXISTING CONTOUR		
SOIL BOUNDARY		
VEGETATION BOUNDARY		

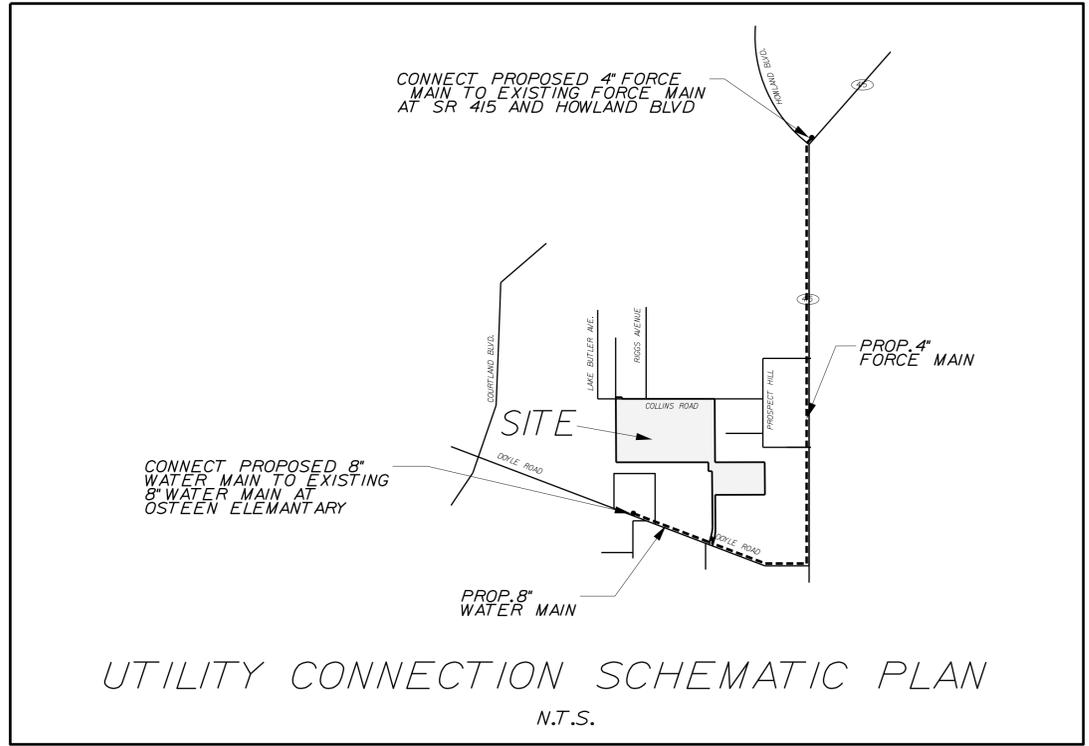
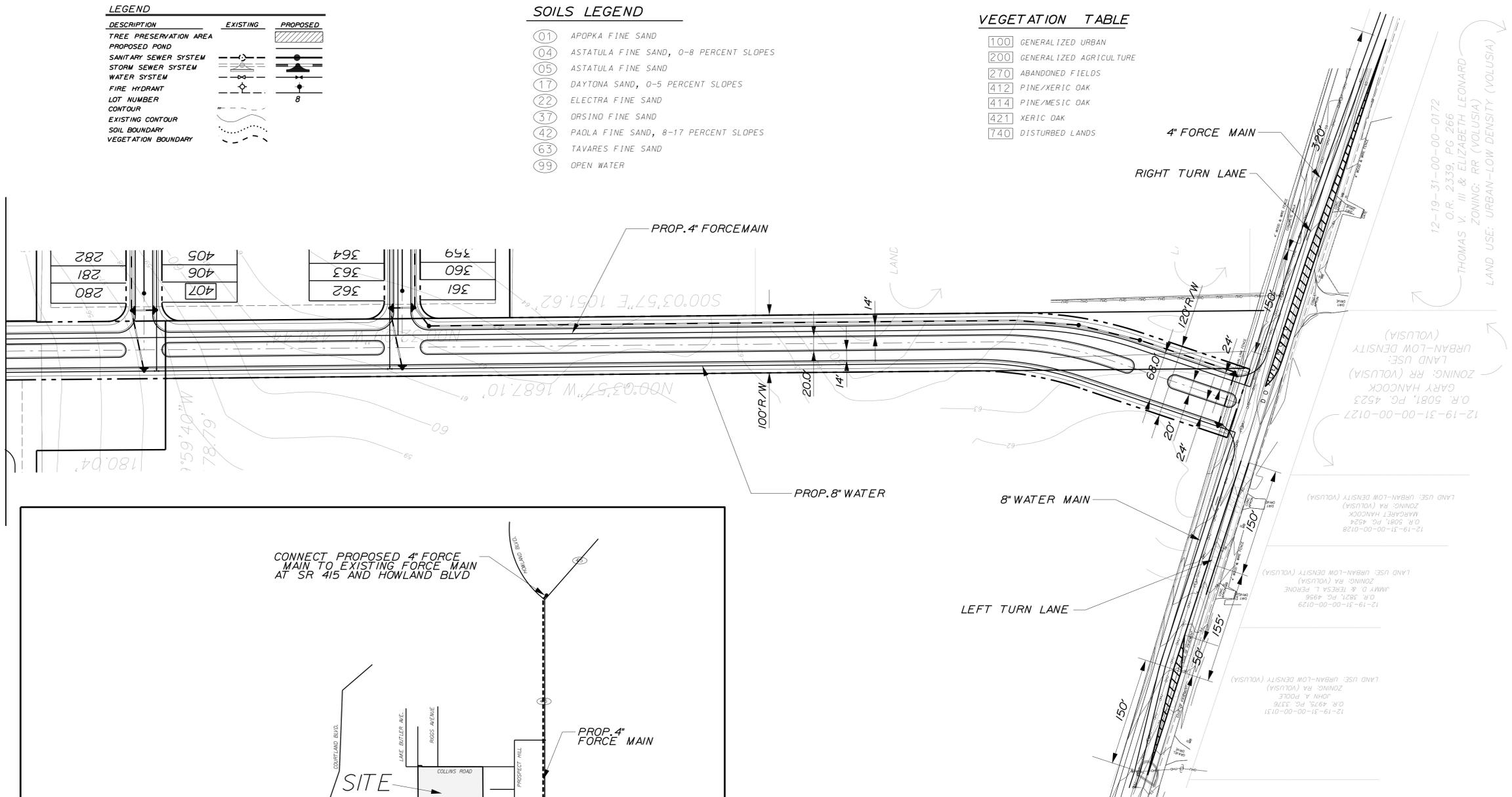
**SOILS LEGEND**

01	APOPKA FINE SAND
04	ASTATULA FINE SAND, 0-8 PERCENT SLOPES
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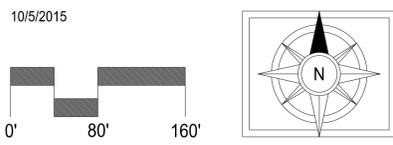
**VEGETATION TABLE**

100	GENERALIZED URBAN
200	GENERALIZED AGRICULTURE
270	ABANDONED FIELDS
412	PINE/XERIC OAK
414	PINE/MESIC OAK
421	XERIC OAK
740	DISTURBED LANDS

MATCH LINE SEE SHEET 4



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**VINELAND RESERVE**  
MASTER DEVELOPMENT PLAN  
CITY OF DELTONA

## **TRAFFIC METHODOLOGY AND REVIEW CORRESPONDENCE**



Ref: 10838

## TECHNICAL MEMORANDUM

**To:** Mr. James Skinner  
**From:** Chris J. Walsh, P.E.  
**Subject:** Traffic Impact Analysis Methodology – Vineland Reserve  
Deltona, Florida  
**Date:** October 28, 2015

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### ***Introduction***

Traffic Engineering Data Solutions, Inc. (TEDS) has been retained to conduct a traffic impact analysis for the Vineland Reserve development located on the north side of Doyle Road approximately 0.46 miles west of State Road 415 in the City of Deltona, Florida (see **Figure 1**). The proposed development will include 279 single-family residential units and 128 townhomes. A preliminary site plan of the proposed development is attached. This letter summarizes the methodology for the traffic impact analysis.

### ***Trip Generation***

The total daily and PM peak-hour trip generation potential for the development was determined based on trip generation equations and rates provided in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual, 9th Edition*. For single-family residential units, Land Use Code 210 (Single-Family Detached Housing) was used. For townhomes, Land Use Code 230 (Residential Condominiums/Townhouse) was used. As summarized in **Table 1**, the proposed development is projected to generate 3,497 total daily trips (1,749 in, 1,748 out) and 338 total PM peak-hour trips (216 in, 122 out).



Aerial Image: Google Earth



**Figure 1**  
**Site Location Map**

**Table 1  
 Trip Generation Summary**

Land Use	Intensity	Units	Daily			PM Peak		
			In	Out	Total	In	Out	Total
Single-Family Detached Housing	279	Dwelling Units	1350	1,349	2,699	167	98	265
Residential Condominium/Townhouse	128	Dwelling Units	399	398	797	49	25	74
Net New External Trips			1,749	1,748	3,497	216	122	339

Single-Family Detached Housing (ITE 9th Edition - Land Use Code 210)

Daily LN (T) = 0.92 x LN (# of DU) + 2.72 50% In 50% Out  
 PM Peak Hour LN (T) = 0.90 x LN (# of DU) + 0.51 63% In 37% Out

Residential Condominium/Townhouse (ITE 9th Edition - Land Use Code 230)

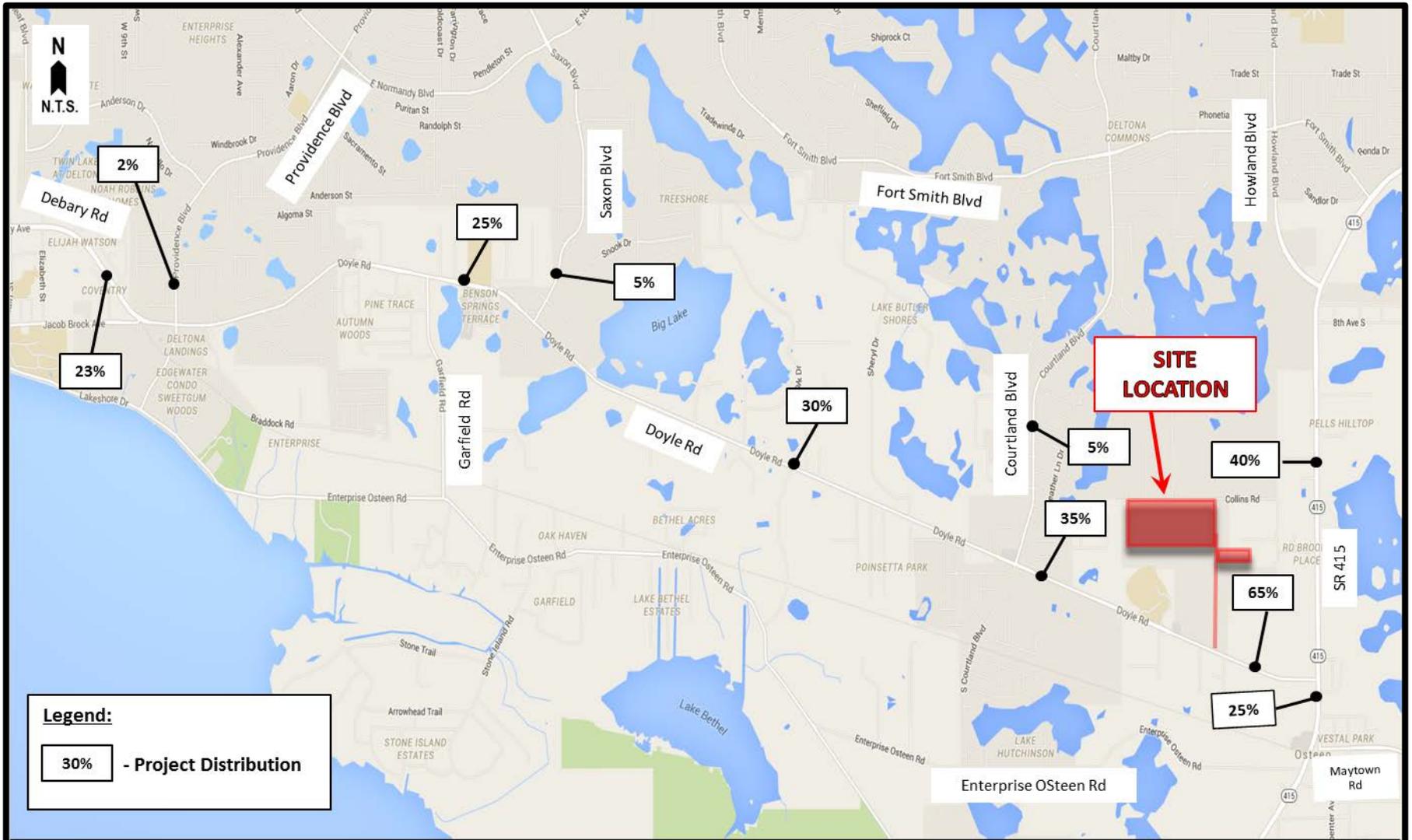
Daily LN (T) = 0.87 x LN (# of DU) + 2.46 50% In 50% Out  
 PM Peak Hour LN (T) = 0.82 x LN (# of DU) + 0.32 67% In 33% Out

**Trip Distribution & Assignment**

A traffic impact analysis was previously conducted in 2006 for the Collingswood Properties and Vineland Reserve developments. The distribution included in the approved TIA included was based on a model distribution. Recognizing that the Vineland Reserve development is still proposed as a residential development, the model distribution from the 2006 TIA was used as the basis for the newly proposed distribution. The proposed trip distribution is shown in **Figure 2** and the 2006 model distribution is attached.

**Study Area**

Because the proposed development is projected to generate more than 300 two-way peak hour external trips, the study area was determined based upon a five-percent level of significance as consistent with the River to Sea Transportation Planning Organization (River to Sea TPO) Transportation Impact Analysis (TIA) Guidelines. A summary of the determination of the five-percent significance area can be found in **Table 2**. The adopted levels of service (LOS) included in **Table 2** were obtained from the City of Deltona’s comprehensive plan and the generalized service volumes based on FDOT’s 2013 Quality/Level of Service Handbook.



Aerial Image: Google Earth



**Figure 4**  
**Trip Distribution Map**

**Table 2**  
**Summary of Significant Impact Determination**

Roadway Segment	Existing Number of Lanes	Adopted Level of Service Standard	Pk-Hr 2-Way Generalized Service Volume	Percent Assignment	Pk-Hr 2-Way Project Trips	Project Trips as % of Service Volume	Impact Exceeds 5%?
<b>State Road 415</b>							
Enterprise-Osteen Road to Doyle Rd	4	E	3,759	25.0%	85	2.26%	No
Doyle Rd to Walmart Dwy	4	E	3,759	40.0%	135	3.59%	No
<b>Doyle Road</b>							
Main Street to Providence Blvd	4	E	3,759	23.0%	78	2.08%	No
Providence Blvd to Garfield Road	2	E	1,230	25.0%	85	6.91%	YES
Garfield Road to Saxon Blvd	2	E	1,230	25.0%	85	6.91%	YES
Saxon Blvd to Courtland Blvd	2	E	1,230	30.0%	101	8.21%	YES
Courtland Blvd to Project Access Dwy	2	E	1,230	35.0%	118	9.59%	YES
Project Access Dwy to SR 415	2	E	1,230	65.0%	220	17.89%	YES
<b>Courtland Boulevard</b>							
Fort Smith Blvd to Doyle Road	2	E	1,150	5.0%	17	1.48%	No
<b>Saxon Boulevard</b>							
Normandy Blvd to Doyle Road	2	E	1,230	5.0%	17	1.38%	No
<b>Providence Boulevard</b>							
Anderson Dr to Doyle Road	2	E	1,020	2.0%	7	0.69%	No

Based on **Table 2**, the following roadway segments will be analyzed:

- Doyle Road, from Providence Boulevard to State Road 415

The study intersections will include the following:

- Doyle Road at Providence Boulevard
- Doyle Road at Saxon Boulevard
- Doyle Road at Courtland Boulevard
- Doyle Road at State Road 415

The PM peak-hour background traffic volumes for the roadway segments will be projected by factoring up existing volumes through the application of vested trips from the City of Deltona, and/or historical growth rates. Project trips will then be added to the future background volumes to project the build out conditions for each roadway segment and intersection.

The existing and future roadway segment and intersection operating conditions will be analyzed for the PM peak hour. The roadway segments will be analyzed by comparing the two-way link volumes to the generalized service volumes. Should the projected volume be less than the generalized service volume then it shall be concluded that the roadway will operate at an acceptable level of service (LOS)

volume then it shall be concluded that the roadway will operate at an acceptable level of service (LOS) standard at build out of the project. In the event the future volume of a roadway exceeds the generalized service volume, TEDS may conduct a more detailed highway/arterial analysis to further refine the level of service evaluation.

Existing and future PM peak-hour intersection operating conditions will be analyzed using the Highway Capacity Software based upon the committed geometry. Existing signal timings and phasing will be used for intersection analyses. A study intersection will be deemed to operate acceptably if the overall intersection LOS meets the adopted LOS standard for the roadways. Per the River to Sea TPO TIA Guidelines, in the event the two intersecting roadways have different LOS standards, then the lower standard shall prevail. For example, if one roadway has a LOS standard of D and the intersecting road has a LOS standard of E, then the overall intersection LOS standard shall be E.

### ***Critical and Near Critical Study Area***

A critical, near critical, and hurricane critical roadway segment is one where the existing daily volume is 90 percent or more of a roadway's service volume at the adopted LOS standard. There are no critical, near critical, and hurricane critical roadway segments identified on Volusia County Traffic Engineering Division's critical/near-critical map within a five-mile travel distance.

### ***Alternative Mode Analysis***

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

### ***Conclusions, Recommendations and Mitigation***

Based upon the results of the analysis, conclusions and recommendations will be prepared. If the TIA identifies deficient roadways/intersections and the project's impacts are non-deminimus, then a plan to mitigate the project's impacts will be provided.

**From:** Chris Walsh [<mailto:cwalsh@teds-fl.com>]  
**Sent:** Tuesday, November 03, 2015 11:02 AM  
**To:** 'Ron Paradise' <[RParadise@deltonafl.gov](mailto:RParadise@deltonafl.gov)>  
**Cc:** 'Chris Bowley' <[CBowley@deltonafl.gov](mailto:CBowley@deltonafl.gov)>; 'Kat Kyp' <[KKyp@deltonafl.gov](mailto:KKyp@deltonafl.gov)>; 'Melissa Winsett' ([mwinsett@volusia.org](mailto:mwinsett@volusia.org)) <[mwinsett@volusia.org](mailto:mwinsett@volusia.org)>  
**Subject:** RE: Vineland Reserve

Good afternoon Ron,

Below are responses to your methodology comments (see in red). Please note that based on comment #4, we have prepared a revised distribution and included it in a revised methodology (basically the only change is the distribution and the significance test table). Also attached is the old approved traffic study for the development which was the basis of the trip distribution in our first methodology.

Melissa, a driveway permit will be needed from the County for a connection to Doyle Road. Attached is the site plan.

Chris

Chris J. Walsh, PE  
Senior Transportation Engineer



Traffic Engineering Data Solutions, Inc.  
80 Spring Vista Drive  
DeBary, Florida 32713  
386.753.0558 (o) 386.801.5682 (c)  
[cwalsh@teds-fl.com](mailto:cwalsh@teds-fl.com)  
[www.teds-fl.com](http://www.teds-fl.com)

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**From:** Ron Paradise [<mailto:RParadise@deltonafl.gov>]  
**Sent:** Thursday, October 29, 2015 11:44 AM  
**To:** Chris Walsh <[cwalsh@teds-fl.com](mailto:cwalsh@teds-fl.com)>  
**Cc:** Chris Bowley <[CBowley@deltonafl.gov](mailto:CBowley@deltonafl.gov)>; Kat Kyp <[KKyp@deltonafl.gov](mailto:KKyp@deltonafl.gov)>; Melissa Winsett ([mwinsett@volusia.org](mailto:mwinsett@volusia.org)) <[mwinsett@volusia.org](mailto:mwinsett@volusia.org)>  
**Subject:** RE: Vineland Reserve

Mr. Walsh, I looked at the methodology and have the following observations/comments?

- 1) The TIA will comport with TPO guidelines – correct? **Correct**
- 2) Need to incorporate some sort of signal warrant oriented analysis at the project entrance and Doyle. Furthermore what improvements will be needed to make that intersection function (i.e. turn lanes, storage, etc.)? **We will first analyze the intersection under STOP sign control. If the intersection operates acceptably, then a signal warrant analysis will not be conducted. If the intersection fails (sidestreet approach does not meet the LOS standard), then a signal warrant analysis will be conducted.**
- 3) Please coordinate with Volusia County Traffic Engineering (Doyle is a County Rd.). **Will do**
- 4) With regard to the traffic splits, what is the rationale behind only 8% of the trips heading south on SR 415? In addition, what percent of traffic will use Courtland Blvd. from Doyle to Ft. Smith? Only 2%? **We had utilized the distribution from the previously approved TIA for the same development (see attachment). However, we are in**

agreement as we would expect more traffic to be to/from the south on SR 415. Based on local knowledge, we propose a revised (new) distribution....see the attached revised methodology.

- 5) Note: the City does have 2015 traffic counts on City t-fare facilities. Will send under separate cover. Thank you, we received your email with the count data.
- 6) If traffic deficiencies are noted, please indicate how those deficiencies will be addressed and by what entity including a funding mechanism. We will utilize mitigation procedures in accordance with the TIA guidelines and City's LDR's (proportionate-share is the typical approach but will work with the City and County on mitigation solutions).

Have a good day.

Ron

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**From:** Chris Walsh [<mailto:cwalsh@teds-fl.com>]  
**Sent:** Thursday, October 29, 2015 10:41 AM  
**To:** Ron Paradise  
**Subject:** Vineland Reserve

Good afternoon Ron,

Attached is a methodology for the TIA for the Vineland Reserve development. Please let me know if you have any questions.

Chris

Chris J. Walsh, PE  
Senior Transportation Engineer



Traffic Engineering Data Solutions, Inc.  
80 Spring Vista Drive  
DeBary, Florida 32713  
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[cwalsh@teds-fl.com](mailto:cwalsh@teds-fl.com)  
[www.teds-fl.com](http://www.teds-fl.com)

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**From:** Vischal Persaud [<mailto:vpersaud@teds-fl.com>]  
**Sent:** Wednesday, October 28, 2015 2:41 PM  
**To:** [cwalsh@teds-fl.com](mailto:cwalsh@teds-fl.com)  
**Subject:** Vineland Reserve

Vischal Persaud, EI  
Transportation Analyst



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DeBary, Florida 32713  
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[vpersaud@teds-fl.com](mailto:vpersaud@teds-fl.com)  
[www.teds-fl.com](http://www.teds-fl.com)

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Florida has a very broad Public Records Law. Virtually all written communications to or from State and Local Officials and employees are public records available to the public and media upon request. The City of Deltona's policy does not differentiate between personal and business emails. This means email messages, including your e-mail address and any attachments and information we receive online might be disclosed to any person or media making a public records request. E-mail sent on the City system will be considered public and will only be withheld from disclosure if deemed confidential or exempt pursuant to State Law. If you are an individual whose identifying information is exempt under 119.071, Florida Statutes, please so indicate in your email or other communication. If you have any questions about the Florida public records law refer to Chapter 119 Florida Statutes.

## **TRAFFIC COUNT DATA PRINTOUTS**

Groups Printed- All Vehicles

Start Time	PROVIDENCE Northbound					PROVIDENCE Southbound					DOYLE Eastbound					DOYLE Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	22	37	12	0	71	14	25	59	0	98	114	142	44	0	300	8	65	11	0	84	553
04:15 PM	31	27	8	0	66	10	34	74	0	118	123	215	68	0	406	8	65	18	0	91	681
04:30 PM	36	40	6	0	82	12	26	62	0	100	175	230	71	2	478	1	89	26	0	116	776
04:45 PM	29	37	7	0	73	11	27	68	0	106	131	231	62	1	425	6	81	9	0	96	700
Total	118	141	33	0	292	47	112	263	0	422	543	818	245	3	1609	23	300	64	0	387	2710
05:00 PM	31	55	9	0	95	12	37	54	0	103	138	199	53	1	391	9	65	10	0	84	673
05:15 PM	20	44	7	0	71	14	23	57	0	94	191	233	65	1	490	5	60	31	3	99	754
05:30 PM	25	64	16	0	105	14	32	53	0	99	159	215	60	1	435	6	65	17	0	88	727
05:45 PM	26	58	8	0	92	7	23	62	2	94	150	180	65	0	395	3	63	16	0	82	663
Total	102	221	40	0	363	47	115	226	2	390	638	827	243	3	1711	23	253	74	3	353	2817
Grand Total	220	362	73	0	655	94	227	489	2	812	1181	1645	488	6	3320	46	553	138	3	740	5527
Apprch %	33.6	55.3	11.1	0		11.6	28	60.2	0.2		35.6	49.5	14.7	0.2		6.2	74.7	18.6	0.4		
Total %	4	6.5	1.3	0	11.9	1.7	4.1	8.8	0	14.7	21.4	29.8	8.8	0.1	60.1	0.8	10	2.5	0.1	13.4	

Start Time	PROVIDENCE Northbound					PROVIDENCE Southbound					DOYLE Eastbound					DOYLE Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	36	40	6	0	82	12	26	62	0	100	175	230	71	2	478	1	89	26	0	116	776
04:45 PM	29	37	7	0	73	11	27	68	0	106	131	231	62	1	425	6	81	9	0	96	700
05:00 PM	31	55	9	0	95	12	37	54	0	103	138	199	53	1	391	9	65	10	0	84	673
05:15 PM	20	44	7	0	71	14	23	57	0	94	191	233	65	1	490	5	60	31	3	99	754
Total Volume	116	176	29	0	321	49	113	241	0	403	635	893	251	5	1784	21	295	76	3	395	2903
% App. Total	36.1	54.8	9	0		12.2	28	59.8	0		35.6	50.1	14.1	0.3		5.3	74.7	19.2	0.8		
PHF	.806	.800	.806	.000	.845	.875	.764	.886	.000	.950	.831	.958	.884	.625	.910	.583	.829	.613	.250	.851	.935

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM					04:15 PM					04:30 PM					04:30 PM					
+0 mins.	31	55	9	0	95	10	34	74	0	118	175	230	71	2	478	1	89	26	0	116	
+15 mins.	20	44	7	0	71	12	26	62	0	100	131	231	62	1	425	6	81	9	0	96	
+30 mins.	25	64	16	0	105	11	27	68	0	106	138	199	53	1	391	9	65	10	0	84	
+45 mins.	26	58	8	0	92	12	37	54	0	103	191	233	65	1	490	5	60	31	3	99	
Total Volume	102	221	40	0	363	45	124	258	0	427	635	893	251	5	1784	21	295	76	3	395	
% App. Total	28.	60.	11	0		10.	29	60.	0		35.	50.	14.	0.3		5.3	74.	19.	0.8		
	1	9				5		4			6	1	1			7	7	2			
PHF	.82	.86	.62	.00	.864	.93	.83	.87	.00	.905	.83	.95	.88	.62	.910	.58	.82	.61	.25		.851
	3	3	5	0		8	8	2	0		1	8	4	5		3	9	3	0		

Groups Printed- Heavy Trucks

Start Time	PROVIDENCE Northbound					PROVIDENCE Southbound					DOYLE Eastbound					DOYLE Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	1	0	1	0	2	1	0	1	0	2	5	2	0	0	7	0	2	0	0	2	13
04:15 PM	0	0	1	0	1	0	0	1	0	1	0	1	0	0	1	0	3	1	0	4	7
04:30 PM	0	1	0	0	1	0	0	1	0	1	1	2	0	0	3	0	0	0	0	0	5
04:45 PM	0	0	0	0	0	0	1	0	0	1	1	0	0	1	2	0	0	0	0	0	3
Total	1	1	2	0	4	1	1	3	0	5	7	5	0	1	13	0	5	1	0	6	28
05:00 PM	0	2	0	0	2	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	4
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	2
*** BREAK ***																					
05:45 PM	0	0	0	0	0	0	0	0	2	2	0	0	1	0	1	0	1	0	0	1	4
Total	0	2	0	0	2	0	1	0	2	3	0	1	1	1	3	0	2	0	0	2	10
Grand Total	1	3	2	0	6	1	2	3	2	8	7	6	1	2	16	0	7	1	0	8	38
Apprch %	16.7	50	33.3	0		12.5	25	37.5	25		43.8	37.5	6.2	12.5		0	87.5	12.5	0		
Total %	2.6	7.9	5.3	0	15.8	2.6	5.3	7.9	5.3	21.1	18.4	15.8	2.6	5.3	42.1	0	18.4	2.6	0	21.1	

Start Time	PROVIDENCE Northbound					PROVIDENCE Southbound					DOYLE Eastbound					DOYLE Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	1	0	1	0	2	1	0	1	0	2	5	2	0	0	7	0	2	0	0	2	13
04:15 PM	0	0	1	0	1	0	0	1	0	1	0	1	0	0	1	0	3	1	0	4	7
04:30 PM	0	1	0	0	1	0	0	1	0	1	1	2	0	0	3	0	0	0	0	0	5
04:45 PM	0	0	0	0	0	0	1	0	0	1	1	0	0	1	2	0	0	0	0	0	3
Total Volume	1	1	2	0	4	1	1	3	0	5	7	5	0	1	13	0	5	1	0	6	28
% App. Total	25	25	50	0		20	20	60	0		53.8	38.5	0	7.7		0	83.3	16.7	0		
PHF	.250	.250	.500	.000	.500	.250	.250	.750	.000	.625	.350	.625	.000	.250	.464	.000	.417	.250	.000	.375	.538

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM					04:00 PM					04:00 PM					04:00 PM				
+0 mins.	1	0	1	0	2	1	0	1	0	2	5	2	0	0	7	0	2	0	0	2
+15 mins.	0	0	1	0	1	0	0	1	0	1	0	1	0	0	1	0	3	1	0	4
+30 mins.	0	1	0	0	1	0	0	1	0	1	1	2	0	0	3	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	1	0	0	1	1	0	0	1	2	0	0	0	0	0
Total Volume	1	1	2	0	4	1	1	3	0	5	7	5	0	1	13	0	5	1	0	6
% App. Total	25	25	50	0		20	20	60	0		53.8	38.5	0	7.7		0	83.3	16.7	0	
PHF	.25	.25	.50	.00	.500	.25	.25	.75	.00	.625	.35	.62	.00	.25	.464	.00	.41	.25	.00	.375
	0	0	0	0		0	0	0	0		0	5	0	0		0	7	0	0	

Groups Printed- ALL VEHICLES

Start Time	SAXON BLVD Northbound					SAXON BLVD Southbound					DOYLE RD Eastbound					DOYLE RD Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	0	0	1	0	1	13	0	21	0	34	41	90	0	0	131	1	48	23	0	72	238
04:15 PM	0	0	0	0	0	20	0	20	0	40	44	73	2	0	119	0	56	19	0	75	234
04:30 PM	0	0	0	0	0	12	0	17	0	29	49	107	0	0	156	0	65	23	0	88	273
04:45 PM	0	0	0	0	0	16	0	16	0	32	44	79	0	0	123	0	43	26	0	69	224
Total	0	0	1	0	1	61	0	74	0	135	178	349	2	0	529	1	212	91	0	304	969
05:00 PM	0	0	1	0	1	15	1	23	0	39	53	100	0	0	153	0	48	23	0	71	264
05:15 PM	0	0	0	0	0	11	0	28	0	39	59	97	0	0	156	0	42	36	0	78	273
05:30 PM	0	0	0	0	0	12	0	31	0	43	54	100	1	0	155	2	48	31	0	81	279
05:45 PM	0	0	0	0	0	17	0	22	0	39	46	91	0	0	137	0	52	28	0	80	256
Total	0	0	1	0	1	55	1	104	0	160	212	388	1	0	601	2	190	118	0	310	1072
Grand Total	0	0	2	0	2	116	1	178	0	295	390	737	3	0	1130	3	402	209	0	614	2041
Apprch %	0	0	100	0		39.3	0.3	60.3	0		34.5	65.2	0.3	0		0.5	65.5	34	0		
Total %	0	0	0.1	0	0.1	5.7	0	8.7	0	14.5	19.1	36.1	0.1	0	55.4	0.1	19.7	10.2	0	30.1	

Start Time	SAXON BLVD Northbound					SAXON BLVD Southbound					DOYLE RD Eastbound					DOYLE RD Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
05:00 PM	0	0	1	0	1	15	1	23	0	39	53	100	0	0	153	0	48	23	0	71	264
05:15 PM	0	0	0	0	0	11	0	28	0	39	59	97	0	0	156	0	42	36	0	78	273
05:30 PM	0	0	0	0	0	12	0	31	0	43	54	100	1	0	155	2	48	31	0	81	279
05:45 PM	0	0	0	0	0	17	0	22	0	39	46	91	0	0	137	0	52	28	0	80	256
Total Volume	0	0	1	0	1	55	1	104	0	160	212	388	1	0	601	2	190	118	0	310	1072
% App. Total	0	0	100	0		34.4	0.6	65	0		35.3	64.6	0.2	0		0.6	61.3	38.1	0		
PHF	.000	.000	.250	.000	.250	.809	.250	.839	.000	.930	.898	.970	.250	.000	.963	.250	.913	.819	.000	.957	.961

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:	04:00 PM					05:00 PM					05:00 PM					05:00 PM				
+0 mins.	0	0	1	0	1	15	1	23	0	39	53	100	0	0	153	0	48	23	0	71
+15 mins.	0	0	0	0	0	11	0	28	0	39	59	97	0	0	156	0	42	36	0	78
+30 mins.	0	0	0	0	0	12	0	31	0	43	54	100	1	0	155	2	48	31	0	81
+45 mins.	0	0	0	0	0	17	0	22	0	39	46	91	0	0	137	0	52	28	0	80
Total Volume	0	0	1	0	1	55	1	104	0	160	212	388	1	0	601	2	190	118	0	310
% App. Total	0	0	100	0		34.4	0.6	65	0		35.3	64.6	0.2	0		0.6	61.3	38.1	0	
PHF	.000	.000	.250	.000	.250	.809	.250	.839	.000	.930	.898	.970	.250	.000	.963	.250	.913	.819	.000	.957

Groups Printed- Heavy Trucks

Start Time	SAXON BLVD Northbound					SAXON BLVD Southbound					DOYLE RD Eastbound					DOYLE RD Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	0	1	0	0	1	6
04:15 PM	0	0	0	0	0	0	0	1	0	1	0	2	0	0	2	0	2	1	0	3	6
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	3
*** BREAK ***																					
Total	0	0	0	0	0	0	0	1	0	1	0	9	0	0	9	0	3	2	0	5	15
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
*** BREAK ***																					
05:45 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	2
Total	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	2	0	0	2	4
Grand Total	0	0	0	0	0	0	0	2	0	2	0	10	0	0	10	0	5	2	0	7	19
Apprch %	0	0	0	0		0	0	100	0		0	100	0	0		0	71.4	28.6	0		
Total %	0	0	0	0		0	0	10.5	0	10.5	0	52.6	0	0	52.6	0	26.3	10.5	0	36.8	

Start Time	SAXON BLVD Northbound					SAXON BLVD Southbound					DOYLE RD Eastbound					DOYLE RD Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	0	1	0	0	1	6
04:15 PM	0	0	0	0	0	0	0	1	0	1	0	2	0	0	2	0	2	1	0	3	6
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	3
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	1	0	1	0	9	0	0	9	0	3	2	0	5	15
% App. Total	0	0	0	0		0	0	100	0		0	100	0	0		0	60	40	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.450	.000	.000	.450	.000	.375	.500	.000	.417	.625

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM					04:00 PM					04:00 PM					04:00 PM				
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	0	1	0	0	1
+15 mins.	0	0	0	0	0	0	0	1	0	1	0	2	0	0	2	0	2	1	0	3
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	1	0	1	0	9	0	0	9	0	3	2	0	5
% App. Total	0	0	0	0		0	0	100	0		0	100	0	0		0	60	40	0	
PHF	.00	.00	.00	.00	.000	.00	.00	.25	.00	.250	.00	.45	.00	.00	.450	.00	.37	.50	.00	.417

Groups Printed- All Vehicles

Start Time	COURTLAND BLVD Northbound					COURTLAND BLVD Southbound					DOYLE RD Eastbound					DOYLE RD Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	8	9	5	0	22	5	9	33	0	47	38	36	15	0	89	8	51	18	0	77	235
04:15 PM	8	7	0	1	16	5	12	23	2	42	44	48	9	0	101	1	48	22	0	71	230
04:30 PM	4	8	2	0	14	13	10	19	0	42	45	50	3	0	98	4	76	19	0	99	253
04:45 PM	14	15	0	2	31	10	8	20	0	38	53	34	7	0	94	7	54	26	2	89	252
Total	34	39	7	3	83	33	39	95	2	169	180	168	34	0	382	20	229	85	2	336	970
05:00 PM	8	12	4	0	24	7	15	13	0	35	62	34	6	0	102	3	59	38	0	100	261
05:15 PM	12	18	5	0	35	16	5	25	0	46	68	32	14	0	114	7	56	32	0	95	290
05:30 PM	10	16	1	3	30	9	10	32	2	53	67	26	12	0	105	6	50	31	0	87	275
05:45 PM	14	14	6	0	34	9	13	23	0	45	53	29	13	0	95	9	57	23	0	89	263
Total	44	60	16	3	123	41	43	93	2	179	250	121	45	0	416	25	222	124	0	371	1089
Grand Total	78	99	23	6	206	74	82	188	4	348	430	289	79	0	798	45	451	209	2	707	2059
Apprch %	37.9	48.1	11.2	2.9		21.3	23.6	54	1.1		53.9	36.2	9.9	0		6.4	63.8	29.6	0.3		
Total %	3.8	4.8	1.1	0.3	10	3.6	4	9.1	0.2	16.9	20.9	14	3.8	0	38.8	2.2	21.9	10.2	0.1	34.3	

Start Time	COURTLAND BLVD Northbound					COURTLAND BLVD Southbound					DOYLE RD Eastbound					DOYLE RD Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	8	12	4	0	24	7	15	13	0	35	62	34	6	0	102	3	59	38	0	100	261
05:15 PM	12	18	5	0	35	16	5	25	0	46	68	32	14	0	114	7	56	32	0	95	290
05:30 PM	10	16	1	3	30	9	10	32	2	53	67	26	12	0	105	6	50	31	0	87	275
05:45 PM	14	14	6	0	34	9	13	23	0	45	53	29	13	0	95	9	57	23	0	89	263
Total Volume	44	60	16	3	123	41	43	93	2	179	250	121	45	0	416	25	222	124	0	371	1089
% App. Total	35.8	48.8	13	2.4		22.9	24	52	1.1		60.1	29.1	10.8	0		6.7	59.8	33.4	0		
PHF	.786	.833	.667	.250	.879	.641	.717	.727	.250	.844	.919	.890	.804	.000	.912	.694	.941	.816	.000	.928	.939

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM					05:00 PM					05:00 PM					04:30 PM				
+0 mins.	8	12	4	0	24	7	15	13	0	35	62	34	6	0	102	4	76	19	0	99
+15 mins.	12	18	5	0	35	16	5	25	0	46	68	32	14	0	114	7	54	26	2	89
+30 mins.	10	16	1	3	30	9	10	32	2	53	67	26	12	0	105	3	59	38	0	100
+45 mins.	14	14	6	0	34	9	13	23	0	45	53	29	13	0	95	7	56	32	0	95
Total Volume	44	60	16	3	123	41	43	93	2	179	250	121	45	0	416	21	245	115	2	383
% App. Total	35.8	48.8	13	2.4		22.9	24	52	1.1		60.1	29.1	10.8	0		5.5	64	30	0.5	
PHF	.786	.833	.667	.250	.879	.641	.717	.727	.250	.844	.919	.890	.804	.000	.912	.750	.800	.750	.250	.958
	6	3	7	0		1	7	7	0		9	0	4	0		0	6	7	0	

Groups Printed- Heavy Trucks

Start Time	COURTLAND BLVD Northbound					COURTLAND BLVD Southbound					DOYLE RD Eastbound					DOYLE RD Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	0	0	0	0	0	0	2	1	0	3	0	4	0	0	4	0	2	0	0	2	9
04:15 PM	0	0	0	1	1	0	0	1	2	3	0	2	0	0	2	0	0	0	0	0	6
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	2
04:45 PM	0	0	0	2	2	0	0	0	0	0	0	1	0	0	1	0	0	0	2	2	5
Total	0	0	0	3	3	0	2	2	2	6	1	7	0	0	8	0	3	0	2	5	22
05:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
05:30 PM	0	0	0	3	3	0	0	0	1	1	0	0	0	0	0	0	1	0	0	1	5
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	0	0	3	3	0	0	1	1	2	0	1	0	0	1	0	2	0	0	2	8
Grand Total	0	0	0	6	6	0	2	3	3	8	1	8	0	0	9	0	5	0	2	7	30
Apprch %	0	0	0	100		0	25	37.5	37.5		11.1	88.9	0	0		0	71.4	0	28.6		
Total %	0	0	0	20	20	0	6.7	10	10	26.7	3.3	26.7	0	0	30	0	16.7	0	6.7	23.3	

Start Time	COURTLAND BLVD Northbound					COURTLAND BLVD Southbound					DOYLE RD Eastbound					DOYLE RD Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	0	0	0	0	0	0	2	1	0	3	0	4	0	0	4	0	2	0	0	2	9
04:15 PM	0	0	0	1	1	0	0	1	2	3	0	2	0	0	2	0	0	0	0	0	6
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	2
04:45 PM	0	0	0	2	2	0	0	0	0	0	0	1	0	0	1	0	0	0	2	2	5
Total Volume	0	0	0	3	3	0	2	2	2	6	1	7	0	0	8	0	3	0	2	5	22
% App. Total	0	0	0	100		0	33.3	33.3	33.3		12.5	87.5	0	0		0	60	0	40		
PHF	.000	.000	.000	.375	.375	.000	.250	.500	.250	.500	.250	.438	.000	.000	.500	.000	.375	.000	.250	.625	.611

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:00 PM

+0 mins.	04:45 PM					04:00 PM					04:00 PM					04:00 PM					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
+0 mins.	0	0	0	2	2	0	2	1	0	3	0	4	0	0	4	0	2	0	0	2	
+15 mins.	0	0	0	0	0	0	0	1	2	3	0	2	0	0	2	0	0	0	0	0	
+30 mins.	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	
+45 mins.	0	0	0	3	3	0	0	0	0	0	0	1	0	0	1	0	0	0	2	2	
Total Volume	0	0	0	5	5	0	2	2	2	6	1	7	0	0	8	0	3	0	2	5	
% App. Total	0	0	0	100		0	33.3	33.3	33.3		12.5	87.5	0	0		0	60	0	40		
PHF	.00	.00	.00	.41	.417	.00	.25	.50	.25	.500	.25	.43	.00	.00	.500	.00	.37	.00	.25	.625	
	0	0	0	7		0	0	0	0		0	8	0	0		0	5	0	0		

Groups Printed- All Vehicles

Start Time	SR 415 Northbound					SR 415 Southbound					DOYLE RD Eastbound					DOYLE RD Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	49	138	0	0	187	2	97	18	0	117	29	0	34	0	63	0	0	0	0	0	367
04:15 PM	49	151	0	0	200	2	99	23	0	124	24	0	37	0	61	0	0	0	0	0	385
04:30 PM	63	182	0	0	245	0	108	30	0	138	20	0	46	0	66	0	0	0	0	0	449
04:45 PM	62	174	0	0	236	1	83	23	0	107	19	0	29	0	48	0	0	0	0	0	391
Total	223	645	0	0	868	5	387	94	0	486	92	0	146	0	238	0	0	0	0	0	1592
05:00 PM	79	184	0	0	263	1	113	15	0	129	23	0	29	0	52	0	0	0	0	0	444
05:15 PM	69	198	0	0	267	4	109	18	0	131	19	0	31	0	50	0	0	0	0	0	448
05:30 PM	66	200	0	0	266	2	116	17	0	135	10	0	34	1	45	0	0	0	0	0	446
05:45 PM	82	223	0	0	305	2	79	17	0	98	14	0	27	0	41	0	0	0	0	0	444
Total	296	805	0	0	1101	9	417	67	0	493	66	0	121	1	188	0	0	0	0	0	1782
Grand Total	519	1450	0	0	1969	14	804	161	0	979	158	0	267	1	426	0	0	0	0	0	3374
Apprch %	26.4	73.6	0	0		1.4	82.1	16.4	0		37.1	0	62.7	0.2		0	0	0	0	0	
Total %	15.4	43	0	0	58.4	0.4	23.8	4.8	0	29	4.7	0	7.9	0	12.6	0	0	0	0	0	

Start Time	SR 415 Northbound					SR 415 Southbound					DOYLE RD Eastbound					DOYLE RD Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	79	184	0	0	263	1	113	15	0	129	23	0	29	0	52	0	0	0	0	0	444
05:15 PM	69	198	0	0	267	4	109	18	0	131	19	0	31	0	50	0	0	0	0	0	448
05:30 PM	66	200	0	0	266	2	116	17	0	135	10	0	34	1	45	0	0	0	0	0	446
05:45 PM	82	223	0	0	305	2	79	17	0	98	14	0	27	0	41	0	0	0	0	0	444
Total Volume	296	805	0	0	1101	9	417	67	0	493	66	0	121	1	188	0	0	0	0	0	1782
% App. Total	26.9	73.1	0	0		1.8	84.6	13.6	0		35.1	0	64.4	0.5		0	0	0	0	0	
PHF	.902	.902	.000	.000	.902	.563	.899	.931	.000	.913	.717	.000	.890	.250	.904	.000	.000	.000	.000	.000	.994

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

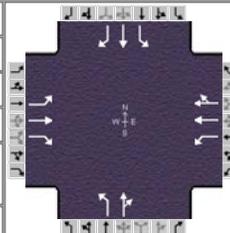
	05:00 PM					04:30 PM					04:00 PM					04:00 PM					
+0 mins.	79	184	0	0	263	0	108	30	0	138	29	0	34	0	63	0	0	0	0	0	0
+15 mins.	69	198	0	0	267	1	83	23	0	107	24	0	37	0	61	0	0	0	0	0	0
+30 mins.	66	200	0	0	266	1	113	15	0	129	20	0	46	0	66	0	0	0	0	0	0
+45 mins.	82	223	0	0	305	4	109	18	0	131	19	0	29	0	48	0	0	0	0	0	0
Total Volume	296	805	0	0	1101	6	413	86	0	505	92	0	146	0	238	0	0	0	0	0	0
% App. Total	26.	73.	0	0		1.2	81.	17	0		38.	0	61.	0		0	0	0	0	0	
	9	1				8					7		3								
PHF	.90	.90	.00	.00	.902	.37	.91	.71	.00	.915	.79	.00	.79	.00	.902	.00	.00	.00	.00	.00	.000
	2	2	0	0		5	4	7	0		3	0	3	0		0	0	0	0	0	



## **EXISTING CONDITIONS HCS PRINTOUTS**

# HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency		Analysis Date	Nov 2, 2015	Duration, h	1.00
Analyst		Time Period	5pm-6pm	Area Type	Other
Jurisdiction		Analysis Year	2015 Existing Condition	PHF	1.00
Intersection	Providence Blvd			Analysis Period	1 > 7:00
File Name	Doyle at Providence Existing.xus				
Project Description	Existing Condition PM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	638	827	243	23	253	74	102	221	40	47	115	226

Signal Information													
Cycle, s	91.5	Reference Phase	2										
Offset, s	0	Reference Point	Begin										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	2.2	5.8	27.2	3.5	2.3	15.6			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.5	4.5	4.5	4.0	0.0	4.0			
				Red	2.5	2.5	2.5	3.0	0.0	3.0			

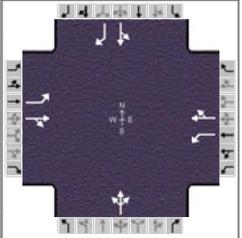
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	3.0	1.1	4.0	1.1	4.0	1.1	3.0
Phase Duration, s	22.0	47.0	9.2	34.2	12.8	24.8	10.5	22.6
Change Period, (Y+R <sub>c</sub> ), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Allow Headway (MAH), s	3.0	3.0	3.0	3.0	3.2	3.2	3.1	3.2
Queue Clearance Time (g <sub>s</sub> ), s	17.0	42.0	2.8	8.6	6.1	14.4	4.0	14.5
Green Extension Time (g <sub>e</sub> ), s	0.0	0.0	0.0	2.9	0.1	1.0	0.1	1.0
Phase Call Probability	1.00	1.00	0.44	1.00	0.93	1.00	0.70	1.00
Max Out Probability	1.00	1.00	0.00	0.00	0.00	0.02	0.00	0.03

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	638	827	243	23	168	159	102	261		47	115	226
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1881	1586	1810	1900	1710	1774	1809		1774	1863	1596
Queue Service Time (g <sub>s</sub> ), s	15.0	40.0	9.3	0.8	6.3	6.6	4.1	12.4		2.0	5.0	12.5
Cycle Queue Clearance Time (g <sub>c</sub> ), s	15.0	40.0	9.3	0.8	6.3	6.6	4.1	12.4		2.0	5.0	12.5
Capacity (c), veh/h	616	822	693	134	565	508	310	353		212	317	271
Volume-to-Capacity Ratio (X)	1.035	1.006	0.351	0.171	0.298	0.312	0.329	0.740		0.221	0.363	0.833
Available Capacity (c <sub>a</sub> ), veh/h	616	822	693	387	830	747	489	494		629	509	436
Back of Queue (Q), veh/ln (50th percentile)	24.9	31.4	3.1	0.3	2.7	2.5	1.7	5.6		0.8	2.2	5.0
Overflow Queue (Q <sub>3</sub> ), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Queue Storage Ratio (RQ) (50th percentile)	1.04	0.47	0.39	0.07	0.04	0.04	0.44	0.09		0.21	0.04	1.25
Uniform Delay (d <sub>1</sub> ), s/veh	17.9	25.8	17.1	25.0	24.8	24.9	27.1	34.7		30.1	33.6	36.7
Incremental Delay (d <sub>2</sub> ), s/veh	112.1	68.8	0.1	0.2	0.1	0.1	0.2	1.9		0.2	0.3	3.7
Initial Queue Delay (d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Control Delay (d), s/veh	130.0	94.6	17.3	25.2	24.9	25.0	27.3	36.6		30.3	33.9	40.5
Level of Service (LOS)	F	F	B	C	C	C	C	D		C	C	D
Approach Delay, s/veh / LOS	96.8	F		25.0	C		34.0	C		37.3	D	
Intersection Delay, s/veh / LOS	71.5						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	2.4	B	2.4	B	2.8	C
Bicycle LOS Score / LOS	3.3	C	0.8	A	1.1	A	1.1	A

# HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information		
Agency		Duration, h	1.00			
Analyst		Analysis Date	Nov 2, 2015		Area Type	Other
Jurisdiction		Time Period	5pm-6pm		PHF	1.00
Intersection	Saxon Blvd	Analysis Year	2015		Analysis Period	1 > 7:00
File Name	Doyle at Saxon Existing.xus					
Project Description	Existing PM Peak Hour					



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	212	388	1	2	190	118	0	0	1	55	1	104

Signal Information				Phase Diagram								
Cycle, s	48.4	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
Green	5.2	17.0	6.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.5	4.5	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	2.0	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

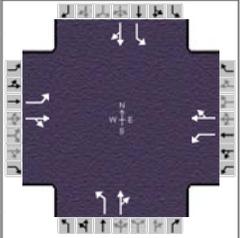
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2		6		8		4
Case Number	1.0	4.0		6.3		8.0		7.0
Phase Duration, s	11.7	35.2		23.5		13.2		13.2
Change Period, (Y+R <sub>c</sub> ), s	6.5	6.5		6.5		7.0		7.0
Max Allow Headway (MAH), s	3.1	3.0		3.0		3.2		3.2
Queue Clearance Time (g <sub>s</sub> ), s	5.2	7.1		8.7		2.0		5.0
Green Extension Time (g <sub>e</sub> ), s	0.3	1.3		1.3		0.3		0.2
Phase Call Probability	0.94	1.00		1.00		0.88		0.88
Max Out Probability	0.00	0.00		0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	212	389		2	308			0			56	104
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1880		1010	1760			0			1448	1579
Queue Service Time (g <sub>s</sub> ), s	3.2	5.1		0.1	6.7			0.0			1.7	3.0
Cycle Queue Clearance Time (g <sub>c</sub> ), s	3.2	5.1		0.1	6.7			0.0			1.7	3.0
Capacity (c), veh/h	575	1114		504	619						333	202
Volume-to-Capacity Ratio (X)	0.369	0.349		0.004	0.498			0.000			0.168	0.514
Available Capacity (c <sub>a</sub> ), veh/h	943	1750		1089	1638						746	653
Back of Queue (Q), veh/ln (50th percentile)	0.8	1.1		0.0	2.0						0.5	1.0
Overflow Queue (Q <sub>3</sub> ), veh/ln	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Queue Storage Ratio (RQ) (50th percentile)	0.06	0.02		0.00	0.03			0.00			0.01	0.06
Uniform Delay (d <sub>1</sub> ), s/veh	7.8	5.1		10.2	12.3						19.1	19.7
Incremental Delay (d <sub>2</sub> ), s/veh	0.1	0.1		0.0	0.2			0.0			0.1	0.8
Initial Queue Delay (d <sub>3</sub> ), s/veh	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Control Delay (d), s/veh	8.0	5.1		10.2	12.6						19.2	20.4
Level of Service (LOS)	A	A		B	B						B	C
Approach Delay, s/veh / LOS	6.1		A	12.5		B	18.4		B	20.0		B
Intersection Delay, s/veh / LOS	10.1						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.0	B	2.3	B	2.3	B	2.3	B
Bicycle LOS Score / LOS	1.5	A	1.0	A	0.5	A	0.8	A

# HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency		Duration, h	1.00		
Analyst		Analysis Date	Nov 2, 2015	Area Type	Other
Jurisdiction		Time Period	5pm-6pm	PHF	1.00
Intersection	Courtland Blvd	Analysis Year	2015	Analysis Period	1 > 7:00
File Name	Doyle at Courtland Existing.xus				
Project Description	PM Peak Hour Existing				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	250	121	45	25	222	124	44	60	16	41	43	93

Signal Information				Signal Phases								
Cycle, s	46.6	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	6.3	12.0	7.3	0.0	0.0	0.0	0.0	0.0
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.5	4.5	4.0	0.0	0.0	0.0	0.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.5	2.5	3.0	0.0	0.0	0.0	0.0	0.0

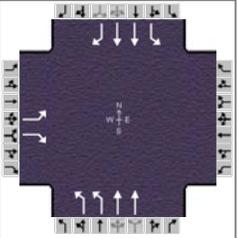
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6		2		4		8
Case Number	1.0	4.0		6.3		6.0		6.0
Phase Duration, s	13.3	32.3		19.0		14.3		14.3
Change Period, (Y+R <sub>c</sub> ), s	7.0	7.0		7.0		7.0		7.0
Max Allow Headway (MAH), s	3.1	3.1		3.1		3.2		3.2
Queue Clearance Time (g <sub>s</sub> ), s	6.2	4.2		10.4		7.0		5.4
Green Extension Time (g <sub>e</sub> ), s	0.3	1.0		1.0		0.5		0.5
Phase Call Probability	0.96	1.00		1.00		0.98		0.98
Max Out Probability	0.01	0.00		0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	7	4	14	3	8	18
Adjusted Flow Rate (v), veh/h	250	166		25	346		44	76		41	136	
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1794		1239	1767		1273	1831		1344	1692	
Queue Service Time (g <sub>s</sub> ), s	4.2	2.2		0.7	8.4		1.5	1.7		1.3	3.4	
Cycle Queue Clearance Time (g <sub>c</sub> ), s	4.2	2.2		0.7	8.4		5.0	1.7		3.0	3.4	
Capacity (c), veh/h	479	972		473	455		261	289		317	267	
Volume-to-Capacity Ratio (X)	0.522	0.171		0.053	0.760		0.169	0.263		0.129	0.510	
Available Capacity (c <sub>a</sub> ), veh/h	817	1154		952	1137		743	982		826	907	
Back of Queue (Q), veh/ln (50th percentile)	1.2	0.5		0.2	2.8		0.4	0.6		0.3	1.2	
Overflow Queue (Q <sub>3</sub> ), veh/ln	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Queue Storage Ratio (RQ) (50th percentile)	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
Uniform Delay (d <sub>1</sub> ), s/veh	10.2	5.4		13.1	16.0		20.3	17.3		18.6	18.0	
Incremental Delay (d <sub>2</sub> ), s/veh	0.3	0.0		0.0	1.0		0.1	0.2		0.1	0.6	
Initial Queue Delay (d <sub>3</sub> ), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (d), s/veh	10.5	5.4		13.1	17.0		20.4	17.4		18.7	18.6	
Level of Service (LOS)	B	A		B	B		C	B		B	B	
Approach Delay, s/veh / LOS	8.5		A	16.7		B	18.5		B	18.6		B
Intersection Delay, s/veh / LOS	14.1						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.2	B	2.3	B	2.3	B	2.3	B
Bicycle LOS Score / LOS	1.2	A	1.1	A	0.7	A	0.8	A

# HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	1.00				
Analyst		Analysis Date	Nov 2, 2015		Area Type	Other	
Jurisdiction		Time Period	5pm-6pm		PHF	1.00	
Intersection	Doyle Rd		Analysis Year	2015		Analysis Period	1 > 7:00
File Name	SR 415 at Doyle Existing.xus						
Project Description	Existing PM Peak Hour						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	66		121				296	805		9	417	67

Signal Information				Phase Timings (s)						Phase Diagrams				
Cycle, s	90.0	Reference Phase	2	Green	1.0	2.4	53.3	8.8	0.0	0.0	1	2	3	4
Offset, s	0	Reference Point	End	Yellow	4.5	4.5	4.5	4.0	0.0	0.0	5	6	7	8
Uncoordinated	No	Simult. Gap E/W	On	Red	2.0	2.0	2.0	1.0	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On											

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8			1	6	5	2
Case Number		9.0			2.0	4.0	2.0	3.0
Phase Duration, s		13.8			16.4	68.7	7.5	59.8
Change Period, (Y+R <sub>c</sub> ), s		5.0			6.5	6.5	6.5	6.5
Max Allow Headway (MAH), s		3.2			3.1	0.0	3.1	0.0
Queue Clearance Time (g <sub>s</sub> ), s		8.7			9.4		2.4	
Green Extension Time (g <sub>e</sub> ), s		0.2			0.5	0.0	0.0	0.0
Phase Call Probability		0.99			1.00		0.20	
Max Out Probability		0.05			0.00		0.00	

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3		18				1	6		5	2	12
Adjusted Flow Rate (v), veh/h	66		121				296	805		9	417	67
Adjusted Saturation Flow Rate (s), veh/h/ln	1792		1594				1740	1773		1810	1773	1610
Queue Service Time (g <sub>s</sub> ), s	3.1		6.7				7.4	8.2		0.4	4.9	1.6
Cycle Queue Clearance Time (g <sub>c</sub> ), s	3.1		6.7				7.4	8.2		0.4	4.9	1.6
Capacity (c), veh/h	175		155				384	2452		20	2100	953
Volume-to-Capacity Ratio (X)	0.378		0.779				0.770	0.328		0.444	0.199	0.070
Available Capacity (c <sub>a</sub> ), veh/h	299		266				763	2452		397	2100	953
Back of Queue (Q), veh/ln (50th percentile)	1.3		2.7				3.1	2.4		0.2	1.7	0.5
Overflow Queue (Q <sub>3</sub> ), veh/ln	0.0		0.0				0.0	0.0		0.0	0.0	0.0
Queue Storage Ratio (RQ) (50th percentile)	0.06		0.12				0.24	0.04		0.05	0.03	0.04
Uniform Delay (d <sub>1</sub> ), s/veh	38.1		39.7				38.9	5.5		44.2	8.5	7.8
Incremental Delay (d <sub>2</sub> ), s/veh	0.5		3.2				1.3	0.4		5.7	0.2	0.1
Initial Queue Delay (d <sub>3</sub> ), s/veh	0.0		0.0				0.0	0.0		0.0	0.0	0.0
Control Delay (d), s/veh	38.6		42.9				40.2	5.9		49.9	8.7	8.0
Level of Service (LOS)	D		D				D	A		D	A	A
Approach Delay, s/veh / LOS	41.4		D		0.0		15.1	B		9.3		A
Intersection Delay, s/veh / LOS	16.3						B					

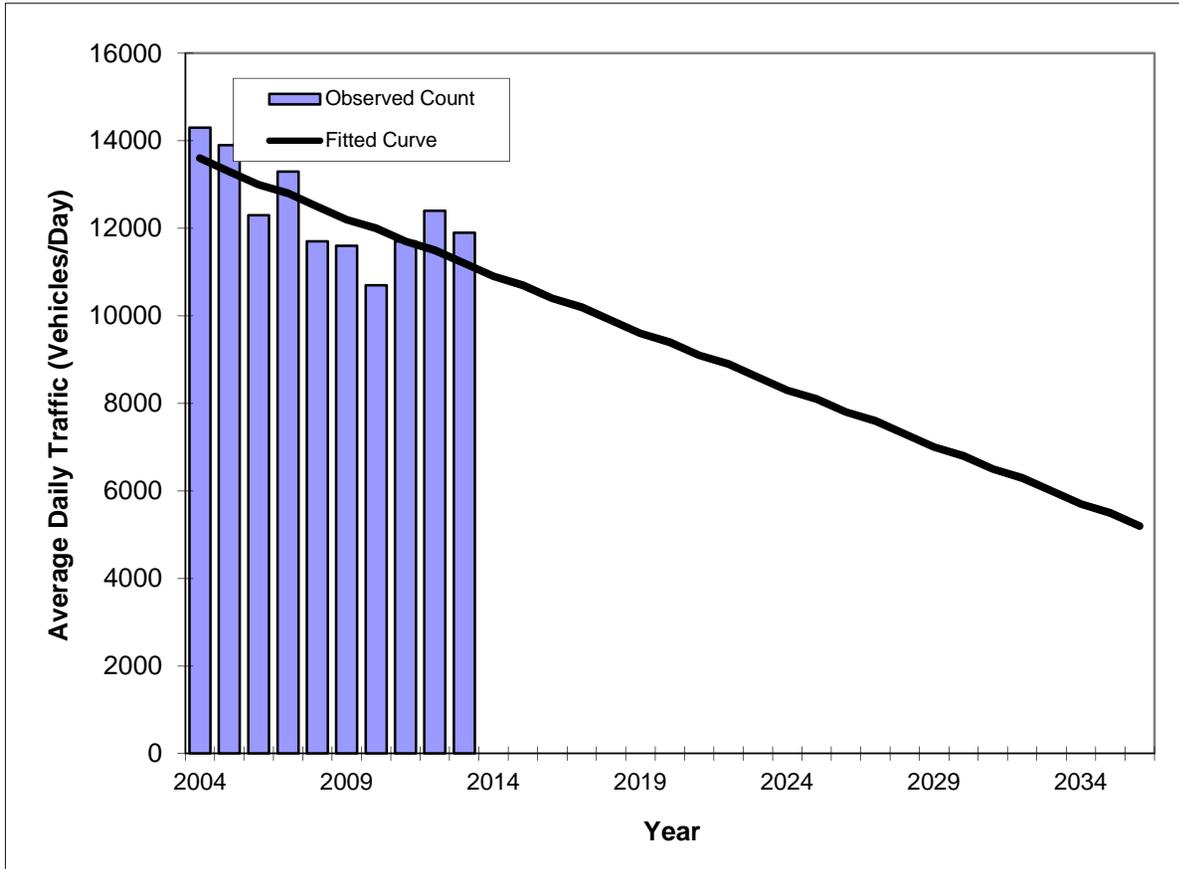
Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.0	C	3.0	C	1.9	A	2.7	B
Bicycle LOS Score / LOS		F			1.4	A	0.9	A

## **HISTORICAL TRENDS SPREADSHEETS**

# TRAFFIC TRENDS

## Doyle Rd -- Providence Blvd

<b>County:</b>	Volusia
<b>Station #:</b>	485
<b>Highway:</b>	Doyle Rd



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2004	14300	13600
2005	13900	13300
2006	12300	13000
2007	13300	12800
2008	11700	12500
2009	11600	12200
2010	10700	12000
2011	11700	11700
2012	12400	11500
2013	11900	11200
<b>2014 Opening Year Trend</b>		
2014	N/A	10900
<b>2015 Mid-Year Trend</b>		
2015	N/A	10700
<b>2016 Design Year Trend</b>		
2016	N/A	10400
<b>TRANPLAN Forecasts/Trends</b>		

**\*\* Annual Trend Increase:**      -261  
**Trend R-squared:**                    49.0%  
**Trend Annual Historic Growth Rate:**   -1.96%  
**Trend Growth Rate (2013 to Design Year):**   -2.38%  
**Printed:**                                11-Nov-15

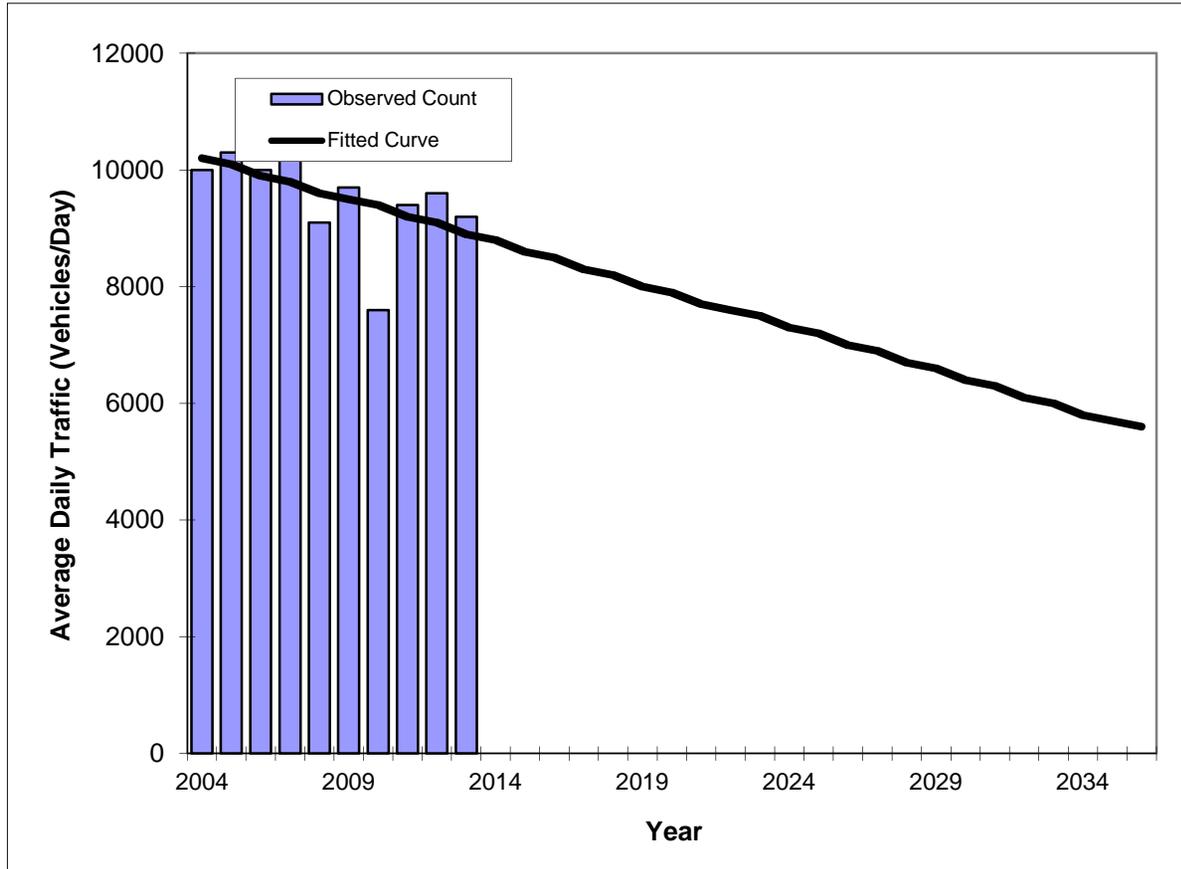
**Straight Line Growth Option**

\*Axle-Adjusted

# TRAFFIC TRENDS

## Doyle Rd -- Saxon Blvd

<b>County:</b>	Volusia
<b>Station #:</b>	530
<b>Highway:</b>	Doyle Rd



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2004	10000	10200
2005	10300	10100
2006	10000	9900
2007	10800	9800
2008	9100	9600
2009	9700	9500
2010	7600	9400
2011	9400	9200
2012	9600	9100
2013	9200	8900
<b>2014 Opening Year Trend</b>		
2014	N/A	8800
<b>2015 Mid-Year Trend</b>		
2015	N/A	8600
<b>2016 Design Year Trend</b>		
2016	N/A	8500
<b>TRANPLAN Forecasts/Trends</b>		

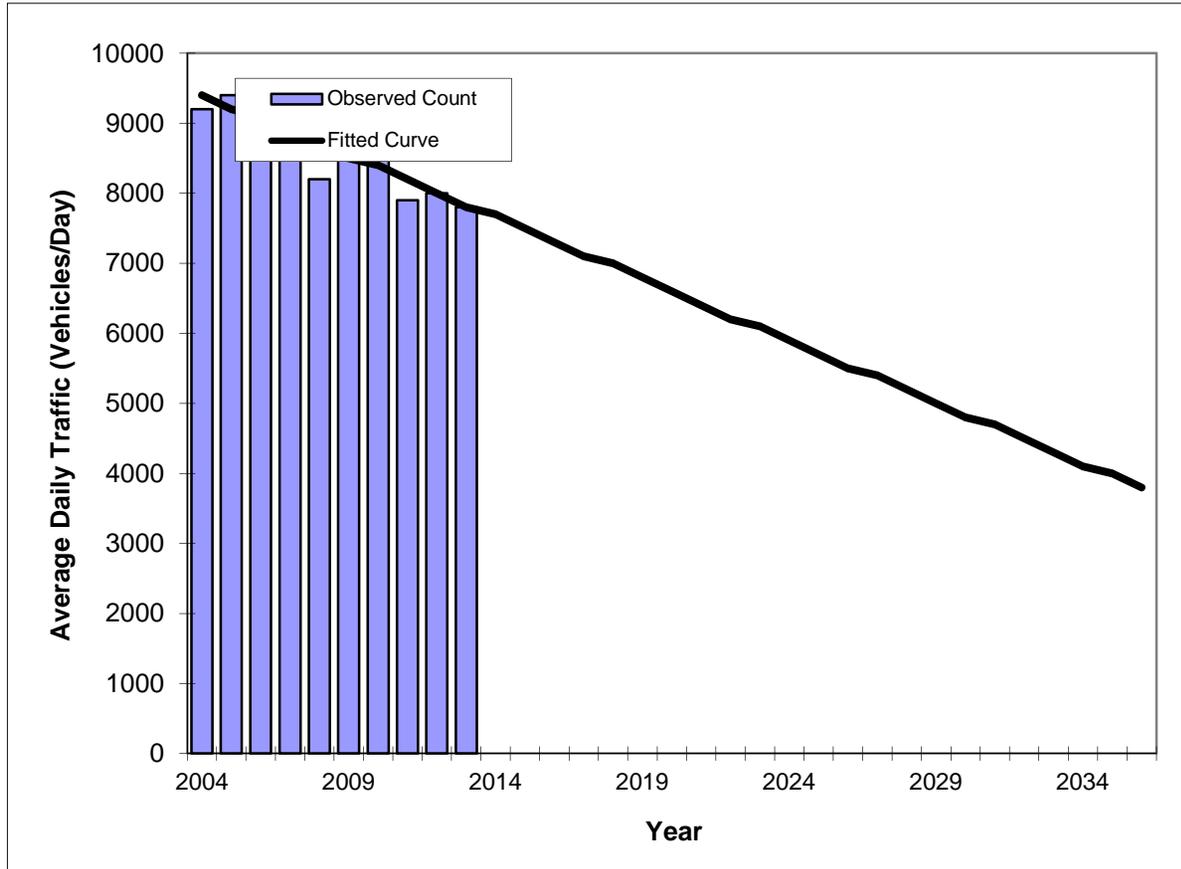
\*\* Annual Trend Increase: -146  
 Trend R-squared: 26.3%  
 Trend Annual Historic Growth Rate: -1.42%  
 Trend Growth Rate (2013 to Design Year): -1.50%  
 Printed: 11-Nov-15  
**Straight Line Growth Option**

\*Axle-Adjusted

# TRAFFIC TRENDS

## Doyle Rd -- Courtland Blvd

<b>County:</b>	Volusia
<b>Station #:</b>	531
<b>Highway:</b>	Doyle Rd



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2004	9200	9400
2005	9400	9200
2006	9200	9100
2007	9000	8900
2008	8200	8700
2009	8900	8500
2010	8700	8400
2011	7900	8200
2012	8000	8000
2013	7800	7800
<b>2014 Opening Year Trend</b>		
2014	N/A	7700
<b>2015 Mid-Year Trend</b>		
2015	N/A	7500
<b>2016 Design Year Trend</b>		
2016	N/A	7300
<b>TRANPLAN Forecasts/Trends</b>		

**\*\* Annual Trend Increase:**      -176  
**Trend R-squared:**                    78.7%  
**Trend Annual Historic Growth Rate:**   -1.89%  
**Trend Growth Rate (2013 to Design Year):** -2.14%  
 Printed: 11-Nov-15

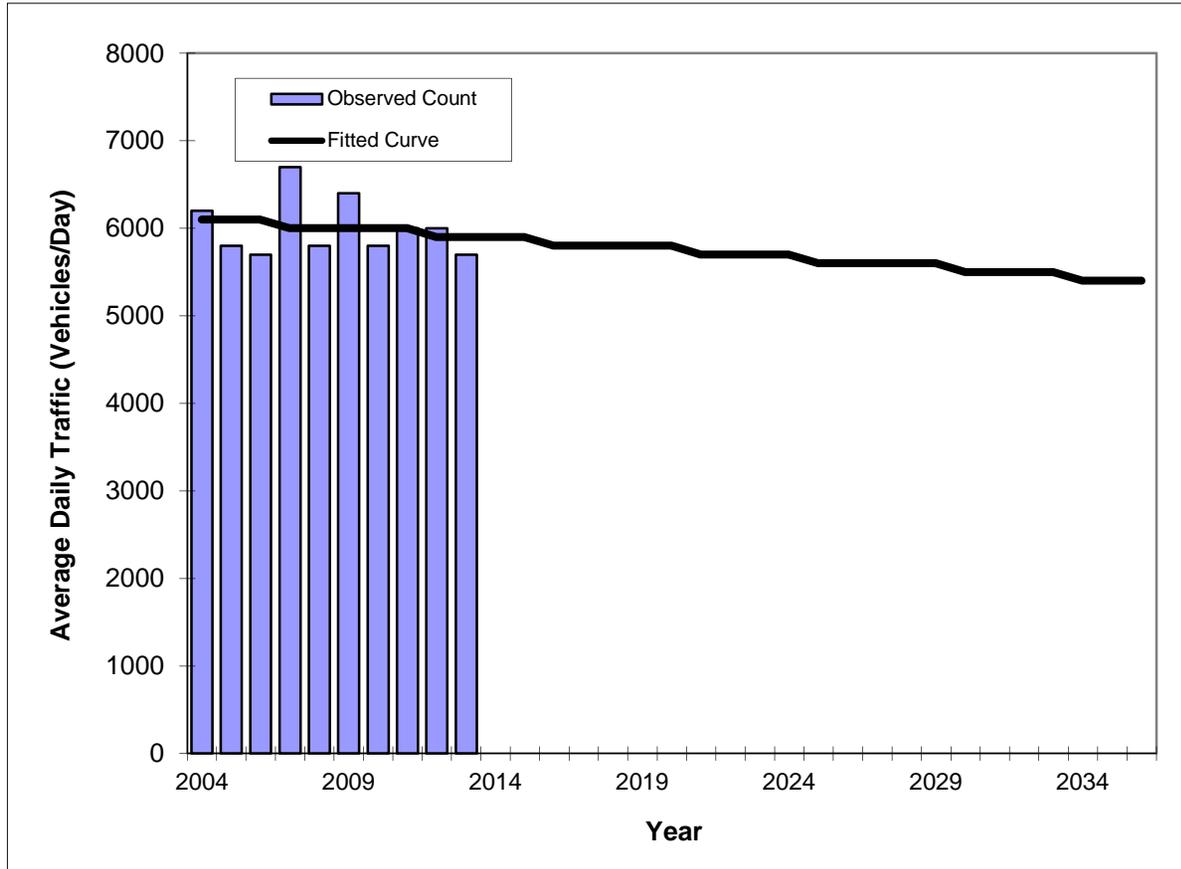
**Straight Line Growth Option**

\*Axle-Adjusted

# TRAFFIC TRENDS

## Doyle Rd -- SR 415

<b>County:</b>	Volusia
<b>Station #:</b>	533
<b>Highway:</b>	Doyle Rd



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2004	6200	6100
2005	5800	6100
2006	5700	6100
2007	6700	6000
2008	5800	6000
2009	6400	6000
2010	5800	6000
2011	6000	6000
2012	6000	5900
2013	5700	5900
<b>2014 Opening Year Trend</b>		
2014	N/A	5900
<b>2015 Mid-Year Trend</b>		
2015	N/A	5900
<b>2016 Design Year Trend</b>		
2016	N/A	5800
<b>TRANPLAN Forecasts/Trends</b>		

**\*\* Annual Trend Increase:** -22  
**Trend R-squared:** 4.2%  
**Trend Annual Historic Growth Rate:** -0.36%  
**Trend Growth Rate (2013 to Design Year):** -0.56%  
 Printed: 11-Nov-15

**Straight Line Growth Option**

\*Axle-Adjusted

# **TURNING MOVEMENT WORKSHEETS**

## Turning Movement Worksheet - PM Peak Hour

State Road 415 at Doyle Road

	SR 415			SR 415			Doyle Road			Doyle Road		
	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
<b>Existing</b>												
<b>Existing Volume</b>	296	805	0	9	417	67	66	0	121	0	0	0
<b>Count year</b>	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015
<b>Pk Season Factor</b>	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<b>Adjust Exist Volume</b>	296	805	0	9	417	67	66	0	121	0	0	0
<b>Future Background</b>												
<b>Vested Trips</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>Growth (%)</b>	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
<b>Growth (year)</b>	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017
<b>Growth (volume)</b>	6	16	0	0	8	1	1	0	2	0	0	0
<b>Applied Growth</b>	6	16	0	0	8	1	1	0	2	0	0	0
<b>Volume</b>	302	821	0	9	425	68	67	0	123	0	0	0
<b>New External Project Trips</b>												
<b>% In</b>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Volume In</b>	54	0	0	0	0	86	0	0	0	0	0	0
<b>% Out</b>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Volume Out</b>	0	0	0	0	0	0	49	0	30	0	0	0
<b>Total Volume</b>	54	0	0	0	0	86	49	0	30	0	0	0
<b>Total</b>												
<b>Total</b>	356	821	0	9	425	154	116	0	153	0	0	0

## Turning Movement Worksheet - PM Peak Hour

Courtland Blvd at Doyle Road

	Courtland Blvd			Courtlnad Blvd			Doyle Road			Doyle Road		
	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
<b>Existing</b>												
<b>Existing Volume</b>	44	60	16	41	43	93	250	121	45	25	222	124
<b>Count year</b>	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015
<b>Pk Season Factor</b>	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<b>Adjust Exist Volume</b>	44	60	16	41	43	93	250	121	45	25	222	124
<b>Future Background</b>												
<b>Vested Trips</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>Growth (%)</b>	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
<b>Growth (year)</b>	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017
<b>Growth (volume)</b>	1	1	0	1	1	2	5	2	1	1	4	2
<b>Applied Growth</b>	1	1	0	1	1	2	5	2	1	1	4	2
<b>Volume</b>	45	61	16	42	44	95	255	123	46	26	226	126
<b>New External Project Trips</b>												
<b>% In</b>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Volume In</b>	0	0	0	11	0	0	0	65	0	0	0	0
<b>% Out</b>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Volume Out</b>	0	0	0	0	0	0	0	0	0	0	37	6
<b>Total Volume</b>	0	0	0	11	0	0	0	65	0	0	37	6
<b>Total</b>												
<b>Total</b>	45	61	16	53	44	95	255	188	46	26	263	132

## Turning Movement Worksheet - PM Peak Hour

Saxon Blvd at Doyle Road

	Saxon Blvd			Saxon Blvd			Doyle Road			Doyle Road		
	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
<b>Existing</b>												
<b>Existing Volume</b>	0	0	1	55	1	104	212	388	1	2	190	118
<b>Count year</b>	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015
<b>Pk Season Factor</b>	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<b>Adjust Exist Volume</b>	0	0	1	55	1	104	212	388	1	2	190	118
<b>Future Background</b>												
<b>Vested Trips</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>Growth (%)</b>	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
<b>Growth (year)</b>	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017
<b>Growth (volume)</b>	0	0	0	1	0	2	4	8	0	0	4	2
<b>Applied Growth</b>	0	0	0	1	0	2	4	8	0	0	4	2
<b>Volume</b>	0	0	1	56	1	106	216	396	1	2	194	120
<b>New External Project Trips</b>												
<b>% In</b>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Volume In</b>	0	0	0	11	0	0	0	54	0	0	0	0
<b>% Out</b>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Volume Out</b>	0	0	0	0	0	0	0	0	0	0	31	6
<b>Total Volume</b>	0	0	0	11	0	0	0	54	0	0	31	6
<b>Total</b>												
<b>Total</b>	0	0	1	67	1	106	216	450	1	2	225	126

## Turning Movement Worksheet - PM Peak Hour

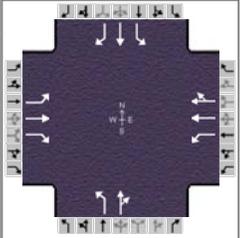
Providence Blvd at Doyle Road

	Providence Blvd			Providence blvd			Doyle Road			Doyle Road		
	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
<b>Existing</b>												
Existing Volume	102	221	40	47	115	226	638	827	243	23	253	74
Count year	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015
Pk Season Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adjust Exist Volume	102	221	40	47	115	226	638	827	243	23	253	74
<b>Future Background</b>												
Vested Trips	0	0	0	0	0	0	0	0	0	0	0	0
Growth (%)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Growth (year)	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017
Growth (volume)	2	4	1	1	2	5	13	17	5	0	5	1
Applied Growth	2	4	1	1	2	5	13	17	5	0	5	1
Volume	104	225	41	48	117	231	651	844	248	23	258	75
<b>New External Project Trips</b>												
% In	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 In	0	0	0	4	0	0	0	50	0	0	0	0
% Out	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 Out	0	0	0	0	0	0	0	0	0	0	29	2
Total Volume	0	0	0	4	0	0	0	50	0	0	29	2
<b>Total</b>												
<b>Total</b>	104	225	41	52	117	231	651	894	248	23	287	77

## **FUTURE CONDITIONS HCS PRINTOUTS**

# HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency		Analysis Date	Nov 2, 2015	Duration, h	1.00
Analyst		Time Period	5pm-6pm	Area Type	Other
Jurisdiction		Analysis Year	2015 Existing Condition	PHF	1.00
Intersection	Providence Blvd			Analysis Period	1 > 7:00
File Name	Doyle at Providence Future.xus				
Project Description	Future Condition PM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	651	904	248	23	287	77	104	225	41	52	117	231

Signal Information				Signal Timing (s)								Signal Phases												
Cycle, s	92.0	Reference Phase	2	Green	2.2	5.8	27.2	3.7	2.2	15.9	Yellow	4.5	4.5	4.5	4.0	0.0	4.0	Red	2.5	2.5	2.5	3.0	0.0	3.0
Offset, s	0	Reference Point	Begin																					
Uncoordinated	Yes	Simult. Gap E/W	On																					
Force Mode	Fixed	Simult. Gap N/S	On																					

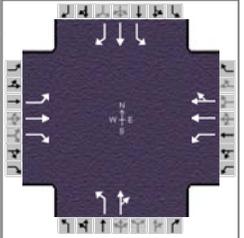
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	3.0	1.1	4.0	1.1	4.0	1.1	3.0
Phase Duration, s	22.0	47.0	9.2	34.2	12.9	25.1	10.7	22.9
Change Period, (Y+R <sub>c</sub> ), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Allow Headway (MAH), s	3.0	3.0	3.0	3.0	3.2	3.2	3.1	3.2
Queue Clearance Time (g <sub>s</sub> ), s	17.0	42.0	2.8	9.4	6.2	14.7	4.2	14.9
Green Extension Time (g <sub>e</sub> ), s	0.0	0.0	0.0	3.3	0.1	1.0	0.1	1.0
Phase Call Probability	1.00	1.00	0.44	1.00	0.93	1.00	0.74	1.00
Max Out Probability	1.00	1.00	0.00	0.00	0.00	0.03	0.00	0.03

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	651	904	248	23	188	176	104	266		52	117	231
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1881	1586	1810	1900	1721	1774	1809		1774	1863	1596
Queue Service Time (g <sub>s</sub> ), s	15.0	40.0	9.6	0.8	7.1	7.4	4.2	12.7		2.2	5.1	12.9
Cycle Queue Clearance Time (g <sub>c</sub> ), s	15.0	40.0	9.6	0.8	7.1	7.4	4.2	12.7		2.2	5.1	12.9
Capacity (c), veh/h	596	818	689	133	562	509	313	356		214	322	276
Volume-to-Capacity Ratio (X)	1.093	1.106	0.360	0.173	0.334	0.347	0.332	0.746		0.243	0.363	0.837
Available Capacity (c <sub>a</sub> ), veh/h	596	818	689	384	826	748	488	491		625	506	434
Back of Queue (Q), veh/ln (50th percentile)	38.0	63.7	3.2	0.3	3.0	2.9	1.8	5.7		0.9	2.3	5.2
Overflow Queue (Q <sub>3</sub> ), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Queue Storage Ratio (RQ) (50th percentile)	1.58	0.94	0.40	0.07	0.05	0.05	0.45	0.10		0.23	0.04	1.30
Uniform Delay (d <sub>1</sub> ), s/veh	17.8	26.0	17.4	25.2	25.3	25.4	27.0	34.8		30.0	33.6	36.8
Incremental Delay (d <sub>2</sub> ), s/veh	196.8	211.0	0.1	0.2	0.1	0.2	0.2	2.3		0.2	0.3	4.6
Initial Queue Delay (d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Control Delay (d), s/veh	214.6	237.0	17.6	25.4	25.4	25.6	27.2	37.1		30.2	33.8	41.4
Level of Service (LOS)	F	F	B	C	C	C	C	D		C	C	D
Approach Delay, s/veh / LOS	198.7	F		25.5	C		34.3	C		37.7	D	
Intersection Delay, s/veh / LOS	133.8						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	2.4	B	2.4	B	2.8	C
Bicycle LOS Score / LOS	3.5	C	0.8	A	1.1	A	1.1	A

# HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency		Analysis Date	Nov 2, 2015	Duration, h	1.00
Analyst		Time Period	5pm-6pm	Area Type	Other
Jurisdiction		Analysis Year	2015 Existing Condition	PHF	1.00
Intersection	Providence Blvd			Analysis Period	1 > 7:00
File Name	Doyle at Providence Future-Optimized.xus				
Project Description	Future Condition PM Peak Hour (Optimized)				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	651	904	248	23	287	77	104	225	41	52	117	231

Signal Information														
Cycle, s	114.6	Reference Phase	2											
Offset, s	0	Reference Point	Begin											
Uncoordinated	Yes	Simult. Gap E/W	On	Green	2.6	12.2	38.4	4.1	3.1	19.2				
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.5	4.5	4.5	4.0	0.0	4.0				
				Red	2.5	2.5	2.5	3.0	0.0	3.0				

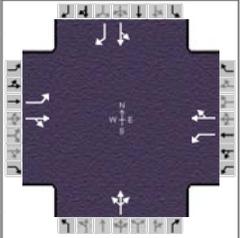
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	3.0	1.1	4.0	1.1	4.0	1.1	3.0
Phase Duration, s	28.8	64.6	9.6	45.4	14.1	29.3	11.1	26.2
Change Period, (Y+R <sub>c</sub> ), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Allow Headway (MAH), s	3.0	3.0	3.0	3.0	3.2	3.2	3.1	3.2
Queue Clearance Time (g <sub>s</sub> ), s	21.2	54.8	2.9	10.7	7.3	17.9	4.8	18.3
Green Extension Time (g <sub>e</sub> ), s	0.6	2.7	0.0	3.3	0.1	0.9	0.1	0.9
Phase Call Probability	1.00	1.00	0.52	1.00	0.96	1.00	0.81	1.00
Max Out Probability	0.66	0.21	0.00	0.00	0.00	0.15	0.00	0.17

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	651	904	248	23	187	177	104	266		52	117	231
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1881	1589	1810	1900	1726	1774	1809		1774	1863	1586
Queue Service Time (g <sub>s</sub> ), s	19.2	52.8	10.5	0.9	8.3	8.7	5.3	15.9		2.8	6.4	16.3
Cycle Queue Clearance Time (g <sub>c</sub> ), s	19.2	52.8	10.5	0.9	8.3	8.7	5.3	15.9		2.8	6.4	16.3
Capacity (c), veh/h	677	946	800	131	639	581	316	352		188	312	266
Volume-to-Capacity Ratio (X)	0.961	0.955	0.310	0.176	0.293	0.304	0.329	0.755		0.277	0.375	0.868
Available Capacity (c <sub>a</sub> ), veh/h	728	1065	900	484	1076	978	437	394		511	406	346
Back of Queue (Q), veh/ln (50th percentile)	14.9	27.4	3.6	0.4	3.7	3.5	2.3	7.7		1.2	2.9	7.5
Overflow Queue (Q <sub>3</sub> ), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Queue Storage Ratio (RQ) (50th percentile)	0.62	0.41	0.45	0.09	0.06	0.06	0.59	0.13		0.31	0.05	1.88
Uniform Delay (d <sub>1</sub> ), s/veh	17.2	27.3	16.8	29.0	28.0	28.2	34.1	43.6		38.3	42.4	46.5
Incremental Delay (d <sub>2</sub> ), s/veh	35.2	22.8	0.1	0.2	0.1	0.1	0.2	6.2		0.3	0.3	16.3
Initial Queue Delay (d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Control Delay (d), s/veh	52.4	50.0	16.9	29.2	28.1	28.3	34.3	49.9		38.6	42.7	62.8
Level of Service (LOS)	D	D	B	C	C	C	C	D		D	D	E
Approach Delay, s/veh / LOS	46.3		D	28.3		C	45.5		D	53.8		D
Intersection Delay, s/veh / LOS	44.9						D					

MultiModal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.7	A	1.9	A	1.9	A	1.9	A
Bicycle LOS Score / LOS	3.5	C	0.8	A	1.1	A	1.1	A

# HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information		
Agency		Duration, h	1.00			
Analyst		Analysis Date	Nov 2, 2015		Area Type	Other
Jurisdiction		Time Period	5pm-6pm		PHF	1.00
Intersection	Saxon Blvd	Analysis Year	2015		Analysis Period	1 > 7:00
File Name	Doyle at Saxon Future.xus					
Project Description	Future PM Peak Hour					



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	216	450	1	2	225	126	0	0	1	67	1	106

Signal Information				Signal Phases									
Cycle, s	48.6	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	5.3	17.0	6.3	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.5	4.5	4.5	0.0	0.0	0.0			
				Red	2.0	2.0	2.5	0.0	0.0	0.0			

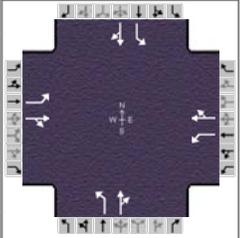
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2		6		8		4
Case Number	1.0	4.0		6.3		8.0		7.0
Phase Duration, s	11.8	35.3		23.5		13.3		13.3
Change Period, (Y+R <sub>c</sub> ), s	6.5	6.5		6.5		7.0		7.0
Max Allow Headway (MAH), s	3.1	3.0		3.0		3.2		3.2
Queue Clearance Time (g <sub>s</sub> ), s	5.3	8.3		9.8		2.0		5.0
Green Extension Time (g <sub>e</sub> ), s	0.3	1.5		1.5		0.3		0.3
Phase Call Probability	0.95	1.00		1.00		0.91		0.91
Max Out Probability	0.00	0.00		0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	216	451		2	351			0			68	106
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1880		954	1767			0			1446	1579
Queue Service Time (g <sub>s</sub> ), s	3.3	6.3		0.1	7.8			0.0			2.0	3.0
Cycle Queue Clearance Time (g <sub>c</sub> ), s	3.3	6.3		0.1	7.8			0.0			2.1	3.0
Capacity (c), veh/h	541	1113		482	618						336	206
Volume-to-Capacity Ratio (X)	0.399	0.405		0.004	0.568			0.000			0.203	0.515
Available Capacity (c <sub>a</sub> ), veh/h	903	1741		1032	1636						741	649
Back of Queue (Q), veh/ln (50th percentile)	0.9	1.3		0.0	2.4						0.6	1.0
Overflow Queue (Q <sub>3</sub> ), veh/ln	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Queue Storage Ratio (RQ) (50th percentile)	0.06	0.02		0.00	0.04			0.00			0.01	0.06
Uniform Delay (d <sub>1</sub> ), s/veh	8.2	5.3		10.3	12.8						19.3	19.7
Incremental Delay (d <sub>2</sub> ), s/veh	0.2	0.1		0.0	0.3			0.0			0.1	0.7
Initial Queue Delay (d <sub>3</sub> ), s/veh	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Control Delay (d), s/veh	8.4	5.4		10.3	13.1						19.4	20.4
Level of Service (LOS)	A	A		B	B						B	C
Approach Delay, s/veh / LOS	6.4		A	13.1		B	18.4		B	20.0		C
Intersection Delay, s/veh / LOS	10.4						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.0	B	2.3	B	2.3	B	2.3	B
Bicycle LOS Score / LOS	1.6	A	1.1	A	0.5	A	0.8	A

# HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information		
Agency		Duration, h	1.00			
Analyst		Analysis Date	Nov 2, 2015		Area Type	Other
Jurisdiction		Time Period	5pm-6pm		PHF	1.00
Intersection	Courtland Blvd	Analysis Year	2015		Analysis Period	1 > 7:00
File Name	Doyle at Courtland Future.xus					
Project Description	PM Peak Hour Future					



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	255	188	46	26	263	132	45	61	16	53	44	95

Signal Information														
Cycle, s	48.5	Reference Phase	2											
Offset, s	0	Reference Point	End											
Uncoordinated	Yes	Simult. Gap E/W	On	Green	6.5	13.3	7.7	0.0	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.5	4.5	4.0	0.0	0.0	0.0				
				Red	2.5	2.5	3.0	0.0	0.0	0.0				

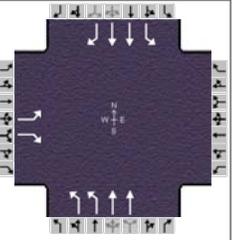
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6		2		4		8
Case Number	1.0	4.0		6.3		6.0		6.0
Phase Duration, s	13.5	33.8		20.3		14.7		14.7
Change Period, (Y+R <sub>c</sub> ), s	7.0	7.0		7.0		7.0		7.0
Max Allow Headway (MAH), s	3.1	3.1		3.1		3.2		3.2
Queue Clearance Time (g <sub>s</sub> ), s	6.4	5.2		12.1		7.3		5.7
Green Extension Time (g <sub>e</sub> ), s	0.3	1.2		1.2		0.5		0.6
Phase Call Probability	0.97	1.00		1.00		0.99		0.99
Max Out Probability	0.01	0.00		0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	7	4	14	3	8	18
Adjusted Flow Rate (v), veh/h	255	234		26	395		45	77		53	139	
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1817		1165	1774		1270	1831		1343	1692	
Queue Service Time (g <sub>s</sub> ), s	4.4	3.2		0.8	10.1		1.6	1.8		1.7	3.7	
Cycle Queue Clearance Time (g <sub>c</sub> ), s	4.4	3.2		0.8	10.1		5.3	1.8		3.5	3.7	
Capacity (c), veh/h	457	1003		467	486		256	293		314	270	
Volume-to-Capacity Ratio (X)	0.558	0.233		0.056	0.812		0.176	0.263		0.169	0.514	
Available Capacity (c <sub>a</sub> ), veh/h	774	1123		868	1097		707	943		791	871	
Back of Queue (Q), veh/ln (50th percentile)	1.2	0.7		0.2	3.4		0.4	0.7		0.5	1.2	
Overflow Queue (Q <sub>3</sub> ), veh/ln	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Queue Storage Ratio (RQ) (50th percentile)	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
Uniform Delay (d <sub>1</sub> ), s/veh	10.6	5.6		13.1	16.5		21.1	17.9		19.4	18.7	
Incremental Delay (d <sub>2</sub> ), s/veh	0.4	0.0		0.0	1.3		0.1	0.2		0.1	0.6	
Initial Queue Delay (d <sub>3</sub> ), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (d), s/veh	11.0	5.6		13.1	17.7		21.2	18.1		19.5	19.2	
Level of Service (LOS)	B	A		B	B		C	B		B	B	
Approach Delay, s/veh / LOS	8.4		A	17.5		B	19.2		B	19.3		B
Intersection Delay, s/veh / LOS	14.3						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.2	B	2.3	B	2.3	B	2.3	B
Bicycle LOS Score / LOS	1.3	A	1.2	A	0.7	A	0.8	A

# HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information		
Agency		Duration, h	1.00			
Analyst		Analysis Date	Nov 2, 2015		Area Type	Other
Jurisdiction		Time Period	5pm-6pm		PHF	1.00
Intersection	Doyle Rd		Analysis Year	2015	Analysis Period	1 > 7:00
File Name	SR 415 at Doyle Future.xus					
Project Description	Future PM Peak Hour					



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	116		153				356	821		9	425	154

Signal Information				Phase 1						Phase 2							
Cycle, s	90.0	Reference Phase	2	Green	1.0	4.0	49.9	10.6	0.0	0.0	Green	1.0	4.0	49.9	10.6	0.0	0.0
Offset, s	0	Reference Point	End	Yellow	4.5	4.5	4.5	4.0	0.0	0.0	Yellow	4.5	4.5	4.5	4.0	0.0	0.0
Uncoordinated	No	Simult. Gap E/W	On	Red	2.0	2.0	2.0	1.0	0.0	0.0	Red	2.0	2.0	2.0	1.0	0.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On														

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8			1	6	5	2
Case Number		9.0			2.0	4.0	2.0	3.0
Phase Duration, s		15.6			18.0	66.8	7.5	56.4
Change Period, (Y+R <sub>c</sub> ), s		5.0			6.5	6.5	6.5	6.5
Max Allow Headway (MAH), s		3.2			3.1	0.0	3.1	0.0
Queue Clearance Time (g <sub>s</sub> ), s		10.4			11.0		2.4	
Green Extension Time (g <sub>e</sub> ), s		0.2			0.5	0.0	0.0	0.0
Phase Call Probability		1.00			1.00		0.20	
Max Out Probability		0.32			0.04		0.00	

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3		18				1	6		5	2	12
Adjusted Flow Rate (v), veh/h	116		153				356	821		9	425	154
Adjusted Saturation Flow Rate (s), veh/h/ln	1792		1594				1740	1773		1810	1773	1610
Queue Service Time (g <sub>s</sub> ), s	5.5		8.4				9.0	8.9		0.4	5.5	4.2
Cycle Queue Clearance Time (g <sub>c</sub> ), s	5.5		8.4				9.0	8.9		0.4	5.5	4.2
Capacity (c), veh/h	212		189				443	2378		20	1966	893
Volume-to-Capacity Ratio (X)	0.547		0.811				0.804	0.345		0.444	0.216	0.173
Available Capacity (c <sub>a</sub> ), veh/h	299		266				690	2378		359	1966	893
Back of Queue (Q), veh/ln (50th percentile)	2.4		3.6				3.8	2.8		0.2	2.0	1.4
Overflow Queue (Q <sub>3</sub> ), veh/ln	0.0		0.0				0.0	0.0		0.0	0.0	0.0
Queue Storage Ratio (RQ) (50th percentile)	0.10		0.16				0.29	0.05		0.05	0.03	0.11
Uniform Delay (d <sub>1</sub> ), s/veh	37.4		38.7				38.2	6.4		44.2	10.2	9.9
Incremental Delay (d <sub>2</sub> ), s/veh	0.8		8.8				1.8	0.4		5.7	0.3	0.4
Initial Queue Delay (d <sub>3</sub> ), s/veh	0.0		0.0				0.0	0.0		0.0	0.0	0.0
Control Delay (d), s/veh	38.2		47.5				40.0	6.8		49.9	10.4	10.3
Level of Service (LOS)	D		D				D	A		D	B	B
Approach Delay, s/veh / LOS	43.5		D	0.0			16.8	B		11.0		B
Intersection Delay, s/veh / LOS	18.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.0	C	3.0	C	1.9	A	2.7	B
Bicycle LOS Score / LOS		F			1.5	A	1.0	A

TWO-WAY STOP CONTROL SUMMARY								
<b>General Information</b>				<b>Site Information</b>				
Analyst				Intersection	Doyle Rd at Prop Vineland Res			
Agency/Co.				Jurisdiction				
Date Performed	11/11/2015			Analysis Year	2017			
Analysis Time Period	5pm-6pm PM Peak Hour Build-Out							
Project Description								
East/West Street: Doyle Rd				North/South Street: Vineland Reserve Entry/Exit				
Intersection Orientation: East-West				Study Period (hrs): 1.00				
<b>Vehicle Volumes and Adjustments</b>								
<b>Major Street</b>	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	76	187			363	140		
Peak-Hour Factor, PHF	0.95	0.95	1.00	1.00	0.95	0.95		
Hourly Flow Rate, HFR (veh/h)	80	196	0	0	382	147		
Percent Heavy Vehicles	1	--	--	0	--	--		
Median Type	Undivided							
RT Channelized			0				0	
Lanes	1	1	0	0	1	1		
Configuration	L	T			T	R		
Upstream Signal		0			0			
<b>Minor Street</b>	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)				79		43		
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.95	1.00	0.95		
Hourly Flow Rate, HFR (veh/h)	0	0	0	83	0	45		
Percent Heavy Vehicles	0	0	0	1	0	0		
Percent Grade (%)		0			0			
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	1	0	1		
Configuration				L		R		
<b>Delay, Queue Length, and Level of Service</b>								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L					L		R
v (veh/h)	80					83		45
C (m) (veh/h)	1043					357		670
v/c	0.08					0.23		0.07
95% queue length	0.25					0.90		0.22
Control Delay (s/veh)	8.7					18.1		10.8
LOS	A					C		B
Approach Delay (s/veh)	--	--				15.5		
Approach LOS	--	--				C		

## TRANSPORTATION IMPACT ANALYSIS SUBMISSION CHECKLIST

	DESCRIPTION	INFORMATION INCLUDED			
		YES	NO	N/A	Remarks <sup>1</sup>
<b>TRANSPORTATION IMPACT ANALYSIS REPORT DATA</b>	4 Printed TIA Copies Signed and Sealed by Professional Engineer	✓			
	1 Electronic version of the TIA & all analysis computer files	✓			
	Site Location relative to surrounding roadway network (map)	✓			
	Description of proposed land uses	✓			
	Proposed Build-out schedule	✓			
	Study area boundaries including all Thoroughfare Road segments and intersections within appropriate radius (map)	✓			
	Existing Traffic Volumes	✓			
	Existing roadway segment analysis	✓			
	Existing intersection analysis	✓			
	List scheduled improvements within first three years of County, FDOT, and/or City Capital Improvement Programs			✓	
	Proposed development trip generation/internal capture/pass by capture	✓			
	Proposed development trip distribution and assignment (map)	✓			
	Future Background Traffic Volume Estimates	✓			
	Projected future roadway segment analysis	✓			
	Future Total Peak-Hour(s) Traffic Volume Estimates (Background + Vested + Project Trips)	✓			
	Projected future Peak-Hour(s) roadway intersection analysis including proposed turn lanes and signals	✓			
	Projected Future Roadway Concurrency Analysis	✓			
	Conclusions and Recommended Improvements	✓			
	Site access recommendations	✓			
	Concurrency mitigation strategy			✓	
<b>APPENDIX DATA</b>	Methodology Documentation & Conceptual Site Plan	✓			
	Traffic Count Data & Inventory of Existing Road Conditions	✓			
	Confirmation of Scheduled Improvements (Copy of Appropriate CIE)			✓	
	Existing Conditions Analysis Worksheets (HCS Printouts)	✓			
	Background Traffic Growth Worksheets	✓			
	Trip Generation, Internal Capture, Pass-By Capture Worksheets	✓			
	Future Conditions Analysis Worksheets (HCS Printouts)	✓			
	Turn Lanes Analysis Worksheets (Queue Length)		✓		
	Signal Warrant Analysis		✓	✓	
	Multi Way STOP Warrant Analysis	✓			

<sup>1</sup> - Remarks: Justify "NO" and "N/A"

Submitted By:  Printed Name: Chris W. West  
 Date: 11-13-15

# Review of Vineland Reserve Traffic Impact Analysis City of Deltona



Prepared By: BCC Engineering, Inc.  
April 15, 2016

We have completed our review the Traffic Impact Analysis (TIA) prepared by Traffic Engineering Data Services (TEDS) for Vineland Reserve in the City of Deltona. The review included analysis of the existing traffic volumes and review of the proposed traffic volumes shown in the TIA prepared for the proposed improvement, review of the directional splits of the traffic, and the Level of Service on the Impacted Major Roadways with the TIA projected traffic.

**Methodology:** We used Accepted Engineering Practices set forth in the ITE Trip Generation Manual, 9<sup>th</sup> Edition Spreadsheet for the proposed density of each property. We compared this information and data generated to the Traffic Impact Analysis prepared by the applicant's engineering firm for accuracy and consistency. We input corresponding socio-economic data as sketch-level planning into the latest version of the Central Florida Regional Planning Model (CFRPM 5.011). From the data generated, we compared our output from the model to that shown in the prepared documents for reasonableness check. We reviewed the TIA's PM Peak Analysis using SYNCHRO including HCM 2010 Report for accuracy.

**Findings:**

- Only the PM Peak was included in the study, it would be beneficial if the AM Peak were also included in the study.
- The results of the Trip Generation in the study was very close to our results and considered reasonable.
- The output from the Trip Distribution did show a difference, primarily at SR 415. The model we used sent 70% of the traffic east towards SR 415 and at SR 415, 45% turned south toward Seminole County while 25% turned north toward Walmart/Daytona Beach. Other distributions did not change significantly.
- There was not a significant difference in the LOS at the intersections analyzed.

Description/ITE Code	Units	Expected Units	Total Generated Trips		
			Daily	AM Hour	PM Hour
Data Center 160	KSF <sup>2</sup>		0	0	0
High-Cube Warehouse/Dist Center 152	KSF <sup>2</sup>		0	0	0
Utilities 170	KSF <sup>2</sup>		0	0	0
Utilities 170	Employees		0	0	0
Single Family Homes 210	DU	279.0	2,656	209	279
Single Family Homes 210	Acres		0	0	0
Single Family Homes 210	Persons		0	0	0
Single Family Homes 210	Vehicles		0	0	0
Apartment 220	DU		0	0	0
Apartment 220	Persons		0	0	0
Apartment 220	Vehicles		0	0	0
Low Rise Apartment 221	Occ.DU		0	0	0
High Rise Apartment 222	DU		0	0	0
Mid-Rise Apartment 223	DU		0	0	0
Rental Townhouse 224	DU		0	0	0
Resd. Condo/Townhouse 230	DU	128.0	744	56	67
Resd. Condo/Townhouse 230	Persons		0	0	0
Resd. Condo/Townhouse 230	Vehicles		0	0	0



# Staff Report

**To:** Planning and Zoning Board

**From:** Scott McGrath

**Date:** May 3, 2016

**Re:** VR16-001, 1690 Panama Court, 6 foot fence in side street yard

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## A. Summary of Application:

**Applicant:** Linda Hodges

**Request:** To allow a 5 foot tall rail and picket fence in the side street yard.

**Tax Parcel No.:** 8130-23-10-0070

**Property Acreage:** +/-2.25

**Property Location:** Located on the northwest corner of Panama Court and Saxon Boulevard, just south of Doyle Road.

**Legal Description:** Lot 7 Block 173 Deltona Lakes Unit 23 Map Book 27 Pages 36-40 of the Volusia County public records.

## B. Existing Zoning:

1. **Subject Property:** R-1AAA Single Family Residential

2. **Adjacent Properties:**

**North:** C-1 Retail Commercial

**South:** R-1AAA Single Family Residential

**East:** R-1AAA Single Family Residential

**West:** R-1AAA Single Family Residential

**C. Zoning Description:**

Sec. 110-307. - R1-AAA, AA, A, and R1, Single-Family classifications.

*Purpose and intent.* These classifications are established within the city to provide areas for single-family dwellings and customary accessory buildings. The regulations for this classification are designed to promote the construction and continued use of land for single-family dwellings, and to provide as conditional uses certain structures and uses required to serve the residents, such as churches and noncommercial recreational areas. Prohibited are uses of land that would create potential nuisances to residential areas, adversely affect residential property values, overburden public facilities or create potentially adverse individual or cumulative impacts to adjacent lakes that would diminish their water quality or aesthetic appeal.

**D. Background:**

The applicant is seeking to vary from the Deltona Land Development Code Section 110-806(e)(4) to permit and build a five foot tall, non-opaque metal rail type fence in the side street yard. The fence construction type and material would have a low opacity value and will not obstruct the vision triangle for the intersection.

**E. Matters for Consideration:**

**1. Special conditions and circumstances exist which are peculiar to the land, structure, sign, or building involved and which are not applicable to other lands, structures, signs, or buildings in the same zoning classification.**

Due to large size of the parcel and extensive road frontage, people mistake portions of the property for vacant or public land. The applicant is concerned for the safety of her family from frequent trespassers on her property. Allowing the 5 foot tall, low opacity fence in the side street yard will help protect her family and property from intrusion.

**2. Special conditions and circumstances exist that do not result from the actions of the applicant.**

Because of the large size and open nature of the parcel, people mistake portions of the property as vacant and park in the applicant's yard and/or Right of Way. Allowing the fence in the side street yard would prohibit others from parking in Ms. Hodges yard.

**3. Literal interpretation of the provisions of this chapter would deprive the applicant of rights commonly enjoyed by other properties in the same zoning classifications, under the terms of the chapter, and would work cause an unnecessary and undue hardship on the applicant.**

The fence proposed is typical of the nearby fences on the cul-de-sac, all of which are at or near the poverty line and non-opaque. Allowing this variance will increase the beauty and harmony of the neighborhood. The fence is allowed in the front under the existing code.

**4. The variance granted is the minimum variance that will make possible the reasonable use of the land, building, structure, or sign.**

The variance is minimal and provides reasonable use of land, given the special circumstances relating to this application.

**5. The granting of the variance is in harmony with the general intent and purpose of this chapter and the City of Deltona Comprehensive Plan, as it may be amended from time to time, and that such variance will not be injurious to the area involved.**

The intent and purpose of section 110-806(e)(4) is to protect sight lines for traffic movement and the open space vistas of the City, the proposed fence is non-opaque and will not interfere with traffic visibility or movements.

**CONCLUSION/STAFF RECOMMENDATION:**

Staff recommends approval of Resolution 2016-20, granting permission to erect a five foot non-opaque fence in the side street yard.



# AERIAL PHOTO

## Legend

-  Subject Parcels
-  City Boundary



NOT TO SCALE

DRAWN BY S. CAMPBELL



# FUTURE LAND USE MAP

## Legend

-  Subject Parcels
-  City Boundary



NOT TO SCALE

DRAWN BY S. CAMPBELL



## LOCATION MAP

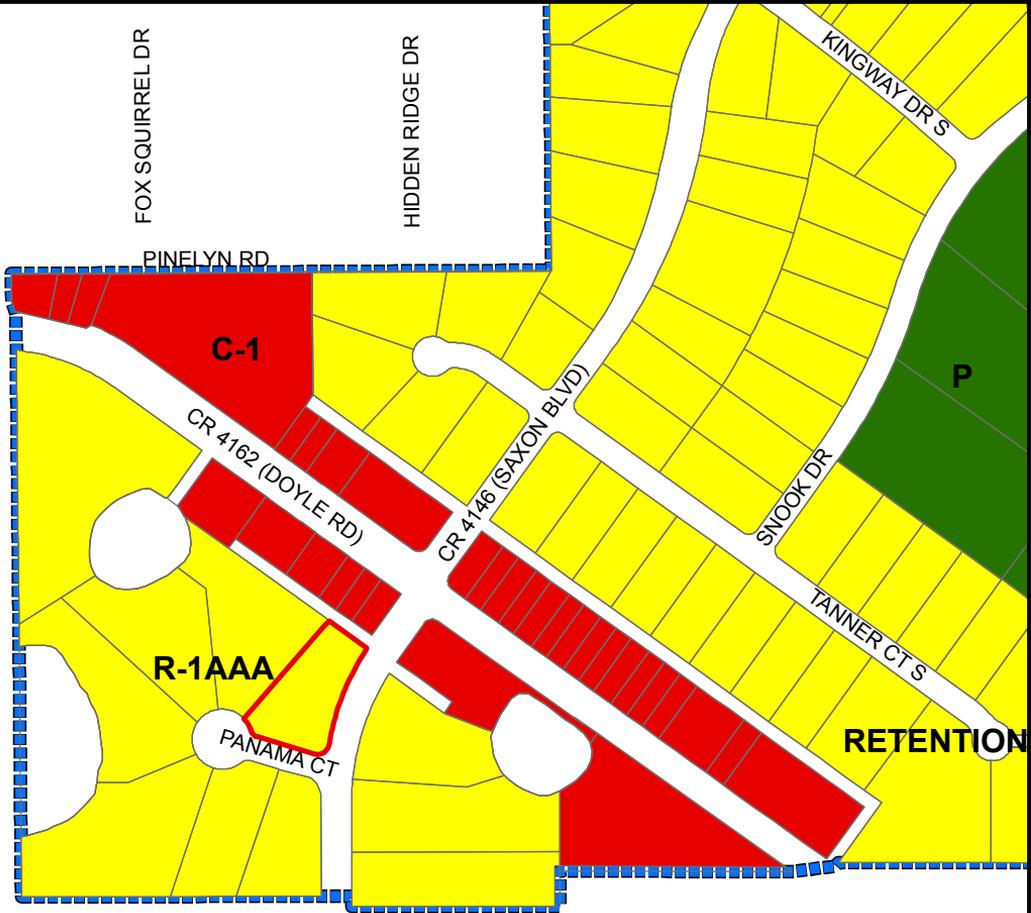
### Legend

-  Subject Parcels
-  City Boundary



NOT TO SCALE

DRAWN BY S. CAMPBELL



# ZONING MAP

## Legend

-  Subject Parcels
-  City Boundary



NOT TO SCALE

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**RESOLUTION NO. 2016-20**

**A RESOLUTION OF THE CITY OF DELTONA, FLORIDA,  
APPROVING A ZONING VARIANCE FOR A SIX FOOT  
TALL FENCE IN THE SIDE STREET YARD FOR THE  
PROPERTY LOCATED AT 1690 PANAMA COURT,  
DELTONA; PROVIDING FOR CONFLICTS,  
SEVERABILITY, AND AN EFFECTIVE DATE.**

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**WHEREAS**, the City of Deltona, Florida, adopted Sections of the 110-806 Deltona Code of Ordinances, as amended; and

**WHEREAS**, a zoning variance application has been received by the City, meeting the basic requirements and supporting documentation for a zoning variance from the height and setback requirements standards forth in Section 110-806(4) of the City of Deltona Code of Ordinances, for the property located at 1690 Panama Court; and

**WHEREAS** the City Commission found a literal enforcement of the provision of Chapter 110, Zoning Ordinance, would result in unnecessary and undue hardship on the applicant that is not self-imposed.

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

**Section 1.** In accordance with City of Deltona Code of Ordinances, Section No. 110-1103, as amended, the Deltona City Commission hereby grants the Variance to permit a six (6) foot tall fence in the side street yard for the property located at 1690 Panama Court, Deltona, Florida (File # VR16-002).

**Section 2. Severability.** If any provision of this Resolution or the application thereof to any person or circumstance is held invalid, the invalidity shall not affect other provisions or applications of the Resolution, which can be given effect without the invalid provision or application, and to this end the provisions of this Resolution, are declared severable.

**Section 3. Effective Date.** This resolution 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 \_\_\_\_\_, 2016.**

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JOHN C. MASIARCZYK, SR., Mayor

ATTEST:

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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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GRETCHEN R. H. VOSE, City Attorney

Department of Development Services  
2345 Providence Boulevard,  
Deltona, Florida 32725  
(386) 878-8600,  
Fax (386) 878-8621

April 14, 2016

**Ref: Request for Variance of 1' to Install 5' fence  
1690 Panama Ct, Deltona, Florida**

To Whom It May Concern,

This proposal letter is to request and substantiate the grant of a Variance for a residence at (1690 Panama Court) in (Deltona, Florida. ). The Variance requested is relatively minor, and as shown below clearly meets parameters to support a finding in favor of the Variance. Further, if granted, this Variance will not violate or circumvent any of the design or living conditions of the neighborhood.

#### **Property Fence**

The petitioner requests a Variance allowing a fence to be built along the side and front the residential property, generally following the property line. The height of the fence is proposed at 5', which is 1' above the requirement. The petitioner's equally important need for this fence is to ensure harmony and peaceful coexistence with the neighbors, with regard to the petitioner's home being on the corner/intersection of Saxon Boulevard and Panama Court. Also, adjacent to the property to North is a commercial strip/retail center that has quite a few patrons.

The proposed fence 5 foot height is requested in order to provide safety, sound barrier and for increased home security. Both of these concerns are due to the proximity of the home along Saxon Boulevard.

The requested Variance would provide a security barrier and reduce the noise level in the home. It is the absolute intent of the petitioner (for his own personal architectural preferences as well as the needs of the Zoning Administrator/Planning Commission) to create a fence that specifically blends in with not only the existing landscape and vegetation, but is also in complete harmony with the neighboring fence types and appearances:

- The proposed fence shall be constructed of aluminum style similar as several neighboring properties' fences.
- The proposed fence shall be finished in the identical manner (paint/stain/varnish, etc) as several neighboring properties' fences.
- The proposed fence is desired, intended, and shall be built specifically to be unobtrusive and "low key", blending in with the neighborhood.

Granting the proposed Variance allows the proposed fence and the entire property to “fade into” the neighborhood and the landscape in a far more attractive and harmonious manner.

The petitioner is confident that the proposed Variances fall within these guidelines, notably;

- A) “...an exceptional or extraordinary circumstance...” The petitioner’s desire to provide safety to her family and property, and the neighbors’ desire to have a more peaceful neighborhood are enough to justify allowing the petitioner to achieve that goal in any circumstance. However, the fact that the property in question is an extremely large lot for (Deltona), As such, this situation is in fact somewhat an exceptional or extraordinary circumstance compared to other properties in (Deltona);
- B) “Literal enforcement... would result in practical difficulty or unnecessary hardship” The petitioner would experience practical difficulty each and every day by distracting noise from cars passing along Saxon Boulevard. if this Variance were not to be granted;
- C) “...necessary for the preservation of a substantial property right... possessed by other property in the same district” and those property owners are enjoying the substantial right of security on a daily basis;
- D) “The granting of such Variance will not be materially detrimental to the public welfare...” the proposed Variance does no harm to either public or private interests, and is not injurious to any property or interest. In fact, granting the proposed Variance will serve only to create a more pleasing visual harmony, by virtue of the careful architectural design to make the fence and gate lines blend,
- E) “The granting of the Variance will not constitute a grant of special privileges.
- F) “The granting of such Variance will be in harmony with the general purpose and intent of the variance process.

The proposed fence is designed, laid out, and shall be constructed in a manner that achieves harmony with the neighborhood, fosters peaceful relations with neighbors, and blends in visually in a low-key, unobtrusive manner with the surroundings. As such, it is clearly in harmony with the overall intents and purposes of the variance process. Additionally, the proposed fence this Variance is being requested for does not encroach or infringe on any neighboring residential properties, nor would it impose any hardship on any neighbors, nor would it serve to create a situation where any neighbor’s quality of life, property value, or peaceful co-existence would be negatively affected. Quite the contrary, the proposed Variance would allow the petitioner to become a more secure neighbor, with sound barrier and safety, enjoying greater personal security, and achieve a lower noise level in his home.

Respectfully submitted,

Linda Hodges, Petitioner  
1690 Panama Court  
Deltona, FL 32725-8518

