City of Deltona

Mayor
John Masiarczyk

Vice Mayor
Heidi Herzberg
District 3

Commissioners:

Zenaida Denizac
District 1

Webster Barnaby
District 2

Nancy Schleicher
District 4

Fred Lowry
District 5

Chris Nabicht
District 6

City Manager
William D. Denny

REGULAR CITY COMMISSION MEETING
MONDAY, APRIL 7, 2014
6:30 P.M.

DELTONA COMMISSION CHAMBERS
2345 PROVIDENCE BLVD.
DELTONA, FLORIDA

AGENDA

1. CALL TO ORDER:

2. ROLL CALL – CITY CLERK:

3. INVOCATION AND PLEDGE TO THE FLAG:

A. Invocation Presented by Commissioner Schleicher - Nick Pizza.

4. APPROVAL OF MINUTES & AGENDA:

A. Approval of Minutes - Regular City Commission Meeting of March 17, 2014.

B. Additions or Deletions to Agenda.

5. PRESENTATIONS/AWARDS/REPORT:

A. Presentation - Super Star Student of the Month Certificates for March 2014.

B. Presentation - Love Your Heart 5K, Presented by Final Mile

Race Management.

C. Presentation of the New Arts & Performance Center Presented by Lloyd Marcus.

6. **PUBLIC FORUM - Citizen comments for any items. (4 minute maximum length)**

CONSENT AGENDA: **All items marked with an * will be considered by one motion unless removed from the Consent Agenda by a member of the City Commission.**

7. CONSENT AGENDA:

***A. Request for approval of the William S. Harvey Deltona Scholarship Advisory Board's recommendation to add Jerry M. Robinson, M.D. to the Wall of Fame.**

***B. Request for approval of recommendations for scholarship awards from the William S. Harvey Deltona Scholarship Advisory Board.**

8. ORDINANCES AND PUBLIC HEARINGS:

A. Public Hearing - Ordinance No. 02-2014, Zoning Map Amendment for three (3) lots from Mixed Planned Unit Development (MPUD) to the Business Planned Unit Development (BPUD) for the Saxon Sterling Silver project, at first reading.

B. Public Hearing - Ordinance No. 04-2014, Zoning Map Amendment (RZ13-009) for eleven (11) parcels located at the northeast corner of the Saxon Boulevard/Finland Drive intersection, at first reading.

C. Public Hearing - Resolution No. 2014-06, Lakeshore Shared-Use Path Local Agency Program (LAP) Agreement between the Florida Department of Transportation (FDOT) and the City of Deltona (City) to secure design services.

9. OLD BUSINESS:

10. NEW BUSINESS:

11. CITY ATTORNEY COMMENTS:

12. CITY MANAGER COMMENTS:

A. Lobbyist Update.

13. CITY COMMISSION COMMENTS:

14. 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.

AGENDA MEMO

TO: Mayor & City Commission **AGENDA DATE:** 4/7/2014

FROM: William D. Denny, City Manager **AGENDA ITEM:** 3 - A

SUBJECT: Invocation Presented by Commissioner Schleicher - Nick Pizza.

LOCATION: N/A

BACKGROUND: At the Regular City Commission Meeting on Monday, October 17, 2011, the City Commission approved to have each Commissioner by District schedule someone to present the invocation at each Regular City Commission meeting rotating each Commissioner by District starting with District #1, #2, #3, #4, #5, #6 and the Mayor.

ORIGINATING DEPARTMENT: City Clerk's Office

SOURCE OF FUNDS: N/A

COST: N/A

REVIEWED BY: City Clerk

STAFF RECOMMENDATION PRESENTED BY: N/A - Invocation Only.

POTENTIAL MOTION: N/A - Invocation Only.

AGENDA ITEM APPROVED BY:

William D. Denny, City Manager

AGENDA MEMO

TO: Mayor & City Commission **AGENDA DATE:** 4/7/2014

FROM: William D. Denny, City Manager **AGENDA ITEM:** 4 - A

SUBJECT: Approval of Minutes - Regular City Commission Meeting of March 17, 2014.

LOCATION:	N/A
BACKGROUND:	N/A
ORIGINATING DEPARTMENT:	City Clerk's Office
SOURCE OF FUNDS:	N/A
COST:	N/A
REVIEWED BY:	City Clerk
STAFF RECOMMENDATION PRESENTED BY:	City Clerk Joyce Raftery - To approve the minutes of the Regular City Commission Meeting of March 17, 2014.
POTENTIAL MOTION:	"I move to approve the minutes of the Regular City Commission Meeting of March 17, 2014."
AGENDA ITEM APPROVED BY:	_____ William D. Denny, City Manager
ATTACHMENTS:	• Minutes of 3-17-2014 RCM

CITY OF DELTONA, FLORIDA
REGULAR CITY COMMISSION MEETING
MONDAY, MARCH 17, 2014

A Regular Meeting of the Deltona City Commission was held on Monday, March 17, 2014 at the City Hall Commission Chambers, 2345 Providence Boulevard, Deltona, Florida.

1. CALL TO ORDER:

The meeting was called to order at 6:30 p.m. by Mayor Masiarczyk.

2. ROLL CALL:

Mayor	John Masiarczyk	Present
Vice Mayor	Heidi Herzberg	Present
Commissioner	Webster Barnaby	Present
Commissioner	Zenaida Denizac	Present
Commissioner	Fred Lowry	Present
Commissioner	Chris Nabicht	Present
Commissioner	Nancy Schleicher	Present
City Manager	Dave Denny	Present
City Attorney	Becky Vose	Present
City Clerk	Joyce Raftery	Present

Also present: Public Works/Deltona Water Director Gerald Chancellor; Planning and Development Services Director Chris Bowley; Finance Director Robert Clinger; Economic Development Manager Jerry Mayes; Deputy City Manager Dale Baker; Deputy Fire Chief Russell Rafferty; and VCSO Captain Dave Brannon.

3. INVOCATION AND PLEDGE TO THE FLAG:

Invocation Presented by Commissioner Barnaby.

The National Anthem was sung by the musical group Harmony.

4. APPROVAL OF MINUTES & AGENDA:

A. Minutes:

1. Approval of Minutes – Regular City Commission Meeting of March 3, 2014.

Motion by Commissioner Lowry, seconded by Vice Mayor Herzberg to approve the minutes of the Regular City Commission Meeting of March 3, 2014.

Motion carried unanimously with members voting as follows: Commissioner Barnaby, For; Commissioner Denizac, For; Commissioner Lowry, For; Commissioner Nabicht, For; Commissioner Schleicher, For; Vice Mayor Herzberg, For; and Mayor Masiarczyk, For.

B. Additions or Deletions to Agenda:

5. PRESENTATIONS/AWARDS/REPORTS:

A. Recognition to promote Deltona talent attendance at local shows and performances.

Mayor Masiarczyk recognized Kelsie Geertgens who sang an opera piece from "O Mio Bambio" at a recent talent show held at Deltona High School, encouraged the talented youth of Deltona to participate, and parents and residents to attend shows and performances whenever possible, .

B. Proclamation – Boys and Girls Club Week – March 23 through March 29, 2014. Certificate of Recognition to Deanne James, Unit Director, Harris Saxon Club (Professional of the Year) and Shane Smith (Youth of the Year).

The Commission presented a Proclamation to the Volusia/Flagler Counties Boys and Girls Club CPO Joe Sullivan in recognition of Boys and Girls Club Week, and presented Certificates of Recognition to Deanne James, Unit Director of the Harris Saxon Club for "Professional of the Year", and to Shane Smith for being selected as the Boys and Girls Clubs of Volusia/Flagler Counties' "Youth of the Year".

C. Annual Audit Presentation – Comprehensive Annual Financial Report for the Year Ended September 30, 2013.

Mark White and Laurie Walker, members of the Deltona audit team discussed the primary scope of a financial audit, defined auditing standards, and presented the highlights of the City of Deltona Comprehensive Annual Financial Report (CAFR) for the year ended September 30, 2013.

The Commission and the audit team also discussed the Governmental Accounting Standards Board's (GASB) new accounting pronouncements; GASB statements Nos. 62 and 63 which became effective in 2014, and that the City was able to implement them, GASB No. 65 which comes out in 2014 that changes geography and terminology, and removes some old bond issuance cost standards, two (2) pension standards, GASB No. 67 goes into effect in 2014 and GASB No. 68 which goes into effect in 2015. GASB No. 67 deals with financial reporting by the pension plans, and GASB No. 68 involves employer accounting and reporting for pension plans, which requires all local governments that have defined benefit pension plans to put the unfunded pension plan liability on the balance sheet as a liability to the City instead of just being annotated in the footnotes. The projected Firefighter Pension Plan unfunded liability for next year's budget being in the neighborhood of $5 million dollars, the current actuarial report, the new GASB accounting standards as they relate to pension plans, assets and market changes, the possible effect of the new GASB standard No. 68 on a City's credit rating, effects on an enterprise fund, debt service coverage ratios, the state of Deltona's reserves being in very good financial condition, and the City being in very good financial accounting condition. The Commission thanked the Finance Department, Finance Director, and City Manager for the good accounting methods, and financial management.

Motion by Commissioner Nabicht, seconded by Commissioner Schleicher to accept the City of Deltona's *Comprehensive Annual Financial Report* (CAFR) for the fiscal year ended September 30, 2013.

Motion carried unanimously with members voting as follows: Commissioner Barnaby, For; Commissioner Denizac, For; Commissioner Lowry, For; Commissioner Nabicht, For; Commissioner Schleicher, For; Vice Mayor Herzberg, For; and Mayor Masiarczyk, For.

6. PUBLIC FORUM – Citizen comments for items not on the agenda. None.

Mayor Masiarczyk recognized and thanked County Councilwoman Joyce Cusack for attending the Deltona City Commission meeting.

7. CONSENT AGENDA: None.

8. ORDINANCES AND PUBLIC HEARINGS:

A. Public Hearing - Ordinance No. 02-2014, Zoning Map Amendment to change the Zoning Designation from Mixed Planned Unit Development (MPUD) for three lots to the Saxon Sterling Silver Business Planned Unit Development (BPUD).

Mayor Masiarczyk stated that staff has requested additional time to review Agenda Item 8-A and he requested a motion to table Item 8-A to time certain to April 7, 2014. He stated the Commission would hear comments from anyone that could not attend the April 7, 2014 Regular Commission meeting.

Commission Denizac asked Mrs. Vose if it was legal to take public comments on an agenda item that is being tabled, and Mrs. Vose replied "yes", from individuals who cannot make the next hearing.

Mayor Masiarczyk opened the public hearing to anyone who could not attend the April 7, 2014 Regular Commission meeting.

a) Theresa Brazee, 1057 Platinum Court, stated that Wal-Mart representatives said they were approved to build in the Saxon Sterling neighborhood, she was concerned about the lack of notice, a sign advertising the upcoming store was posted on the lot which Wal-Mart representatives apologized for the administrative and marketing mistakes, Wal-Mart's representative was very condescending at the last meeting she attended, a hospital in the area would be great for job seekers, and she is against the Wal-Mart being built in the Saxon Sterling Silver residential area.

Mayor Masiarczyk closed the public hearing.

Motion by Commissioner Schleicher, seconded by Vice Mayor Herzberg to table Item 8-A to time certain to April 7, 2014.

Motion carried unanimously with members voting as follows: Commissioner Barnaby, For; Commissioner Denizac, For; Commissioner Lowry, For; Commissioner Nabicht, For; Commissioner Schleicher, For; Vice Mayor Herzberg, For; and Mayor Masiarczyk, For.

Mayor Masiarczyk allowed a public comment on a separate issue from a resident who missed the Public Comment portion of the meeting.

a) Steven Mingey, 1310 Broken Pine Road, stated that he wanted to address an issue that effects approximately 400 households, he lives outside of the Deltona City limits, is a single income family, being affected by the new outside of the City water surcharge, his water bill being higher than both his electric bill and his daughter's college savings fund, and he requested a re-examination of the surcharge to try and relieve the financial burden on families in need and to look at future plans on how to curb water costs.

B. Public Hearing – Resolution No. 2014-02, declaring certain real property of the City of Deltona as surplus and authorizing the sale or disposal of such property.

Mayor Masiarczyk opened and closed the public hearing as there were no public comments.

Motion by Commissioner Lowry, seconded by Commissioner Nabicht to adopt Resolution No. 2014-02 declaring certain real property of the City as surplus and authorizing the sale or disposal of such property.

Mayor Masiarczyk read the title of Resolution No. 2014-02.

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF DELTONA, FLORIDA, DECLARING CERTAIN REAL PROPERTY OF THE CITY KNOWN AS A PORTION OF LAKE DAVID, AS SURPLUS AND AUTHORIZING THE SALE OR DISPOSAL OF SUCH PROPERTY; PROVIDING FOR CONFLICTS; AND PROVIDING FOR AN EFFECTIVE DATE.

Motion carried unanimously with members voting as follows: Commissioner Barnaby, For; Commissioner Denizac, For; Commissioner Lowry, For; Commissioner Nabicht, For; Commissioner Schleicher, For; Vice Mayor Herzberg, For; and Mayor Masiarczyk, For.

Resolution No. 2014-02 was adopted at 7:19 p.m.

9. OLD BUSINESS: None.

10. NEW BUSINESS:

A. Consideration of request from THR Florida LP for a reduction of fine from $37,100.00 assessed pursuant to Special Magistrate Case DEL-13-088 and DEL-13-090.

Building and Enforcement Services Director Dale Baker introduced Sean Mills attorney for THR Florida LP and provided an overview of the property violations which are for the contractor failing to pull the required permits. He stated the owners have purchased approximately 124 homes in Deltona, many of which were foreclosed homes, which they purchased, cleaned, and made improvements to. He stated there are few violations left open on any of the homes owned by THR Florida LP, and the owners seem to be very responsible. Special Magistrate Cino recommended reducing the fine to $1,000 dollars per case which would cover the City's expenses.

The Commission and staff discussed whether or not THR is a responsible property owner, the owners being noticed but not appearing, THR being a business and not a private home owner, continual requests coming before the Commission for a reduction in fines, the Commission enforcing fines that will make owners think twice before violating an ordinance, when the THR attorney was retained, a fine of $1,000 dollars per case not covering staff costs as it pertains to the violations and not sending a strong enough message to the property owners, the impact on neighborhoods when homes are not taken care of, not supporting a fine reduction down to $1,000 dollars, the length of time the fines were established, the property owner being responsible and wanting to do things the right way but the contractor not pulling permits, prior discussions about revamping the City's notification process when a home goes into violation, the positive aspects of THR purchasing 124 homes in Deltona and bringing them into compliance, the purpose of Code Enforcement enforcing compliance, not being a revenue source for the City but, should cover the City's expenses, imposing a $37,000 dollar fine not benefiting the City, having established policies

and not deviating from them, property owners adhering to the fine's time limits, and acknowledging responsible business owners who try to clean up the dilapidated homes in Deltona.

Motion by Commissioner Barnaby, seconded by Vice Mayor Herzberg to approve the request of THR Florida LP for a reduction of the fine concerning Case No. DEL-13-088 and DEL-13-090 for the property located at 1202 Voyager Street, Deltona, Florida, to the sum of $2,000.00 to be paid within 30 days (April 17, 2014) and pay all Municipal Liens on any other property owned in the City of Deltona or the fine reverts back to the original amount.

Commissioner Denizac asked about any other violations on property that THR owns, and Mr. Baker replied that most of the other violations were tenant related, Code Enforcement policy is to deal with, and educate the violators, so property owners usually are not even notified when it is a tenant violation. He stated that the property manager is very attentive when he is made aware of a tenant violation and has gone as far as to give one continual violator a seven (7) day eviction notice.

Mayor Masiarczyk asked if THR owned the home when the violations occurred, and Mr. Baker replied "yes".

Mayor Masiarczyk opened and closed the public hearing as there were no public comments

Motion failed with members voting as follows:

Commissioner Barnaby	**For**
Commissioner Denizac	**Against**
Commissioner Lowry	**Against**
Commissioner Nabicht	**Against**
Commissioner Schleicher	**Against**
Vice Mayor Herzberg	**For**
Mayor Masiarczyk	**Against**

Motion by Commissioner Nabicht to not grant a reduction of fine for THR Florida LP concerning Case No. DEL-13-088 and DEL-13-090 for the property located at 1202 Voyager Street, Deltona, Florida.

Motion failed for lack of a second.

Motion by Mayor Masiarczyk, seconded by Commissioner Schleicher to grant a fine reduction for THR Florida LP concerning Case No. DEL-13-088 and Case No. DEL-13-090 for the property located at 1202 Voyager Street, Deltona, Florida, to the sum of $5,000.00 per violation for a total of $10,000, to be paid within 30 days (April 17, 2014) and pay all Municipal Liens on any other property owned in the City of Deltona or the fine reverts back to the original amount.

Commissioner Barnaby asked for the motion to be read again, and Deputy City Clerk Mitch Honaker reread the motion.

Vice Mayor Herzberg asked Mayor Masiarczyk if the motion was for $5,000 per violation or for a total fine of $5,000 dollars, and Mayor Masiarczyk replied that his motion was for $5,000 per violation for a total of $10,000 dollars.

Motion carried with members voting as follows:

Commissioner Barnaby	**For**
Commissioner Denizac	**For**
Commissioner Lowry	**For**
Commissioner Nabicht	**Against**
Commissioner Schleicher	**For**
Vice Mayor Herzberg	**Against**
Mayor Masiarczyk	**For**

B. Request for the abandonment of two easements on SR 415.

Mayor Masiarczyk opened and closed the public hearing as there were no public comments.

Motion by Commissioner Schleicher, seconded by Commissioner Lowry to approve the abandonment of said easements as they are no longer required, necessary or useful to the interests of the City and the public for the use for which it was originally granted.

Motion carried unanimously with members voting as follows: Commissioner Barnaby, For; Commissioner Denizac, For; Commissioner Lowry, For; Commissioner Nabicht, For; Commissioner Schleicher, For; Vice Mayor Herzberg, For; and Mayor Masiarczyk, For.

C. Request for appointment of a City representative to the Tourist Development Council (TDC) for a four year term and the appointment of an alternate City representative.

Mayor Masiarczyk stated that the Volusia County Attorney answered the City's question concerning the State legislation that allows Tourist Development tax dollars to go to the largest City in Volusia County as it relates to the 3% tax disbursement and Deltona being the largest City in Volusia County, that he was not satisfied with the County's answer, he made the Tourist Development Council (TDC) aware of the situation and he asked that it provide a play by play answer on the County's position on the subject, and the TDC has assured him it will look into it and provide a report to everyone at the next TDC meeting.

Mayor Masiarczyk opened and closed the public hearing as there were no public comments.

Motion by Vice Mayor Herzberg, seconded by Commissioner Denizac to appoint Mayor John Masiarczyk as the City's representative to the Tourist Development Council (TDC) for a term to expire on March 31, 2018 and appoint Commissioner Chris Nabicht as the City's alternate TDC representative.

Motion carried unanimously with members voting as follows: Commissioner Barnaby, For; Commissioner Denizac, For; Commissioner Lowry, For; Commissioner Nabicht, For; Commissioner Schleicher, For; Vice Mayor Herzberg, For; and Mayor Masiarczyk, For.

D. Consideration of appointment or re-appointment of four (4) members to the City's Planning and Zoning Board.

Mayor Masiarczyk opened and closed the public hearing as there were no public comments.

Motion by Vice Mayor Herzberg, seconded by Commissioner Denizac to confirm the appointment of Adam Walosik (Commissioner Lowry's appointment), Noble Olasimbo (Commissioner Schleicher's appointment), Tom Burbank (Commissioner Nabicht's appointment), and David McKnight (Vice Mayor Herzberg's appointment) to the Planning and Zoning Board for a term to expire on March 15, 2017.

Motion carried unanimously with members voting as follows: Commissioner Barnaby, For; Commissioner Denizac, For; Commissioner Lowry, For; Commissioner Nabicht, For; Commissioner Schleicher, For; Vice Mayor Herzberg, For; and Mayor Masiarczyk, For.

11. CITY ATTORNEY COMMENTS: None.

12. ACTING CITY MANAGER COMMENTS:

A. Lobbyist Update:

Mr. Denny stated House Bill (HB) 813, titled the "Ratepayer Representation Act" which allows authorized counties to take over municipalities utilities once the municipalities franchise expires, the bill prevents municipalities from extending services to the unincorporated parts of the County without the express consent of the board of County Commissioners, it also limits the rate a municipality can charge outside the City boundary customers, the proposed rate for outside the municipal boundaries customer would have to be approved by the Florida Public Service Commission (PSC), and doing a rate increase being a costly and timely ordeal. He has talked to the City's lobbyist, the proposed bill goes before the House Energy and Utilities Sub-Committee on April 18, 2014, the lobbyist thinks it will go through the sub-committee but will not gain any strength after that, and he will keep Deltona informed on the bill.

After discussion, the Commission concurred to inform the lobbyist that the Deltona Commission strongly opposes HB 813.

Mr. Denny discussed HB 1313, which is a bill designed to protect the outstanding Florida springs in addition to the first magnitude springs, of which, there are 32 of those springs, currently Blue Springs is not on the list, the intent of the bill is to remove the nutrients from the ground water in the entire spring shed of any of the Florida outstanding springs, reduce the nitrogen content to three (3) milligrams per liter, the difficulty in trying to meet the bill's stringent standards, other requirements of the bill, a municipality's responsibilities, the bill proposing no cost to residents to comply with the bill, municipalities may be eligible for up to 75% of funding, if funding is available, the bill's devastating effect on a municipality's utilities, the bill requiring comp plans to be amended, ordinances adopted to ensure springs will be protected, he has also discussed this bill with the lobbyist and it is being strongly opposed.

Mayor Masiarczyk asked Mr. Denny to send out some bullet points to the Commission on the two (2) bills so Commissioners can voice Deltona's opposition to both bills.

13. CITY COMMISSION COMMENTS:

a) Commissioner Denizac stated that she felt Tallahassee is being bought and paid for by special interest groups who could care less about the effect on communities, she thanked the Finance Department for the audit results, commended the Commission for setting forth a very conservative agenda that provides quality public services and safety and at the same time still doing more with less, she thanked Chris Bowley and Jerry Mayes for the success of her Town Hall meeting, and Commission members who attended.

b) Commissioner Nabicht stated that the buzz word of "unfunded liability" causes concern and gets a lot of people unnecessarily excited. However, the Firefighter Pension Plan in particular is a very sound plan, and yes, there is an unfunded liability, but pension plans are long term investments and liabilities, the money going into GASB No. 68 is nothing more than another mortgage financed over 35 years, just as the City has with a bond, the Commission should not get overly excited when hearing the term "unfunded liability", it is just an accounting term that shows up every year in the annual report, and under GASB No. 68 it will just be shown in a different format, the City's plan has always existed, the plan is funded well, and the firefighters contribute being 8% to the plan.

c) Commissioner Schleicher thanked Commissioner Denizac for her Town Hall meeting, she thought it went very well and was greatly attended. The Jewish Community had a wonderful Shabbat Service, next Wednesday, March 26, 2014 at the DeBary Golf & Country Club is the State of the Region luncheon providing an update of how West Volusia County is doing and what is going on in the area, reminded everyone to acquire tickets ahead of time from any one of the Chambers, the DeBary SunRail Station Open House is Saturday, March 29, 2014 at 9:00 a.m., April 1, 2014 is the opening of the Halifax Health radiology clinic on Saxon Blvd., and lastly April 5, 2014 is the Chili cook-off at Station 65, from 10:30 a.m. to 12:30 p.m.

d) Commissioner Lowry stated that he threw out another baseball this past weekend, the 5k run was a good event, and the Wags and Whiskers Pet Fest held at the Keysville Park went really well.

e) Vice Mayor Herzberg stated that she asked the City Manager to put Board updates that Commissioners attend on future Agenda, she recognized the Boys and Girls Club of Volusia/Flagler Counties, two (2) administrators from Deltona schools were given a tour of the Harris Saxon Boys and Girls Club, and there is talk of bringing a second club to Deltona. She discussed the River of Lakes Heritage Corridor (ROLHC), the City's portion of the corridor by Thornby Park, the establishment of a ROLHC website www.rolhc.org, the development of unique City banners for ROLHC as part of a marketing proposal, at the last Team Volusia Economic Development Corporation (TVEDC) meeting there was discussion regarding Trader Joes announcement of a Daytona location, two (2) new private investors joining TVEDC, Daytona Beach Kennel Club and the Shores Resorts; TVEDC proposed that all entities work together in developing a coordinated methodology in bringing the film industry to Volusia County, and developing a universal County permit for when film or other major companies want to come into the County, the next Volusia League of Cities (VLC) dinner being Thursday, March 27, 2014 which the City of Port Orange is hosting, the annual awards banquet will be at the Pelican Bay Golf and Country Club, after the Executive meeting there was a joint meeting between VLC and the Volusia Council of Governments (VCOG) discussing Deltona rejoining VCOG, it being a very good discussion on the purpose of VCOG and VLC, the difference between the two (2) entities, if the two (2) organizations should be combined or not, the formally proposed eight (8) member board to discuss the future of VCOG and VLC, and how the entities would look and work in the future. She thanked staff

for an outstanding audit, and for keeping Deltona in the black.

Commissioner Denizac asked if Vice Mayor Herzberg had heard of any interesting upcoming economic development that would have a direct and positive impact on the residents of Deltona, and Vice Mayor Herzberg replied "yes" there are two (2) potential businesses in the pipeline to come to Deltona and both are in the five (5) stage business development process. One (1) project is in stage three (3) and one is in stage four (4), with stage five (5) being the announcement stage.

f) Mayor Masiarczyk stated that he applauds the efforts to bring the film industry to Volusia County, Deltona Veterans Park having been used several times for filming a local attorney's commercials, that he has had literally hundreds of people come to the park because of an internet scavenger hunt game which sends participants on a treasure hunt throughout West Volusia County, part of the game is for them to find other attractions to add to future games so he suggested visiting Dewey O. Boster Sports Complex, he thanked the Beacon and News Journal for doing a great job of increasing the awareness of activities occurring in Deltona, he was granted an honorary title of Rabi Mayor at last Friday night's Shabbat event and he highlighted what a great event it was in bringing all the different temples from across the County together in one night, he discussed the Finance Department staying on top of the GASB Firefighter Pension funds needed each year and coordinating with the Firefighter Pension Board on acceptable numbers, he wished everyone a happy Saint Patrick's day, extended the Commission's sincere condolences to Captain Brannon who recently lost his mother, and stated that he and his family will be in everyone's prayers.

14. ADJOURNMENT:

There being no further business, the meeting adjourned at 8:14 p.m.

John Masiarczyk Sr., Mayor

ATTEST:

Mitch Honaker, Deputy City Clerk

AGENDA MEMO

TO: Mayor & City Commission **AGENDA DATE:** 4/7/2014

FROM: William D. Denny, City Manager **AGENDA ITEM:** 5 - A

SUBJECT: Presentation - Super Star Student of the Month Certificates for March 2014.

LOCATION: N/A

BACKGROUND: Superstar Student of the Month awards for March 2014, will be presented to:

1. Deltona Lakes Elementary, Kathy Nguyen, 3rd Grade
2. Discovery Elementary, Bradley Robin, 5th Grade
3. Enterprise Elementary, Leanette Negron, 5th Grade
4. Friendship Elementary, Katherine Mendez, 5th Grade
5. Pride Elementary, Lauren Jackson, 4th Grade
6. Spirit Elementary, Emma Reichert, 4th Grade
7. Sunrise Elementary, Peyton Bergman, 3rd Grade
8. Timbercrest Elementary, Caden Vaughn, 1st Grade
9. Galaxy Middle, Forris Hogan, 6th Grade
10. Heritage Middle, Eesha Thakore, 6th Grade

ORIGINATING DEPARTMENT: City Manager's Office

SOURCE OF FUNDS: N/A

COST: N/A

REVIEWED BY: City Clerk

STAFF RECOMMENDATION PRESENTED BY: N/A - Presentation Only.

POTENTIAL MOTION:	N/A - Presentation Only.
AGENDA ITEM APPROVED BY:	_____ William D. Denny, City Manager
ATTACHMENTS:	• Student Achievements

Super Star Students Read File – March 2014, presented on April 7, 2014.

Teacher	School	Student	Grade	Reading Comments on Student Achievements
Mrs. Castro	Deltona Lakes Elementary	Kathy Nguyen	3rd	Kathy Nguyen, a 3rd grade student at Deltona Lakes Elementary School, is receiving a Super Star certificate for: • Academic excellence; she has A's in all subjects. • She is extremely well-behaved and a great role model to all her peers. • Kathy is always willing to go the extra mile to help others in various activities. Even when she earns a reward, she will choose something that will be beneficial to others as well (for example, reading to one of the Kindergarten classes).
Mrs. Sweeney	Discovery Elementary	Bradley Robin	5th	Bradley Robin, a 5th grade student at Discovery Elementary School, is receiving a Super Star certificate for: • Academic excellence; he always puts forth 100% effort and works on a high level of understanding. • He is responsible, as demonstrated in his performance as a Safety Patrol. • Bradley helps others in class as a peer tutor, and is always ready to offer assistance in a kind and friendly way.
Barbara K. Papoi	Enterprise Elementary	Leanette Negron	5th	Leanette Negron, a 5th grade student from Enterprise Elementary, is receiving a Super Star Certificate for being: • Honest and modeling integrity. • She strives to achieve and completes each and every assignment. • Leanette is respectful and reliable. • She works well with others.

Mrs. Watson	Friendship Elementary	Katherine Mendez	5th	Katherine Mendez, a 5th grade student from Friendship Elementary, is receiving a Super Star certificate for: • Academic excellence; she is on the Honor Roll. • She is responsible; she is a Safety Patrol and also is in the National Elementary Honor Society. • Katherine goes to Boys and Girls Club and was just selected to be on the Basketball Team. • She does peer tutoring and participates in STAR Math.
Mrs. Miller	Pride Elementary	Lauren Jackson	4th	Lauren Jackson, 4th grade student from Pride Elementary School, is receiving a Super Star certificate for: • Academic Excellence; she has earned straight A's. • She is an active member of Girl Scouts. • Lauren had a perfect score on the Reading FCAT and over 400 Reading Counts. • She is a peer tutor to classmates, and a friend and helper to all.
Mrs. Gaugh	Spirit Elementary	Emma Reichert	4th	Emma Reichert, a 4th grade student from Spirit Elementary School, is receiving a Super Star certificate for: • Academic excellence; she has continuously earned A's and B's. • She is a great role model to her peers. • In addition to working hard to keep her grades high, she has earned over 346 Reading Counts Points. • Emma won the school spelling bee as a 4th grader and represented Spirit Elementary School at the county spelling bee. She placed 18th in the county bee.

Mrs. Doom	Sunrise Elementary	Peyton Bergman	3rd	Peyton Bergman, a 3rd grade student from Sunrise Elementary School, is receiving a Super Star certificate for: • Academic excellence; he is always working hard doing his personal best. • He is responsible and trustworthy, and demonstrates active listening. • Peyton helps others in class and is always ready to offer assistance in a kind and friendly way.
Mrs. Deyne	Timbercrest Elementary	Caden Vaughn	1st	Caden Vaughn, a 1st grade student from Timbercrest Elementary School, is receiving a Super Star certificate for: • Academic excellence; he excels in all academic areas and is eager to learn. • He is responsible; he follows rules and procedures, completes homework, and sets an example for others around him. He is a true role model for others. • Caden has a drive to be the best he can be that is uncommon and exceptional for a child his age. He always strives to be the best at everything he does.
Mrs. Drescher	Galaxy Middle	Forris Hogan	6th	Forris Hogan, a 6th grade student at Galaxy Middle School, is receiving a Super Star certificate for: • Academic excellence; he recently won a silver medal in the statewide Science Olympiad, his first time ever competing. He also strives to maintain Honor Roll. • He is responsible and a leader with his peers. He encourages them to do their best and strive for excellence. • Forris also helps others in class with organization and supplies without being asked. He is a pleasure to have in class and is highly deserving of this recognition.

Mrs. Scully	Heritage Middle	Eesha Thakore	6th	Eesha Thakore , a 6th grade student from Heritage Middle School is receiving a Super Star certificate for: • Working hard to achieve her goals. She is an AVID student and utilizes her skills learned in that program across the board in order to earn straight A's. • She is responsible and goes the extra mile. • Eesha is a leader and displays a fondness for Math and Science. • She was chosen to represent the school at the Women in Aviation Day event on April 1st, and her essay was a top contender for Heritage Middle.

AGENDA MEMO

TO: Mayor & City Commission **AGENDA DATE:** 4/7/2014

FROM: William D. Denny, City Manager **AGENDA ITEM:** 5 - B

SUBJECT: Presentation - Love Your Heart 5K, Presented by Final Mile Race Management.

LOCATION: N/A

BACKGROUND: The 2nd Annual "Love Your Heart" 5K Run brought in more than $5000 for the American Heart Association. The run, sponsored by the City of Deltona and Halifax Health, took place on Saturday, February 15th. The run followed the "River-2-Sea Trail" and looping through Thornby Park. The race started at t 7:30am with the starting line at Deltona Middle School, located at 250 Enterprise Road. There were more than 260 running and walking participants. This was a competitive 5K Run with the fastest runner completing the race in 19 minutes and 17 seconds.

To wrap up this year's Race, Halifax Health is proud to present this check for $5000.00 to the American Heart Association.

Presenters: Mr. Bill Griffin/Halifax Health, Don Stoner/Final Mile Race Management, Robin Mozingo/American Heart Association, and City Commission, City of Deltona.

ORIGINATING DEPARTMENT: City Manager's Office

SOURCE OF FUNDS: N/A

COST: N/A

REVIEWED BY: Economic Development Manager, City Manager

STAFF RECOMMENDATION PRESENTED BY: N/A - Presentation Only.

POTENTIAL

MOTION:	N/A - Presentation Only.
AGENDA ITEM APPROVED BY:	_____ William D. Denny, City Manager

AGENDA MEMO

TO: Mayor & City Commission **AGENDA DATE:** 4/7/2014

FROM: William D. Denny, City Manager **AGENDA ITEM:** 5 - C

SUBJECT: Presentation of the New Arts & Performance Center Presented by Lloyd Marcus.

LOCATION:	N/A
BACKGROUND:	Loyd Marcus, President of Deltona Arts and Historical Center, requested to present to the City Commission a proposal for a New Arts & Performance Center.
ORIGINATING DEPARTMENT:	City Manager's Office
SOURCE OF FUNDS:	N/A
COST:	N/A
REVIEWED BY:	City Clerk
STAFF RECOMMENDATION PRESENTED BY:	N/A - Presentation Only.
POTENTIAL MOTION:	N/A - Presentation Only.
AGENDA ITEM APPROVED BY:	_____ William D. Denny, City Manager

AGENDA MEMO

TO: Mayor & City Commission **AGENDA DATE:** 4/7/2014

FROM: William D. Denny, City Manager **AGENDA ITEM:** 7 - A

SUBJECT: Request for approval of the William S. Harvey Deltona Scholarship Advisory Board's recommendation to add Jerry M. Robinson, M.D. to the Wall of Fame.

LOCATION: N/A

BACKGROUND: At the Regular City Commission Meeting on November 19, 2012, Mayor Masiarczyk suggested that the William S. Harvey Deltona Scholarship Advisory Board take over the Wall of Fame nominations and selection process, with results and recommendations presented to the Commission for approval and the Commission concurred.

At the last meeting of the William S. Harvey Deltona Scholarship Advisory Board held on Thursday, March 20, 2014 the Board recommended the Wall of Fame nominee Jerry M. Robinson, M.D. to be submitted to the City Commission for approval.

ORIGINATING DEPARTMENT: City Clerk's Office

SOURCE OF FUNDS: N/A

COST: N/A

REVIEWED BY: City Clerk

STAFF RECOMMENDATION PRESENTED BY: Joyce Raftery, City Clerk - That the City Commission consider the William S. Harvey Deltona Scholarship Advisory Board's recommendation to add Jerry M. Robinson, M.D. to the Wall of Fame.

POTENTIAL MOTION: "I move to accept the William S. Harvey Deltona Scholarship Advisory Board's recommendation to add Jerry M. Robinson, M.D. to the Wall of Fame."

AGENDA ITEM APPROVED BY:	_____ William D. Denny, City Manager
ATTACHMENTS:	• Nominee - Jerry M. Robinson, M.D.

City of Deltona
Wall of Fame Nominee

Full Name: Jerry M. Robinson M.D.

Address: _____

Telephone: ( ) _____

How long has the nominee been a resident of Deltona? 1967

Describe in detail, the contributions of the nominee during his/her association with the activity or activities for which they are being nominated.

Dr. Robinson was the first doctor to establish a practice in Deltona.

Is the nominee still associated with the activity?

Deceased - Dr. Robinson died December 25, 2008

How has the nominee impacted the quality of life in Deltona?

Why do you feel this person deserves to be on the Deltona Wall of Fame?

He is part of the history of Deltona.

Name and telephone number of potential contacts for additional information re: nominee:

_____

_____

_____

Nominated by: Helen Dicks ***Phone #:*** 386-532-5897

Attach additional information, if necessary.

Helen Dicks

3089 Boxelder Street

Deltona, Florida 32725

386-532-5897

Jerry M. Robinson, M.D. July 4, 1938-December 25, 2008.

I would like to nominate Dr. Robinson for the City of Deltona Wall of Fame.

Not only was he the first Doctor to establish a practice in Deltona, but he was responsible for bringing many medical facilities to Deltona such as: a Lab, Imaging services, and many other medical and community services.

Dr. Robinson was very compassionate, and cared for his patients. I have heard many stories of how he cared for patients that could not afford to pay him.

He loved Deltona, and was involved with the unincorporated Deltona, and continued his involvement when we became a City. The City could always depend on Dr. Robinson's help whenever it was needed.

Dr. Robinson believed in service. He served his Country in the United States Navy, the Vietnam War, and his served his patients in Deltona for forty years.

The History of Deltona cannot be written without including Jerry M. Robinson M.D.

I hope you will consider Dr. Robinson for the Wall of Fame.

Sincerely

Helen Dicks

AGENDA MEMO

TO: Mayor & City Commission **AGENDA DATE:** 4/7/2014

FROM: William D. Denny, City Manager **AGENDA ITEM:** 7 - B

SUBJECT: Request for approval of recommendations for scholarship awards from the William S. Harvey Deltona Scholarship Advisory Board.

LOCATION: N/A

BACKGROUND: The William S. Harvey Deltona Scholarship Advisory Board met on March 20, 2014, and selected 24 applicants to receive the 2013/2014 scholarship awards. The selections were based on the following criteria: 1) financial need; 2) academic achievement; 3) school; 4) community and/or leadership activities; 5) special skills and/or talents; and 6) an essay of 500 to 750 words.

As you are aware, the FY 13/14 budget included an amount of $40,000 for scholarship awards based on anticipated revenue from recyclables.

ORIGINATING DEPARTMENT: City Manager's Office

SOURCE OF FUNDS: Recycling Funds.

COST: $40,000

REVIEWED BY: City Manager

STAFF RECOMMENDATION PRESENTED BY: William D. Denny, City Manager - To approve the City of Deltona William S. Harvey Deltona Scholarship award recipients as recommended by the Board.

POTENTIAL MOTION: "I move to approve the 2013/2014 William S. Harvey Scholarship recipients as presented by the William S. Harvey Deltona Scholarship Advisory Board."

AGENDA ITEM APPROVED BY:	_____ William D. Denny, City Manager
ATTACHMENTS:	• 2013-2014 Scholarship Rankings • 2013-2014 Scholarship Awards

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	**William S. Harvey Scholarship**		**2013-2014 Ranking**										
2	**Last Name**	**First Name**	**School**	**Alcantara**	**Dawson**	**Raimundo**	**Lightbody**	**Meeks**	**Moore**	**Burbank**	**Sub**	**Final**	**Award**
3	Acevedo	Isabel	University of Central Florida	76	100	82	61	93	85	82	579.00	82.71	$ -
4	Applegarth	Kelsey	FL Gulf Coast U, Ft. Meyers	79	80	89	58	80	85	80	551.00	78.71	$ -
5	Arias	Jolynn	Deltona High School	77	100	93	72	90	85	89	606.00	86.57	$ -
6	Bounds	Celine	University High School	81	95	85	69	88	65	77	560.00	80.00	$ -
7	Bunch	Shelby	Deltona High School	67	95	90	49	80	80	60	521.00	74.43	$ -
8	Calhoun	Brenna	Deltona High School	91	80	100	84	85	95	74	609.00	87.00	$ -
9	Collazo	Aramalix	Deltona High School	85	80	90	80	69	98	89	591.00	84.43	$ -
10	Collier	Monique	Pine Ridge High School	94	95	98	88	85	98	87	645.00	92.14	$ -
11	Cretella	Michelle	Deltona High School	83	95	82	82	75	90	84	591.00	84.43	$ -
12	Davis	Kendra	Deltona High School	81	95	89	74	80	80	74	573.00	81.86	$ -
13	DeJesus	Harold	Daytona State College	82	90	82	77	82	80	84	577.00	82.43	$ -
14	DeJesus	Jonathan	University High School	86	95	97	77	90	90	84	619.00	88.43	$ -
15	Duran	Eric	Deltona High School	98	100	100	92	96	98	100	684.00	97.71	$ -
16	Eberhart	Daniel	University High School	83	90	70	81	85	85	86	580.00	82.86	$ -
17	Fanning	William	Home School/Virtual/DSC	93	90	100	88	95	95	90	651.00	93.00	$ -
18	Frato	Amber	Stetson University		100	90	66	98	90	84	528.00	88.00	$ -
19	Gayle	Sheryllyn	Mainland High School	84	90	95	83	91	98	85	626.00	89.43	$ -
20	Ginn	Morgan	Deltona High School	87	90	100	75	95	88	70	605.00	86.43	$ -
21	Gomez	Tiffany	Deltona High School	97	95	90	84	95	89	92	642.00	91.71	$ -
22	Hardrick	Alexa	DeLand High School	84	95	100	76	96	88	79	618.00	88.29	$ -
23	Holmes	Zachery	Deltona High School	90	95	94	73	87	95	79	613.00	87.57	$ -
24	Jimeno	Adrianna	Pine Ridge High School	93	100	90	91	84	88	95	641.00	91.57	$ -
25	Kehr	Kathryn	Father Lopez High School	74	100	85	61	90	92	64	566.00	80.86	$ -
26	Khwaja	Eisa	University High School	92	100	95	86	96	78	91	638.00	91.14	$ -
27	Langrick	Ashton	Deltona High School	86	100	100	82	95	92	62	617.00	88.14	$ -
28	Leisen	Nicole	Univ of S. Florida, Tampa	74	90	80	74	86	89	53	546.00	78.00	$ -
29	MacFarlane	Jessica	Deltona High School	78	100	84	76	91	100	58	587.00	83.86	$ -
30	Marva	Yvette	Seminole State College	74	75	85	71	87	82	74	548.00	78.29	$ -
31	Mendez	Luis	Pine Ridge High School	88	90	98	86	87	87	92	628.00	89.71	$ -
32	Morales	Alejandra	Deltona High School	95	95	95	97	90	88	91	651.00	93.00	$ -
33	Oretsky	Alexandra	Florida State University	78	100	88	85	85	88	75	599.00	85.57	$ -
34	Payan	Ali	Deltona High School	88	90	93	87	90	93	75	616.00	88.00	$ -
35	Pertler	Caroline	Univ of Florida, Gainesville	71	100	80	83	90	94	67	585.00	83.57	$ -
36	Pimental	Lynnette	Montclair State Univ, NJ	79	80	68	61	93	89	78	548.00	78.29	$ -
37	Pinnock	Travis	Univ of Florida, Gainesville	85	100	93	83	98	82	75	616.00	88.00	$ -
38	Pitts	Justin	Pine Ridge High School	84	95	89	87	85	93	69	602.00	86.00	$ -
39	Pizza	Joseph	University High School	91	85	85	86	92	90	78	607.00	86.71	$ -

	A	B	C	D	E	F	G	H	I	J	K	L	M
40	Premo	Kaleigh	Deltona High School	88	95	93	86	83	98	75	618.00	88.29	$ -
41	Prior	Roxanna	Deltona High School	77	90	80	80	77	78	58	540.00	77.14	$ -
42	Radstake	Chrstina	Seminole State College	79	100	82	74	89	78	43	545.00	77.86	$ -
43	Rivera	Jason	Pine Ridge High School	81	85	86	78	68	82	77	557.00	79.57	$ -
44	Rodriguez	Katharine	Deltona High School	78	85	79	74	80	83	69	548.00	78.29	$ -
45	Rodriguez	Mariah	University High School	81	85	81	86	80	90	89	592.00	84.57	$ -
46	Ron	Elyza	Pine Ridge High School	86	88	85	82	82	78		501.00	83.50	$ -
47	Ruiz	Carly	University High School	73	95		67	78	83	51	447.00	74.50	$ -
48	Sanchez	Barbara	Deltona High School	85	95	98	87	85	88	70	608.00	86.86	$ -
49	Schoening	Amanda	Pine Ridge High School	78	100	95	81	83	78	66	581.00	83.00	$ -
50	Smith	Shane	University High School	91	90	93	78	66	80	83	581.00	83.00	$ -
51	Stone	Amanda	University of Central FL	92	95	87	80	77	80	91	602.00	86.00	$ -
52	Stridacchio	Tyler	Deltona High School	69	80	83	64	90	78	56	520.00	74.29	$ -
53	Veras	Sara	Daytona State, DeLand	73	75	75	67	78	100	74	542.00	77.43	$ -
54	Williams	Briana	Pine Ridge High School	94	100	98	93	93	87	96	661.00	94.43	$ -
55	Williams	Neville	Deltona High School	94	85	92	85	81	80	94	611.00	87.29	$ -
56	Young	Megan	Univ of Florida, Gainesville	57	95	83	62	88	75	57	517.00	73.86	$ -

William S. Harvey Scholarship Award Amounts 2013-2014

Last Name	First Name	School	Award
Duran	Eric	Deltona High School	$ 3,000.00
Williams	Briana	Pine Ridge High School	$ 2,500.00
Fanning	William	Home School/Virtual/DSC	$ 2,500.00
Morales	Alejandra	Deltona High School	$ 2,500.00
Collier	Monique	Pine Ridge High School	$ 2,000.00
Gomez	Tiffany	Deltona High School	$ 2,000.00
Jimeno	Adrianna	Pine Ridge High School	$ 2,000.00
Khwaja	Eisa	University High School	$ 2,000.00
Mendez	Luis	Pine Ridge High School	$ 2,000.00
Gayle	Sheryllyn	Mainland High School	$ 2,000.00
DeJesus	Jonathan	University High School	$ 1,500.00
Hardrick	Alexa	DeLand High School	$ 1,500.00
Premo	Kaleigh	Deltona High School	$ 1,500.00
Langrick	Ashton	Deltona High School	$ 1,500.00
Frato	Amber	Stetson University	$ 1,500.00
Payan	Ali	Deltona High School	$ 1,500.00
Pinnock	Travis	Univ of Florida, Gainesville	$ 1,500.00
Holmes	Zachery	Deltona High School	$ 1,000.00
Williams	Neville	Deltona High School	$ 1,000.00
Calhoun	Brenna	Deltona High School	$ 1,000.00
Sanchez	Barbara	Deltona High School	$ 1,000.00
Pizza	Joseph	University High School	$ 1,000.00
Arias	Jolynn	Deltona High School	$ 1,000.00
Ginn	Morgan	Deltona High School	$ 1,000.00
TOTAL AWARDS			$ 40,000.00

Deltona High	12
Pine Ridge High	4
Home School	1
University High	3
DeLand High	1
Mainland High	1
Stetson University	1
UF Gainesville	1
Total Recipients	24

AGENDA MEMO

TO: Mayor & City Commission **AGENDA DATE:** 4/7/2014

FROM: William D. Denny, City Manager **AGENDA ITEM:** 8 - A

SUBJECT: Public Hearing - Ordinance No. 02-2014, Zoning Map Amendment for three (3) lots from Mixed Planned Unit Development (MPUD) to the Business Planned Unit Development (BPUD) for the Saxon Sterling Silver project, at first reading.

LOCATION:

Generally located at the intersection of Saxon Boulevard and Sterling Silver Boulevard, along the north side of Saxon Boulevard.

BACKGROUND:

The subject property (site) has a long entitlement history in Deltona (the City), briefly summarized as follows:

1. In 2005, the subject site was rezoned as the *Retirement Community at Sterling Park MPUD* and the rezoning was consistent with the underlying *Commercial* future land use designation.
2. The rezoning allowed for a four (4) lot subdivision and lot 3 of that site was developed as the Sterling Court retirement facility that includes 118 multi-family units with detached duplexes/triplexes.
3. In 2006, a Final Plat was approved for the MPUD that created four (4) legal lots of record (see attached).
4. In 2006, the *Development Agreement and Cross Access Easement* (DA) for the MPUD was adopted that approved development rights for the property (see attached and accompanying summary) that allows for commercial or office uses on lot 1 and office uses only on lots 2 and 4, as follows:

Lot 1 approvals:
- Permitted land uses - C-1 zoning permitted uses, except bars/nightclubs, gas stations and convenience stores, fast food restaurants, automobile service stations type C, and any other land use that is not listed as a permitted use in the C-1 zoning district.
- Permitted intensity - 0.25 floor area ratio (FAR).
- Permitted lot coverage - 0.65 impervious surface ratio (ISR).
- Access - right-in/right-out along Saxon Blvd. with median construction on Saxon Blvd. Access from Sterling Silver

Blvd.
- Commitments/encumbrances - six (6) foot high masonry screen wall and landscaping along the north and west property lines, 15-ft. wide utility easement along Saxon Blvd., 1-ft. wide non-vehicular ingress and egress easement along roadway frontages, and utility easement at the northeast corner of the lot.

Lot 3 approvals: Lot 3 is the constructed retirement center and not included in this BPUD application.

Lots 2 and 4 approvals:
- Permitted land uses - business office or medical office development.
- Permitted intensity - 0.25 FAR (business office) or 0.12 FAR (medical office).
- Permitted lot coverage - 0.65 ISR.
- Access - three (3) driveways were permitted along Alabaster Way into lots 2 and 4.
- Commitments/encumbrances - Tract B is 44-ft. wide for common area, drainage, and utility easement (DUE), and ingress/egress; 10-ft. DUE extending from Tract B to Road B; 24-ft. wide access and utility easement from Alabaster Way to the Saxon Medical Park; Tract C common area; Road B (vacated by Ordinance No. 02-2008); 20-ft. wide School Board easement; 15-ft. wide utility easement along Saxon Blvd., and 1-ft. wide non-vehicular ingress and egress easement along Saxon Blvd. and Sterling Silver Blvd.

Other:
- 8-ft. wide sidewalks (only 5-ft. wide sidewalks constructed on Saxon Blvd.; need 8-ft.)
- Landscape medians constructed by Owner/Developer to be maintained by a POA (medians not landscaped; POA not created).
- Pedestrian crosswalks (partially striped/need completed).
- Turn-lane arrows internal to project (done).
- Signalization escrow funds prorated per lot (no monies escrowed).

The applicant initially proposed two options for this Master Development Plan (MDP); Options 1 and 2 (see attached) and amendments to the previously approved DA. Since the original approvals for the MPUD and the Planning and Zoning Board (Board) hearing for this ordinance on February 19, 2014, the applicant revised the DA and MDP plan, as follows:

1. BPUD application only includes lots 1, 2, and 4 (lot 3 ownership is listed as a joinder to DA).
3. Only Option 2 is addressed in the revised DA and TIA.
4. Option 2 removes commercial land uses on lot 1, but adds them on lots 2 and 4.

5. Option 2 continues potential for office or medical office use on lots 1, 2, and 4.
6. Signalization commitment from 2006 is kept.
7. Cross-access to medical plaza maintained for co-located access to lots 2 and 4.
8. Access to City's lift station maintained.
9. Access points, screen walls, easements, medians, and landscape treatments maintained.
10. FAR altered for lots 2 and 4 from 0.25 or 0.12 to 0.182.
11. ISR increased for lots 2 and 4 slightly from 0.65 to 0.67.
12. Cross-access and utility easement along lot 4 reduced from 24-ft. to 20-ft. and 14-ft. stabilized drive replaced with 12-ft. paved drive for access to City lift station.

Per the City's Code of Ordinances, the written agreement (DA) and the preliminary plan comprise the MDP and shall be consistent with each other. While the applicant submitted two options on the preliminary plan, the DA and TIA focus on Option 2 only. Staff worked with Volusia County Traffic Engineering and a peer review consultant for access and traffic management; and the applicant for land use compatibility issues, understanding that the site is already entitled for commercial and office development. An updated peer review letter will be provided upon receipt from the consultant, due to a new TIA submitted by the applicant.

Finally, at the February 19, 2014, meeting, the P&Z Board recommended that the City Commission deny Ordinance No. 02-2014, due to outstanding issues raised by the applicant that night; the continued need to provide safe access; outstanding 2006 DA commitments; and neighborhood compatibility measures needed for less-intensive residential homes. The applicant has attempted to address those issues in the revised DA and MDP, Option 2 . Staff can support the attached revisions to the DA and only Option 2 of the MDP, with the recommended conditions of approval listed in the attached staff report. Staff does not support a 24-hour facility as proposed by the applicant.

ORIGINATING DEPARTMENT: Planning and Development Services

SOURCE OF FUNDS: N/A

COST: N/A

REVIEWED BY: Planning Director, Finance Director, City Attorney

STAFF RECOMMENDATION PRESENTED BY:

Chris Bowley, AICP, Director, Planning and Development Services - Staff recommends that the City

Commission approve Ordinance No. 02-2014, a rezoning of the Saxon-Sterling Silver lots 1, 2, and 4 from MPUD to BPUD, to include the amendments to the Development Agreement and only Option 2 of the Master Development Plan.

POTENTIAL MOTION:

"I move to approve Ordinance No. 02-2014, a rezoning of the Saxon-Sterling Silver lots 1, 2, and 4 from MPUD to BPUD, to include the amendments to the Development Agreement and only Option 2 of the Master Development Plan, at first reading."

AGENDA ITEM APPROVED BY:

_____

William D. Denny, City Manager

ATTACHMENTS:

- Staff Report 030314
- Proposed Development Agreement
- Adopted 2006 MPUD Final Plat
- Adopted 2006 Development Agreement
- Adopted 2006 DA Summary
- Traffic Impact Analysis 030114
- TIA Peer Review Letter for CPH TIA
- Volusia County Traffic Engineering Comments 120313
- Ordinance No. 02-2014

CITY OF DELTONA

Memorandum

To: Planning and Zoning Board

From: Chris Bowley, AICP

Date: December 7, 2013
Revised: March 3, 2014

Re: Project No. RZ13-008: Amendment to the Official Zoning Map for the property known as Saxon-Sterling Silver, located at the intersection of Sterling Silver and Saxon Boulevards.

I. SUMMARY OF APPLICATION:

APPLICANT: CPH, Inc.
Larry Wray, P.E.
500 W. Fulton Street
Sanford, FL 32771

Request: The City of Deltona has received an application from Deltona Group Investors, LLC, to rezone the subject property from MPUD to BPUD and amend the Master Development Plan (MDP) and Development Agreement (DA) (See Exhibit A).

A. SITE INFORMATION:

1. **Tax Parcel No.**: 8130-78-00-0020, 8130-78-00-0040
8130-78-00-000B, 8130-78-00-0001
8130-78-00-0010, 8130-78-00-0003

2. **Property Addresses:** 1001 Alabaster Way.

3. **Property Acreage:** ±11.78 acres.

4. **Property Location:** Located at the northwest and northeast corners of the intersection of Saxon Blvd. and Sterling Silver Blvd.

5. **Property Legal Description:** Lot 1, 2, and 4 tracts "B", "C" and road "B", of the retirement community at Sterling Park MPUD, according to the plat thereof as recorded in Map Book 53, Pages 59 and 60 of the public records of Volusia County, Florida.

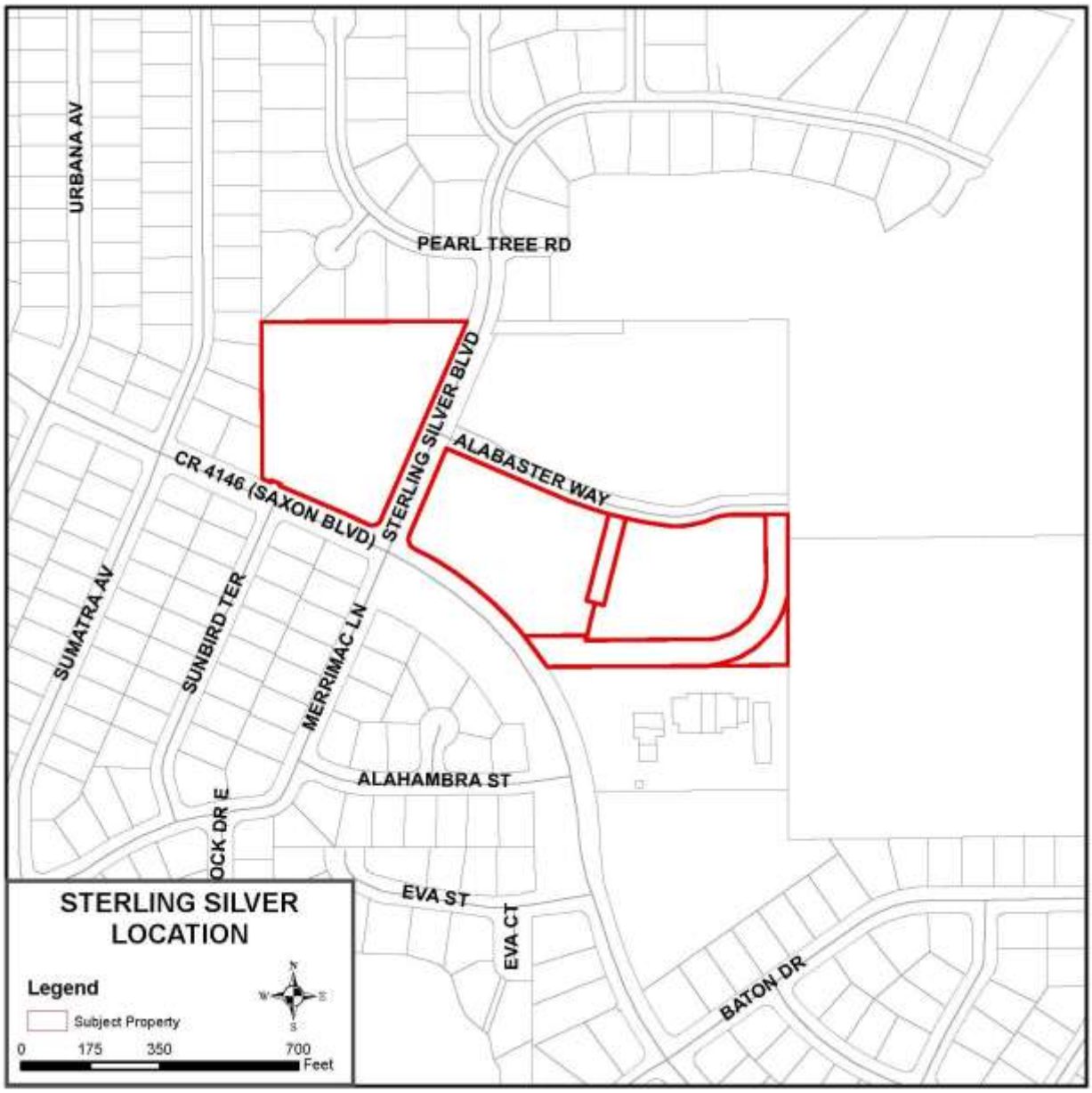


Figure 1: Location Map

Figure 2: Aerial Photo

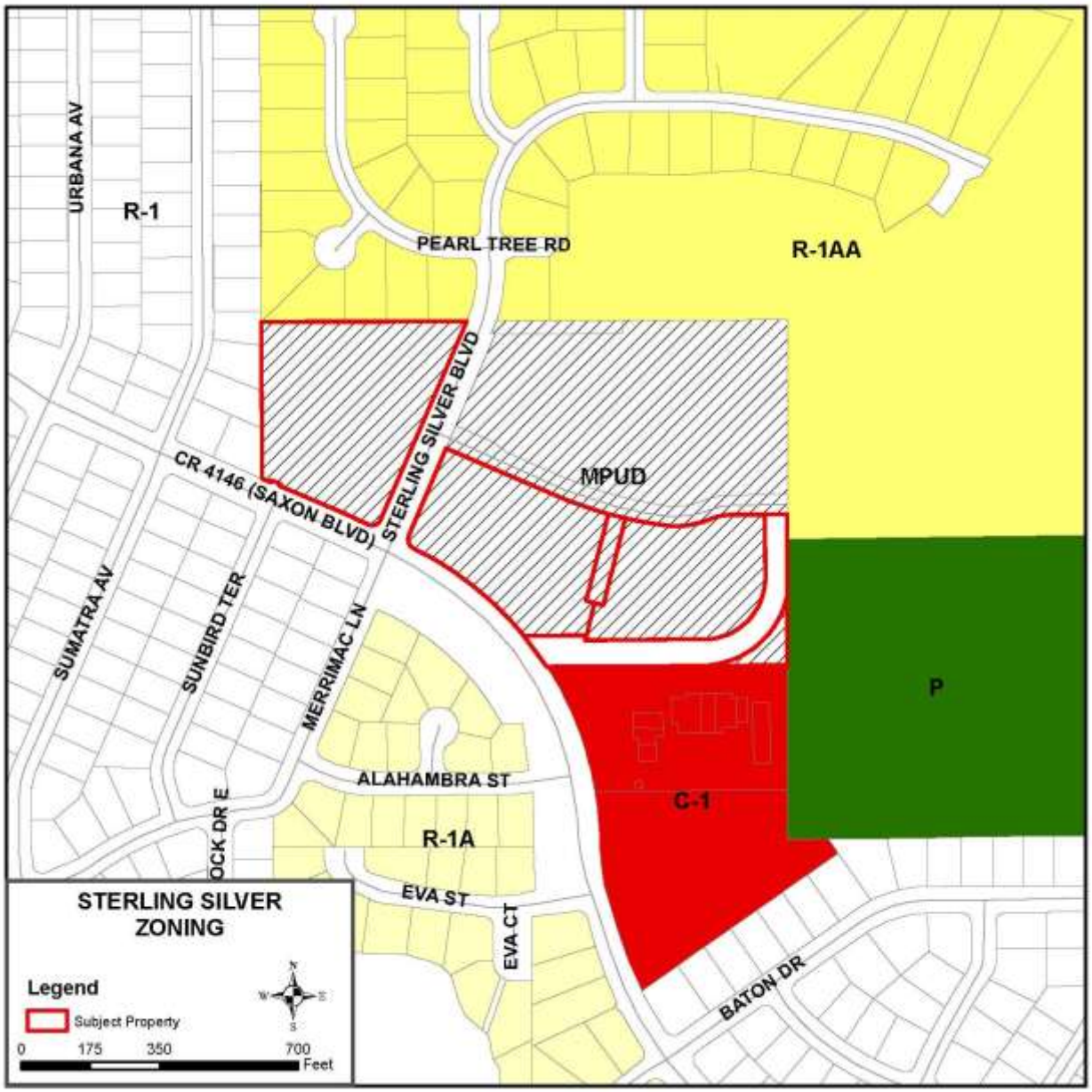


Figure 3: Existing Zoning

B. Existing Zoning:

1. Subject Property:
Existing: MPUD
Requested: BPUD

2. Adjacent Properties
North: MPUD and R-1AA
South: C-1, R-1, and R-1A

East: Public (School) and R-1
West: R-1

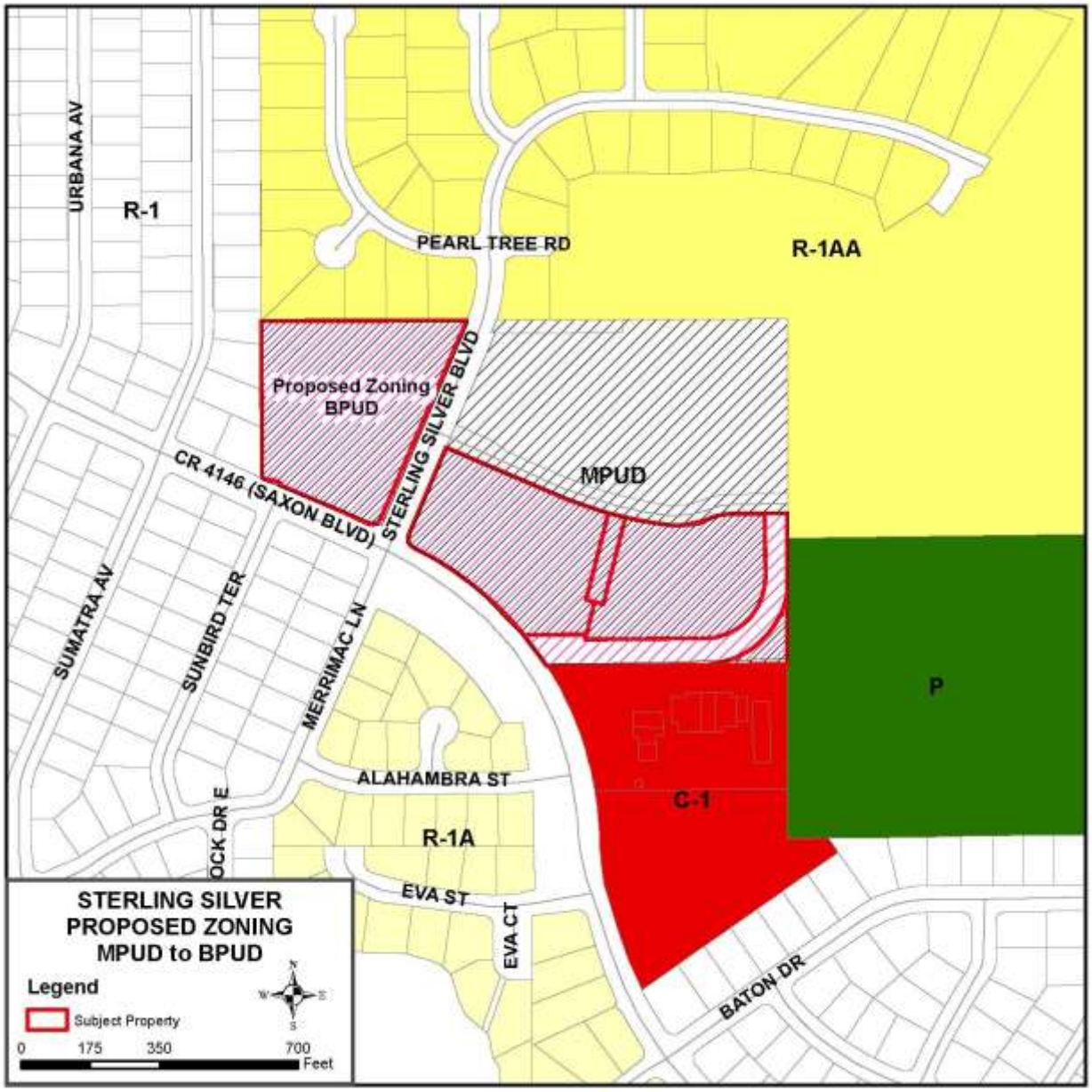


Figure 4: Proposed Zoning

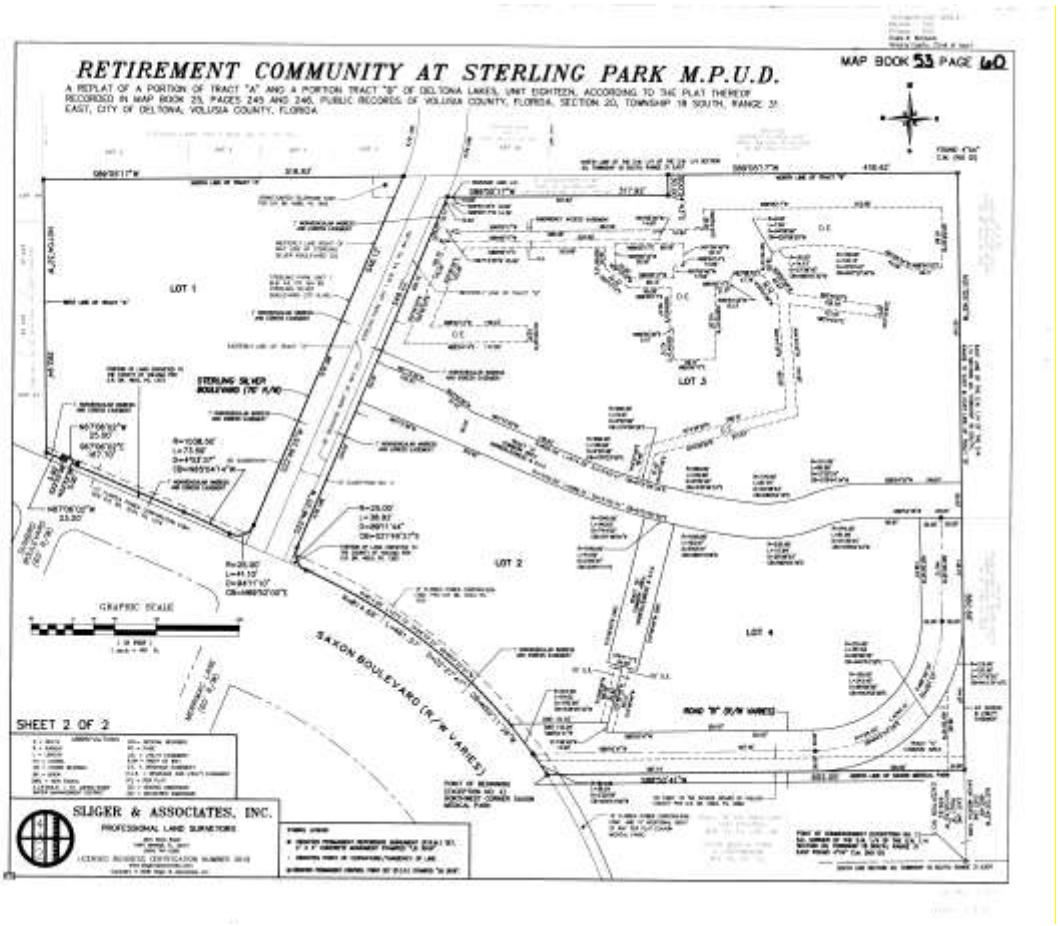


Figure 5: Plat Map

C. Proposed Zoning:

Business Planned Unit Development (BPUD) The purpose and intent of the planned unit development is to provide for integrated developments, which are consistent with the *Comprehensive Plan*, so as to promote the orderly development of compatible land uses. Further, it is intended that a proposed development shall be sensitive to existing adjacent and future land uses, the natural environment, and the impact upon supporting public infrastructure. A BPUD may consist of uses found within the commercial zoning classifications contained within Chapter 110 of the City's Land Development Code (LDC).

To rezone the subject site, the applicant has elected to exclude lot 3 and only rezone lots 1, 2, and 4, from Mixed Use Planned Unit Development (MPUD) to Business Planned Unit Development (BPUD), as described in more detail throughout this report. It is important to note that a PUD consists of two parts, as defined by the LDC. The written agreement is also known as a Development Agreement. The preliminary plan is the graphic exhibit. The two parts are intended to be consistent and mutually supportive.

Any approval of this BPUD will be held to that same standard, as well as be consistent with the proposed ordinance for the rezoning.

D. Back Ground

The proposed property to be rezoned to BPUD has an extensive history. In 2005, the subject property and adjacent land, which totaled over 20 acres, was rezoned to MPUD that contained four (4) lots (See Figure 5). According to the approved MPUD DA, each lot was earmarked for different uses. The uses included a multi-family residential component, office, and commercial entitlements. The property was platted into four (4) lots and recorded into the public records as the *Retirement Community at Sterling Park MPUD*. In 2006, a Final Site Plan was approved for lot 3 of the MPUD, which allowed for a 118-unit age-targeted assisted living facility (multi-family residential). To date, the assisted living facility is the only use to be developed on the MPUD property.

A network of access easements and rights-of-way were required as part of the approval of the MPUD. The intent of the designed access was to provide safe ingress and egress for all of the proposed lots within the development with the least amount of impact to the critical City thoroughfare of Saxon Blvd. The access design was also to encourage cross-access to other developments in the area for interconnectivity, to facilitate internal trip capture, and to provide access to the adjacent school, office complex, a City lift-station, and the medical plaza to the south. The access network evolved and in 2008, the property owner abandoned a right-of-way listed on the plat as road “B”, which at the time granted a full-access right along Saxon Blvd. As part of that abandonment, the City was deeded a public right-of-way depicted on the plat as tract “A” (now Alabaster Way). Since 2007, lots 1, 2, and 4 have remained vacant and undeveloped.

The applicant has now applied to rezone only lots 1, 2, and 4 and other residual land obtained from the vacation of road “B” from MPUD to BPUD. The rezoning application has been submitted with a new DA and a Master Development Plan (MDP) that features two (2) development scenarios (Options 1 and 2). Option 1 is retail commercial oriented, with retail commercial development contemplated throughout lots 1, 2, and 4 (see attached Option 1). Option 2 keeps retail and commercial on lots 2 and 4, as a shopping center, but includes an office/medical office use on lot 1, in lieu of retail commercial use at that location.

While commercial development can be constructed on lot 1 under the current entitlements today, these uses would be developed closest to existing residential homes to the north and west and be in close proximity to the multi-family development on lot 3. Option 1 continues that trend, but Option 2 moves commercial entitlements to lots 2 and 4 and restricts office development to lot 1.

E. Support Information

Public Facilities

a. Potable Water: Deltona Water
b. Sanitary Sewer: Deltona Water
c. Fire Protection: City Fire Station 65
d. Law Enforcement: County Sheriff's Office (VCSO)
e. Electricity: Duke Energy

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

1. **Whether it is consistent with all adopted elements of the Comprehensive Plan.**
   The City is underserved by commercial uses and there is a land-use imbalance between residential and non-residential land uses. To respond to this, the City's Comprehensive Plan contains policies that encourage a diversification of land uses within the City. The revised MDP is meant to simplify the MPUD, making it more viable and flexible towards the local real estate market. Therefore, the proposal to update the MDP is consistent with the Comprehensive Plan.

2. **Its impact upon the environment or natural resources.**
   The property is largely undeveloped; primarily scrub and pine flat woods. The land is located on the DeLand Ridge geologic feature. The soil is predominately Astatula Fine Sand, with a portion of Paola Fine Sand. According to the September 2011 and soon to be updated 2014 FEMA flood zone maps; the subject property is not located within a 100 year floodplain.

   The site is ±11.78 acres and may currently be used as habitat for small wildlife. Large animals likely do not use the site. Gopher tortoises may be associated with the site and the tortoises within the development will have to be relocated following state and federal permitting procedures.

3. **Its impact upon the economy of any affected area.**
   The proposed impact upon the local economy will depend on the development pattern listed in Options 1 and 2. Both scenarios would create temporary construction jobs, but medical offices would ultimately create an employment center and, thus, higher paying professional jobs in Option 2, instead of service-oriented jobs in Option 1. If the property does develop with an office capacity under the proposed zoning, such development would help diversify the City's tax base.

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 Volusia County School Board staff has indicated that this rezoning will not affect local schools.
b. **Sewage Disposal:** The site will be served by City sewer and capacity will be available.
c. **Potable Water:** Deltona Water will serve the site and sufficient potable water capacity is available.
d. **Drainage:** All site related stormwater runoff will be managed on-site and all stormwater management facilities will be constructed in accordance with the necessary requirements of the City's Land Development Code and other permitting agencies.
e. **Transportation Systems:** The applicant has submitted a Traffic Impact Analysis (TIA) as part of the application package. While the MDP contains two (2) development scenarios, the TIA only addresses Option 1 – retail (±14,000 SF), fast food (two buildings each being ±4,500 SF), convenience store with gas pumps (±5,700 SF) and a grocery store (±44,000 SF). The Option 2 that features the medical office use was not included in the TIA, but would be less of a traffic generator than Option 1. Further, the TIA was formulated with a new access plan that is being proposed by the applicant. The new access plan can have an impact on traffic characteristics, both on-site and off-site.

   According to the TIA, Option 1 would generate 15,676 gross daily trips. Factoring in pass-by rates, the net new trips would be reduced to 7,095 trips; or a 45% reduction. This type of pass-by reduction is not unusual for the type of uses proposed. The end result is that the project is of ample magnitude to generate a significant amount of traffic.

   Traffic is not necessarily a negative attribute. A lot of traffic implies economic activity and vitality and certainly enhances land-use opportunities for property abutting major, well-traveled thoroughfares. High traffic volumes also represent ~~s~~ a maximization of a significant public investment – roads. To manage traffic, the City has established level of service (LOS) standards for roads within the City. The LOS for Saxon Blvd. is "E". LOS "E" can be described as a facility that is operating at the maximum capacity with traffic generally still flowing. Stoppages and some delays may be expected during peak hours.

   As part of TIA investigation, numerous road segments were reviewed – especially Saxon Blvd. from Veterans Memorial Parkway (Orange City) to East Normandy Blvd. Based on the submitted TIA trip distribution, of which City staff contends is representative of the local traffic patterns, three (3) segments of Saxon Blvd. have been identified as being adversely impacted by the development proposal. The Saxon Blvd. segments are from the FDOT parking ride to I-4, I-4 to Finland Dr., and Finland Dr. to Normandy Blvd; of which the first segment is not within

the City's jurisdiction and the other two (2) segments are within the City. The fact that the Saxon Blvd. corridor from I-4 to N. Normandy Blvd. has been identified by the TIA as problematic, validates existing conditions. Those Saxon Blvd. roadway segments are currently operating at a level of service "F" even without the development that is associated with this rezoning request (LOS "F" represents a failure of traffic movement and delays are common and lengthy.)

However, according to the submitted TIA, the impact on the segments of Saxon Blvd. from I-4 to Finland Dr. and Finland Dr. to Normandy Blvd. would be very small. The TIA quantifies the impact as 3.7%, but does not suggest any remedial actions to address this deficiency. The TIA also identified the signalized intersections at Saxon Blvd. at Finland Dr. and Saxon Blvd. and Normandy Blvd. as failing. The TIA suggests that the Saxon Blvd/Finland Dr. signal could be retimed to cycle five-seconds longer than the current timing; which would improve flow enough to make the intersection operate at an acceptable level of service. However, retiming the intersection signal would involve the logistically complex retiming of all of the Saxon Blvd. signals from Enterprise Rd. to Finland Dr. through the installation of an signal interconnect. The Saxon Blvd/Normandy Blvd. intersection is currently operating at an LOS of "F". The TIA indicates that the delay at the intersection after development of the property to be rezoned will be measured at 4.6 seconds. Expressed in real world terms, it could mean more motorist sit through the first signal cycle before progressing through the intersection during the second cycle.

As a note, the submitted TIA did review Tivoli Dr. between Saxon Blvd. and Providence Blvd. Tivoli Dr., notwithstanding serving as a collector function, is classified as a local road and, according to the City's Comprehensive Plan local roads are not to fall below a LOS of "D". The TIA erroneously indicates that segment of Tivoli Dr. has a LOS of "E". An analysis of traffic counts for the subject segment of Tivoli Dr. revealed that the roadway currently operates at a LOS of "C". The trips generated by the project will impact Tivoli Dr., but it is unclear if the project will cause the Tivoli Drive segment to operate below the required threshold of an LOS of "D".

An important component of this project, even from the first rezoning in 2005, is access management. The original MPUD DA was rife with language to ensure cross-access with a development to the south, provide internal connections between development nodes, and to limit access to Saxon Blvd.; especially through the creation of road "B", if warranted. This coincided with intensity and land use limitations to mitigate traffic volumes.

To understand the intent of the access management, the geographic context of the property needs to be reviewed. The property fronts on Saxon Blvd. The segment of Saxon Blvd. where the property is located is a four (4) lane facility with a

posted speed limit of 45 mph. The property is also located nearly at the apex of a curve as Saxon Blvd. transitions to a westerly direction. Limiting access to roadway thoroughfares is common planning practice and is something that has occurred in the City for many years to protect the capacity and function of the thoroughfare as designed. The intent is to restrict turning maneuvers and driveway cuts, which slow traffic flow and create the potential for traffic accidents. The latter reason is acute with the curvature of the road and design speed of the segment of Saxon Blvd. associated with the project. Traffic should be directed to a safe ingress and egress, which would be the signalized intersection of Saxon Blvd. and Sterling Silver Blvd. However, to warrant a need for the aforementioned intersection to be signalized, traffic should be directed to this controlled access point for safety and functionality purposes. Finally, the need for access management is also supported by adopted roadway design standards.

The original MPUD limited access along Saxon Blvd. to three (3) strategic points. One point was located along the southern margin of the property where the property abuts an existing development known as the Saxon Medical Park. There was full access planned and platted at this point and the access was intended to be joint, or shared between the Saxon Medical Park site and the property proposed to be rezoned, as listed in the respective approved DAs for the projects.

The existing MPUD DA called for the common access point. In addition, a 2004 Developer's Agreement between the City and the owner of the Saxon Medical Park required cooperation to facilitate joint access with adjacent uses. This access was connected to an access feature referred to on the Retirement Community at Sterling Park MPUD plat as road "B". However, road "B" was vacated by the applicant in 2008, which removed the full access permitted on the subject site. The next access from Saxon Blvd. is a full access at the intersection of Sterling Silver Blvd. and Saxon Blvd. This access point exists today and is being used by a residential area and the aforementioned assisted living facility. The intersection of Sterling Silver Blvd. and Saxon Blvd. is approved to be signalized. According to the MPUD DA, the applicant is responsible for erecting a traffic signal at the Saxon Blvd/Sterling Silver Blvd. intersection associated with the development of lots 1, 2, and 4 of the MPUD site. Finally, for lot 1 located west of Sterling Silver Blvd., a right-in and right-out only access is provided onto Saxon Blvd. However, the intent is that a landscape island be built in the Saxon Blvd. median across from the subject access point to discourage illegal left turns that cross several lanes of traffic. Other access to the lots would come from Sterling Silver Blvd. and Alabaster Way, which includes existing driveway cuts into the lots 2 and 4.

A purpose of the existing MPUD access plan was to maximize the use of a central, signalized intersection. This would be safer, especially in light of the travel speeds and the curvature of Saxon Blvd. associated with the property. The

access plan is also designed to protect the level of service of City roads and protecting level of service on City roads enables future development in the City to utilize the capacity savings derived from appropriate access management. The applicant is proposing changes to the access plan. The new proposal, as part of the BPUD rezoning application, abandons the cross-access requirement between the BPUD site and the Saxon Medical Park and proposes to create a new access point, located roughly equidistant along the frontage of lots 2 and 4. The proposed access point is proposed to be limited to right-in and right-out turning movements and to be constructed with a turn lane.

This proposed access would be problematic, because the access point and related turn lane increases the potential for traffic conflicts. The proposed turn lane will commence immediately after the existing access to the Saxon Medical Park site to the south, as governed by roadway design standards. This would create a situation that, as cars are attempting to negotiate a right or left turn onto Saxon Blvd. from the Medical Park, cars would also be slowing and maneuvering to transition to the deceleration lane leading to the proposed driveway cut. This is compounded by the fact that the posted speed of 45 mph, in conjunction with the convex curve, makes traffic management in the area more difficult to navigate, is an unsafe design, and does not adhere to adopted roadway design standards. In addition, if the signal at the intersection of Saxon Blvd. and Sterling Silver Blvd. is activated, the proposed access point would create additional traffic friction. If traffic does not use the Saxon Blvd. and Sterling Silver Blvd. intersection, a signal for the intersection may not be warranted for the intersection. Without a signal, making left turns into and out of Sterling Silver Blvd. would be difficult and unsafe. Finally, the potential to introduce oversized vehicles into the proposed limited access point would further compound traffic safety and may limit the function and capacity of Saxon Blvd.

The applicant is responsible for signalizing the intersection of Sterling Silver Blvd. and Saxon Blvd., per the original MPUD DA that governed this area. The change is that the applicant will construct a string-pole signal system instead of the mast arm design, as approved by City as part of the original MPUD DA. The TIA did include a signal warrant element. However, the background data for the signal warrant conclusions is inconsistent. For example, the 5-6 p.m. period shows a total of 339 trips on the Hourly Trip Generation determination. The Warrant 1 item shows a total of 286 trips and the Appendix D, p.m. peak period shows a total of 245 trips. Finally, Appendix E, Intersection Analysis, Future Total Analysis, shows a different 282 p.m. peak trips.

The applicant is proposing to eliminate the original DA requirement for median operations associated with the right-in and right-out access from lot 1 to Saxon Blvd. The requirement for the raised median was designed to enhance traffic safety and protect traffic capacity on Saxon Blvd to allow for non-residential

intensive land uses at the subject site. Right turn islands, sometimes referred to as 'pork chops', are routinely violated by motorist who drive over the islands to make illegal left turns and the inclusion of 'bat wings' on those 'pork chops' will not suffice for safety. The raised median will more thoroughly discourage illegal left turns.

Based on the above, the following will be required for access management and mitigation for traffic safety:

1. Revise the submitted TIA to include those changes and corrections of inconsistencies listed in the GMB peer review letter to the City, dated January 21, 2014 (See Exhibit B).
2. The City Land Development Code includes detailed and technical requirements with regard to roadway design and access within Chapter 96. There will be over 15,000 trips turning in and out of the property every day. The site is located on a four (4) lane City thoroughfare that has a posted speed limit of 45 miles per hour. There is one existing access to the property to be rezoned – Sterling Silver Blvd. According to Section 96-37, there will need to be deceleration lanes for both left and right turning movements on to Sterling Silver Blvd. According to Section 96-37(a)(10)(c)(5)(i), a left turn lane with 200' of storage and 100' of transition will be a required improvement along Saxon Blvd. to facilitate turning movements onto Sterling Silver Blvd.
3. The City and/or County may require more storage, if warranted by the ultimate development program. As part of the applicant's TIA, a dual left turn lane from Saxon Blvd. to Sterling Silver Blvd. is recommended for traffic safety. The duel left turn lane would generate ample storage and ensure that more cars would be able to access the property that would be warranted by the proposed development program. The dual left turn lane would require that a lane be added to Sterling Silver Blvd. from Saxon Blvd. to Alabaster Way.
4. The City Land Development Code Section 96-37(a)(10)(c)(5)(ii) will require a right turn lane from Saxon Blvd. onto Sterling Silver Blvd. The required dimension of the right turn lane is a minimum of 150 feet of storage and 100 feet of transition. Scaling the 250 foot design of the right turn lane reveals that nearly all of the property frontage on Saxon Blvd., east of the Saxon Blvd/Sterling Silver Blvd. intersection should be devoted to a deceleration/right turn lane. The right turn lane would render the requested right-in and right-out access between lots 2 and 4 of the project in direct conflict and is also considered too close to the proposed signal at Sterling Silver Blvd. intersection. Thus, the full access point where road "B" was located along with the joint access to the Saxon Medical Park property provides a safer condition.

There are two off-site components within the TIA to be addressed. One is the traffic volumes and off-site impacts and the other is off-site mobility, safety and

access management. There will be off-site impacts to road way segments and intersections. These congested areas are constrained points – Saxon Blvd. from I-4 to Normandy Blvd. and the intersections of Saxon Blvd and Finland Dr. and Saxon Blvd. and N. Normandy Blvd. The segments of Saxon Blvd. are constrained without the project and are currently operating below the allowable LOS of "E". According to the submitted TIA, the project will contribute another 3.7% impact to these segments. Typical methods to address this condition are to deny the project based on a lack of roadway capacity, scale back the project in intensity to minimize traffic impacts, mitigate for off-site impacts, or accept higher traffic volumes in certain areas with the understanding that general mobility and safety will be maintained. To encourage appropriate development and to reduce sprawl, the City allows backlogged roads to be degraded up to 20% from the adopted LOS. The flexibility to approve development, notwithstanding allowable LOS thresholds, is described in the following Comprehensive Plan policy:

Policy CIE1-1.4
The determination of concurrency for backlogged facilities, included in the Thoroughfare System segments shall be consistent with the revised Land Development Regulations and established in the following manner (9J-5.016(3)(c)(1,3,4&6):

a. Establish Benchmark Traffic Counts
The most recent twenty-four hour traffic counts taken prior to the adoption of this Comprehensive Plan shall be used as the benchmark counts for each backlogged road identified in the Transportation Element.
b. Set Percent Thresholds of Benchmark Traffic Counts
Each of these backlogged thoroughfare roads shall not be allowed to degrade its operational service standards on a peak hour basis (using the most recent sanction FDOT Highway Capacity Tables) by allowing no more than twenty (20) percent of the peak hour bench mark counts for such facilities in The City. Some backlogged thoroughfare roads will only be allowed to be degraded ten (10) or fifteen (15) percent from the adopted Level of Service.
c. Track Development - Trip Generation/Distribution
The City shall track all proposed new developments and based on generally accepted traffic modeling procedures identify the likely number of trips generated by such developments and their distribution specifically for this objective to the previously identified backlogged thoroughfare roads. Tracking shall start upon the Comprehensive Plan's effective date of the revised Land Development Regulations.
d. Tracking on a Cumulative Basis
This tracking of the additional trips to the twenty percent threshold of the benchmark counts and trips originating within the boundaries of the Future Transportation Map shall be done on a cumulative basis following the adoption of this plan.
e. Cumulative Thresholds Twenty, Fifteen and Ten Percent

The City shall not approve any additional final development orders, (excluding vested properties) including building permits, once the percent threshold for projects that would generate trips in excess of ten/fifteen/twenty percent on a peak hour-basis, unless a final development order is subject to the adoption and implementation of an Area-wide Traffic Action Mitigation Plan. An Area-wide Traffic Action Mitigation Plan shall include, but not be limited to, the following activities:

- *additional or modified turn lanes*
- *additional or modified signalization*
- *incentives for mass transit use where available*
- *incentives for van/carpooling programs*
- *promote staggered work hours*
- *operating lanes*

f. 100 percent mitigation of the impacts of a proposed development

It shall be the goal of each Area-wide Traffic Action Mitigation Plan to achieve 100 percent mitigation of the impacts of a proposed development. Such plans shall include, when applicable, participants in addition to the property owner or applicant in question such as but not limited to adjacent property owners and business establishments.

Providing flexibility with regard to traffic LOS standards is important for the City to achieve economic goals than the free flow of traffic during relatively short periods of time during any given day on just a few short segments of roadway. Overriding goals include promoting compact urban development patterns that also limits the need for annexations, diversify the tax base, address the jobs/housing imbalance that drives many of the traffic patterns within the City; provide more retail and service opportunity to support the existing population, as well as protect the mobility of the City.

Saxon Blvd. is a Volusia County road. Therefore, the County does have oversight in how Saxon Blvd. will be accessed through the Use Permit process. The County Code requirements for deceleration lanes and related storage dimensions are identical to those of the City. In addition, the County has the same basic transportation goals as the City to ensure safe and efficient mobility. While, the County may issue a Use Permit for access based on several parameters, the City is responsible for managing and approving the rezoning and related MDP that addresses access and traffic. Therefore, the City will uphold its Land Development Code requirements to ensure that safe access management that meets the City's and County's roadway design standards are met. The current access management approved under the existing MPUD is warranted to be adequate for the project. The newly proposed access management needs to be amended for staff to support this rezoning application. Finally, the City will uphold the existing one-foot non-vehicular ingress and egress easement on the existing plat along Saxon Blvd. to protect the capacity and function of that thoroughfare.

Any changes in circumstances or conditions affecting the area.
There has been no significant change affecting the area.

Any mistakes in the original classification.
No known mistakes in the MPUD original classification.

Its effect upon the public health, welfare, safety or morals.
As part of the rezoning application to BPUD, the applicant has submitted a new DA. Staff has reviewed the DA and has made comments in a Microsoft Word strike-through and underline format but did not attempt to rewrite the DA. The DA with staff comments is attached.

CONCLUSION/STAFF RECOMMENDATION
In 2005, the subject property was approved for commercial and office uses on lot 1, with a floor area ratio (FAR) cap of 0.25. Lots 2 and 4 were also approved for medical office use (0.12 FAR) and for general office use (0.25 FAR). The approved MPUD contemplated a mixture of land uses with the assisted living facility on lot 3 and commercial and office uses within the overall project. The master development program, with its limitation on land uses, intensities, and access management, was intended to provide a mixed-use program over the four (4) lots, but more importantly, sought to control access management through a series of interconnected roadway facilities, easements, and a traffic signal designed to afford safe ingress and egress. These measures also attempted to facilitate some level of compatibility between more intensive non-residential uses and the less intensive adjacent residential homes by placing FAR caps on development in a limited and quantifiable manner.

The applicant is proposing a development program that would increase the range of permitted uses, intensities, location, and access availability from that previously approved. The MDP submittal and accompanying DA seeks approval for two (2) development scenarios on lot 1 that provides a development alternative at the rezoning level and also allows for retail commercial development on lots 2 and 4. While both scenarios contemplate commercial development on lots 2 and 4, Option 1 would also keep current entitlements for retail commercial development on lot 1. Thus, the development program for the three vacant lots would be greatly increased beyond the current approvals allowed, primarily through the high-volume of trips that could be generated on area roads, in addition to visual, noise, lighting, etc. Option 2 provides a similar entitlement of that approved today. However, it shifts the land uses from retail commercial on lot 1 to lots 2 and 4 and from office on lots 2 and 4 to lot 1. From a land use compatibility scenario, this option places more intensive retail commercial uses on land closer to the larger roadway facility of Saxon Boulevard is farther away from adjacent residential uses across Alabaster Way. In addition, more compatible to adjacent office uses will be located next to low density residential areas.

Staff has reviewed the proposed development program submitted by the applicant with the accompanying DA and compared it to the previous approvals. The proposed development program was reviewed in relation to the City's goals, objectives, and policies in the *Comprehensive Plan*, and regulatory criteria in the LDC that requires adjacency and compatibility between land uses. Part of that compatibility and function is associated with access management and the accommodation of

existing and proposed capacity of the area roadway network for current conditions and following project build-out. Further, the applicant submitted a TIA and the City used a peer review traffic consultant (GMB) to ensure that the recommended roadway network improvements are functional, as designed. An important component of that is to implement public health, safety, and welfare goals that are paramount to the basic mission of government. Of the scenarios submitted by the applicant, Option 2 achieves the following:

1. Is within the 0.25 FAR cap for lot 1 with a less intensive office use limitation;
2. Generates fewer average daily trips than the retail commercial uses proposed in Option 1;
3. Is more compatible with adjacent land uses; and
4. Is less service-oriented; and
5. Potentially can provide an employment center for the area.

To promote adjacency and compatibility in keeping with the City's *Comprehensive Plan* and LDC, staff is proposing the following Conditions of Approval be included to be able to rezone the subject property to BPUD:

1. Remove Option 1 of the MDP submittal, as provided;
2. Limit hours of operation for retail commercial uses from 6:00 AM to 11:00 PM for all activity;
3. Orient service areas away from residential uses and have service areas screened from adjacent properties. This includes the use of a screen wall and landscaping along the north and west property line of lot 1 and along a portion of Alabaster Way adjacent to the proposed grocery store facility;
4. Limit a cap of 0.25 FAR for lot 1 and 0.182 FAR total area for lots 2 and 4, as provided on Option 2 of the MDP;
5. Limit the impervious surface ratio (ISR) to 0.65 for lot 1 and 0.67 for lots 2 and 4;
6. Limit permitted land uses on lots 2 and 4, as listed in the C-1 zoning category, to exclude bars/nightclubs, gas stations, convenience stores, fast food restaurants, automobile service stations, and other uses not allowed in the C-1 zoning category; and
7. Provide access management, as recommended in the Volusia County memo, dated December 3, 2013, and the GMB peer review letter, dated January 27, 2014. Revise the TIA to include that information, as requested on January 28, 2014.

Staff recommends inclusion of the above-listed Conditions of Approval, revisions to the Development Agreement as addressed with the applicant and to be consistent with the preliminary plan of the MDP, and revisions to the preliminary plan for Option 2 only of the MDP to be able to move forward with Project RZ13-008. However, as of the date of this report, the above listed revisions to the Option 2 of the MDP and the TIA have not been received and the Development Agreement draft does not match the submitted preliminary plan. Therefore, for the purposes of this report, staff recommends continuation of this item until the above listed items can be made consistent.

DEVELOPMENT AGREEMENT
For the project known as the Saxon Sterling Silver BPUD located at Saxon Boulevard

Exhibit A to Ordinance No. 02-2014

THIS AGREEMENT (the "Agreement") entered into and made as of the _____day of _____, 2014, by and between the CITY OF DELTONA, FLORIDA, (hereinafter referred to as the "City"), and DELTONA RETAIL INVESTMENT, L.L.C., a South Carolina limited liability company (hereinafter referred to as the "Owner/Developer"), and DELTONA GROUP INVESTORS, LLC, a Washington limited liability company, and RETIREMENT COMMUNITY AT STERLING PARK POA, INC., a _____ corporation, (hereinafter referred to jointly and severally as the "Current Owner")

W I T N E S S E T H

WHEREAS, this Agreement replaces the Development Agreement recorded in Official Record Book 5825, Pages 1350 through 1370 of the Public Records of Volusia County, Florida, known as the Saxon Retirement Village MPUD and hereinafter referred to as the "SRV PUD," as to Lots 1, 2 and 4, and also as to Tract "B" Common Area, Tract "C" Common Area and vacated Road "B", all per Retirement Community at Sterling Park MPUD Subdivision, Plat Book 53, Pages 59 and 60, Public Records of Volusia County, Florida; and

WHEREAS, the SRV PUD remains in effect as to all other lands as described therein; and

WHEREAS, the Saxon Sterling Silver BPUD shall include Lots 1, 2, and 4 and also Tract "B" Common Area, Tract "C" Common Area and vacated Road "B" and hereinafter be referred to as the "Subject Property", with Lots 2 and 4, Tract "B", Tract "C", and vacated Road "B" all hereinafter referred to as "Lots 2 and 4"; and

WHEREAS, the Current Owner warrants that it holds legal title to the property described in Paragraph 2 below, and the Owner/Developer warrants that it is the contract purchaser thereof 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/Developer desires to facilitate the orderly development of the subject property, in compliance with all of the laws and regulations of the City, and of other applicable governmental authorities, and the Owner/Developer desires to ensure that its development is compatible with other properties in the area and complies with all applicable local government transportation policies and 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/Developer has sought the City's approval for plans to develop its property, and the City has approved the Saxon Sterling Silver BPUD Master Development Plan (the "MDP") on _____, 2014 subject to the covenants, restrictions, and easements offered by the Owner/Developer and contained herein; and

WHEREAS, this Agreement is entered into based on the City's home rule powers.

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. Incorporation. The recitals herein contained are true and correct and are incorporated herein by reference.

2. Ownership. The Current Owner represents that it is the present owner of parcel#'s 8130-78-00-000B, 8130-78-00-0003, 8130-78-00-0040, 8130-78-00-0001, 8130-78-

00-0020, and 8130-78-00-0010, and more particularly described in Ordinance No. 02-2014, Exhibit A (the "Subject Property"), and that the said Subject Property is under contract for sale to Owner/Developer.

3. Title Opinion/Certification. The Owner/Developer will provide to the City, in advance of the City's execution of this Agreement, a title insurance commitment, a title opinion of an attorney licensed in the State of Florida, or a certification by an abstractor or title company authorized to do business in the State of Florida, showing, upon conveyance of the property from Current Owner, marketable title to the Subject Property to be in the name of the Owner/Developer and showing all liens, mortgages, and other encumbrances that have not been satisfied or released of record.

4. Subordination/Joinder. All liens, mortgages, and other encumbrances not satisfied or released of record, except as set forth on the attached Exhibit B, must be subordinated to the terms of this Agreement or the lienholder must join in this Agreement. It shall be the responsibility of the Owner/Developer to promptly obtain the said subordination or joinder, as well as joinder of the owner of Lot 3 of the SRV PUD, in form and substance set forth on the attached Exhibit C, prior to the City's execution of the Agreement.

5. Development Agreement. The Master Development Agreement shall be comprised of this Development Agreement and the Master Development Plan ("MDP") attached as Exhibit D.

6. Development Standards.

   a. Sidewalks: The Current Owner of the SRV PUD has previously constructed sidewalks for the SRV PUD. However, the Owner/Developer or subsequent owners are required to improve the sidewalk system associated with the subject

BPUD. More specifically, the Owner/Developer or subsequent owners will be required to increase the sidewalk width along Saxon Blvd. from 5 feet to 8 feet. The Saxon Blvd. sidewalk improvement can be constructed on a lot by lot basis but must be completed before a Certificate of Occupancy (C/O) is issued for lot development. In addition, Owner/Developer or subsequent owners will be required to provide a sidewalk network through Lots 2 and 4 to link the sidewalk system on Alabaster Way to the Saxon Blvd. sidewalk with the intent of providing safe internal pedestrian connections. This sidewalk network on Lots 2 and 4 will be addressed through the site plan approval process. The Owner/Developer shall also appropriately stripe all crosswalks. Finally, the Owner/Developer, subsequent owners or a created property owners association will be responsible for repair and the maintenance of the sidewalk system and striping.

b. Permitted Uses:

The following land uses, together with accessory uses (as defined in the City Land Development Code), shall be permitted:

- Lot 1: Any general office, medical office, medical clinic, or professional office use including without limitation, urgent care facilities, ambulatory surgery centers, diagnostic imaging facilities and medical laboratories.
- Maximum FAR on Lot 1 - 0.25.

  Minimum lot size on Lot 1 – 12,500 square feet.
- Lots 2 and 4: Pharmacies, grocery stores with customary uses and ancillary liquor sales (no COP activity), and all uses as permitted by the C-1, zoning district under the Code of Ordinances, City of Deltona, Florida,

as it is in effect as of the time of the adoption of this ordinance. Provided, however, convenience stores, automobile service stations, Types A, B, and C, gas stations, bars, and nightclubs, and other uses not allowed in the C-1 zoning district are not permitted.

- Only one drive through facility will be allowed on Lots 2 and 4. The drive through facility shall be located approximately as shown on the MDP so that noise and headlights related thereto are not directed towards Lot 3 of the SRV PUD.
- Maximum FAR on Lots 2 and 4: 0.182 of the total land area of Lots 2 and 4.
- Minimum lot size on Lots 2 and 4: 10,000 square feet.
- Hours of operation on Lots 2 and 4: 6:00 am. to 11:00 pm. Includes all services, deliveries, trash collection and general use.
- Other Prohibited Uses on Lots 1, 2 and 4: funeral homes, pawnshops, recycling collection centers, tattoo parlors, bars, billiard rooms, pool halls, bowling alleys, night clubs, private clubs and/or lodges.

c. Site Lighting. Site lighting within the Property shall conform to the standards contained in the City Lighting Code, Ordinance No. 10-2004 and the design requirements of Section 110-828 (b)(2) of that Code. An illumination plan shall be designed by a licensed engineer and submitted with any Final Site Plan application.

d. Parking. All parking shall conform to Sections 110-828 and 110-829 of the Deltona Code of Ordinances, as may be amended from time to time. Lots 2 and 4

shall be treated as a unified shopping center for parking requirements. Consistent with Section 110-828, the amount of parking on Lots 2 and 4 will be figured at 4.0 spaces per 1,000 square feet of gross floor area.

e. Site Access. Subject to the requirements of the County of Volusia (the "County") on Saxon Boulevard, the site access shall be managed as follows:

1. Except as otherwise provided herein, all development shall meet the City's and County's transportation concurrency management, driveway design, and internal circulation requirements, and no design shall be approved that does not meet the City's Code of Ordinances.

2. On Lot 1, the following access points and related movements, notwithstanding the existing 1 ft. non-vehicular access easement, are allowed: 1) A right in/right out access on to Saxon Blvd. A raised concrete median will be required to be constructed by the Owner/Developer in the Saxon Blvd. right-of-way across from the Lot 1 right in/right out access, along with a concrete 'pork chop' (no 'bat wings'). Both the 'pork chop and raised median in the Saxon Blvd. right-of-way shall be designed and constructed to discourage illegal left hand turns. Such operations shall be constructed and in place prior to the issuance of the first Certificate of Occupancy on Lot 1. The right in/right out on to Saxon Blvd and median operations shall be subject to the approval of Volusia County. 2) Full access, appropriately aligned, at the intersection of Sterling Silver Blvd. and Alabaster Way. 3) A right in/right out/left in access point to Sterling Silver Blvd. located north of the aforementioned access at the intersection

of Sterling Silver Blvd. and Alabaster Way.

3. Lots 2 and 4 can only be accessed from Saxon Blvd. by a joint access driveway at the approximate location of the existing full movement driveway of the neighboring Saxon Medical Park facilitated by an easement or other joint access agreement as generally shown on the MDP. Provided, however, if the County does not permit the said joint access to Saxon Blvd., access to Saxon Blvd., if any, shall only be permitted if it complies with both City and County design standards. The connection to, use of and any needed improvement to the access point will be addressed during the City site plan review process. In addition, Lots 2 and 4 can be accessed off of Alabaster Way at four different points. The eastern most located Alabaster Way access point will constitute a stub out leading to a 20' wide easement intended for access to the City lift station and other public infrastructure. The Owner/Developer will provide a 12' wide paved driveway to the lift station. The next access point to the west will feature only right in/right out access to Alabaster Way. The remaining two access points to the west on Alabaster Way will be full movements and aligned to effectively intersect with the existing driveway cuts situated on Lot 3 of the SRV PUD.

4. Subject to the approval of Volusia County and at its own expense, the Owner/Developer shall be permitted to design, permit, purchase, construct, and install a "span wire" traffic signal at the intersection of Sterling Silver Boulevard with Saxon Boulevard which, if not immediately

warranted, may be operated in flashing yellow mode. The traffic signal shall be constructed or, if Volusia County does not permit construction, the current costs bonded, before the issuance of the first Certificate of Occupancy for any development on Lots 1, 2 and 4. In addition, Lot 3 of the SRV PUD is in no way obligated to build, bond or otherwise make any fair share contributions to the construction of the traffic signal. Lot 3 of the SRV PUD is fully vested for signalization purposes.

5. There is recognition that Saxon Blvd. is a Volusia County road and the County will be required to issue a use permit for activity within the Saxon Blvd. right of way for driveway and signal work. The City and the Owner/Developer will coordinate with the County to implement the access and traffic management elements of this Agreement.

f. Building Setbacks. Minimum building setbacks from the property lines of the lots within the Subject Property shall be as follows:

- Yards on Saxon Boulevard: 25 feet.
- All other yards on a public road: 15 feet.
- Internal lot lines: 5 feet.
- Side or Rear Yards adjacent to residential: 30 feet.
- Except as provided above: 10 feet.

g. Maximum Building Height: 36 feet.

h. Minimum building separation: 10 feet.

i. Maximum Impervious Surface Coverage: Not to exceed 65 % on Lot 1 and 67% on the combined acreage of Lots 2 and 4.

j. Perimeter Landscaped Buffers and other landscaping requirements shall be consistent with or exceed the requirements of Section 110-808 of the City Code of Ordinances.

Landscape buffer widths shall be as follows:

Saxon Blvd.:	25 ft.
Alabaster Way:	15 ft.
Sterling Silver Blvd.:	15 ft.
Lot 1 abutting residential:	30 ft.
Lots 2 and 4 abutting school on east:	5 ft.
Lots 2 and 4 south:	5 ft.

All landscape materials and density shall be consistent with Section 110-808 of the City Code of Ordinances. In addition, a masonry, finished six (6) foot high wall consistent with that constructed along the north boundary of the adjacent retirement center (the "existing wall") shall be erected along the north and west property boundaries of Lot 1 to buffer and visually screen the proposed uses from the existing residential homes. Landscaping shall be placed on the proposed development's side of the wall. In conjunction with the requisite landscape buffer for Lots 2 and 4, either a six (6) foot high, finished, masonry wall shall, consistent with the "existing wall", be constructed on Alabaster Way, between the most east driveway servicing the Saxon Retirement Community and the eastern most right in/right out commercial driveway shown on the MDP. As an alternative to a wall on Lots 2 and 4, architecture of the proposed grocery building shall be enhanced along its exposure along Alabaster Way to include items such

as pilasters, sections of decorative cornice, and other architectural treatments similar to those along the front of the store. Walls and landscaping will be maintained by the Owner/Developer, subsequent owners, or a property owner's association. All dumpsters, recycle areas, and truck wells shall be screened from view per the City's Code of Ordinances.

k. Clearing and Grading: All such development activity shall conform to the procedures and requirements listed within the City's Code of Ordinances and shall follow NPDES standards.

l. Building Design: Buildings shall be designed so that any side facing Saxon Boulevard, Sterling Silver Boulevard, or Alabaster Way that is not the main entrance shall incorporate architectural treatments that enhance the appearance of the building façade or that give the appearance of being the front of the building. The buildings developed within the BPUD and permitted signs shall be of a similar architectural design to create continuity throughout the entire project site.

m. Utilities: The Owner/Developer shall install water and sewer lines at its expense to service the entire Subject Property, and shall not interrupt water or sewer service to Lot 3 of the SRV PUD. Any site related upgrades necessary to provide service for the Subject Property and to continue uninterrupted water and sewer service to Lot 3 of the SRV PUD shall be provided at the Owner/Developer's sole expense.

n. Platting and Final Site Plans: Lots 2 and 4 may be combined consistent with Section 106-27(a)(7)(a) of the City Code of Ordinances. The Subject Property can be replatted consistent with Chapter 106 of the City Code of Ordinances.

o. Final Site Plan: The approved final site plan shall be consistent with the approved MDP, and strictly in compliance with the City Code of Ordinances and this Agreement, except where variances and modifications are specifically authorized as permitted by the City Code of Ordinances and according to the procedures set forth herein.

p. Stormwater: Upon development of each lot, or within a master stormwater system, stormwater retention shall be provided in accordance with the City of Deltona Code of Ordinances, Deltona Comprehensive Plan, and all applicable St. Johns River Water Management District regulations.

q. Signs: All signs shall comply with Chapter 102, Deltona Code of Ordinances as it may be amended from time to time.

r. Environmental: As part of the City site plan review process, any state, federal and local required environmental permits shall be obtained and copies provided to the City.

s. The owner of each lot within the Subject Property shall have the ongoing responsibility to maintain all landscaping, sidewalks and walls with relate to that owner's lot or a property's owners association shall be formed to be responsible therefor. .

7. Obligations. Any surface improvement as described and required hereunder, such as signalization, walls, stormwater management facilities and utilities shall be performed or bonded (based on the then current costs) prior to the issuance of the first Certificate of Occupancy receipt on that portion of the subject property to which the surface improvement relates. Should the

Owner/Developer fail to undertake and complete its obligations as described in this Agreement, to the City's specifications, then the City shall give the Owner/Developer thirty (30) days written notice to commence and ninety (90) days to complete said required obligation at the sole expense of the Owner/Developer. If the Owner/Developer fails to complete the obligations within the ninety (90) day period then the City, without further notice to the Owner/Developer, or its successors in interest, may, without prejudice to any other rights or remedies it may have, perform any and all of the obligations described in this Agreement. Further, the City is hereby authorized to assess the actual and verified cost of completing the obligations required under this Agreement and record a lien against the Subject Property in that amount. The lien of such assessments shall be superior to all others, and all existing lienholders and mortgagees, by their execution of the subordination or joinder documents, agree to subordinate their liens or mortgages to the City's said liens or assessments. Notice to the Owner/Developer and its successors in interest shall be deemed to have been given upon the mailing of notice to the above-mentioned address. **NOTWITHSTANDING THE FOREGOING, IF OWNER/DEVELOPER SELLS OR OTHERWISE TRANSFERS OWNERSHIP OF ANY PORTION OF THE SUBJECT PROPERTY, ANY FAILURE OF OBLIGATIONS ON THE PART OF OWNER/DEVELOPER TO BE PERFORMED THAT PERTAIN TO SUCH SOLD OR TRANSFERRED PORTION SHALL BE THE RESPONSIBILITY OF THE PURCHASER/TRANSFEREE, AND ANY LIEN FOR COSTS TO THE CITY, OR OBLIGATIONS OR THE INDEMNITY CONTAINED IN SECTION 8 OF THIS AGREEMENT SHALL APPLY ONLY TO SUCH SOLD/TRANSFERRED PORTION OF THE SUBJECT PROPERTY**

8. Enforcement. In the event that enforcement of this Agreement by the City becomes

necessary, and the City is successful in such enforcement, the Owner/Developer shall be responsible for all costs and expenses, including attorneys' fees, whether or not litigation is necessary and, if necessary, both at trial and on appeal, incurred in enforcing or ensuring compliance with the terms and conditions of this Agreement which 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/Developer. Interest on unpaid overdue sums shall accrue at the rate of the lesser of eighteen percent (18%) compound annually or at the maximum rate allowed by law.

9. Indemnification. The Owner/Developer or a purchaser/transferee (as referred to in Section 9 hereof), each only as to such portion of the Subject Property then owned by the Owner/Developer or purchaser/transferee, shall indemnify and hold harmless the City from 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 of the use or development of the Subject Property, except those claims or liabilities caused by or arising from the negligence 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 sewer plans, fire safety, or quality of construction, whether or not inspected, approved, or permitted by the City.

10. MDP. The MDP approval for the Subject Property, given at second and final reading of Ordinance 02-2014 at the regular meeting of the City Commission on _____, 2014, is

specifically incorporated into this Agreement by reference for the purpose of clarifying boundaries, locations, areas, and improvements described in this Agreement, and all development shall be in substantial accordance with and subject to the terms of the said MDP approval. The MDP and this Development Agreement will be used to review any platting and land development activity.

11. Compliance. The Owner/Developer agrees that it, and its successors and assigns, will abide by the provisions of this Agreement, the City's Comprehensive Plan, and the City's Code of Ordinances, including but not limited to, the site plan regulations of the City as amended from time to time, which are incorporated herein by reference and such subsequent amendments hereto as may be applicable. Further, all required improvements, including landscaping, shall be continuously maintained by the Owner/Developer, or 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 approvals, to the Subject Property should the Owner/Developer fail to comply with the terms of this Agreement. In the event of a conflict between this Development Agreement and the City's Land Development Code, this Agreement shall govern the development of the BPUD property.

12. Utility Easements. The Owner/Developer shall provide to the City such easements and other legal documentation, in form mutually acceptable to the City Attorney and the Owner/Developer, as the City may deem reasonably necessary or appropriate for the installation and maintenance of the utility and other services serving the Subject Property and Lot 3 of the SRV PUD. Such easements shall not materially interfere with the Owner/Developer's use and enjoyment of the Subject Property, but shall sufficiently provide continued uninterrupted sewer and water service to Lot 3, SRV PUD.

13. Concurrency and Vested Rights. The Owner/Developer acknowledges and agrees that prior to the issuance of any building permit(s) for the Property, the Owner/Developer must have received and be in the possession of a valid unexpired certificate of capacity. The certificate of capacity verifies the availability of infrastructure capacity sufficient to permit development pursuant to the approved site plan for the Subject Property without causing a reduction in the levels of service adopted in the City's Comprehensive Plan. The certificate of capacity shall be effective for a term as defined in the City's Code of Ordinances. Neither this Agreement nor the approved BPUD Plan shall create or result in a vested right or rights to develop the Property without a current and valid certificate of capacity.

14. Notices. Where notice is herein required to be given, it shall be by certified mail return receipt requested, addressee only, hand delivery or courier. Said notice shall be sent to the following, as applicable:

OWNER/DEVELOPER'S REPRESENTATIVES:
Deltona Retail Investment, L.L.C.
550 Long Point Road
Mount Pleasant, SC 29464
(843) 654-7887
Fax: (843) 654-7889

With Copies To:

F.A. (Alex) Ford, Jr., Esq.
Landis Graham French, P.A.
P.O. Box 48
DeLand, FL 32721-0048
(386) 734-3451
Fax: (386) 736-1350

and

CPH, INC.
P.J. Sutch, P.E.
500 W. Fulton Street
Sanford, Florida 32771
(407) 322-6841
Fax: (407) 330-0639

CITY'S REPRESENTATIVES:
Director Development Services
City of Deltona
2345 Providence Boulevard
Deltona, FL 32725
(386) 878-8600
Fax: (386) 878-8601

and

City Attorney
City of Deltona
2345 Providence Boulevard
Deltona, FL 32725
(386) 878-8870
Fax: (386) 878-8871

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 obligation to identify its lender(s) to all parties in a fashion as is required for notices herein.

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

16. Binding Effect. This Agreement shall run with the land, shall be binding upon and inure to the benefit of the Owner/Developer and its assigns and successors in interest, and the City and its assigns and successors in interest. The Owner/Developer shall pay the cost of recording this document in 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 or grant the authority to supersede federal and state laws.

17. Severability. If any part of this Agreement is found invalid or unenforceable in any court, such invalidity or unenforceability shall not affect the other parts of this 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 Agreement is declared severable.

18. Condition Precedent; Effect of SRV PUD. As a condition precedent to this Agreement, the Owner/Developer shall have purchased the Subject Property from the Current Owner, as conclusively established by the recording of a deed or deeds from the Current Owner to the Owner/Developer in the Public Records of Volusia County, Florida. Upon the recording of this Agreement, the SRV PUD shall have no further applicability to the Subject Property, but shall remain in effect as to all other lands described therein. Further, the City acknowledges the provisions of Section 6.e.4. of this Agreement shall govern the obligations of Lot 3 of the SRV PUD (and its owner) with regard to the expense of signalization.

IN WITNESS WHEREOF, the Owner/Developer and the City have executed this Agreement as of the day and year first above written.

SIGNED, SEALED, AND DELIVERED IN THE PRESENCE OF THE OWNER/DEVELOPER:

OWNER/DEVELOPER:

DELTONA RETAIL INVESTMENT, LLC.,
a South Carolina limited liability company,
by WRS, INC, a South Carolina corporation,
it's Manager.

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 _____, 2014, 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

ACCEPTED FOR THE CITY OF DELTONA:

By:

_____
John C. Masiarczyk, Sr., Mayor

Date: _____

ATTEST:

_____
Joyce Raftery, CMC, City Clerk

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 _____, 2014, by _____, who are personally known to me and acknowledge executing the same freely and voluntarily under authority vested in them and that the seal affixed thereto is the true and corporate seal of the City of Deltona, Florida.

_____
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, City Attorney

CURRENT OWNER:
DELTONA GROUP INVESTORS, LLC, a Washington limited liability company

By:_____
Printed name:_____
Title:_____

_____
Signature of Witness # 1

_____
Print or type name

_____
Signature of Witness #2

_____
Print or type name

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me this ___ day of _____, 2014, by_____, of DELTONA GROUP INVESTORS, LLC, a Washington limited liability company, who is personally known to me or who has/have produced _____ as identification and who did not (did) take an oath.

_____
Signature of Notary
Print or type name:_____

(NOTARY SEAL)

CURRENT OWNER:
RETIREMENT COMMUNITY AT STERLING PARK POA, INC., a _____ corporation

By:_____
Printed name:_____
Title:_____

_____
Signature of Witness # 1

_____
Print or type name

_____
Signature of Witness #2

_____
Print or type name

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me this ___ day of _____, 2014, by_____, of RETIREMENT COMMUNITY AT STERLING PARK POA, INC., a _____ corporation, who is personally known to me or who has/have produced _____ as identification and who did not (did) take an oath.

_____
Signature of Notary
Print or type name:_____

(NOTARY SEAL)

SUBORDINATION AGREEMENT

THIS SUBORDINATION AGREEMENT made this _____day of _____, 20__, by _____whose address is _____, referred to as "Mortgagee".

WITNESSETH: The Mortgagee of the property described in the foregoing Agreement which property is owned by _____, does hereby agree to subordinate all its interests and rights contained in the property to the foregoing Agreement which property is owned by _____ entered into by _____ as Owner/Developer and the CITY OF DELTONA. This Subordination Agreement shall bind all successors, assigns, and representatives of the Mortgagee.

SIGNED, SEALED AND DELIVERED
IN THE PRESENCE OF:

MORTGAGEE:

By:_____
Signature

_____
Signature of Witness # 1

_____
Print or type name

_____
Print or type name

AS:_____
Print or type office

_____
Signature of Witness # 2

_____
Print or type name

STATE OF FLORIDA
COUNTY OF

The foregoing instrument was acknowledged before me this ____day of _____, 2014, 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

EXHIBIT A
LEGAL DESCRIPTION

LOTS 1, 2, AND 4, TRACTS “B”, “C” AND ROAD “B”, OF RETIREMENT COMMUNITY AT STERLING PARK M.P.U.D., ACCORDING TO THE PLAT THEREOF AS RECORDED IN MAP BOOK 53, PAGES 59 AND 60 OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.

EXHIBIT B
EASEMENTS OF RECORD

Development Agreement and Grant Access Easement recorded in Official Records Book 5825, Page 1350, of the Public Records of Volusia County, Florida.

Easement to the City of Deltona, Florida, by instrument in Official Records Book 6190, Page 3111, of the Public Records of Volusia County, Florida.

Easement to the School Board of Volusia County by instrument in Official Records Book 5063, Page 2660, of the Public Records of Volusia County, Florida.

Easement granted to Florida Power Corporation and Progress Energy Florida, Inc. by instrument in Official Records Book 6034, Page 310, of the Public Records of Volusia County, Florida.

Utility Easement to the City of Deltona, Florida by instrument in Official Records Book 6190, Page 3103, of the Public Records of Volusia County, Florida.

Easement to Florida Power Corporation by instrument in Official Records Book 3234, Page 1016, of the Public Records of Volusia County, Florida.

EXHIBIT C

JOINDER AND CONSENT OF LOT 3 OWNER

The undersigned, Owner of the fee simple title of Lot 3, Retirement Community at Sterling Park M.P.U.D., according to the plat thereof, recorded in Plat Book 53, Pages 59 and 60, Public Records of Volusia County, Florida, hereby joins in and consents to the terms of Section 6(e)(4) and 18 of the Development Agreement to which this Joinder and Consent is attached.

IN WITNESS WHEREOF, the undersigned has executed this Instrument as of the day first set forth above.

Signed, sealed and delivered in the presence of the following two witnesses:

_____
(Signed name of witness one)

_____
(Printed name of witness one)

_____
(Signed name of witness two)

_____
(Printed name of witness two)

BORROWER:

DELTONA RETIREMENT RESIDENCE LLC, an Oregon limited liability company

By: Hawthorn Management Services Corp., a Washington corporation, its Manager

By: _____
Barton G. Colson, as President

STATE OF WASHINGTON
COUNTY OF CLARK

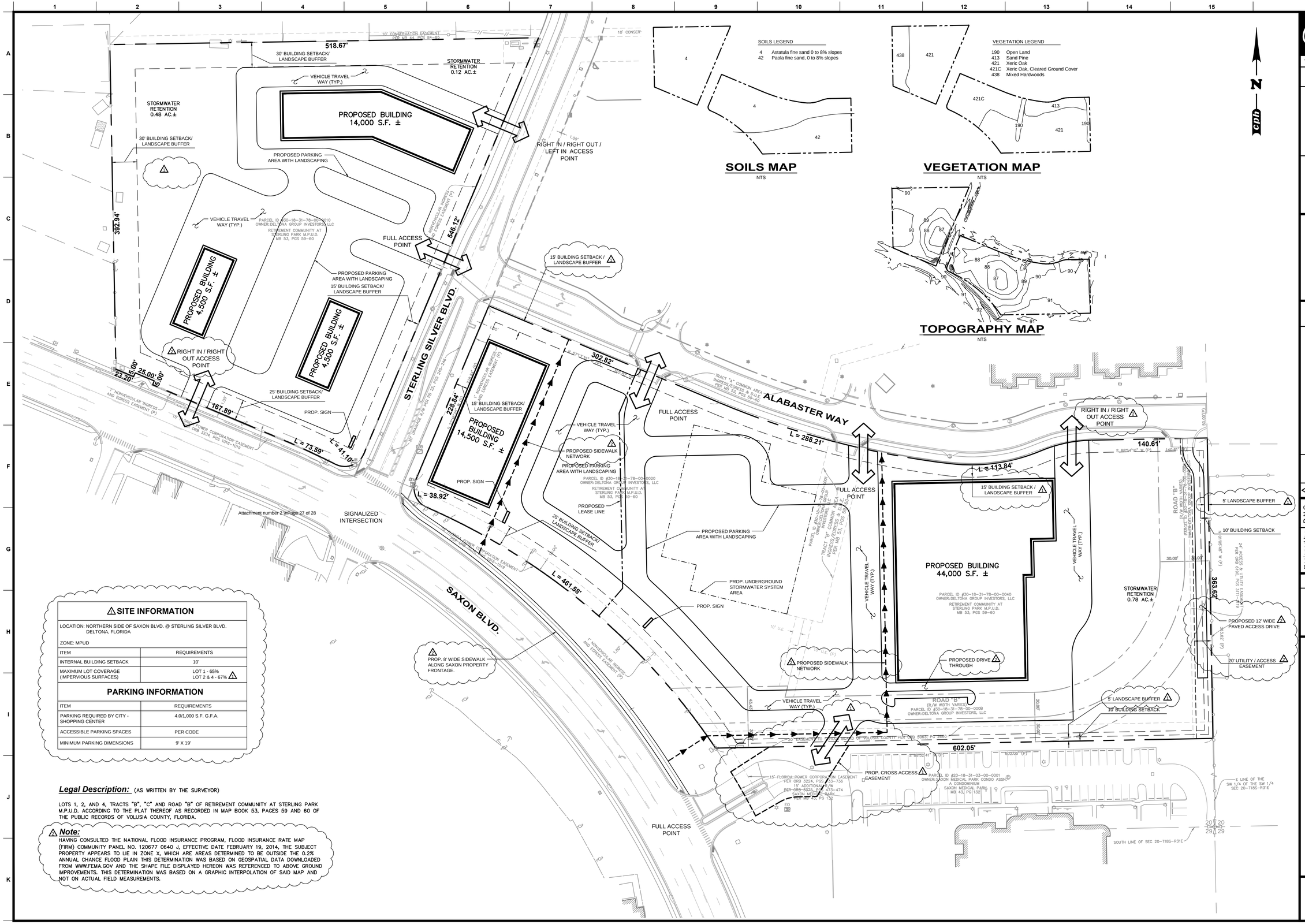
The foregoing instrument was acknowledged before me this ____ day of _____, 2014, by Barton G. Colson, as President of Hawthorn Management Services Corp., a Washington corporation, the Manager of Deltona Retirement Residence LLC, an Oregon limited liability company. He is personally known to me.

_____
Notary Public for Washington

_____
Printed Name

_____
My Commission expires
[AFFIX NOTARY SEAL]

EXHIBIT D
MASTER DEVELOPMENT PLAN



SITE INFORMATION

LOCATION: NORTHERN SIDE OF SAXON BLVD. @ STERLING SILVER BLVD. DELTONA, FLORIDA

ZONE: MPUD

ITEM	REQUIREMENTS
INTERNAL BUILDING SETBACK	10'
MAXIMUM LOT COVERAGE (IMPERVIOUS SURFACES)	LOT 1 - 65% LOT 2 & 4 - 67%

PARKING INFORMATION

ITEM	REQUIREMENTS
PARKING REQUIRED BY CITY - SHOPPING CENTER	4.0/1,000 S.F. G.F.A.
ACCESSIBLE PARKING SPACES	PER CODE
MINIMUM PARKING DIMENSIONS	9' X 19'

Legal Description: (AS WRITTEN BY THE SURVEYOR)

LOTS 1, 2, AND 4, TRACTS "B", "C" AND ROAD "B" OF RETIREMENT COMMUNITY AT STERLING PARK M.P.U.D. ACCORDING TO THE PLAT THEREOF AS RECORDED IN MAP BOOK 53, PAGES 59 AND 60 OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.

Note:

HAVING CONSULTED THE NATIONAL FLOOD INSURANCE PROGRAM, FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NO. 120677 0640 J, EFFECTIVE DATE FEBRUARY 19, 2014, THE SUBJECT PROPERTY APPEARS TO LIE IN ZONE X, WHICH ARE AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN THIS DETERMINATION WAS BASED ON GEOSPATIAL DATA DOWNLOADED FROM WWW.FEMA.GOV AND THE SHAPE FILE DISPLAYED HEREON WAS REFERENCED TO ABOVE GROUND IMPROVEMENTS. THIS DETERMINATION WAS BASED ON A GRAPHIC INTERPOLATION OF SAID MAP AND NOT ON ACTUAL FIELD MEASUREMENTS.

cph
www.cphcorp.com
A Full Service A & E Firm
Architects
Engineers
Environmental
Landscape Architects
M / E / P
Planners
Surveyors
Traffic / Transportation
Offices in:
• Florida
• Puerto Rico
• Connecticut
• Maryland
• Texas
HOWARD L. WRAY, JR. P.E.
FL. P.E. NO. 55557

No.	Date	By
1	2/28/14	H.L.W.
2	3/11/14	H.L.W.
3	PER CITY COMMENTS	
4	PER CITY COMMENTS	
5	Revision	

Designed by:	R.N.C.
Drawn by:	R.N.C.
Checked by:	H.L.W.
Approved by:	H.L.W.
Scale:	1" = 50'
Date:	6-12-13
Job No.:	W9401.1
© 2014	

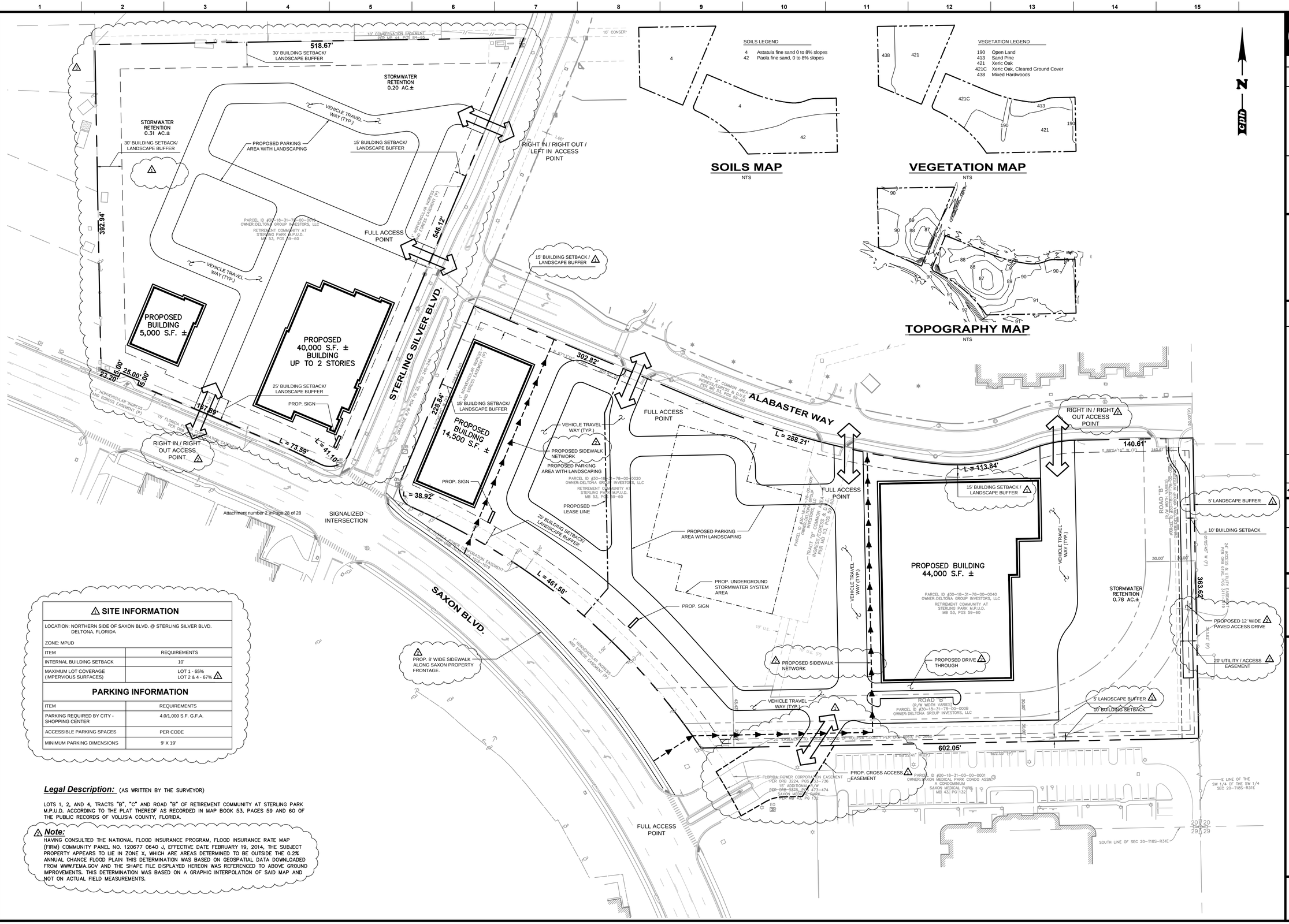
Plans Prepared By:
CPH, Inc.
500 West Fulton St.
Sanford, Fl. 32771
Ph: 407.322.6841
Licenses:
Eng. C.O.A. No. 3215
Survey L.B. No. 7143
Arch. Lic. No. AA2600926
Lndscp. Lic. No. LC0000298

MASTER DEVELOPMENT PLAN
OPTION 1

SAXON STERLING SILVER BPUD

DELTONA, FLORIDA

Sheet No.
C-2.1



SITE INFORMATION

LOCATION: NORTHERN SIDE OF SAXON BLVD. @ STERLING SILVER BLVD. DELTONA, FLORIDA

ZONE: MPUD

ITEM	REQUIREMENTS
INTERNAL BUILDING SETBACK	10'
MAXIMUM LOT COVERAGE (IMPERVIOUS SURFACES)	LOT 1 - 65% LOT 2 & 4 - 67%

PARKING INFORMATION

ITEM	REQUIREMENTS
PARKING REQUIRED BY CITY - SHOPPING CENTER	4.0/1,000 S.F. G.F.A.
ACCESSIBLE PARKING SPACES	PER CODE
MINIMUM PARKING DIMENSIONS	9' X 19'

Legal Description: (AS WRITTEN BY THE SURVEYOR)

LOTS 1, 2, AND 4, TRACTS "B", "C" AND ROAD "B" OF RETIREMENT COMMUNITY AT STERLING PARK M.P.U.D. ACCORDING TO THE PLAT THEREOF AS RECORDED IN MAP BOOK 53, PAGES 59 AND 60 OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.

Note:
HAVING CONSULTED THE NATIONAL FLOOD INSURANCE PROGRAM, FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NO. 120677 0640 J, EFFECTIVE DATE FEBRUARY 19, 2014, THE SUBJECT PROPERTY APPEARS TO LIE IN ZONE X, WHICH ARE AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN THIS DETERMINATION WAS BASED ON GEOSPATIAL DATA DOWNLOADED FROM WWW.FEMA.GOV AND THE SHAPE FILE DISPLAYED HEREON WAS REFERENCED TO ABOVE GROUND IMPROVEMENTS. THIS DETERMINATION WAS BASED ON A GRAPHIC INTERPOLATION OF SAID MAP AND NOT ON ACTUAL FIELD MEASUREMENTS.

cph
www.cphcorp.com
A Full Service A & E Firm
Architects
Engineers
Environmental
Landscape Architects
M / E / P
Planners
Surveyors
Traffic / Transportation
Offices in:
• Florida
• Puerto Rico
• Connecticut
• Maryland
• Texas

HOWARD L. WRAY, JR., P.E.
FL. P.E. NO. 55557

No.	Date	Revision	By
1	3/25/14	PER LOT 1 REVISION LAYOUT	H.L.W.
2	3/31/14	PER CITY COMMENTS	H.L.W.
3	2/28/14	PER CITY COMMENTS	H.L.W.

Designed by:	R.N.C.
Drawn by:	R.N.C.
Checked by:	H.L.W.
Approved by:	H.L.W.
Scale:	1" = 50'
Date:	6-12-13
Job No.:	W9401.1

© 2014

Plans Prepared By:
CPH, Inc.
500 West Fulton St.
Sanford, Fl. 32771
Ph: 407.322.6841
Licenses:
Eng. C.O.A. No. 3215
Survey L.B. No. 7143
Arch. Lic. No. AA2600926
Lndscp. Lic. No. LC0000298

MASTER DEVELOPMENT PLAN
OPTION 2

SAXON STERLING SILVER BPUD

DELTONA, FLORIDA

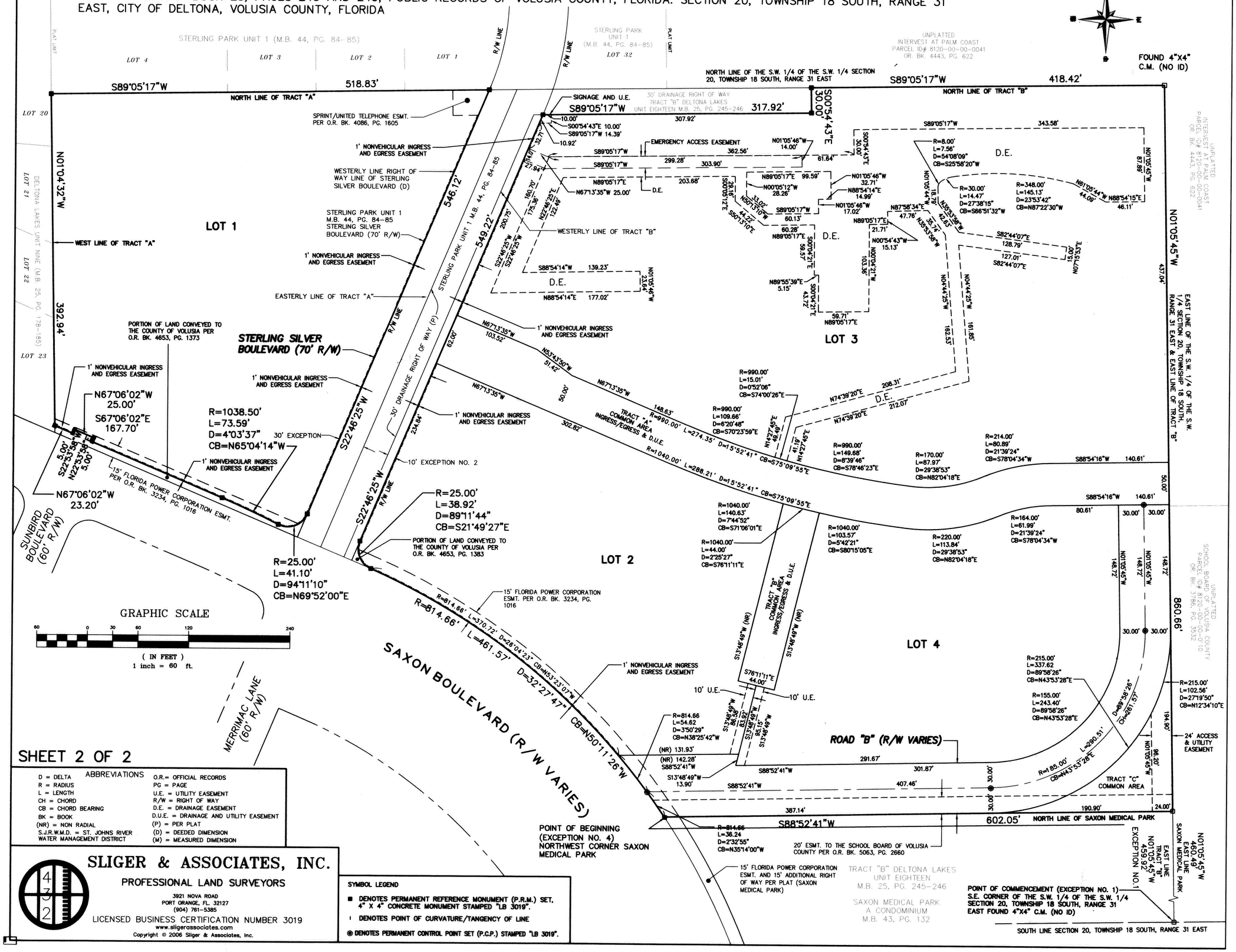
Sheet No.
C-2.2

Instrument# 2006-116938 # 2
Book: 53
Page: 60
Diane M. Matousek
Volusia County, Clerk of Court

MAP BOOK 53 PAGE 60

RETIREMENT COMMUNITY AT STERLING PARK M.P.U.D.

A REPLAT OF A PORTION OF TRACT "A" AND A PORTION TRACT "B" OF DELTONA LAKES, UNIT EIGHTEEN, ACCORDING TO THE PLAT THEREOF RECORDED IN MAP BOOK 25, PAGES 245 AND 246, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA. SECTION 20, TOWNSHIP 18 SOUTH, RANGE 31 EAST, CITY OF DELTONA, VOLUSIA COUNTY, FLORIDA



SHEET 2 OF 2

ABBREVIATIONS

D = DELTA	O.R.= OFFICIAL RECORDS
R = RADIUS	PG = PAGE
L = LENGTH	U.E. = UTILITY EASEMENT
CH = CHORD	R/W = RIGHT OF WAY
CB = CHORD BEARING	D.E. = DRAINAGE EASEMENT
BK = BOOK	D.U.E. = DRAINAGE AND UTILITY EASEMENT
(NR) = NON RADIAL	(P) = PER PLAT
S.J.R.W.M.D. = ST. JOHNS RIVER WATER MANAGEMENT DISTRICT	(D) = DEEDED DIMENSION
	(M) = MEASURED DIMENSION

SLIGER & ASSOCIATES, INC.
PROFESSIONAL LAND SURVEYORS
3921 NOVA ROAD
PORT ORANGE, FL. 32127
(904) 761-5385
LICENSED BUSINESS CERTIFICATION NUMBER 3019
www.sligerassociates.com
Copyright © 2006 Sliger & Associates, Inc.

SYMBOL LEGEND

- ■ DENOTES PERMANENT REFERENCE MONUMENT (P.R.M.) SET, 4" X 4" CONCRETE MONUMENT STAMPED "LB 3019".
- I DENOTES POINT OF CURVATURE/TANGENCY OF LINE
- ◉ DENOTES PERMANENT CONTROL POINT SET (P.C.P.) STAMPED "LB 3019".

Instrument# 2006-116985 # 1
Book: 5825
Page: 1350

EXHIBIT B
For Ordinance No. 19-2005

DEVELOPMENT AGREEMENT AND GRANT CROSS ACCESS EASEMENT
Mixed Planned Unit Development
Project No. 05-MPUD-001

Saxon Retirement Village

1651 Saxon Boulevard

Prepared by and return to:
City of Deltona,/ City Clerk
2345 Providence Blvd.
Deltona, FL 32725

THIS AGREEMENT entered into and made as of the 26th day of April, 2006, by and between the **CITY OF DELTONA, FLORIDA,** (hereinafter referred to as the **"City"**), and Deltona Retirement Residence, LLC (hereinafter referred to as the **"Owner/Developer"**).

W I T N E S S E T H

WHEREAS, the Owner/Developer warrants that it holds legal title to the property described in Paragraph 2 below and that the holders of any and all liens and encumbrances affecting such property will subordinate their interests to this Agreement, and Grant Cross Access Easement; and

WHEREAS, the Owner/Developer 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/Developer desires to ensure that its development is compatible with other properties in the area and planned traffic patterns; and

WHEREAS, the Subject Property fronts upon Saxon Boulevard and the City, after consideration of certain traffic problems, has delineated certain requirements related to ingress

and egress from the Subject Property and other adjacent properties in the area; 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/Developer has sought the City's approval for plans to develop its property, and the City has approved a site plan on February 22, 2006 subject to the covenants, restrictions, and easements offered by the Owner/Developer and contained herein.

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. **Incorporation.** The recitals herein contained and true and correct and are incorporated herein by reference.

2. **Ownership.** The Owner/Developer represents that it is the present owner of the following described property (hereinafter referred to as the "Subject Property"):

Attached hereto as Exhibit "A"

3. **Title Opinion/Certification.** The Owner/Developer will provide to the City, in advance of the City's execution of this Agreement, a title opinion of an attorney licensed in Florida, or a certification by an abstractor or title company authorized to do business in Florida, showing marketable title to the Subject Property to be in the name of the Owner/Developer and showing all liens, mortgages, and other encumbrances not satisfied or released of record.

4. **Subordination/Joinder.** Unless otherwise agreed to by the City, all liens, mortgages, and other encumbrances 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/Developer to promptly obtain the said subordination or joinder, in form and substance acceptable to the City Attorney, prior to the City's execution of the Agreement.

5. **Grant of Cross Access Easement.** The Owner/Developer hereby grants, conveys and assigns to the City a full, free and non-exclusive right to travel, enter, exit, pass and/or repass, with or without vehicles, upon, over, and across, any portion of that certain twenty-four feet (24') wide easement area more particularly described in Paragraph 10(d).

6. **Purpose of Easement.** The purpose of the easement described in Paragraph Five (5) above is to provide access to and from the Subject Property and the property to the adjacent property as shown on the approved master development plan. It is the design and intention of the City to connect the adjacent properties so as to limit the number of access points to the adjacent streets.

7. **Implementation of Easement.** It is specifically acknowledged and agreed by and between the parties hereto that the City shall be entitled, but shall not be required, to implement the easement area, as described in Paragraph Five (5) above, for the benefit of those desiring to access the Subject Property or adjacent or connected properties for the purpose of utilizing the facilities or development thereon. The City shall be entitled to connect the subject easement area to any other easement areas, rights-of-way, or such other transportation facilities as the City shall determine at locations consistent with the approved site plan.

H:\GMerced\Developer's Agreement\Cross Access Easement
O:\Us\FL\Deltona\City state\Devel Agree exh B.doc

8. **Construction, Installation and Maintenance of Easement.** At such time as the Owner/Developer grants, conveys, and assigns to the City the access easement area described in Paragraph 5 above, it shall be the obligation of the Owner/Developer to construct, install and maintain the paved surfaces and other improvements on the above-described easement area, so as to reasonably implement and facilitate the use of the easement area for the easement purposes stated herein.

9. **Curb Cut.** In the event and at such time as the City shall determine in its reasonable discretion to relocate or eliminate the planned curb cut, then the Owner/Developer shall, at the Owner/Developer expense, relocate or eliminate the curb cut and appropriately restore (including, but not limited to the installation of sidewalks) and landscape part or all of the above-described easement areas, according to the City's specifications. Upon the completion of such relocation or elimination and restoration and landscaping to the City's specification, the City shall abandon its easement interest in all or part of the easement areas. The legal documentation of such abandonment shall be in form and substance acceptable to the City Attorney and shall be recorded in the Public Records of Volusia County, Florida. Further, the Owner/Developer shall execute all additional or amended easements to reflect changes in the easement area as result of the relocation or elimination of the original easement.

10. **Development Standards.**

a. Sidewalks: The Owner/Developer will construct an eight (8) foot wide sidewalk on the north side of Saxon Boulevard in accordance with the Volusia County design standards, an eight (8) foot sidewalk on one side of Sterling Silver

Boulevard with a striped pedestrian cross walk at the intersection of Sterling Silver Boulevard and proposed Road or driveway A, an eight (8) foot sidewalk on one side of proposed Road or driveway A with directional arrows. If Road B is approved then eight (8) foot sidewalks shall be installed on one side.

b. Permitted Uses:

Retirement Village, lot 3, Permitted Land Uses. The following land uses, together with customary incidental and subordinate accessory uses shall be permitted, not to exceed 118 residential units with the senior housing building, 3 duplexes, and 2 triplexes:

Senior housing developments

Lots 2 and 4 Permitted Land Uses. The following land uses, together with customary incidental and subordinate accessory uses shall be permitted:

Business office with a maximum floor area ratio of 0.25

Medical office with a maximum floor area ratio of 0.12

Lot 1 Permitted Land Use. The following land uses, together with customary incidental and subordinate accessory uses shall be permitted:

Land uses as permitted by the C-1 Retail Commercial zoning district, section [redacted] Code of Ordinances, City of Deltona, Florida as it is in effect at the time of the adoption of this ordinance, except:

Bars/nightclubs;
Gas stations and convenience stores;
Fast food restaurants;
Automobile service stations, Type C.;
And any other land use that is not listed as a permitted use in the above cited section [redacted]

Maximum Floor Area Ratio= 0.25

H:\GMerced\Developer's Agreement\Cross Access Easement
O:\Us\FL\Deltona\City state\Devel Agree exh B.doc

b. Site Lighting. Site lighting within the Property shall conform to the standards contained in the City Lighting Code, Ordinance No. 10-2004 and the design requirements of Ordinance No. 14-2004. Illumination plan shall be designed by a licensed engineer and member of the IESNA.

c. Parking. Parking within Lots 1, 2 and 4 shall conform to Section 110-810 of the Code, as it exists on the date upon which any final site plan is approved for construction of a primary building on such parcel. Amendments to the approved Master Development Plan that require additional parking shall conform to the requirements of the City that are in effect at the time the amendments are adopted, unless a variance or modification is obtained from the City in accordance with the procedures established at that time.

Parking requirements for the Retirement Village, lot 3 shall be 0.5 parking space per 1.0 living units within the senior housing building proposed to contain 118 residential units. The duplexes and triplexes shall conform to the parking requirements of section 110-810 of the zoning code at the time that a final site plan is approved.

d. Site Access. Site access shall be provided in the locations shown on the approved Master Development Plan, subject to the following conditions:

If Road B is not built as a local street, the east/west connection from Sterling Silver Boulevard to the school board site to the east shall be considered a local road A with a minimum right of way width of fifty (50) feet, dedicated to the City of Deltona. Additional right-of-way shall be required if needed to accommodate turning movements.

Deceleration lanes and turn lanes servicing all roads shown in the Master Development Plan, shall be provided in accordance with the city traffic requirements. No Development Order will be issued or approved until the minimum requirements are met.

The 44' access common area that provides access to lot 2 and lot 4 shall be held in common and maintained by a common property owners association, and shall be completely constructed whenever the owner/developer applies for a final site plan development order of Lot 2 or Lot 4, whichever occurs first.

The right in/right out only access from Lot 1 onto Saxon Boulevard shall be allowed so long as grade separated landscaped median is approved by the city and county. The landscaping within the median shall be maintained by the developer

until such time as the maintenance responsibility is legally transferred to a property owners' association, as with all other common maintenance areas included in this planned unit development.

Should Road B not be approved, a 24' wide access easement shall be provided along the east property line at the south edge of road A to the south property line. This access easement shall provide access to the school board lift station and provide cross access to and from the existing medical plaza to the south. At the time of the development of Lot 3 Retirement Village, the owner/developer shall construct a fourteen (14) feet stabilized access within this access easement from driveway A, moving south to the existing lift station, at their sole expense.

The Master Development Plan shall include a redesign of the existing median located on Sterling Silver Boulevard so that left turn movements can be made from proposed Road B. The median will be landscaped by the developer and maintained by the property owners association.

The Owner/Developer, its successors or assigns, for each proposed lot shall escrow its proportionate fair share of the costs of designing, permitting, purchasing, constructing, and installing a mast arm traffic signal at the intersection of Sterling Silver Boulevard with Saxon Boulevard, or at the intersection of Road B with Saxon Boulevard, whichever meets Volusia County signal warrant requirements first during the required period of escrow. The escrowed funds shall be delivered to the City of Deltona, Florida, in a form acceptable to the City Attorney and shall be held in escrow for fifteen (15) years from the date the development order for the last developed lot is approved. Lots 1-4 shall be vested based on the escrow and shall not be responsible for any future fair share payments for installation of the mast arm traffic signal. If the escrowed funds have not been applied by the end of that time period any unapplied funds shall be returned to the Owner/Developer of each lot who deposited the funds with the City, and the Owner/Developer and its successors or assigns for each lot shall be released from any further obligation with regard to the installation of the signal.

e. Building Setbacks. Minimum building setbacks from the Property lines of the lots shall be as follows:

Lot 1:
Front, side and rear yards, which abut residential neighborhoods and a thoroughfare: 30 feet.

Side street yard: 15 feet.

Lot 2:

a) south yard : 30 feet
b) all other yards: 15 feet

Lot 3:
a) south yard: 15 feet

b) west yard: 20 feet

c) north yard: 15 feet

d) east yard: 20 feet

Lot 4:
a) north yard: 15 feet

b) south yard: 25' feet if Road B is not approved, or 5' feet from the south right of way line if Road B is approved, and only ground cover shall be planted within the 20' school board easement.

c) west yard: 15 feet

d) east yard: 20 feet

f. Maximum Building Height: Lot 3-45 feet. Lots 1, 2 and 4- 36 feet.

g. Minimum building separation: 15 feet.

h. Maximum Residential Density on lot 3: 17 units per acre, including the 118 residential units within the senior housing building that do not include kitchens.

i. Minimum Living Area per dwelling (duplex and triplex): 800 sq. ft.; excluding the residential units within the senior housing building.

j. Maximum Impervious Surface Coverage: 65% of the Property area shown on the approved Master Development Plan. Individual parcels within the unified Property may have more or less impervious surface coverage, but the total impervious surface area on the unified Property shall not exceed the permitted maximum set forth herein. This standard shall not exempt any lot from the minimum landscaping buffer or stormwater requirements.

H:\GMerced\Developer's Agreement\Cross Access Easement
O:\Us\FL\Deltona\City state\Devel Agree exh B.doc

k. Perimeter Landscaped Buffers and other landscaping requirements:

Saxon Boulevard: 30 feet

Sterling Silver Boulevard, except for lot 3: 15 feet

Sterling Silver Boulevard, lot 3: 20 feet

Road A: 10 feet

Road B, if approved: 5 feet

South Property line if Road B is not approved: 25 feet

Lot 1 adjacent to existing residential uses: 30 feet

Lot 3 adjacent to vacant residential uses: 15 feet

Any landscape plan submitted with any Final Site Plan application shall comply with all other provisions of section 110-808 of the zoning code, including but not limited to the landscape wall, interior landscaping, and parking landscaping requirements.

Lots 1, 2, and 4 shall be kept in their natural vegetative state, until a Final Site Plan is approved per lot, unless the owner installs the minimum required landscape buffer, landscape walls, and provides temporary ground cover on and around each lot in accordance with section 110-808 of the zoning code or this Development Agreement, whichever is most restrictive.

All maintenance, equipment, dumpster and loading areas shall be screened from view by a combination of landscaping and walls. Fences that have the appearance of a masonry wall may be used.

A masonry, finished, capped wall with architectural treatments that will compliment the primary structure shall be erected along the north property boundary of lot 3 and lot 1 and west of lot 1 to buffer and visually screen the proposed uses from the existing residential homes to the north. Landscaping shall be placed behind the wall. The wall and its associated landscaping shall be erected by the developer of each lot and maintained by the common property owners association.

l. Building Architecture.

Buildings on the parcels shall be designed so that the side of any such building facing Saxon Boulevard, Sterling Silver Boulevard, or Road A that is not the main entrance shall incorporate architectural treatments that give the appearance of being the front of the building.

The buildings developed within the mixed planned unit development and their permitted signs shall be of a similar architectural design to create continuity throughout the entire project site. The design standards of the buildings within the planned unit development shall conform with Ordinance 14-2004.

m. Utilities: The owner/developer shall install water and sewer lines at their expense to service the entire project site. Any upgrades necessary as determined by the City, to the existing lift station located on the school board property to the east, to provide service for this project, will be provided at the owners/developers sole expense. A utilities agreement agreed to by the city and the owner/developer shall be entered into before a Development Order on any lot will be issued.

n. Platting: The requirement that a sketch plan be submitted to the City prior to the application for approval of a subdivision preliminary plat Development Order as required by the City Code shall be satisfied by the approval of the Master Development Plan, and the City shall not require the submission of any additional sketch plan as a part of the subdivision approval process.

The Master Development Plan shall satisfy the subdivision requirements of the City Code for an Overall Development Plan, therefore the requirement for an Overall Development Plan in addition to the approved Master Development Plan is hereby waived by the City, having been approved with conditions by the Development Review Committee on April 28, 2005. No public hearing of the proposed subdivision by the Planning and Zoning Board shall be required, said hearing having been held for the review of the Master Development Plan.

The final site plan of the Property shall include a Preliminary Plat meeting all of the requirements of the Code of Ordinances, City of Deltona, Florida for Final Site Plan and Preliminary Plat applications. The Preliminary Plat portion of the application shall include all of the on site and off site improvements associated with or required for the approved Master Development Plan.

No building permits shall be issued until the City Commission approves the final subdivision plat, and after the Development Review Committee approves the applicable final site plan Development Order. No site work shall commence upon

the Property except for those improvements as may be authorized pursuant to a Preliminary Plat Development Order.

o. Final Site Plan. The owner/developer shall obtain approval of a final site plan for each newly created lot as required by the City Code before commencing any work on the lot. All development of the Property shall be conducted in strict compliance with the approved final site plan. The approved final site plan shall be generally consistent with the approved Master Development Plan, and strictly in compliance with the City Code, except where variances and modifications are specifically authorized as permitted by the City Code and according to the procedures set forth therein.

The submission of a conceptual plan prior to the application for approval of a Final Site Plan Development Order for the proposed Retirement Village, lot 3, as required by the City Code shall be satisfied by the approval of the Master Development Plan, and the City shall not require the submission of any additional conceptual plan for the proposed retirement village. The submission of a conceptual plan and final site plan application for Lots 1, 2, and 4 shall be required.

No Planning and Zoning Board Public Hearing of the Final Site Plan for the Retirement Village, lot 3 shall be required, said requirement having been met by the hearing of the Master Development Plan. However, proposed development of lots 1,2 and 4 may require a Public Hearing in accordance with section 1[redacted] Code of Ordinances, City of Deltona, Florida, as it may be amended from time to time.

Modifications specifically authorized in this Agreement and in Ordinance No. 19-2005, as permitted by Section 110-718 of the City Code Planned Unit Development regulations shall not require additional approval. Any item shown in the application or approved Master Development Plan for which a different standard is not approved herein, shall conform to the City Code. The approved Final Site Plan and Development Order shall be consistent with the specific development standards and conditions contained herein and in Ordinance No. 19-2005.

p. Stormwater: Stormwater retention shall be provided with the development of each platted lot within the proposed mixed planned unit development in accordance with the Land Development Code and Deltona Comprehensive Plan.

q. Stabilized Access: A stabilized emergency access having a design approved by the City shall be provided for emergency vehicles to access the community building located on Lot 3 from Sterling Silver Boulevard in accordance with the approved Master Development Plan.

r. Signs: Lots 1, 2 and 4 shall be permitted one freestanding monument style sign and wall signs in accordance with 102-346, Deltona Code of Ordinances. Lot 3 shall be permitted one freestanding monument style sign and wall signs in accordance with section 102-296 and 102-297, Deltona Code of Ordinances. Any directional (enter/exist) signs required for the safe movement of traffic for the parcels within the planned unit development in accordance with Chapter 102, shall be monument style construction, no more than three feet high, with a maximum of eight square feet in sign area. Sterling Park Subdivision Homeowners Association shall be permitted one subdivision entryway sign on the ten foot (10') by ten foot (10') easement area provided for that purpose as shown on the approved Master Development Plan, Exhibit B. Easement documents conveying the subdivision entryway sign easement to the Sterling Park Homeowners Association, along with reasonable rights of access and maintenance, shall be included in the easements and dedications provided to the City for approval with the final plat of the commercial subdivision permitted by the attached Exhibit B, Master Development Plan.

s. Environmental: Before any Development Order will be issued on any lot within the planned unit development, any state, federal and local required environmental permits shall be obtained and copies provided to the City.

t. Agreement with adjacent Sterling Park HOA: Any agreements between the adjacent residential Homeowners Association and the owner/developer regarding existing or proposed improvements, shall not be enforced by the City and shall not be binding upon the City unless the City Commission wishes to join as a signatory party to said agreement.

11. **Obligations.** Should the Owner/Developer fail to undertake and complete its obligations as described in this Agreement, to the City's specifications, then the City shall give the Owner/Developer thirty (30) days written notice to commence and ninety (90) days to complete said required obligation. If the Owner/Developer fails to complete the obligations within the ninety (90) day period then the City, without further notice to the Owner/Developer, or its successors in interest, may, without prejudice to any other rights or remedies it may have, perform any and all of the obligations described in this Agreement. Further, the City is hereby authorized to assess the actual and verified cost of completing the obligations required under this

Agreement against the Subject Property. The lien of such assessments shall be superior to all others, and all existing lienholders and mortgagees, by their execution of the subordination or joinder documents, agree to subordinate their liens or mortgages to the City's said liens or assessments. Notice to the Owner/Developer and its successors in interest shall be deemed to have been given upon the mailing of notice to the above-mentioned address.

12. **Enforcement.** In the event that enforcement of this Agreement by the City becomes necessary, and the City is successful in such enforcement, the Owner/Developer shall be responsible for all costs and expenses, including attorneys' fees whether or not litigation is necessary and if necessary, both at trial and on appeal, incurred in enforcing or ensuring compliance with the terms and conditions of this Agreement which 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 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/Developer. Interest on unpaid overdue sums shall accrue at the rate of eighteen percent (18%) compound annually or at the maximum rate allowed by law.

13. **Indemnification.** The Owner/Developer shall indemnify and hold harmless the City from 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, by the City or by third parties, except those claims or liabilities caused by or arising from the

gross negligence 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 sewer plans, fire safety, or quality of construction, whether or not inspected, approved, or permitted by the City.

14. **Site Plan Approval.** The master development plan approval for the Subject Property, given at the regular meeting of the Planning Board or Development Review Committee on February 23, 2006, is specifically incorporated into this Agreement by reference for the purpose of clarifying boundaries, locations, areas, and improvements described in this Agreement, and all development shall be in accordance with and subject to the terms of the said site plan approval.

15. **Compliance.** The Owner/Developer agrees that it, and its successors and assigns, will abide by the provisions of this Agreement, the City's Comprehensive Plan, and the City's Land Development Code, including but not limited to, the site plan regulations of the City as amended from time to time, which are incorporated herein by reference and such subsequent amendments hereto as may be applicable. Further, all required improvements, including landscaping, shall be continuously maintained by the Owner/Developer, or its successors and assigns, in accordance with the City's Land Development Code. The City may, without prejudice to any other legal or equitable right or remedy it may have, withhold permits, certificates of occupancy or approvals, and may terminate sewer and/or water services to the subject property should the Owner/Developer fail to comply with the terms of this Agreement.

16. **Utility Easements.** The Owner/Developer shall provide to the City such easements and other legal documentation, in form mutually acceptable to the City Attorney and the

Owner/Developer, as the City may deem reasonably necessary or appropriate for the installation and maintenance of the utility and other services, including but not limited to, sewer, potable water, and reclaimed water services, electric, cable, fire protection and telecommunications provided, however, such easements shall not materially interfere with the Owner/Developer's use and enjoyment of the subject property.

17. **Concurrency and Vested Rights.** The owner acknowledges and agrees that prior to the issuance of any building permit(s) for the Property, the owner must have received and be in the possession of a valid unexpired Certificate of Capacity. The Certificate of Capacity verifies the availability of infrastructure capacity sufficient to permit development pursuant to the approved site plan for the Property without causing a reduction in the levels of service adopted in the City's Comprehensive Plan. The Certificate of Capacity shall be effective for a term as defined in the City's Land Development Code. Neither this Agreement nor the approved Master Development Plan shall create or result in a vested right or rights to develop the Property without a current and valid Certificate of Capacity.

The approval of the Mixed Planned Unit Development Ordinance 19-2005, this Agreement, and the Master Development Plan does not confer on the owner's proposed development an approval of concurrency, or acceptance of any concurrency deficiencies, or acceptance of any proposed measures to satisfy any concurrency management requirements. Instead, the City Commission, at the suggestion of its staff, finds that the concurrency management issues associated with the Master Development Plan have been identified to the extent that they may be resolved during the review of the Final Site Plan and Final Plat in the City Code mandated Development Review

Process. No Final Site Plan Development Order shall be issued except concurrent with, or after, the issuance of a Certificate of Concurrency for each facility subject to concurrency requirements. All facility deficiencies must be mitigated in compliance with the City Code, the adopted City Comprehensive Plan, and applicable law.

18. **Notices.** Where notice is herein required to be given, it shall be by certified mail return receipt requested, addressee only, hand delivery or courier. Said notice shall be sent to the following, as applicable:

OWNER/DEVELOPER'S REPRESENTATIVES:

Deltona Retirement Residence LLC
Bruce D. Thorn
PO Bon 14111
Salem, Oregon 97309
Phone 503-370-7070 Fax 503-375-7644

Cobb & Cole, Esqs.
Mark Watts, Esq
351 E. New York Avenue
DeLand, Fl 32724
[redacted]

H:\GMerced\Developer's Agreement\Cross Access Easement
O:\Us\FL\Deltona\City state\Devel Agree exh B.doc

CITY'S REPRESENTATIVES:

Bob Nix, AICP, Director
Development Services
City of Deltona
2345 Providence Boulevard
Deltona, FL 32725
[redacted] Fax 386-789-7234

L. Roland Blossom,, Esquire
City Attorney
City of Deltona
2345 Providence Boulevard
Deltona, FL 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 obligation to identify its lender(s) to all parties in a fashion as is required for notices herein.

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

19. **Binding Effect.** This Agreement shall run with the land, shall be binding upon and inure to the benefit of the Owner/Developer and its assigns and successors in interest, and the City and its assigns and successors in interest. The Owner/Developer agrees to pay the cost of recording this document in the Public Records of Volusia County, Florida, and shall reimburse the City for the preparation of this Agreement in such amount to be determined by the City. 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.

20. **Severability.** If any part of this Developer's Agreement is found invalid or unenforceable in any court, such invalidity or unenforceability shall not affect the other parts of

this Developer's 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 Developer's Agreement is declared severable.

The remainder of this page intentionally left blank.

H:\GMerced\Developer's Agreement\Cross Access Easement
O:\Us\FL\Deltona\City state\Devel Agree exh B.doc

IN WITNESS WHEREOF, the Owner/Developer and the City have executed this Agreement as of the day and year first above written.

SIGNED, SEALED AND DELIVERED IN THE PRESENCE OF:

OWNER/DEVELOPER
Deltona Retirement Residence LLC

Suzanne J Magee
Signature of Witness # 1

Suzanne J Magee
Print or type name

Nancy A. Brostrom
Signature of Witness #2

Nancy A Brostrom
Print or type name

By: _____
Signature

Bruce D Thorn
Print or type name

AS: Manager
Print or type

ATTEST:

_____
Signature

_____
Print or Type Name

AS: _____

Mailing Address: _____

STATE OF OREGON
COUNTY OF MARION

The foregoing instrument was acknowledged before me this 6th day of April, 2006, by Bruce D Thorn ~~and~~ _____, of Deltona RR LLC who (is/are personally known to me ~~or who has/have produced~~ _____ as identification and who did not (did) take an oath.

Lean Renae Kuor
Signature of Notary-Oregon

Lean Renae Kuor
Print or type name

NOTARY SEAL
OFFICIAL SEAL
LEAH RENAE KUOR
NOTARY PUBLIC-OREGON
COMMISSION NO. 357048
MY COMMISSION EXPIRES APRIL 23, 2006

H:\GMerced\Developer's Agreement\Cross Access Easement
O:\Us\FL\Deltona\City state\Devel Agree exh B.doc

EXHIBIT "A"
Legal Description

Tract "A", of DELTONA LAKES, UNIT EIGHTEEN, according to the plat thereof recorded in MAP BOOK 25, pages 245 and 246, PUBLIC RECORDS of Volusia County, Florida,

LESS AND EXCEPT that portion conveyed to the County of Volusia recorded in Official Record Book 4653, Page 1383, Public Records of Volusia County, Florida and

LESS AND EXCEPT the Easternmost 30 feet of Tract "A", running parallel and adjacent to an existing drainage Right-of-Way, all as recorded in the Plat of DELTONA LAKES UNIT EIGHTEEN, as recorded in Map Book 25, pages 245 and 246, Public Records of Volusia County, Florida.

TRACT "B" of DELTONA LAKES UNIT EIGHTEEN, according to the plat thereof as recorded in Map Book 25, pages 245 and 246, Public Records of Volusia County, Florida.

LESS AND EXCEPTING FROM:

EXCEPTION NO. 1: That portion of said Tract "B" lying Southerly of the following – described line: Commence at the Southeast corner of the Southwest ¼ of the Southwest ¼ Section 20, Township 18 South, Range31 East, as shown on said plat of DELTONA LAKES UNIT EIGHTEEN; thence run North 01° 05' 45" West along the East boundary line of said Tract "B", for a distance of 459.92 feet to the Point of Beginning of the line hereinafter described; thence South 88° 501 50" West, parallel with the South line of the aforesaid Southwest ¼ of the Southwest ¼ of Section 20, for a distance of 601.49 feet to the Point of Termination of said line, said point being on Easterly Right-of-Way line of Saxon Boulevard as shown on said Plat of DELTONA LAKES UNIT EIGHTEEN, in Map Book 25, pages 245 and 246, Public Records of Volusia County, Florida,

EXCEPTION NO. 2: The Western most 10 feet of Tract "B", running parallel and adjacent to an existing drainage Right-of-Way, terminating at its intersection with the Easterly extension of this Right-of-Way, all as recorded in the Plat of DELTONA LAKES UNIT EIGHTEEN, in Map Book25, pages 245 and 246, Public Records of Volusia County, Florida.

EXCEPTION NO. 3: That portion of said Tract "B" conveyed to the County of Volusia recorded in Official Records Book 4653, Page 1383, Public Records of Volusia County, Florida.

ACCEPTED FOR THE CITY OF DELTONA

By: _____
Don Sikorski, Interim Director Development Services

Date: 4/24/06

ATTEST: _____
FAITH MILLER, MMC, City Clerk

Date: 4/26/06

Mailing Address: City of Deltona
2345 Providence Boulevard
Deltona, Florida, 32725

STATE OF FLORIDA
COUNTY OF Volusia

The foregoing instrument was acknowledged before me this 26th day of APRIL, 2006, by Don Sikorski, Interim Director of Development Services and FAITH MILLER, MMC, City Clerk of the CITY OF DELTONA, FLORIDA, who are personally known to me and acknowledge executing the same freely and voluntarily under authority vested in them and that the seal affixed thereto is the true and corporate seal of the City of Deltona, Florida.

_____
Signature of Notary

(NOTARY SEAL)

MARLENE BROWN
Print or type name

MARLENE T. BROWN
MY COMMISSION # DD 306541
EXPIRES: April 4, 2008
1-800-3-NOTARY FL Notary Discount Assoc. Co.

This instrument prepared by:

DEVELOPMENT AGREEMENT (DA) & CROSS ACCESS EASEMENT (05-MPUD-001)

- Recorded on 5/9/06. DA grants cross-access easement to City and runs with the land.
- Requires following City Code.
- Compatible with other properties in area and planned traffic patterns.
- IDs certain traffic problems and delineates requirements related to ingress and egress.
- Owner/Developer is granted right to develop their property through DA.
- City is granted a 24-ft. wide easement along the east side of property (lot 4) (and kept in Ord. No. 02-2008). Purpose stated of the easement is to connect adjacent properties to limit the number of access points to adjacent streets.
- Owner/Developer shall construct the easement.
- Owner/Developer is required to construct an 8-ft. wide sidewalk along north side of Saxon and one side of Sterling Silver. A 5-ft. side sidewalk constructed along Saxon.
- Owner/Developer required to construct 8-ft. wide sidewalk along road A (Alabaster), place directional arrows on Alabaster, and stripe cross walk. Cross walk is not striped.
- Permitted uses and maximum FAR:
    - Lot 1 – C-1 zoning district uses, except bars/nightclubs, gas stations with c-stores, fast food restaurants, auto service stations (type C), any other land use not listed as a permitted in sec. 110-714.02 LDC (0.25 FAR).
    - Lots 2 & 4 – Business office (0.25 FAR) and medical office (0.12 FAR).
    - Lot 3 – 118 residential units, 3 duplexes, and 2 triplexes.
- Site lighting – must meet Code and include an illumination plan.
- Parking – Lots 1, 2, 4, and the duplexes/triplexes on Lot 3 must meet Code. Lot 3 facility to be at 0.5 spaces per 1 living unit.
- Access – If road B not built, a 50-ft. wide ROW dedicated to City with access to the School Board to be provided by developer. ROW was dedicated with no access to school from it. A 20-ft. wide easement, unimproved, was conveyed to the School Board. Additional ROW may be required for turning movements.
- Deceleration lanes and turn lanes shall be provided per City traffic regulations. No DO shall be issued/approved until the minimum requirements are met.
- 44-ft. (tract B on Plat) access to lots 2 and 4 shall be held by a POA and constructed by the Owner/Developer.

- RI/RO from lot 1 to Saxon is allowed, as long as long as a grade separated landscape median approved (in Saxon) by City and County. Landscaping maintained by developer/POA.
- 24-wide easement provided along the east property line, from driveway A, if road B not built. Purpose is to provide access to the existing School Board lift station and existing medical plaza to south. At time of development of lot 3 (retirement village), a 14-ft. wide stabilized access within this 24-ft. wide easement from driveway A to the School Board's lift station shall be constructed by the developer.
- The MDP shall include a redesign of the existing median within Sterling Silver Blvd. to accommodate road B, if road B approved. Landscaping within the median is to be installed by the developer and maintained by the POA.
- Owner/Developer shall escrow a proportionate fair share for cost of designing, permitting, purchasing, constructing, and installing mast arm traffic signal at the intersection of road B and Saxon or at Sterling Silver and Saxon, whichever is warranted by Volusia County. The escrowed funds shall be held by the City and will vest lots 1-4 from future escrow. Escrow funds not established.
- Building setbacks:
    - Lot 1 – front, side and rear yards – 30 ft., street side – 15 ft.
    - Lot 2 – south yard 30 ft., all others 15 ft.
    - Lot 4 – north yard 15 ft., south yard 25 ft. if road B not approved, 5 ft. from south ROW line if road b approved, and only ground cover planted on the 20 ft. wide School Board easement, west yard 15 ft. and east yard 20 ft.
    - Lot 3 – south and north yard 15 ft., east and west yard 20 ft.
- Max. building heights:
    - Lot 1, 2, and 4 – 36 ft.
    - Lot 3 – 45 ft.
- Min. building separation – 15 ft.
- Max. residential density on lot 3 – 17 DU/ac.
- Max. ISR – 65%
- Perimeter buffer requirements:
    - Saxon – 30 ft.

- Sterling Silver for lots 1, 2, and 4 – 15 ft.
- Sterling Silver for lot 3 – 20 ft.
- Road A (Alabaster) – 10 ft.
- Road B (if approved) – 5 ft.
- South property line if road B not approved – 25 ft.
- Lot 1 adjacent to residential – 30 ft.
- Lot 3 adjacent to residential – 15 ft.
- All maintenance equipment dumpster and loading areas shall be screened from view by a combined wall and landscaping.
- Lots 1 and 3 shall have a wall and landscaping installed along the north side and along the west side of Lot 1. Wall to be erected by the developer and maintained by the POA.

- Architecture – unified design throughout the MPUD site.
- Utilities – Owner/Developer to install water and sewer lines at their expense.
- Platting/FSP – sketch plan is not required for a Preliminary Plat approval, due to detail in MDP. Final Site Plan shall include Preliminary Plat and meet Code. No building permits approved until Final Plat approval. No site work until Preliminary Plat DO approval. FSP needed for each new lot and FSP shall conform to MDP. No P&Z for FSP for Lot 3. Lots 1, 2, and 4 FSP may have P&Z hearing.
- Stormwater – provided on each platted lot, no master system.
- Stabilized access – stabilized emergency access is to be provided to Lot 3 community building from Sterilizing Silver.
- Signs – Lots 1-4 are permitted one freestanding sign and wall sign. Monument signs no more than 3-ft. high and 8-SF in copy area. Sterling Park Subdivision entry sign on easement on Lot 3 that is 10x10 ft. and conveyed on Final Plat.
- Environmental – All federal, state, and local environmental permits obtained prior to any DO issuance
- Agreements – agreements between developer of Lots 1-4 and the Sterling Park HOA shall not include the City, unless the City Commission wishes to join the agreement.

SAXON STERLING SILVER BPUD
Project № 14-006
March 2014

TRAFFIC IMPACT ANALYSIS
CITY OF DELTONA, FL

Prepared by:

Traffic & Mobility Consultants
1507 S. Hiawassee Road, Suite 212
Orlando, Florida 32835
www.trafficmobility.com
(407) 531-5332

Prepared for:

CPH Engineers, Inc.
500 W Fulton Street
Sanford, Florida 32771

EXECUTIVE SUMMARY

This traffic analysis was performed for the proposed Saxon Sterling Silver BPUD, a proposed commercial development with a 44,000 square foot grocery store, a 14,500 square foot retail center, and 45,220 square feet of medical office space. The site is located at the intersection of Saxon Boulevard and Sterling Silver Boulevard.

The analysis assessed the project's impact on traffic operations and capacity. Additionally, the analysis evaluated the warrants for signalization of the intersection Saxon Boulevard and Sterling Silver Boulevard. The results of the study as documented herein are summarized below:

- The proposed development will generate 4,127 new external daily trips, of which 198 will occur in the morning peak hour and 404 trips will occur in the evening peak hour.

- An analysis of existing conditions reveals that Saxon Boulevard is currently deficient on the two segments east of Interstate 4. The existing capacity backlog is from I-4 to Normandy Boulevard.

- It was also determined that the intersection of Saxon Boulevard and Normandy Boulevard currently experiences excessive delays in the morning peak hour on the southbound movement due to the heavy volume of traffic desiring to reach I-4.

- The analysis of projected conditions indicates that the deficiencies identified above will prevail into the future. There are no current funded projects by the County, City or State to address this existing backlog.

- The proposed development will not have a significant impact on the capacity and operations deficiencies identified at Saxon and Normandy.

- A review of conditions at the project access indicates the project driveways and intersections are projected to operate adequately at buildout. The proposed driveways will require turn lane improvements as follows:

    - Driveway 1, RI/RO at Lot 1 – 185 foot right turn lane on Saxon Boulevard
    - Driveway 2, Shared Full Access – 185 foot right turn lane on Saxon Boulevard
    - Driveway 7, Access to Lot 1 – 170 foot left turn lane on Sterling Silver Blvd

- A signal warrant analysis conducted for projected traffic volumes indicates that the project will generate sufficient traffic to warrant signalization at Saxon Boulevard and Silver Sterling Boulevard. The issue of signalization should be considered closely and addressed with the City and County again during the site design process.

- The development will connect to the existing pedestrian network in the area. Additional on and near site improvements, such as a pedestrian friendly intersection at Alabaster Way and Silver Sterling will further improve conditions for pedestrians in this area.

- Consideration should be given for a potential future transit route on Saxon Boulevard. Therefore, access connections to the public sidewalk system and visible routes to and from the sight are recommended for consideration during the site design process.

- There are limited bicycle facilities in the vicinity of the site, however it is recommended that bicycle amenities, such as bicycle parking racks, be considered during site design.

PROFESSIONAL ENGINEERING CERTIFICATION

I hereby certify that I am a Professional Engineer properly registered in the State of Florida practicing with Traffic & Mobility Consultants, LLC, a corporation authorized to operate as an engineering business, EB-30024, by the State of Florida Department of Professional Regulation, Board of Professional Engineers, and that I have prepared or approved the evaluations, findings, opinions, conclusions, or technical advice attached hereto for:

PROJECT: Saxon Sterling Silver BPUD

LOCATION: City of Deltona, FL

CLIENT: CPH Engineers, Inc.

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

NAME: Mohammed Abdallah

P.E. No.: Florida P.E. No. 56169

DATE: March 4, 2014

SIGNATURE: _____

TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1

2.0 TRIP GENERATION AND DISTRIBUTION 3

2.1 Trip Generation 3
2.2 Trip Distribution/Assignment 3

3.0 SIGNIFICANCE TEST AND STUDY AREA 5

3.1 Study Area 6
3.2 Traffic Data Collection 6
3.3 Network Improvements 7

4.0 CAPACITY ANALYSIS 8

4.1 Existing Roadway Capacity Analysis 8
4.2 Traffic Projections 9
4.3 Projected Roadway Capacity Analysis 9
4.4 Intersection Capacity Analysis 9

5.0 ACCESS ANALYSIS 16

5.1 Access Capacity Analysis 16
5.2 Turn Lane Warrants 18
5.3 Signal Warrant Analysis 19

6.0 ALTERNATIVE MOBILITY 21

7.0 STUDY CONCLUSIONS 22

APPENDICES 24

Appendix A Preliminary Site Plan
Appendix B Trip Generation Sheets
Appendix C Trip Distribution Model
Appendix D AM & PM Turning Movement Counts
Appendix E 24 Hour Traffic Volume Counts
Appendix F Planned or Programmed Improvements
Appendix G Intersection Capacity Worksheets
Appendix H Driveway Capacity (HCS) Worksheets
Appendix I Signal Warrant Analysis Worksheets

LIST OF TABLES

Table 1 Trip Generation Analysis....3
Table 2 Significance Test....5
Table 3 Existing Roadway Capacity Analysis....8
Table 4 2016 Roadway Capacity Analysis....9
Table 5 AM Peak Hour Intersection Capacity Analysis....14
Table 6 PM Peak Hour Intersection Capacity Analysis....14
Table 7 Driveway Capacity Analysis....16
Table 8 Turn Lane Warrant Analysis....18
Table 9 Projected Traffic Approach Volumes....20

LIST OF FIGURES

Figure 1 Project Site Location....2
Figure 2 Trip Distribution Pattern....4
Figure 3 Existing Turning Volumes – AM Peak....10
Figure 4 Existing Turning Volumes – PM Peak....11
Figure 5 Projected Turning Volumes – AM Peak....12
Figure 6 Projected Turning Volumes – PM Peak....13
Figure 7 Proposed Site Access Plan....17

1.0 INTRODUCTION

This traffic analysis was performed to assess the impact of the proposed Saxon Sterling Silver BPUD on the surrounding transportation facilities. The project site is located on Saxon Boulevard at the intersection of Sterling Silver Boulevard in the City of Deltona, Florida. **Figure 1** depicts the location of the project site and the surrounding roadway network.

The site includes a total of three lots located on the northwest and northeast quadrants of the intersection. The parcels are currently vacant and are proposed to be improved as follows:

Lot 1, Northwest Quadrant

Medical Office/Urgent Care - 45,220 square feet

Lot 2/4, Northeast Quadrant

Supermarket – 44,000 square feet

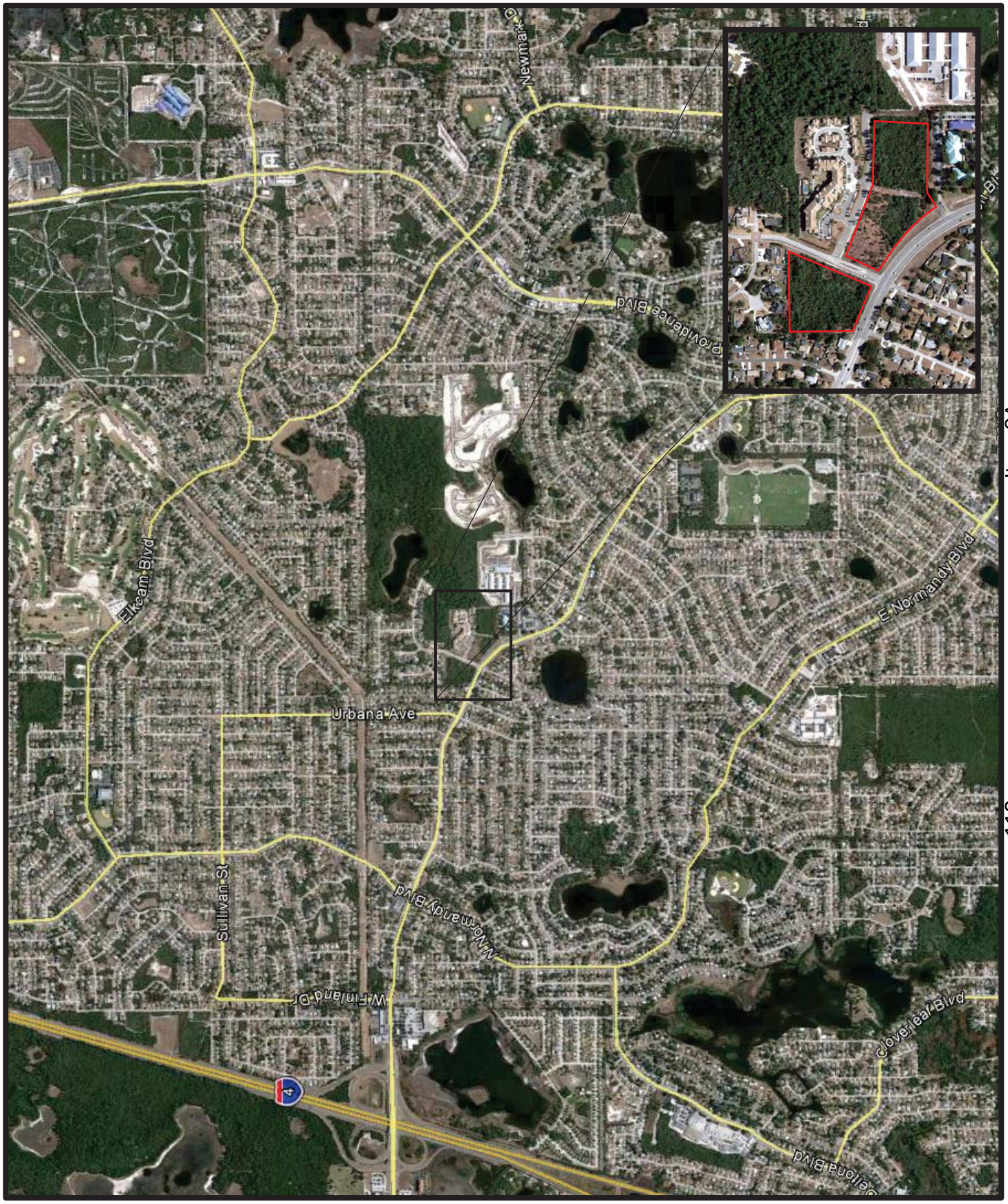
Retail – 14,500 square feet

A conceptual development plan is included in **Appendix A**.

The following analysis is an update to a previously submitted traffic analysis for the project, dated November 2013, which was based on a methodology that was agreed with the City of Deltona and Volusia County. The review comments received on the previous analysis, dated January 27, 2014, are addressed to the extent applicable in this revised and updated report.

The analysis addresses the following elements:

1. Traffic impacts of the project
2. Traffic concurrency requirements
3. Site Access Evaluation
4. Signal Warrant Analysis



TMC
Traffic & Mobility Consultants
1507 S. Hiawassee Rd - Ste 212
Orlando, Florida 32835
P: (407) 531-5332
F: (407) 531-5331
www.trafficmobility.com

Figure:
SITE LOCATION MAP

Project:
Saxon Sterling Silver BPUD

Project No.:
14-006

N
Not to Scale

Figure:
1

2.0 TRIP GENERATION AND DISTRIBUTION

The project's traffic and travel characteristics determine the level of impact it will have on the surrounding transportation facilities. These characteristics include the project's trip generation, the distribution of those trips in the area, then their assignment to the roadway network.

2.1 Trip Generation

Information published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual, 9th Edition* was used to determine the trip generation of the proposed development as summarized in **Table 1**. Detailed trip generation information sheets are included in **Appendix B**.

Table 1
Trip Generation Analysis

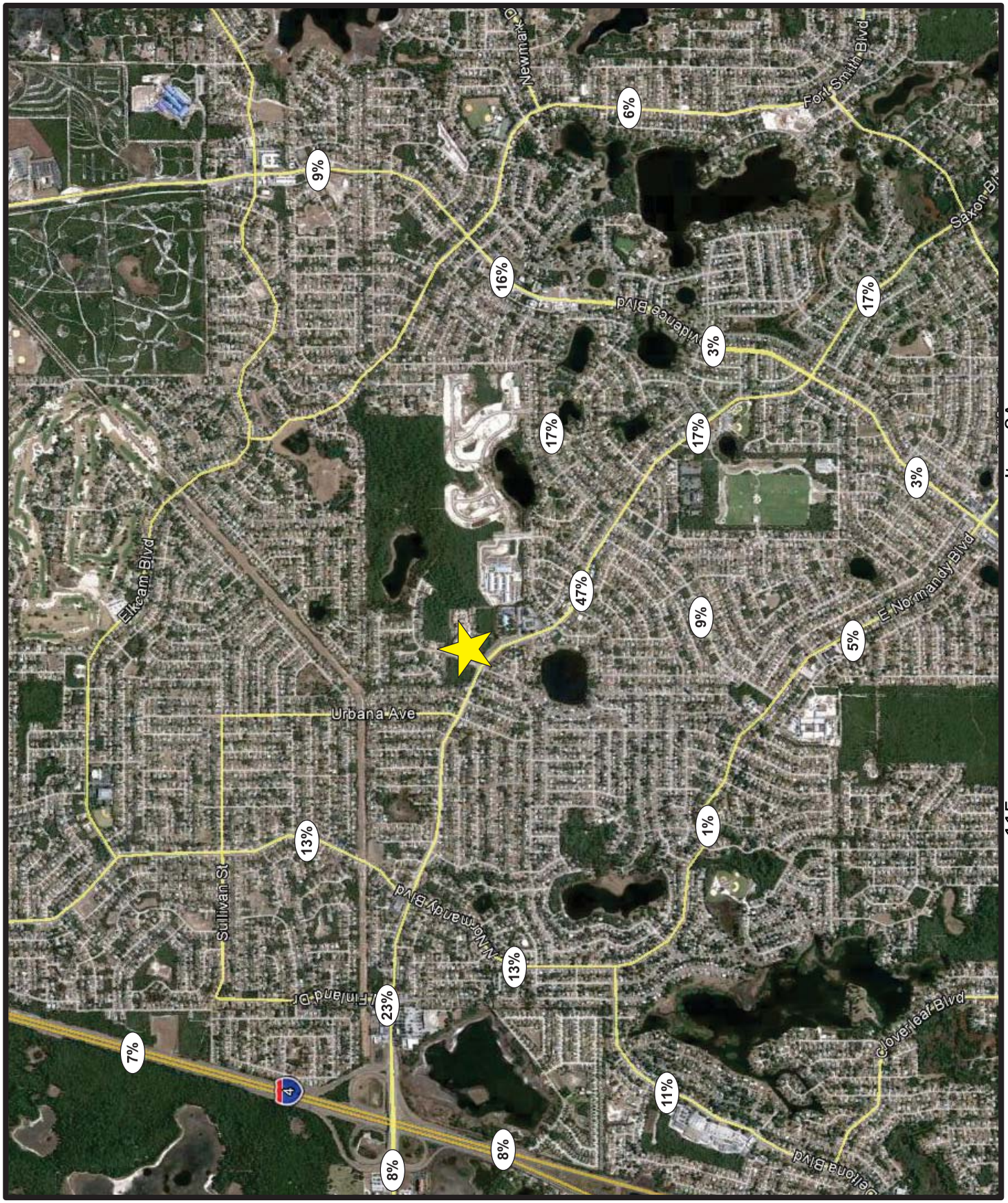
Description	LU Code	Quantity	Daily		AM Peak Hour Trips				PM Peak Hour Trips			
			Rate	Trips	Rate	Enter	Exit	Total	Rate	Enter	Exit	Total
Lot 2/4 - Supermarket	850	44 KSF	102.24	4,499	3.40	93	57	150	9.64	216	208	424
Lot 2/4 - Retail	820	14.5 KSF	133.49	1,936	3.31	30	18	48	11.33	79	85	164
Lot 1 - Medical Office & Urgent Care	720	45.220 KSF	36.14	1,634	2.39	85	23	108	3.15	40	102	142
Total Trip Generation				8,068		208	98	306		335	395	730
Internal Capture				*1,572*		*22*	*10*	*32*		*44*	*52*	*96*
External Trip Generation				6,496		186	88	274		291	343	634
Pass-by Trips Supermarket (36%)				*1,304*		*24*	*24*	*48*		*66*	*66*	*132*
Pass-by Trips Retail (68%)				*1,065*		*14*	*14*	*28*		*49*	*49*	*98*
Net New External Trip Generation				**4,127**		**148**	**50**	**198**		**176**	**228**	**404**

Pass-by Check: Saxon projected background volume at buildout is 2,411 x 14% = 338 trips. Pass-by is 230 trips < 338 trips. No adjstment needed
ITE Trip Generation Manual, 9th Edition

Based on this calculation, the proposed development will generate 4,127 net new external trips per day, of which 198 and 404 new external trips will occur during the AM and PM peak hours, respectively.

2.2 Trip Distribution/Assignment

A trip distribution pattern for the proposed development was obtained from the Central Florida Regional Planning Model (CFRPM) Version 5.2. **Figure 2** illustrates the adjusted trip distribution pattern used in the analysis. The model output plot is included in **Appendix C**.



TMC
Traffic & Mobility Consultants
1507 S. Hiawassee Rd - Ste 212
Orlando, Florida 32835
P: (407) 531-5332
F: (407) 531-5331
www.trafficmobility.com

Figure:
TRIP DISTRIBUTION PATTERN

Project:
Saxon Sterling Silver BPUD

Project No.:
14-006

N
Not to Scale

Figure:
2

3.0 SIGNIFICANCE TEST AND STUDY AREA

The project's influence and study area were determined based on the significance test in accordance with the Volusia TPO standard methodology requirements. In this case, any facility that is impacted by project traffic in excess of 5% of its capacity is considered within the project's influence area. **Table 2** summarizes the significance test.

Table 2
Significance Test

Roadway	Segment	# of Lns	LOS Std	Max SV	Project Trips		% Signif	2011 Critical /Near Critical
					Distrib	Trips		
Saxon Blvd	Enterprise Rd to VM Pkwy	6	E	4,851	2%	8	0.2%	
	VM Pkwy to FDOT Park & Ride	6	E	4,851	8%	32	**0.7%**	Near Critical
	FDOT Park & Ride to Interstate 4	6	E	4,851	8%	32	**0.7%**	Critical
	Interstate 4 to Finland Dr	4	E	3,222	23%	93	**2.9%**	Critical
	Finland Dr to Normandy Blvd	4	E	3,222	23%	93	**2.9%**	Critical
	Normandy Blvd to Sterling Silver Blvd	4	E	3,222	53%	214	**6.6%**	
	Sterling Silver Blvd to Tivoli Dr	4	E	3,222	47%	190	**5.9%**	
	Tivoli Dr to Providence Blvd	2	E	1,269	21%	85	**6.7%**	
	Providence Blvd to Normandy Blvd	2	E	1,269	14%	57	4.5%	
	Normandy Blvd to Doyle Rd	2	E	1,269	9%	36	2.8%	
Tivoli Drive	Normandy to Saxon Blvd	2	D	1,197	9%	36	3.0%	
	Saxon Blvd to Providence Blvd	2	D	1,197	17%	69	**5.8%**	
Normandy Blvd	Elckam Blvd to Saxon Blvd	4	E	2,736	13%	53	1.9%	
	Saxon Blvd to Deltona Blvd	2	E	1,269	13%	53	4.2%	
	Deltona Blvd to Tivoli Dr	2	E	1,269	1%	4	0.3%	
	Tivoli Dr to Providence Blvd	2	E	1,269	5%	20	1.6%	
	Providence Blvd to Saxon Blvd	2	E	1,269	2%	8	0.6%	
Deltona Blvd	Normandy Blvd to Clorverleaf Blvd	4	E	2,736	11%	44	1.6%	
Providence Blvd	Ft Smith Blvd to Tivoli Dr	4	E	2,736	16%	65	2.4%	
	Tivoli Dr to Saxon Blvd	2	E	1,269	3%	12	0.9%	
	Saxon Blvd to Normandy Blvd	2	E	1,269	3%	12	0.9%	

3.1 Study Area

Based on the significance analysis and the study methodology, the following facilities will be included in the study area:

Roadway Segments

Saxon Blvd - VM Pkwy to FDOT Park & Ride
FDOT Park & Ride to Interstate 4
Interstate 4 to Finland Dr
Finland Dr to Normandy Blvd
Normandy Blvd to Sterling Silver Blvd
Sterling Silver Blvd to Tivoli Dr
Tivoli Dr to Providence Blvd

Tivoli Dr - Saxon Blvd to Providence Blvd

Intersections

Saxon Blvd & Finland Dr
Normandy Boulevard
Sterling Siler Boulevard
Tivoli Drive

Providence Blvd & Tivoli Dr

Project Access

3.2 Traffic Data Collection

AM peak hour (7am to 9am) and PM peak hour (4pm to 6pm) turning movement counts were collected at the study intersections and the field data is included **Appendix D**. The volumes were converted to peak season using a Peak Season Correction Factor (PSCF) of 1.10 obtain from the FDOT online traffic information.

Additionally, 24-hour road volume counts were collected on Saxon Boulevard, east and west of Sterling Silver Boulevard and on Sterling Silver Boulevard, north of Saxon Boulevard. The 24-hour counts were obtained for the signal warrant analysis at the intersection of Saxon Boulevard and Sterling Silver Boulevard. The daily volume counts are included in **Appendix E**.

3.3 Network Improvements

A review of the FDOT five-year work program and Volusia County Capital Improvement Element (CIE) and Capital Improvement Plan (CIP) was made to identify any planned or programmed improvements in the vicinity of the project. Based on this review, the following roadway improvement was identified:

Saxon Boulevard

Enterprise Road to I-4 – Widen from 4-lanes to 6-lanes. Under Construction.

The information from the Volusia County CIP is included in **Appendix F**.

4.0 CAPACITY ANALYSIS

4.1 Existing Roadway Capacity Analysis

Existing roadway capacity was analyzed for the PM peak hour to establish the current condition of the network. Existing traffic volumes were obtained from the Volusia County 2012 Traffic Counts. The daily volumes were converted to peak hour using the standard peak to daily factor of 0.091. The volume was then augmented by a factor of 1.025 to reflect the annual growth to the year 2013. Traffic volume data is not published for Tivoli Drive, therefore, the turning movement volumes at the adjacent intersection were used in the analysis of the roadway segment.

The results of the analysis, summarized in **Table 3**, indicate that Saxon Boulevard is currently deficient from Interstate 4 to Normandy Boulevard. This facility is currently backlogged and no improvements are planned in the near future. It is worth noting that the improvements under construction east of Interstate 4 have mitigated the pervious deficiencies on Saxon Boulevard west of Interstate 4.

Table 3
Existing Roadway Capacity Analysis

Roadway	Segment	# of Lns	LOS Std	Max SV	Existing 2013		2011 Critical/Near Critical
					Volume	Deficient (Yes/No)?	
Saxon Blvd	VM Pkwy to FDOT Park & Ride	6	E	4,851	3,796	No	Near Critical
	FDOT Park & Ride to Interstate 4	6	E	4,851	4,028	No	Critical
	Interstate 4 to Finland Dr	4	E	3,222	3,843	**Yes**	Critical
	Finland Dr to Normandy Blvd	4	E	3,222	3,357	**Yes**	Critical
	Normandy Blvd to Sterling Silver Blvd	4	E	3,222	2,239	No	
	Sterling Silver Blvd to Tivoli Dr	4	E	3,222	2,239	No	
	Tivoli Dr to Providence Blvd	2	E	1,269	896	No	
Tivoli Drive	Saxon Blvd to Providence Blvd	2	D	1,197	979	No	

4.2 Traffic Projections

The projected roadway conditions were analyzed for the 2016 buildout year. FDOT historical traffic volumes indicate that traffic volumes have been relatively stable or declining in this area over the past few years. Conservatively, it was agreed that a minimum annual growth rate of 2.5% will be used in the projection of background traffic growth to the 2016 buildout year.

4.3 Projected Roadway Capacity Analysis

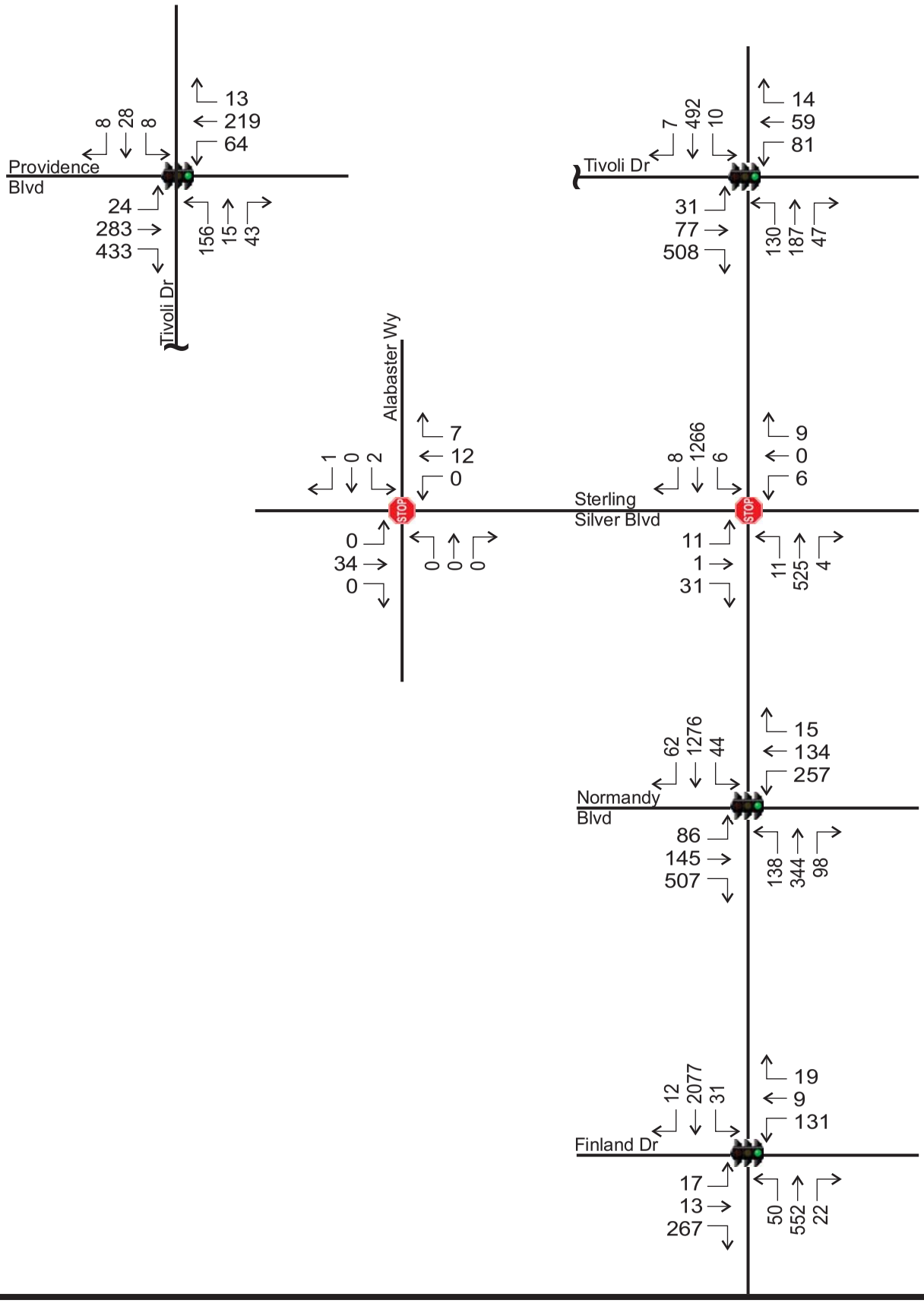
The roadway capacity analysis summarized in **Table 4** indicates that the segments of Saxon Boulevard that are deficient in the existing condition will continue to be deficient in the year 2016. As noted previously, the segments of Saxon Boulevard from Interstate 4 to Normandy Boulevard are backlogged with no planned improvements. As indicated previously in **Table 2**, the proposed development will not significantly impact the deficient segments of Saxon Boulevard at buildout.

Table 4
2016 Roadway Capacity Analysis

Roadway	Segment	# of Lns	LOS Std	Max SV	2016 Background		Project Trips		2016 Total	
					Volume	Deficient (Yes/No)?	Distrib	Trips	Volume	Deficient (Yes/No)?
Saxon Blvd	VM Pkwy to FDOT Park & Ride	6	E	4,851	4,081	No	8%	32	4,113	No
	FDOT Park & Ride to Interstate 4	6	E	4,851	4,330	No	8%	32	4,362	No
	Interstate 4 to Finland Dr	4	E	3,222	4,131	**Yes**	23%	93	4,224	**Yes**
	Finland Dr to Normandy Blvd	4	E	3,222	3,609	**Yes**	23%	93	3,702	**Yes**
	Normandy Blvd to Sterling Silver Blvd	4	E	3,222	2,406	No	53%	214	2,620	No
	Sterling Silver Blvd to Tivoli Dr	4	E	3,222	2,406	No	47%	190	2,596	No
	Tivoli Dr to Providence Blvd	2	E	1,269	964	No	21%	85	1,049	No
Tivoli Drive	Saxon Blvd to Providence Blvd	2	D	1,197	1,052	No	17%	69	1,121	No

4.4 Intersection Capacity Analysis

Seasonally adjusted existing AM and PM peak hour intersection volumes are illustrated in **Figures 3** and **4,** respectively. Using these volumes and project trips, the projected background and buildout volumes were calculated as described in the previous sections. The projected 2016 traffic volumes are provided in **Figures 5** and **6** for the AM and PM peak periods.



TMC Traffic & Mobility Consultants
1507 S. Hiawassee Rd - Ste 212
Orlando, Florida 32835
P: (407) 531-5332
F: (407) 531-5331
www.trafficmobility.com

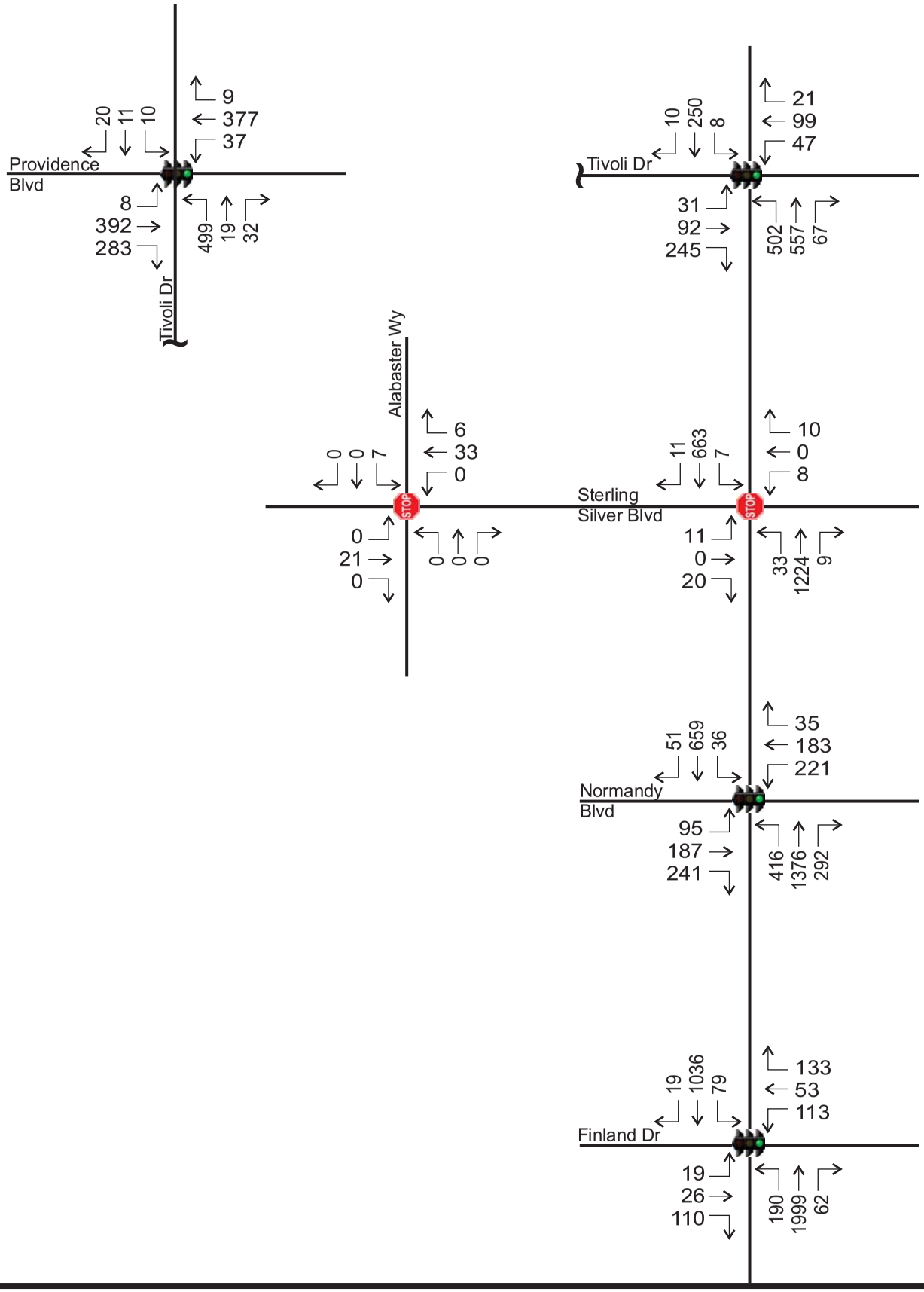
Figure:
EXISTING TRAFFIC VOLUME - AM PEAK

Project:
Saxon Sterling Silver BPUD

Project No.:
14-006

N
Not to Scale

Figure:
3



TMC Traffic & Mobility Consultants
1507 S. Hiawassee Rd - Ste 212
Orlando, Florida 32835
P: (407) 531-5332
F: (407) 531-5331
www.trafficmobility.com

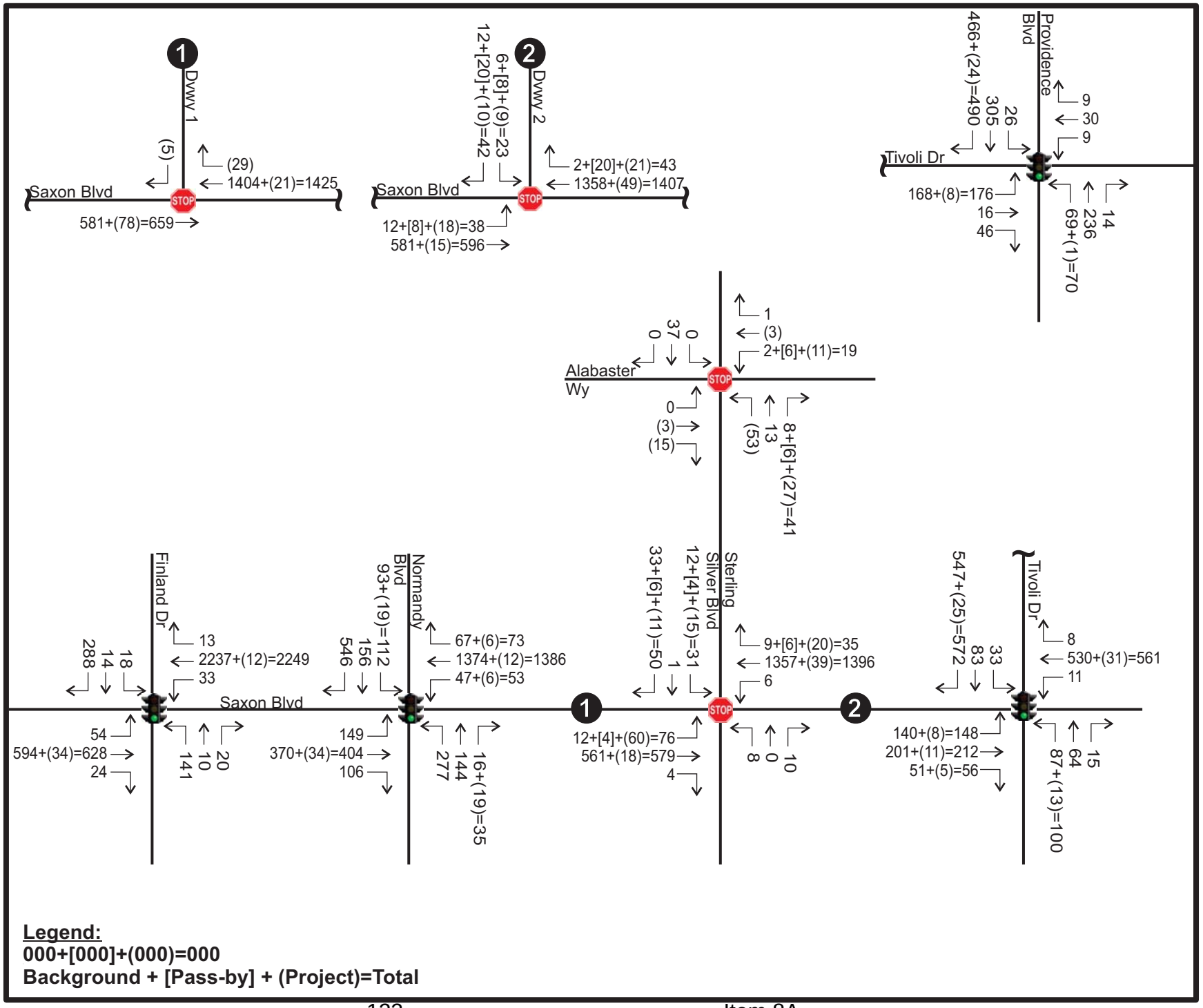
Figure:
EXISTING TRAFFIC VOLUME - PM PEAK

Project:
Saxon Sterling Silver BPUD

Project No.:
14-006

N
Not to Scale

Figure:
4



TMC Traffic & Mobility Consultants
1507 S. Hiawassee Rd - Ste 212
Orlando, Florida 32835
P: (407) 531-5332
F: (407) 531-5331
www.trafficmobility.com

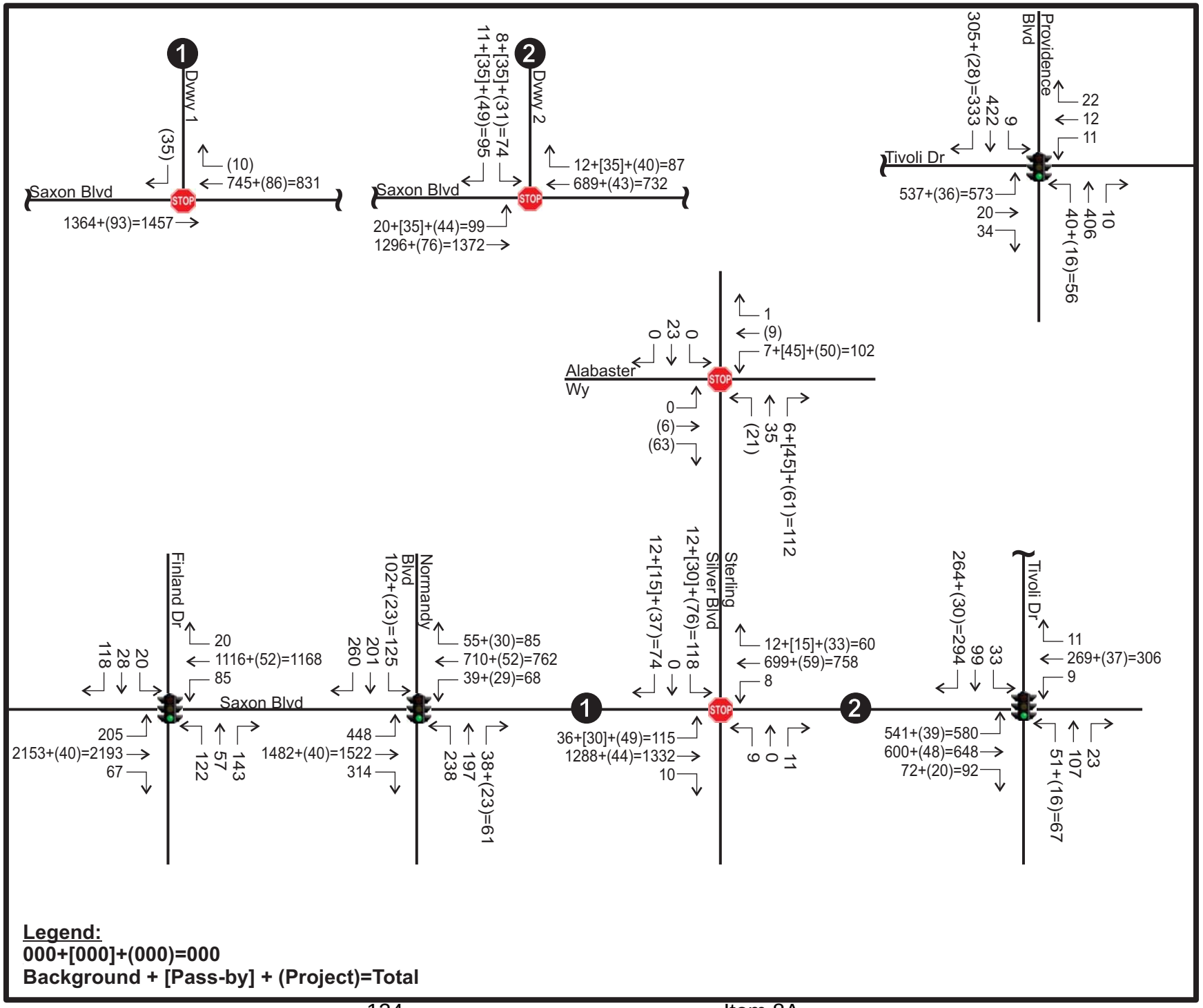
Figure:
2016 PROJECTED TRAFFIC VOLUME - AM PEAK

Project:
Saxon Sterling Silver BPUD

Project No.:
14-006

N
Not to Scale

Figure:
5



TMC Traffic & Mobility Consultants
1507 S. Hiawassee Rd - Ste 212
Orlando, Florida 32835
P: (407) 531-5332
F: (407) 531-5331
www.trafficmobility.com

Figure:
2016 PROJECTED TRAFFIC VOLUME - PM PEAK

Project:
Saxon Sterling Silver BPUD

Project No.:
14-006

N
Not to Scale

Figure:
6

Existing and projected operating conditions at the study intersections were assessed to determine if the project significantly impacts the intersections. The intersection analysis was prepared using the *Synchro Software* and the methods of the Highway Capacity Manual (HCM).

Tables 5 and **6** summarize the results of the analysis for AM and PM peak periods. Detailed analysis worksheets are included in **Appendix G**.

Table 5
AM Peak Hour Intersection Capacity Analysis

Intersection	Control	Analysis	EB		WB		NB		SB		Overall	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Saxon Blvd & Finland Dr	Signal	Exist	12.3	B	9.4	A	43.5	D	37.9	D	12.1	B
		Backgd	12.7	B	25.8	C	43.7	D	37.7	D	24.1	C
		Buildout	12.6	B	27.7	C	43.7	D	37.7	D	25.3	C
Saxon Blvd & Normandy Blvd	Signal	Exist	20.0	C	37.3	D	51.3	D	501.3	F	127.4	F
		Backgd	22.9	C	45.1	D	61.1	E	594.8	F	153.0	F
		Buildout	23.2	C	46.7	D	64.0	E	579.0	F	150.9	F
Saxon Blvd & Tivoli Dr	Signal	Exist	15.8	B	37.1	D	27.7	C	27.9	C	28.1	C
		Backgd	16.0	B	41.5	D	34.8	C	34.7	C	32.5	C
		Buildout	16.2	B	46.5	D	48.8	D	41.3	D	37.7	D
Tivoli Dr & Providence Blvd	Signal	Exist	29.5	C	24.1	C	4.9	A	5.0	A	9.5	A
		Backgd	29.4	C	23.9	C	5.3	A	5.5	A	9.8	A
		Buildout	29.4	C	23.8	C	5.4	A	5.7	A	10.0	B
Saxon Blvd & Sterling Silver Blvd	Stop	Exist	12.2	B	8.6	A	14.5	B	20.6	C	--	--
		Backgd	13.0	B	8.7	A	16.0	C	22.7	C	--	--
		Buildout	15.0	B	8.8	A	19.9	C	35.5	E	--	--
Sterling Silver Blvd & Alabaster Wy	Stop	Exist	--	--	8.7	A	--	--	--	--	--	--
		Backgd	--	--	8.7	A	--	--	--	--	--	--
		Buildout	8.9	A	10.0	B	7.4	A	--	--	--	--

Table 6
PM Peak Hour Intersection Capacity Analysis

Intersection	Control	Analysis	EB		WB		NB		SB		Overall	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Saxon Blvd & Finland Dr	Signal	Exist	47.3	D	5.9	A	54.4	D	44.3	D	34.6	C
		Backgd	66.2	E	5.7	A	60.5	E	45.6	D	47.0	D
		Buildout	71.7	E	5.3	A	60.5	E	45.6	D	49.9	D
Saxon Blvd & Normandy Blvd	Signal	Exist	42.0	D	41.2	D	48.4	D	58.1	E	44.2	D
		Backgd	72.8	E	49.4	D	62.7	E	67.2	E	66.8	E
		Buildout	47.8	D	58.8	E	71.3	E	71.4	E	55.5	E
Saxon Blvd & Tivoli Dr	Signal	Exist	18.0	B	34.8	C	23.1	C	23.6	C	21.7	C
		Backgd	20.1	C	37.8	D	25.6	C	26.3	C	24.0	C
		Buildout	23.9	C	45.5	D	30.3	C	31.0	C	28.7	C
Tivoli Dr & Providence Blvd	Signal	Exist	15.3	B	8.9	A	25.1	C	23.5	C	20.8	C
		Backgd	17.4	B	9.5	A	26.0	C	24.1	C	21.9	C
		Buildout	19.4	B	9.9	A	25.8	C	23.5	C	22.4	C
Saxon Blvd & Sterling Silver Blvd	Stop	Exist	9.3	A	11.9	B	24.7	C	15.3	C	--	--
		Backgd	9.5	A	12.6	B	28.4	D	18.3	C	--	--
		Buildout	10.5	B	12.7	B	38.6	E	46.4	E	--	--
Sterling Silver Blvd & Alabaster Wy	Stop	Exist	--	--	8.9	A	--	--	--	--	--	--
		Backgd	--	--	8.9	A	--	--	--	--	--	--
		Buildout	8.9	A	10.0	B	7.4	A	--	--	--	--

The analysis indicates that the southbound approach at the intersection of Saxon Boulevard and Normandy currently experiences significant delay during the AM peak period. This delay is due to the significant level of traffic turning right at the intersection to reach Interstate 4. This conditions is existing and will continue to prevail in the projected condition.

The proposed development will not add traffic on this movement or cause additional delay at the intersection. Project traffic is in fact present in the southbound left turn movement, which operates adequately during the peak periods.

5.0 ACCESS ANALYSIS

5.1 Access Capacity Analysis

The project's access plan includes a total of 7 access points, two of which provide primary access directly to Saxon Boulevard. The access plan is provided in **Figure 7** for reference.

The site's two access points on Saxon Boulevard were analyzed to determine if they provide sufficient capacity to accommodate the proposed project traffic and if they will operate adequately and efficiently. The access points are described as follows:

- Driveway 1 – Right-in/Right-out providing access to Lot 1, west of Sterling Silver Boulevard
- Driveway 2 – Shared Full access at the eastern boundary of the site

The driveway capacity analysis was conducted based on the methods of the Highway Capacity Manual (HCM) as provided in the Highway Capacity Software (HCS). **Table 7** summarizes the results of the driveway capacity analysis and the worksheets are included in **Appendix H**.

Table 7
Driveway Capacity Analysis

		AM Peak				PM Peak			
Driveway	Movement	Delay	LOS	V/C	Queue	Delay	LOS	V/C	Queue
1	SB Right	14.1	B	0.01	0	11.2	B	0.06	0.2
2	SB Left	36.8	E	0.18	0.61	37.7	E	0.42	1.88
	SB Right	15.1	C	0.11	0.37	11.9	B	0.16	0.57
	SB All	22.7	C	--	--	23.1	C	--	--
	EB Left	14.2	B	0.09	0.3	10.4	B	0.13	0.46

The analysis indicates that the driveways will operate adequately and within their capacity at project buildout. It is noted that the left turn movement will experience delays as drivers will be required to find a gap in the main traffic stream to execute a two-stage maneuver across the median. However, the delays are not projected to exceed the accepted tolerance for such movements.

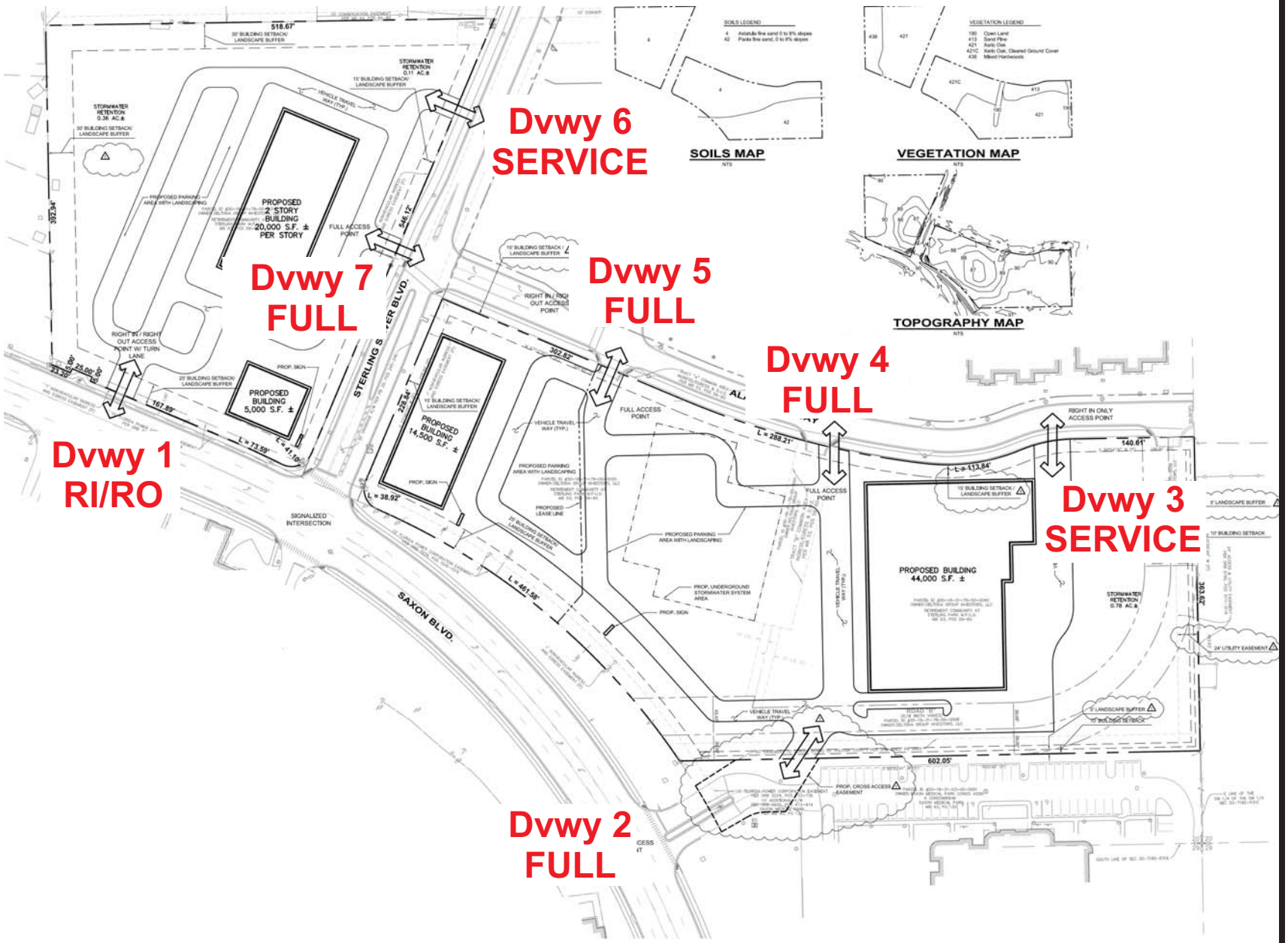


Figure:
PROPOSED SITE ACCESS PLAN

Project:
Saxon Sterling Silver BPUD

Project No.:
14-006

Not to Scale

Figure:
7

Traffic & Mobility Consultants
1507 S. Hiawassee Rd - Ste 212
Orlando, Florida 32835
P: (407) 531-5332
F: (407) 531-5331
www.trafficmobility.com

5.2 Turn Lane Warrants

Turn lane warrants were conducted based on projected traffic volumes at the driveways on Saxon Boulevard and in accordance with the requirements of the City of Deltona code. **Table 8** summarizes the turn lane warrant analysis.

Table 8
Turn Lane Warrant Analysis

Right Turn Lane Warrant Analysis				
Driveway	**Right Turn**	**Volume**	**Speed**	**Warrant Met?**
Dvwy 1 & Saxon Blvd	WB	29	40 mph	Yes
Dvwy 2 & Saxon Blvd	WB	87	40 mph	Yes
Dvwy 4 & Alabaster Wy	EB	53	25 mph	No
Dvwy 5 & Alabaster Wy	EB	53	25 mph	No
Left Turn Lane Warrant Analysis				
Driveway	**Left Turn**	**vpd**	**vph**	**Warrant Met?**
Dvwy 7 & Sterling Silver Blvd	NB	1135	53	Yes

Notes:

Right turn warrant: Turning traffic >= 100 vph OR Road speed >= 35 mph

Left turn warrant: Turning traffic >= 25 vph or total daily volume >= 1,000 vpd

Driveways 3 and 6 are service drives with minimal traffic volume

Volume at Dvwys 4 and 5 was evenly assigned for inbound right turns from Sterling Silver Blvd

Saxon Blvd is improved with TWLTL at Driveway 2, which provides for left turn deceleration

Based on the findings of the analysis the following turn lane dimensions are required:

- Driveway 1 – 185 foot right turn lane on Saxon Boulevard
- Driveway 2 – 185 foot right turn lane on Saxon Boulevard
- Driveway 7 – 170 foot left turn lane on Sterling Silver Blvd

5.3 Signal Warrant Analysis

A signal warrant analysis was conducted for the intersection of Sterling Silver Boulevard and Saxon Boulevard to evaluate if it is feasible to install signalized traffic control at this location under the projected condition. The analysis was conducted per the requirements of the Manual on Uniform Traffic Control Devices (MUTCD) and was limited to the evaluation of Warrant 1 and Warrant 2, the "traffic volume" warrants, since there are no other applicable circumstances for evaluation of the remaining warrants.

As stated previously, 24-hour traffic volumes were obtained at the intersection for use in the analysis. The existing volumes were adjusted using the PSCF and the annual growth rate to obtain 2016 background volumes. Additionally, project traffic was distributed to the intersection to obtain the total projected traffic volume for use in the signal warrant analysis. **Table 9** provides the projected traffic volumes for the analysis.

The signal warrant worksheets are included in **Appendix I**. Based on the projected volumes there is sufficient traffic at this location to potentially justify the installation of a traffic signal. The volume requirements for Warrant 1 and Warrant 2 are met based on the projected traffic volumes.

If the development proceeds as planned, it is recommended that further analysis is conducted during the site approvals process when the final users are better defined and the timing of the development is known.

Table 9
Projected Traffic Approach Volumes

2013 Existing Traffic Volume

Begin Time	Minor SB	Major EB	Major WB	Hourly Total
7:00	36	488	1,093	1,617
8:00	27	379	846	1,252
9:00	28	377	659	1,064
10:00	21	483	569	1,073
11:00	30	500	596	1,126
12:00	22	671	562	1,255
13:00	24	644	679	1,347
14:00	26	683	578	1,287
15:00	33	819	643	1,495
16:00	26	955	589	1,570
17:00	31	1,142	617	1,790
18:00	23	860	532	1,415
19:00	24	704	441	1,169
20:00	15	611	377	1,003
21:00	8	470	217	695
22:00	8	253	114	375
Total	344	9,551	8,019	17,914

2016 Background Traffic

Begin Time	Minor SB	Major EB	Major WB	Hourly Total
7:00	43	578	1,295	1,916
8:00	32	449	1,002	1,483
9:00	34	447	781	1,262
10:00	25	572	674	1,271
11:00	36	592	706	1,334
12:00	25	795	666	1,486
13:00	28	763	804	1,595
14:00	30	809	685	1,524
15:00	39	970	762	1,771
16:00	30	1,131	698	1,859
17:00	36	1,353	731	2,120
18:00	27	1,019	630	1,676
19:00	28	834	522	1,384
20:00	18	724	447	1,189
21:00	9	557	257	823
22:00	9	300	135	444
Total	406	11,315	9,500	21,221

2016 Project Traffic

Begin Time	Minor SB	Major EB	Major WB	Hourly Total
7:00	15	15	14	44
8:00	19	24	21	64
9:00	32	42	37	111
10:00	70	54	48	172
11:00	101	64	57	222
12:00	135	72	64	271
13:00	140	63	56	259
14:00	145	59	52	256
15:00	143	60	53	256
16:00	145	61	54	260
17:00	149	64	57	270
18:00	122	61	54	237
19:00	117	60	54	231
20:00	125	33	29	187
21:00	117	14	12	143
22:00	45	13	12	70
Total	1,605	744	660	3,009

2016 Total Traffic

Begin Time	Minor SB	Major EB	Major WB	Hourly Total
7:00	58	593	1,309	1,960
8:00	51	473	1,023	1,547
9:00	66	489	818	1,373
10:00	95	626	722	1,443
11:00	137	656	763	1,556
12:00	160	867	730	1,757
13:00	168	826	860	1,854
14:00	175	868	737	1,780
15:00	182	1,030	815	2,027
16:00	175	1,192	752	2,119
17:00	185	1,417	788	2,390
18:00	149	1,080	684	1,913
19:00	145	894	576	1,615
20:00	143	757	476	1,376
21:00	126	571	269	966
22:00	54	313	147	514
Total	2,011	12,059	10,160	24,230

6.0 ALTERNATIVE MOBILITY

A review of the preliminary site plan and the surrounding transportation network was made to identify early opportunities to improve mobility in and around the site. The mobility review will be conducted in greater detail through the site planning process, however, the following are general observations for consideration:

Pedestrian Network

1. The site is located in an environment surrounded by an interconnected network of sidewalks. The proposed development should connect to existing sidewalks and establish visible and convenient walking paths from the public right of way into the site.
2. If a signal is installed at Sterling Silver Boulevard, full pedestrian features should be installed to provide a safe crossing between the residential neighborhoods on the south side of the road and the proposed commercial and medical development.
3. Consideration should be given for a visible pedestrian crossing at the intersection of Sterling Silver Boulevard and Alabaster Way, such as stamped or textured pavement, or similar treatment to highlight the presence of pedestrians and school children.

Transit Services

This site is currently not served by fixed route transit. Should transit service become available, it is likely that this commercial node will be along the route. A properly connected pedestrian network as discussed above will encourage the use of such service in the future.

Bicycle Facilities

There are currently no dedicated bicycle facilities serving this area. The project should consider providing a bicycle rack located in a safe and well lit area to encourage and accommodate any bicyclists at the site.

7.0 STUDY CONCLUSIONS

This traffic analysis was performed for the proposed Saxon Sterling Silver BPUD, a proposed commercial development with a 44,000 square foot grocery store, a 14,500 square foot retail center, and 45,220 square feet of medical office space. The site is located at the intersection of Saxon Boulevard and Sterling Silver Boulevard.

The analysis assessed the project's impact on traffic operations and capacity. Additionally, the analysis evaluated the warrants for signalization of the intersection Saxon Boulevard and Sterling Silver Boulevard. The results of the study as documented herein are summarized below:

- The proposed development will generate 4,127 new external daily trips, of which 198 will occur in the morning peak hour and 404 trips will occur in the evening peak hour.

- An analysis of existing conditions reveals that Saxon Boulevard is currently deficient on the two segments east of Interstate 4. The existing capacity backlog is from I-4 to Normandy Boulevard.

- It was also determined that the intersection of Saxon Boulevard and Normandy Boulevard currently experiences excessive delays in the morning peak hour on the southbound movement due to the heavy volume of traffic desiring to reach I-4.

- The analysis of projected conditions indicates that the deficiencies identified above will prevail into the future. There are no current funded projects by the County, City or State to address this existing backlog.

- The proposed development will not have a significant impact on the capacity and operations deficiencies identified at Saxon and Normandy.

- A review of conditions at the project access indicates the project driveways and intersections are projected to operate adequately at buildout. The proposed driveways will require turn lane improvements as follows:

    - Driveway 1, RI/RO at Lot 1 – 185 foot right turn lane on Saxon Boulevard
    - Driveway 2, Shared Full Access – 185 foot right turn lane on Saxon Boulevard
    - Driveway 7, Access to Lot 1 – 170 foot left turn lane on Sterling Silver Blvd

- A signal warrant analysis conducted for projected traffic volumes indicates that the project will generate sufficient traffic to warrant signalization at Saxon Boulevard and Silver Sterling Boulevard. The issue of signalization should be considered closely and addressed with the City and County again during the site design process.

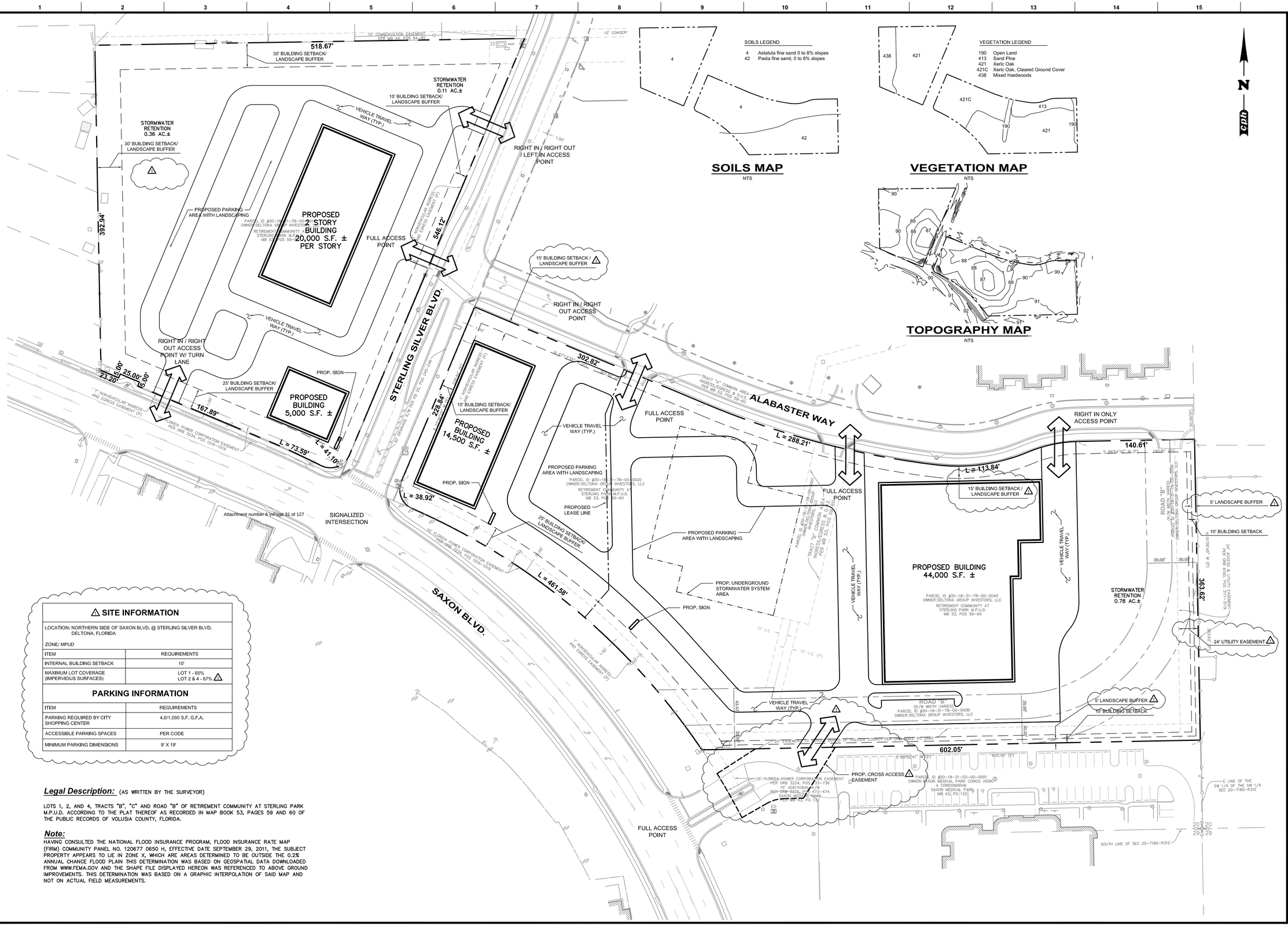
- The development will connect to the existing pedestrian network in the area. Additional on and near site improvements, such as a pedestrian friendly intersection at Alabaster Way and Silver Sterling will further improve conditions for pedestrians in this area.

- Consideration should be given for a potential future transit route on Saxon Boulevard. Therefore, access connections to the public sidewalk system and visible routes to and from the sight are recommended for consideration during the site design process.

- There are limited bicycle facilities in the vicinity of the site, however it is recommended that bicycle amenities, such as bicycle parking racks, be considered during the site design process.

APPENDICES

Appendix A
Preliminary Site Plan



SOILS LEGEND

4	Astatula fine sand 0 to 8% slopes
42	Paola fine sand, 0 to 8% slopes

SOILS MAP

NTS

VEGETATION LEGEND

190	Open Land
413	Sand Pine
421	Xeric Oak
421C	Xeric Oak, Cleared Ground Cover
438	Mixed Hardwoods

VEGETATION MAP

NTS

TOPOGRAPHY MAP

NTS

⚠ SITE INFORMATION

LOCATION: NORTHERN SIDE OF SAXON BLVD, @ STERLING SILVER BLVD. DELTONA, FLORIDA

ZONE: MPUD

ITEM	REQUIREMENTS
INTERNAL BUILDING SETBACK	10'
MAXIMUM LOT COVERAGE (IMPERVIOUS SURFACES)	LOT 1 - 65% LOT 2 & 4 - 67% ⚠

PARKING INFORMATION

ITEM	REQUIREMENTS
PARKING REQUIRED BY CITY SHOPPING CENTER	4.0/1,000 S.F. G.F.A.
ACCESSIBLE PARKING SPACES	PER CODE
MINIMUM PARKING DIMENSIONS	9' X 19'

Legal Description: (AS WRITTEN BY THE SURVEYOR)

LOTS 1, 2, AND 4, TRACTS "B", "C" AND ROAD "B" OF RETIREMENT COMMUNITY AT STERLING PARK M.P.U.D. ACCORDING TO THE PLAT THEREOF AS RECORDED IN MAP BOOK 53, PAGES 59 AND 60 OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.

Note:

HAVING CONSULTED THE NATIONAL FLOOD INSURANCE PROGRAM, FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NO. 120677 0650 H, EFFECTIVE DATE SEPTEMBER 29, 2011, THE SUBJECT PROPERTY APPEARS TO LIE IN ZONE X, WHICH ARE AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN THIS DETERMINATION WAS BASED ON GEOSPATIAL DATA DOWNLOADED FROM WWW.FEMA.GOV AND THE SHAPE FILE DISPLAYED HEREON WAS REFERENCED TO ABOVE GROUND IMPROVEMENTS. THIS DETERMINATION WAS BASED ON A GRAPHIC INTERPOLATION OF SAID MAP AND NOT ON ACTUAL FIELD MEASUREMENTS.

cph
www.cphcorp.com
A Full Service A & E Firm
Architects
Engineers
Environmental
Landscape Architects
M / E / P
Planners
Surveyors
Traffic / Transportation
Offices In:
• Florida
• Puerto Rico
• Connecticut
• Maryland
• Texas
HOWARD L. VIRAY, JR., P.E.
FL. P.E. NO. 55557

No.	Date	Revision	By
1	2/28/14	PER CITY COMMENTS	H.L.W.

Designed by:	R.N.C.
Drawn by:	R.N.C.
Checked by:	H.L.W.
Approved by:	H.L.W.
Scale:	1" = 50'
Date:	6-12-13
Job No.:	W9401.1

© 2014

Plans Prepared By:
CPH, Inc.
500 West Fulton St.
Sanford, Fl. 32771
Ph: 407.322.6841
Licenses:
Eng. C.O.A. No. 3215
Survey L.B. No. 7143
Arch. Lic. No. AA2600926
Lndscp. Lic. No. LC0000298

MASTER DEVELOPMENT PLAN
OPTION 2

SAXON STERLING SILVER BPUD

DELTONA, FLORIDA

Sheet No.
C-2.2

Appendix B
Trip Generation Sheets

Supermarket
(850)

Average Vehicle Trip Ends vs: **1000 Sq. Feet Gross Floor Area**
On a: **Weekday**

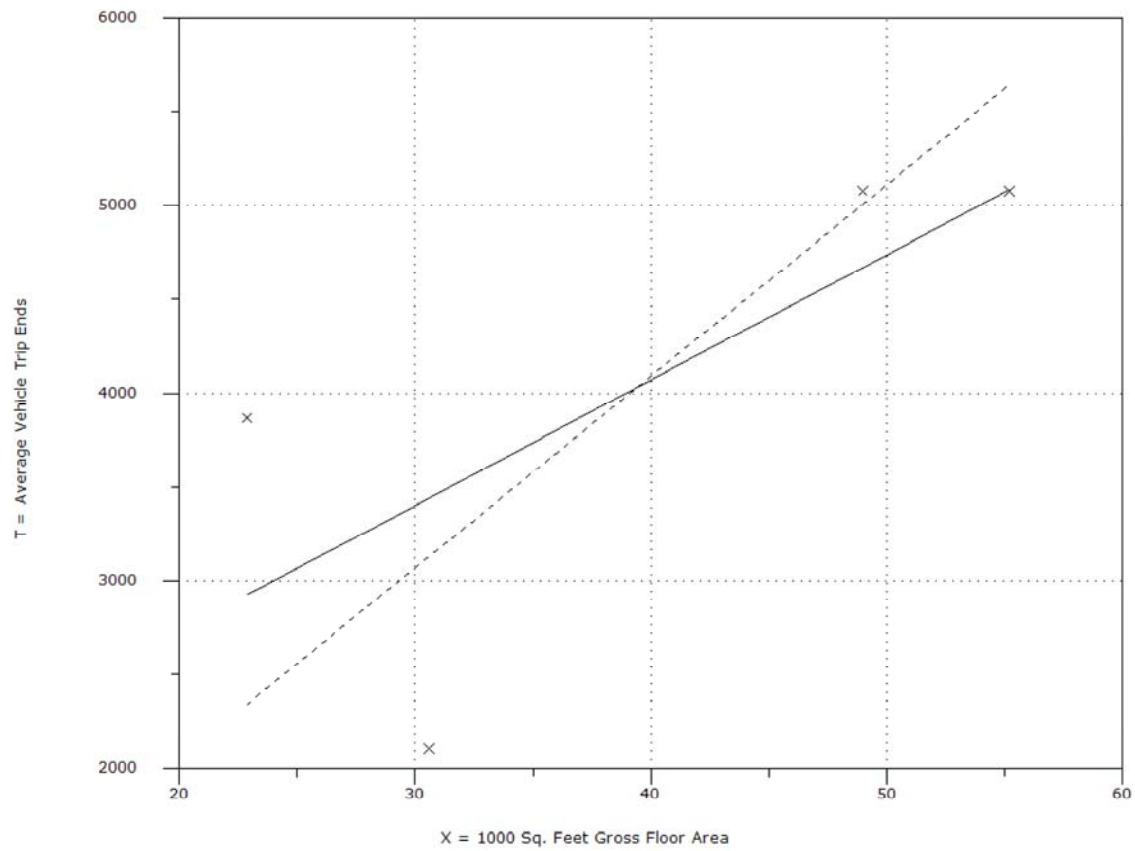
Number of Studies: 4
Average 1000 Sq. Feet GFA: 39
Directional Distribution: 50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
102.24	68.65 - 168.88	31.73

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



Fitted Curve Equation: T = 66.95(X) + 1391.56 $R^2 = 0.52$

Trip Generation, 9th Edition

Supermarket
(850)

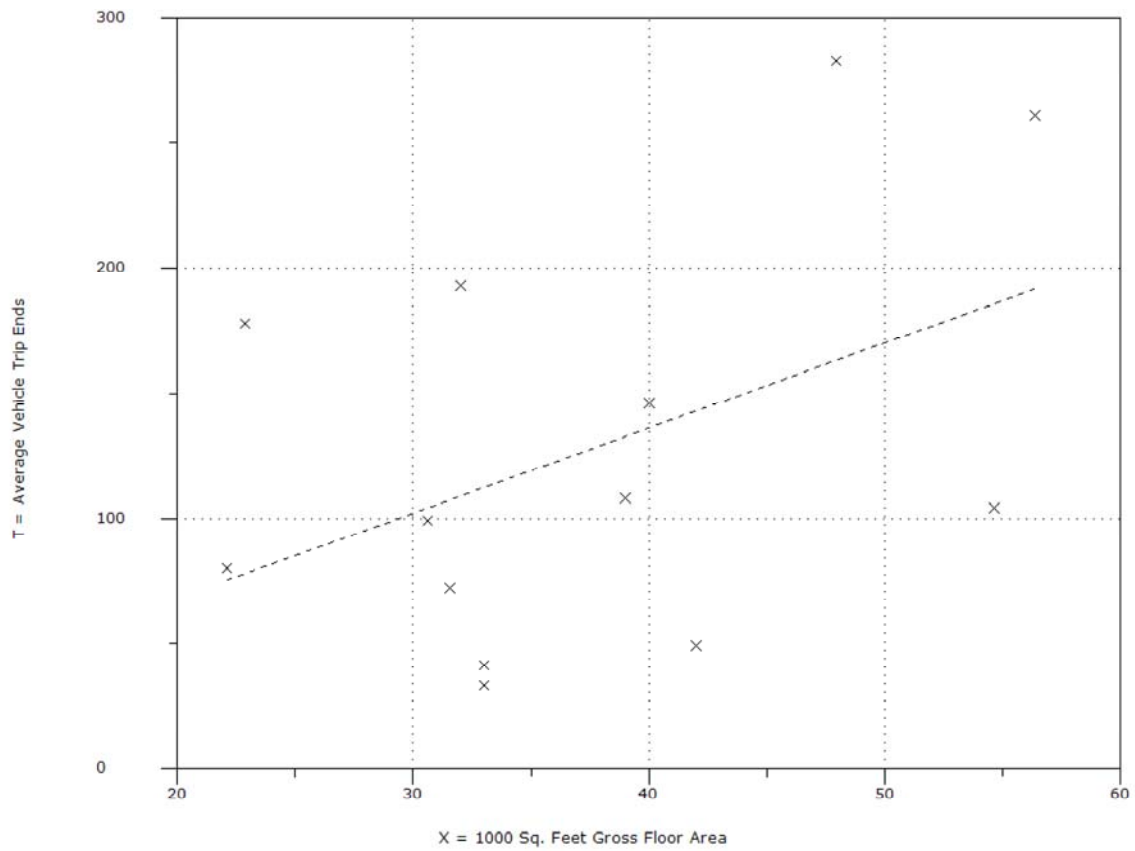
Average Vehicle Trip Ends vs: **1000 Sq. Feet Gross Floor Area**
On a: **Weekday**
Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a.m.

Number of Studies: 13
Average 1000 Sq. Feet GFA: 37
Directional Distribution: 62% entering, 38% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
3.40	1.00 - 7.78	2.64

Data Plot and Equation



× Actual Data Points ◦ Omitted Data Points ——— Fitted Curve - - - - - - - Average Rate
□ Custom Data Points

Fitted Curve Equation: Not Given R^2 = ****

Trip Generation, 9th Edition

Supermarket
(850)

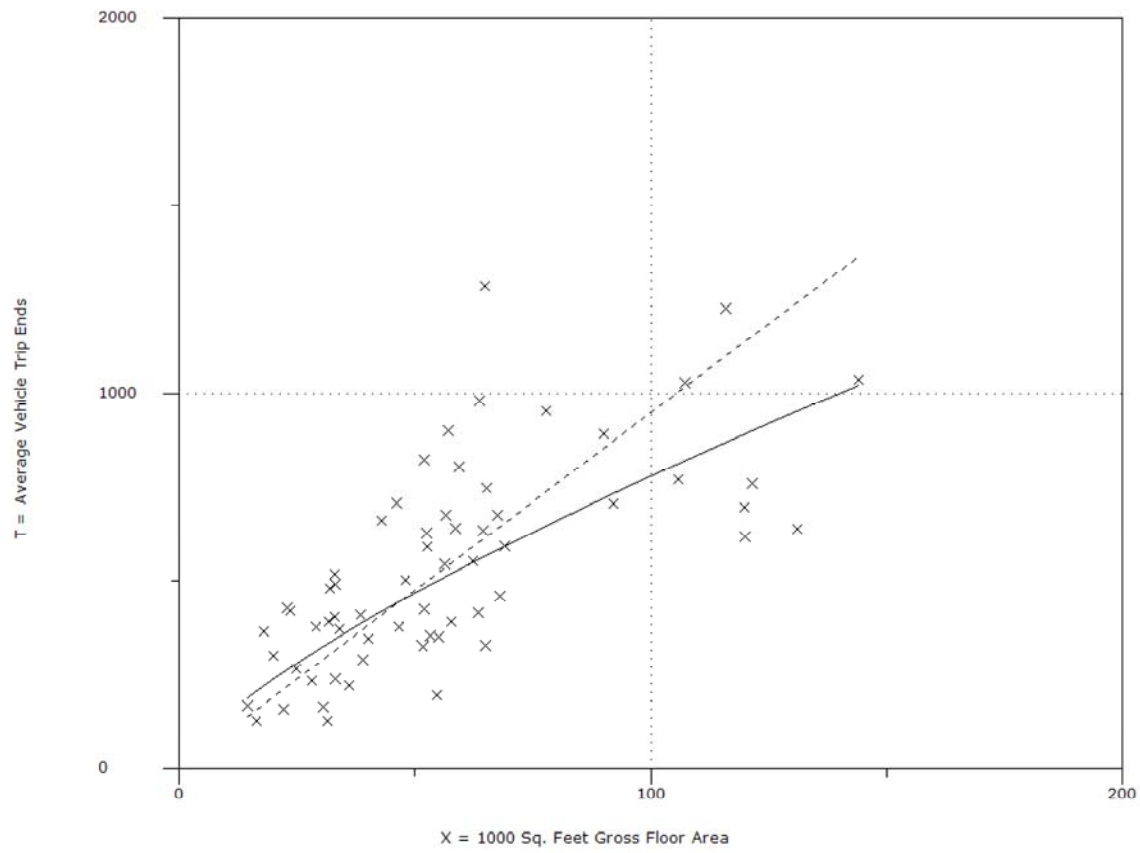
Average Vehicle Trip Ends vs: **1000 Sq. Feet Gross Floor Area**
On a: **Weekday**
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Number of Studies: 62
Average 1000 Sq. Feet GFA: 56
Directional Distribution: 51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
9.48	3.53 - 20.29	4.81

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.74 Ln(X) + 3.25 $R^2 = 0.52$

Trip Generation, 9th Edition

Shopping Center
(820)

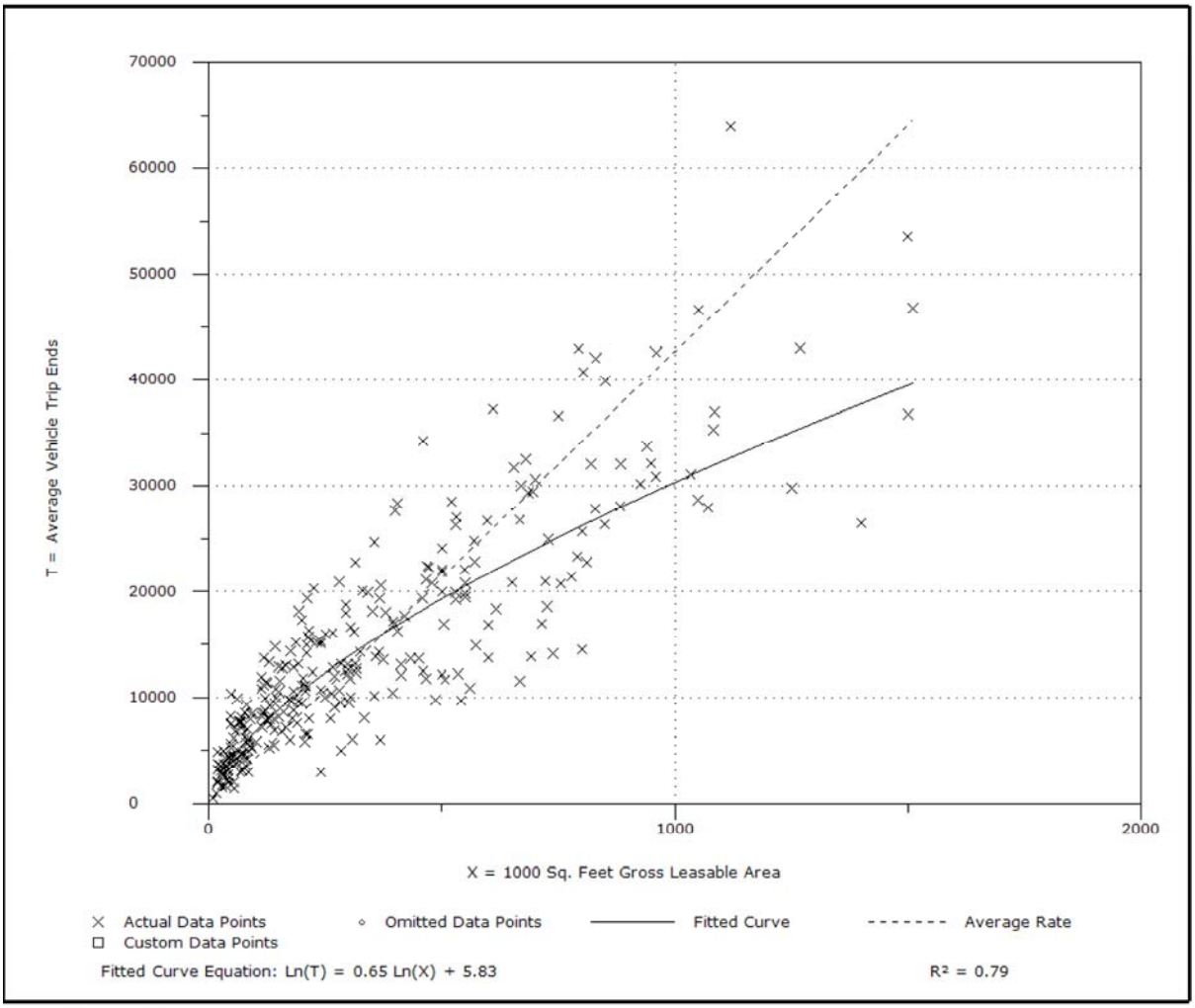
Average Vehicle Trip Ends vs: **1000 Sq. Feet Gross Leasable Area**
On a: **Weekday**

Number of Studies: 302
Average 1000 Sq. Feet GLA: 331
Directional Distribution: 50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Leasable Area

Average Rate	Range of Rates	Standard Deviation
42.70	12.50 - 270.89	21.25

Data Plot and Equation



Trip Generation, 9th Edition

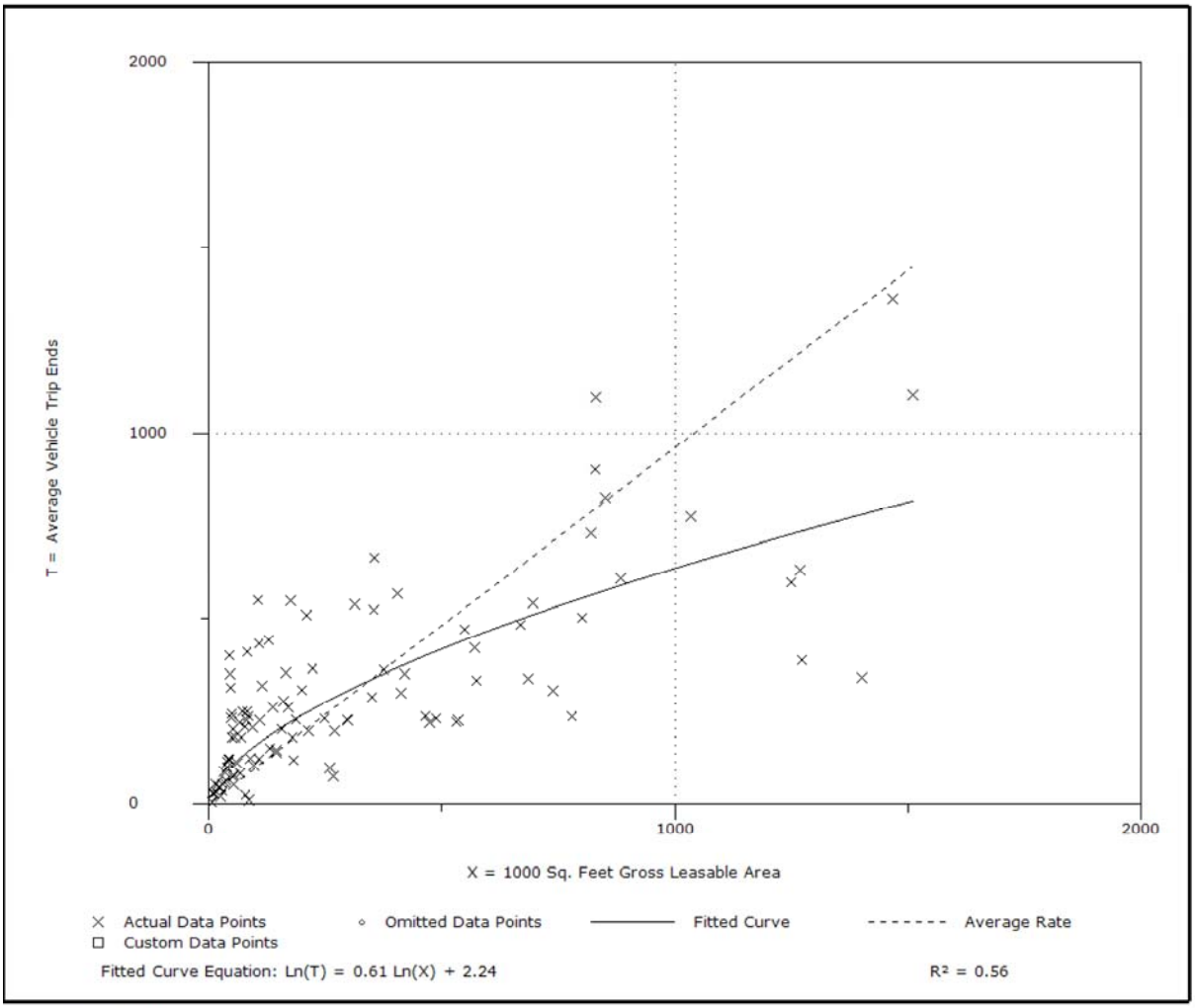
Shopping Center
(820)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Leasable Area**
On a:	**Weekday**
	Peak Hour of Adjacent Street Traffic
	One Hour Between 7 and 9 a.m.
Number of Studies:	104
Average 1000 Sq. Feet GLA:	310
Directional Distribution:	62% entering, 38% exiting

Trip Generation per 1000 Sq. Feet Gross Leasable Area

Average Rate	Range of Rates	Standard Deviation
0.96	0.10 - 9.05	1.31

Data Plot and Equation



Trip Generation, 9th Edition

Shopping Center
(820)

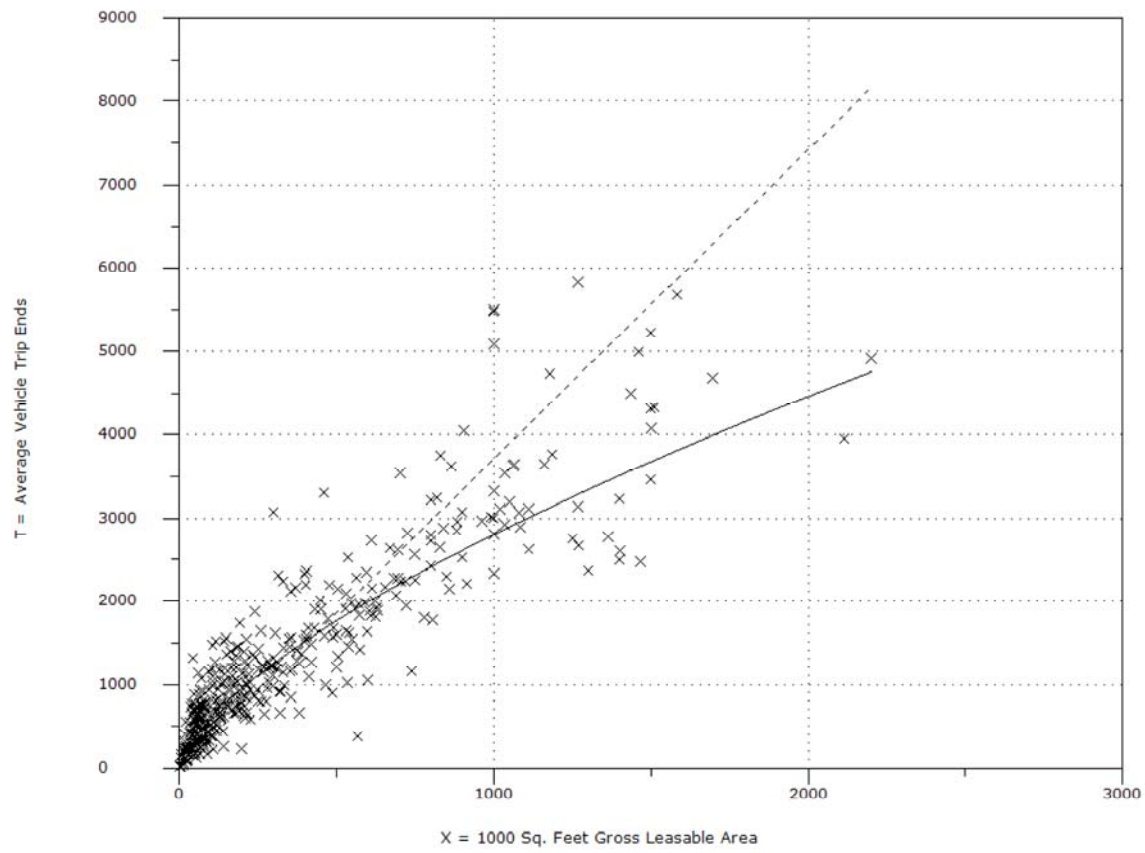
Average Vehicle Trip Ends vs: **1000 Sq. Feet Gross Leasable Area**
On a: **Weekday**
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Number of Studies: 426
Average 1000 Sq. Feet GLA: 376
Directional Distribution: 48% entering, 52% exiting

Trip Generation per 1000 Sq. Feet Gross Leasable Area

Average Rate	Range of Rates	Standard Deviation
3.71	0.68 - 29.27	2.74

Data Plot and Equation



× Actual Data Points ◦ Omitted Data Points ——— Fitted Curve - - - - - - - Average Rate
□ Custom Data Points

Fitted Curve Equation: Ln(T) = 0.67 Ln(X) + 3.31 R^2 = 0.81

Trip Generation, 9th Edition

Medical-Dental Office Building
(720)

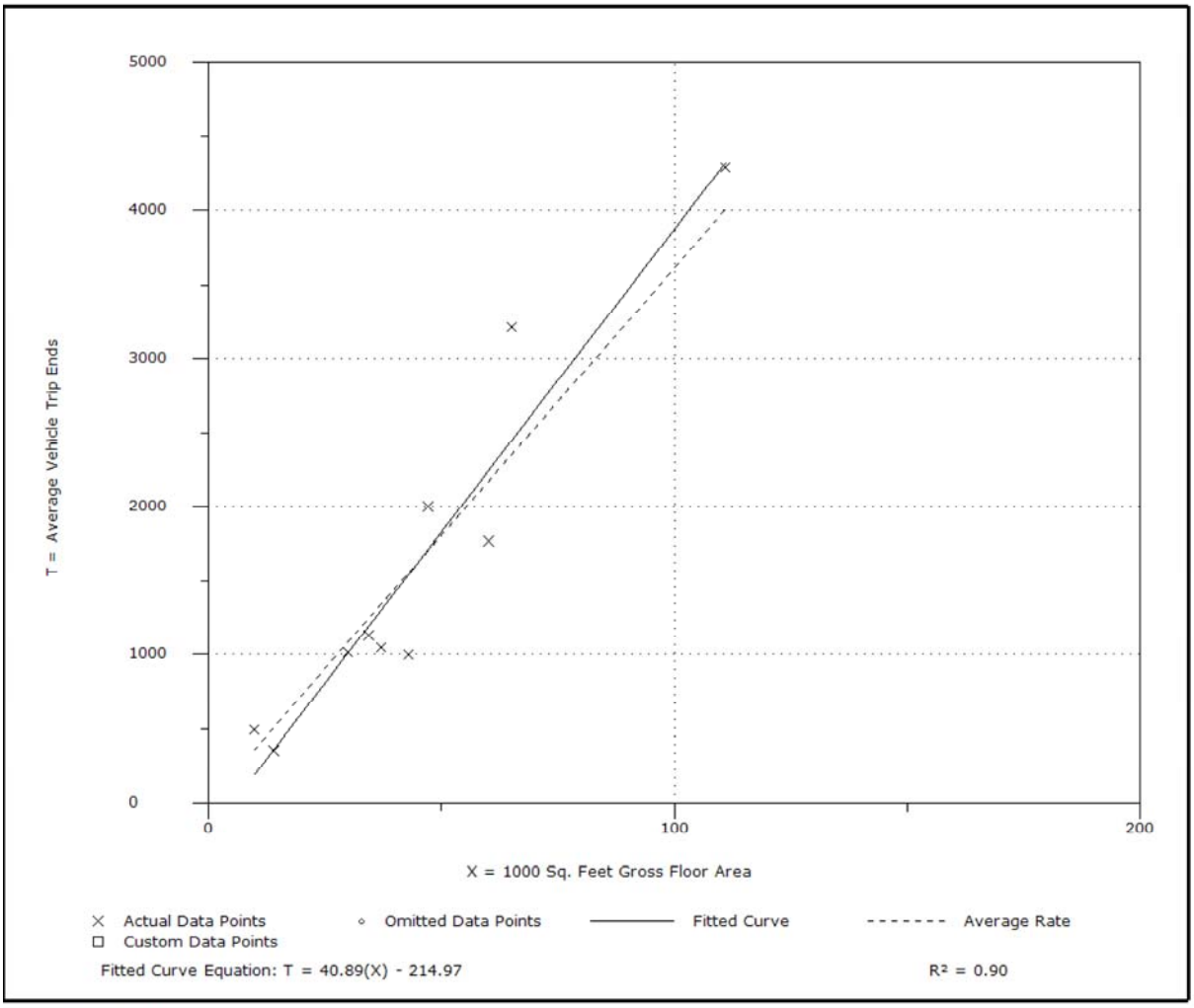
Average Vehicle Trip Ends vs: **1000 Sq. Feet Gross Floor Area**
On a: **Weekday**

Number of Studies: 10
Average 1000 Sq. Feet GFA: 45
Directional Distribution: 50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
36.13	23.16 - 50.51	10.18

Data Plot and Equation



Trip Generation, 9th Edition

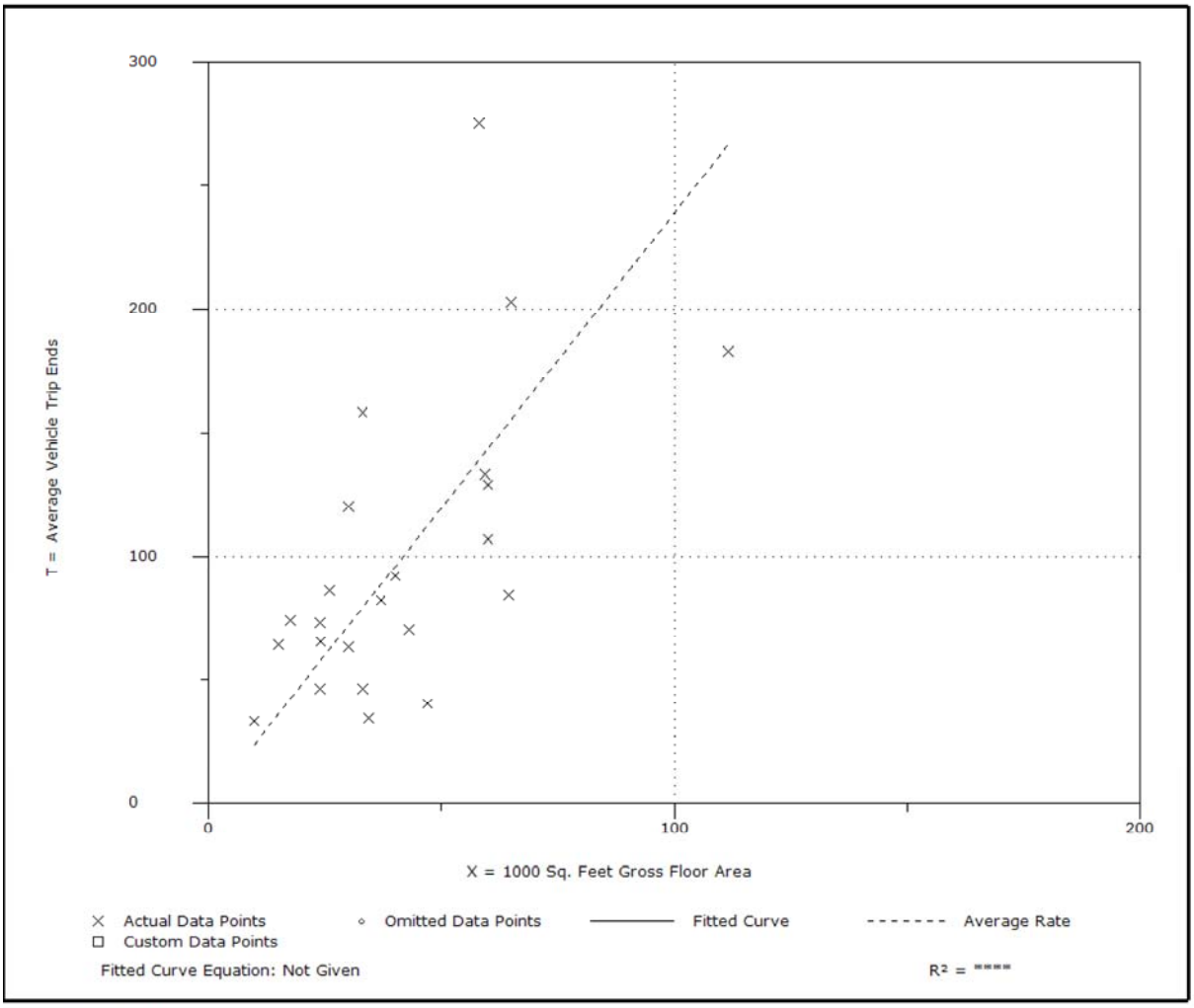
Medical-Dental Office Building
(720)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**
	Peak Hour of Adjacent Street Traffic
	One Hour Between 7 and 9 a.m.
Number of Studies:	23
Average 1000 Sq. Feet GFA:	41
Directional Distribution:	79% entering, 21% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
2.39	0.85 - 4.79	1.89

Data Plot and Equation



Trip Generation, 9th Edition

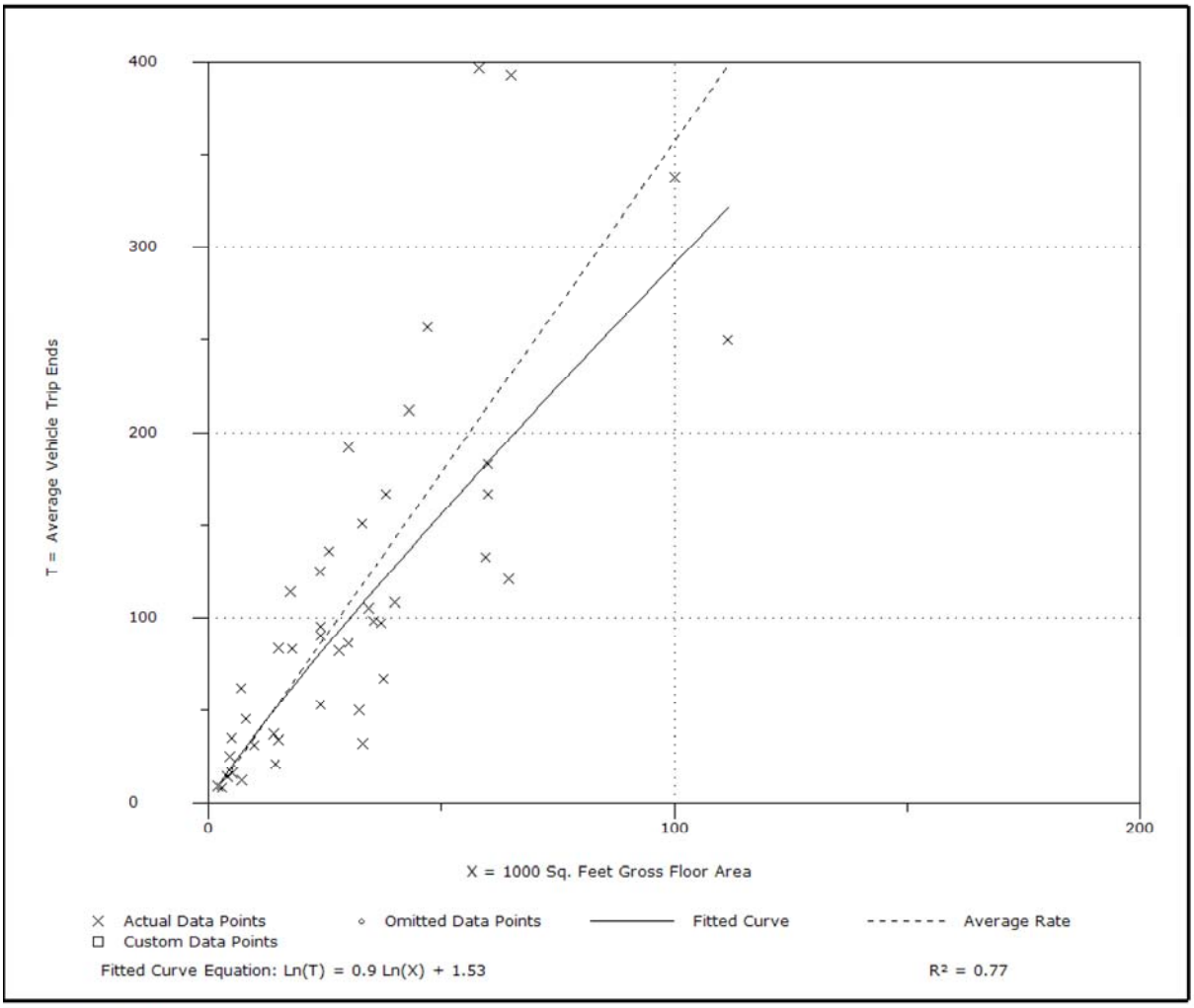
Medical-Dental Office Building
(720)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**
	Peak Hour of Adjacent Street Traffic
	One Hour Between 4 and 6 p.m.
Number of Studies:	43
Average 1000 Sq. Feet GFA:	31
Directional Distribution:	28% entering, 72% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

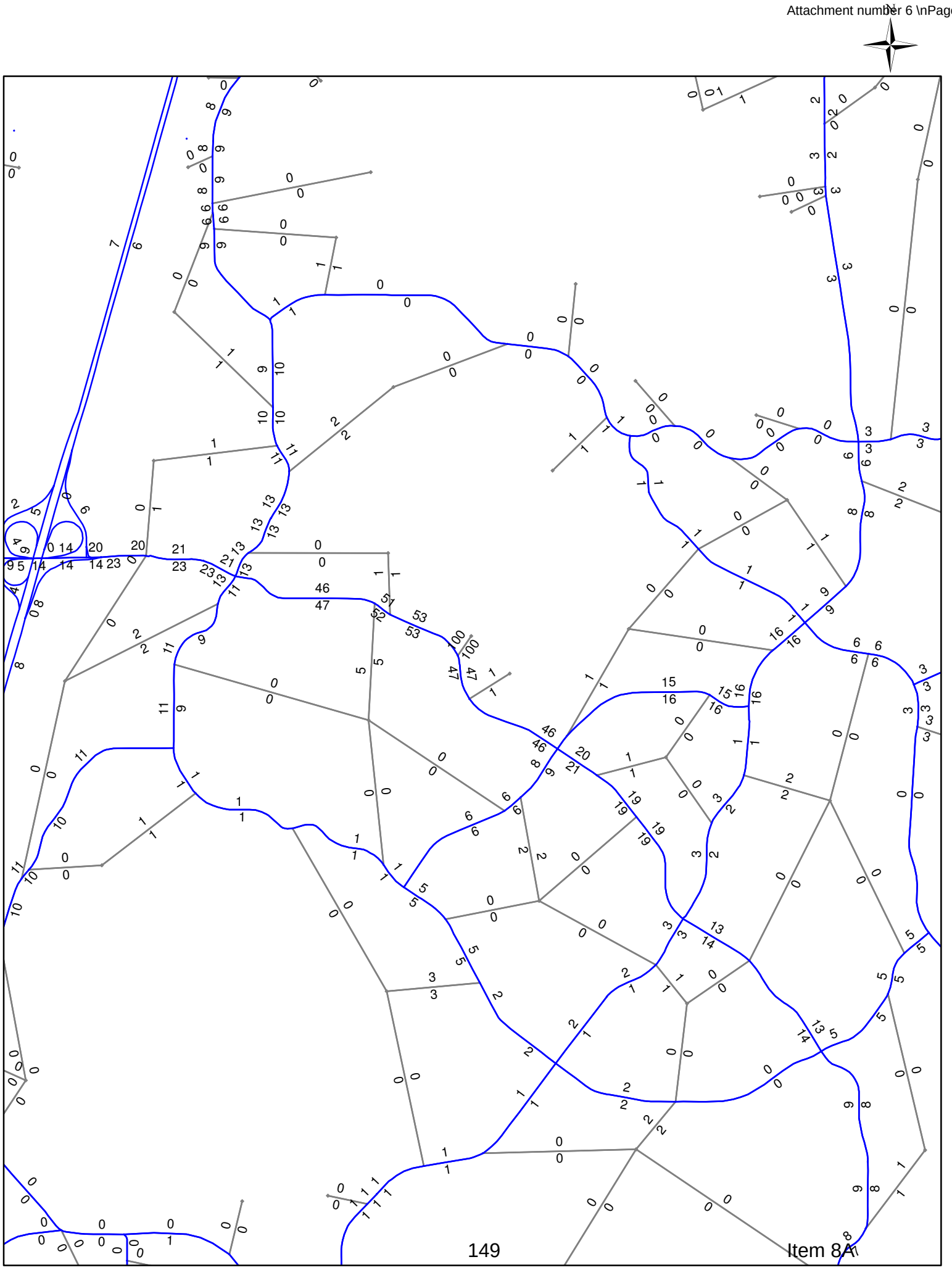
Average Rate	Range of Rates	Standard Deviation
3.57	0.97 - 8.86	2.47

Data Plot and Equation



Trip Generation, 9th Edition

Appendix C
Trip Distribution Model



Appendix D

AM & PM Turning Movement Counts

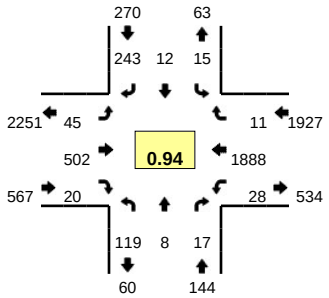
Type of peak hour being reported: Intersection Peak

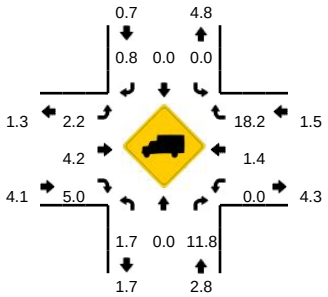
Method for determining peak hour: Total Entering Volume

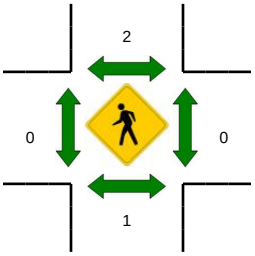
LOCATION: Finland Dr -- Saxon Blvd
CITY/STATE: Deltona, FL

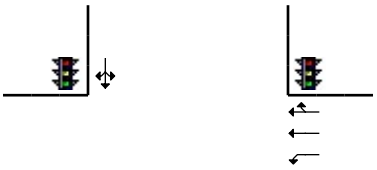
QC JOB #: 11213801
DATE: Wed, Sep 11 2013

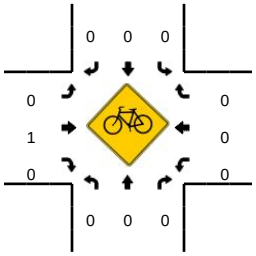
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

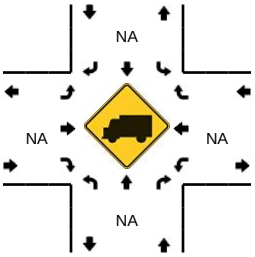


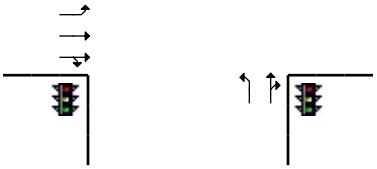


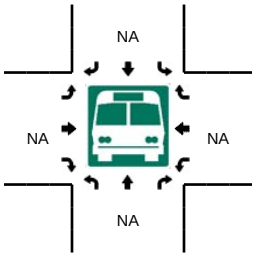












R* = RTOR

15-Min Count Period Beginning At	Finland Dr (Northbound)					Finland Dr (Southbound)					Saxon Blvd (Eastbound)					Saxon Blvd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	21	0	0	0	2	4	4	37	0	18	11	119	2	0	0	3	377	4	0	0	602	
7:15 AM	30	0	1	0	1	4	1	36	0	14	6	139	6	0	0	6	441	1	0	0	686	
7:30 AM	41	3	3	0	3	7	4	50	0	11	12	127	1	0	0	4	504	1	0	0	771	
7:45 AM	23	3	3	0	4	2	1	62	0	9	15	115	4	0	0	11	492	6	0	0	750	2809
8:00 AM	25	2	1	0	1	2	6	54	0	7	11	121	8	1	1	7	451	3	0	0	701	2908
8:15 AM	25	2	2	0	4	3	1	31	0	23	9	116	4	0	1	3	367	2	0	0	593	2815
8:30 AM	16	1	0	0	3	6	1	22	0	27	11	153	7	1	2	2	324	1	0	1	578	2622
8:45 AM	12	2	1	0	3	5	5	22	0	10	14	154	4	0	0	2	328	4	0	0	566	2438

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	164	12	12	0	12	28	16	200	0	44	48	508	4	0	0	16	2016	4	0	0	3084
Heavy Trucks	0	0	0			0	0	8			0	4	0			0	24	0			36
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	1	0			0	0	0			1
Railroad																					
Stopped Buses																					

Comments:

Report generated on 9/17/2013 7:30 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

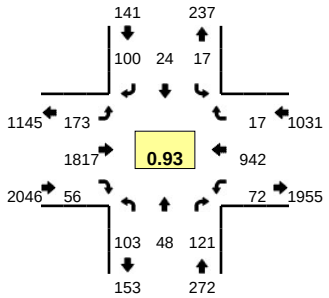
Type of peak hour being reported: Intersection Peak

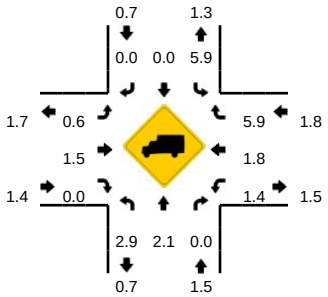
Method for determining peak hour: Total Entering Volume

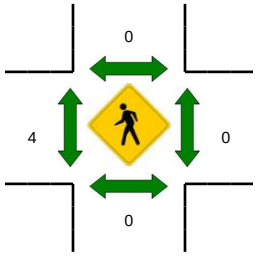
LOCATION: Finland Dr -- Saxon Blvd
CITY/STATE: Deltona, FL

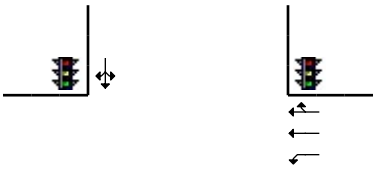
QC JOB #: 11213802
DATE: Wed, Sep 11 2013

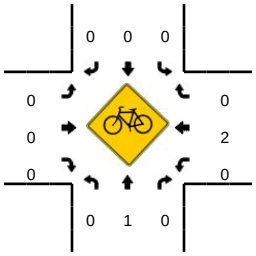
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

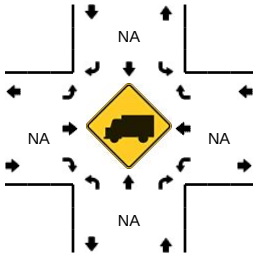


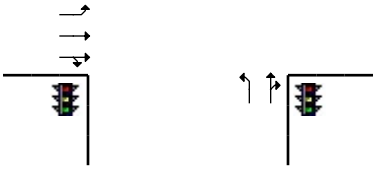


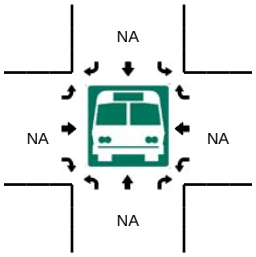












R* = RTOR

15-Min Count Period Beginning At	Finland Dr (Northbound)					Finland Dr (Southbound)					Saxon Blvd (Eastbound)					Saxon Blvd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	15	12	20	0	12	3	7	12	0	5	33	363	14	0	1	19	192	6	0	0	714	
4:15 PM	21	9	14	0	9	2	2	11	0	11	29	378	7	0	0	16	214	6	0	0	729	
4:30 PM	26	13	26	0	10	0	6	14	0	11	39	396	13	0	2	11	249	1	0	0	817	
4:45 PM	21	12	16	1	4	4	9	14	0	13	39	460	9	0	0	12	243	2	0	0	859	3119
5:00 PM	24	15	25	0	6	4	1	2	0	17	42	444	9	1	1	21	239	2	0	0	853	3258
5:15 PM	31	10	26	0	6	5	8	9	0	18	52	486	18	0	2	17	245	8	0	0	941	3470
5:30 PM	26	11	32	0	6	4	6	10	0	17	39	427	17	0	0	22	215	5	0	0	837	3490
5:45 PM	18	13	26	0	4	6	4	7	0	21	35	435	8	0	1	21	221	3	0	0	823	3454

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	124	40	104	0	24	20	32	36	0	72	208	1944	72	0	8	68	980	32	0	0	3764
Heavy Trucks	4	0	0			4	0	0			0	32	0			0	20	0			60
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Railroad																					
Stopped Buses																					

Comments:

Report generated on 9/17/2013 7:30 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

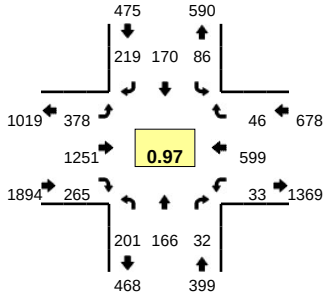
Type of peak hour being reported: Intersection Peak

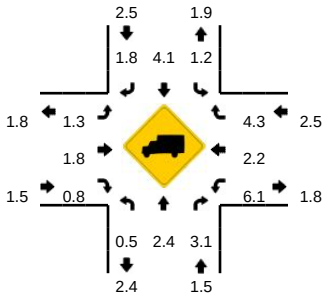
Method for determining peak hour: Total Entering Volume

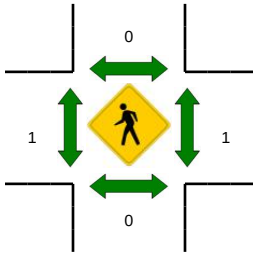
LOCATION: Normandy Blvd -- Saxon Blvd
CITY/STATE: Deltona, FL

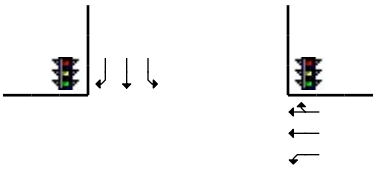
QC JOB #: 11213804
DATE: Wed, Sep 11 2013

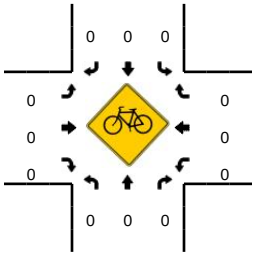
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

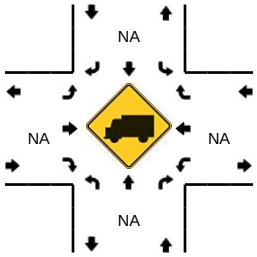


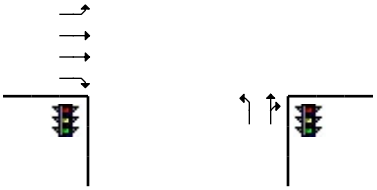


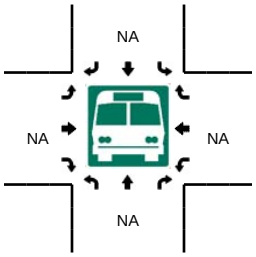












R* = RTOR

15-Min Count Period Beginning At	Normandy Blvd (Northbound)					Normandy Blvd (Southbound)					Saxon Blvd (Eastbound)					Saxon Blvd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	40	28	5	0	2	13	33	23	0	11	77	261	48	0	9	8	141	8	0	0	707	
4:15 PM	43	32	3	0	1	12	33	48	0	13	91	237	54	0	13	4	123	9	0	0	716	
4:30 PM	52	39	6	0	1	11	31	35	0	20	80	272	47	0	14	7	148	9	0	0	772	
4:45 PM	40	35	10	0	3	23	35	36	0	18	98	293	48	0	22	6	150	5	0	2	824	3019
5:00 PM	47	47	5	0	0	19	35	33	0	12	93	297	40	0	22	7	181	11	0	1	850	3162
5:15 PM	56	37	7	0	1	22	52	51	0	16	93	315	50	0	18	11	146	12	0	0	887	3333
5:30 PM	50	44	10	0	1	21	35	41	0	12	89	320	54	0	17	7	142	10	0	2	855	3416
5:45 PM	48	38	8	0	0	24	48	36	0	18	103	319	48	0	16	8	130	8	0	2	854	3446

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	224	148	28	0	4	88	208	204	0	64	372	1260	200	0	72	44	584	48	0	0	3548
Heavy Trucks	0	0	0			0	0	8			8	36	0			4	12	4			72
Pedestrians		0					0					0					4				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Railroad																					
Stopped Buses																					

Comments:

Report generated on 9/17/2013 7:30 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

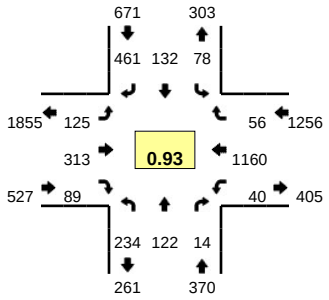
Type of peak hour being reported: Intersection Peak

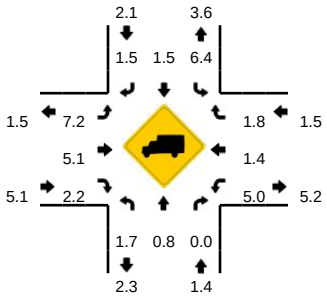
Method for determining peak hour: Total Entering Volume

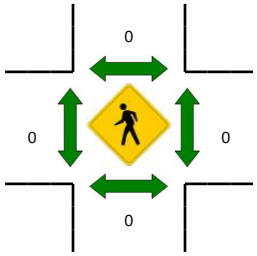
LOCATION: Normandy Blvd -- Saxon Blvd
CITY/STATE: Deltona, FL

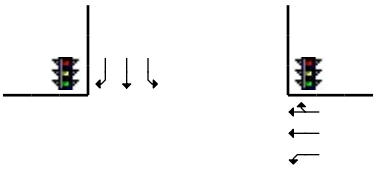
QC JOB #: 11213803
DATE: Wed, Sep 11 2013

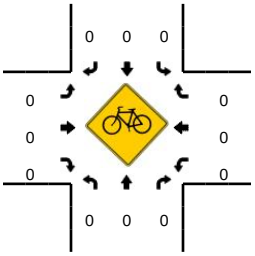
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

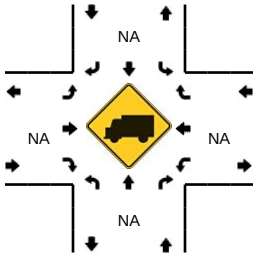


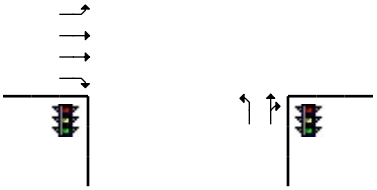


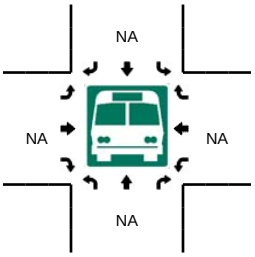












R* = RTOR

15-Min Count Period Beginning At	Normandy Blvd (Northbound)					Normandy Blvd (Southbound)					Saxon Blvd (Eastbound)					Saxon Blvd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	49	19	4	0	3	5	16	67	0	24	25	47	4	0	6	7	261	18	0	0	555	
7:15 AM	62	41	0	0	0	25	24	84	0	22	27	80	13	0	13	7	256	14	0	0	668	
7:30 AM	55	27	4	0	4	31	28	109	0	15	40	81	12	0	11	10	314	14	0	1	756	
7:45 AM	72	32	3	0	0	17	35	103	0	13	34	67	8	0	14	12	300	14	0	0	724	2703
8:00 AM	45	22	3	0	0	5	45	98	0	17	24	85	4	0	14	11	290	12	0	1	676	2824
8:15 AM	68	30	4	0	1	11	39	63	0	26	22	72	19	0	5	17	191	6	0	1	575	2731
8:30 AM	43	37	3	0	2	9	11	51	0	25	26	85	22	0	15	7	210	20	0	0	566	2541
8:45 AM	46	31	6	0	1	17	44	54	0	14	36	92	9	0	14	14	178	6	0	1	563	2380

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	220	108	16	0	16	124	112	436	0	60	160	324	48	0	44	40	1256	56	0	4	3024
Heavy Trucks	0	0	0			4	0	4			0	0	0			0	20	0			28
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Railroad																					
Stopped Buses																					

Comments:

Report generated on 9/17/2013 7:30 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

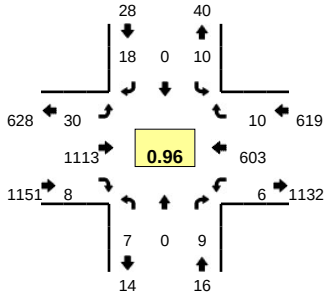
Type of peak hour being reported: Intersection Peak

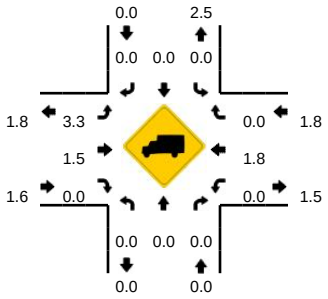
Method for determining peak hour: Total Entering Volume

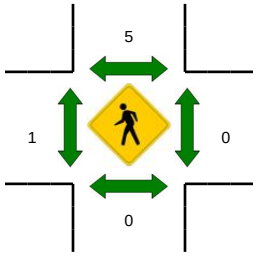
LOCATION: Sterling Silver Blvd -- Saxon Blvd
CITY/STATE: Deltona, FL

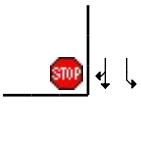
QC JOB #: 11213806
DATE: Wed, Sep 11 2013

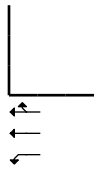
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

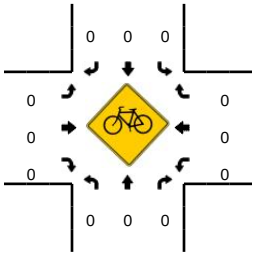


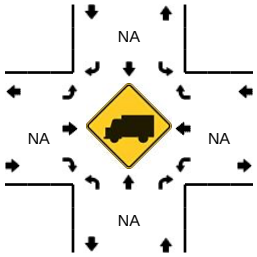


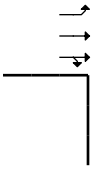


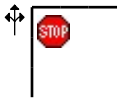


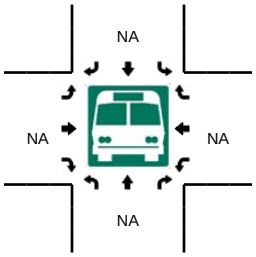












R* = RTOR

15-Min Count Period Beginning At	Sterling Silver Blvd (Northbound)					Sterling Silver Blvd (Southbound)					Saxon Blvd (Eastbound)					Saxon Blvd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	1	1	1	0	0	2	0	7	0	0	4	225	3	0	0	1	126	1	0	0	372	
4:15 PM	0	0	2	0	0	2	0	3	0	0	2	223	3	0	0	3	132	2	1	0	373	
4:30 PM	5	0	1	0	0	2	0	6	0	0	3	237	3	0	0	0	158	1	0	0	416	
4:45 PM	1	0	2	0	0	0	0	2	0	0	8	257	4	0	0	1	155	3	0	0	433	1594
5:00 PM	2	0	2	0	0	3	0	7	0	0	7	272	2	0	0	6	168	4	0	0	473	1695
5:15 PM	1	0	2	0	0	1	0	3	0	0	8	273	0	0	0	0	155	2	0	0	445	1767
5:30 PM	1	0	2	0	0	3	0	2	0	0	8	288	2	0	0	0	151	1	0	0	458	1809
5:45 PM	3	0	3	0	0	3	0	6	0	0	7	280	4	0	0	0	129	3	0	0	438	1814

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	8	0	8	0	0	12	0	28	0	0	28	1088	8	0	0	24	672	16	0	0	1892
Heavy Trucks	0	0	0			0	0	0			0	24	0			0	0	0			24
Pedestrians		0					8					0					0				8
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Railroad																					
Stopped Buses																					

Comments:

Report generated on 9/17/2013 7:30 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

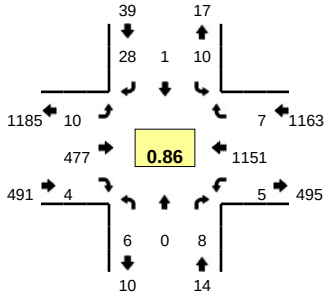
Type of peak hour being reported: Intersection Peak

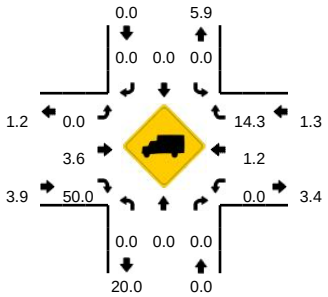
Method for determining peak hour: Total Entering Volume

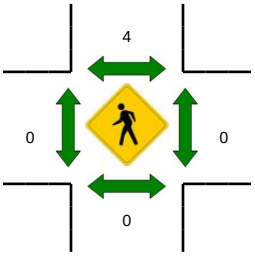
LOCATION: Sterling Silver Blvd -- Saxon Blvd
CITY/STATE: Deltona, FL

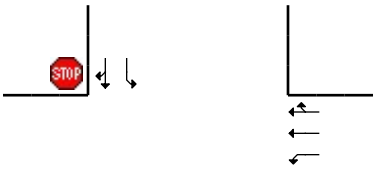
QC JOB #: 11213805
DATE: Wed, Sep 11 2013

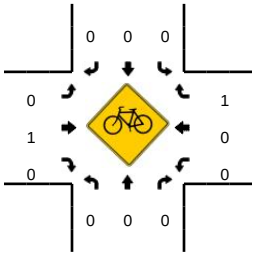
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

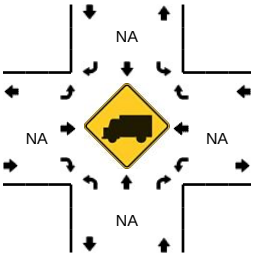


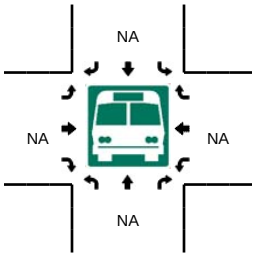












R* = RTOR

15-Min Count Period Beginning At	Sterling Silver Blvd (Northbound)					Sterling Silver Blvd (Southbound)					Saxon Blvd (Eastbound)					Saxon Blvd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	1	0	0	1	0	6	0	0	1	79	0	0	0	0	231	3	0	0	322	
7:15 AM	1	0	2	0	0	2	0	10	0	0	0	135	2	0	0	1	248	0	0	0	401	
7:30 AM	3	0	3	0	0	2	0	2	0	0	3	164	0	0	0	1	314	3	0	0	495	
7:45 AM	1	0	2	0	0	4	0	9	0	0	7	101	1	0	0	0	318	3	0	0	446	1664
8:00 AM	1	0	1	0	0	2	1	7	0	0	0	77	1	0	0	3	271	1	0	0	365	1707
8:15 AM	2	0	0	0	0	0	0	7	0	0	1	95	1	0	0	1	199	4	0	0	310	1616
8:30 AM	2	1	4	0	0	0	0	5	0	0	1	78	1	0	0	1	198	0	0	0	291	1412
8:45 AM	2	0	0	0	0	1	0	4	0	0	6	111	1	0	0	1	179	2	0	0	307	1273

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	12	0	12	0	0	8	0	8	0	0	12	656	0	0	0	4	1256	12	0	0	1980
Heavy Trucks	0	0	0			0	0	0			0	12	0			0	16	0			28
Pedestrians		0					4					0					0				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Railroad																					
Stopped Buses																					

Comments:

Report generated on 9/17/2013 7:30 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

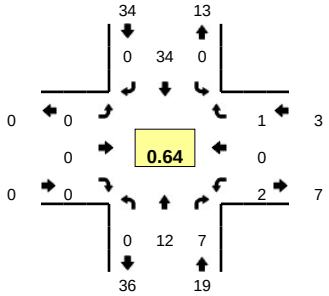
Type of peak hour being reported: Intersection Peak

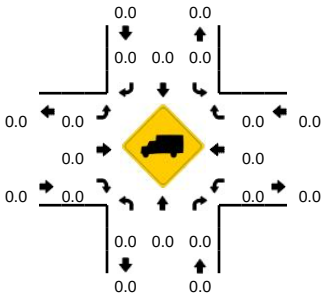
Method for determining peak hour: Total Entering Volume

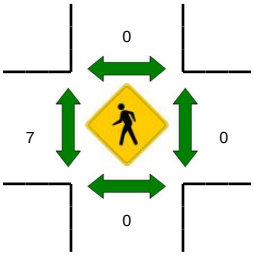
LOCATION: Sterling Silver Blvd -- Alabaster Way
CITY/STATE: Deltona, FL

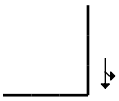
QC JOB #: 11213811
DATE: Wed, Sep 11 2013

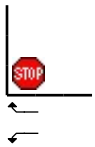
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

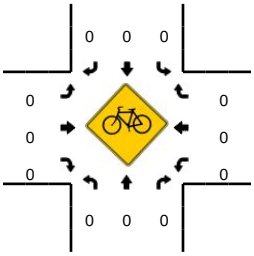


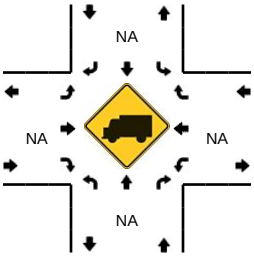


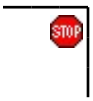


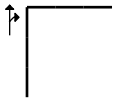


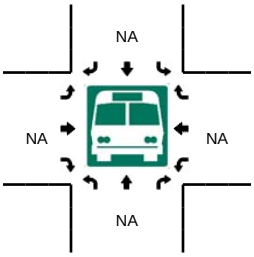












R* = RTOR

15-Min Count Period Beginning At	Sterling Silver Blvd (Northbound)					Sterling Silver Blvd (Southbound)					Alabaster Way (Eastbound)					Alabaster Way (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	4	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	11	
7:15 AM	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	12	
7:30 AM	0	3	2	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	11	
7:45 AM	0	5	5	0	0	0	9	0	0	0	0	0	0	0	0	2	0	1	0	0	22	56
8:00 AM	0	1	0	0	0	0	8	0	0	0	0	0	0	0	0	2	0	0	0	0	11	56
8:15 AM	0	3	2	0	0	0	5	0	0	0	0	0	0	0	0	2	0	0	0	0	12	56
8:30 AM	0	1	1	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	7	52
8:45 AM	0	3	4	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	12	42

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	20	20	0	0	0	36	0	0	0	0	0	0	0	0	8	0	4	0	0	88
Heavy Trucks	0	0	0			0	0	0			0	0	0			0	0	0			0
Pedestrians		0					0					8					0				8
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Railroad																					
Stopped Buses																					

Comments:

Report generated on 9/17/2013 7:30 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

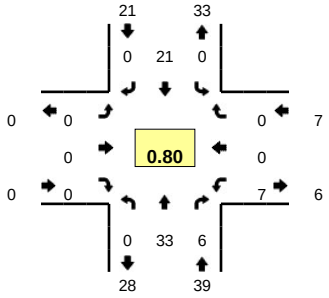
Type of peak hour being reported: Intersection Peak

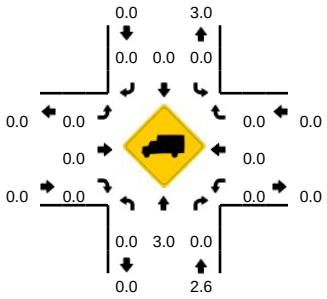
Method for determining peak hour: Total Entering Volume

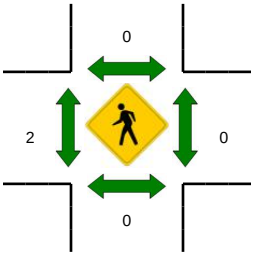
LOCATION: Sterling Silver Blvd -- Alabaster Way
CITY/STATE: Deltona, FL

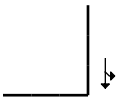
QC JOB #: 11213812
DATE: Wed, Sep 11 2013

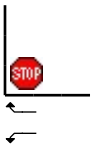
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

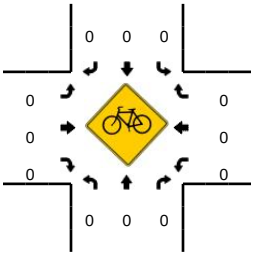


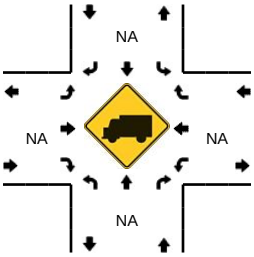


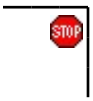


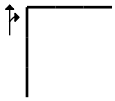


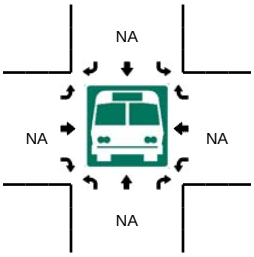












R* = RTOR

15-Min Count Period Beginning At	Sterling Silver Blvd (Northbound)					Sterling Silver Blvd (Southbound)					Alabaster Way (Eastbound)					Alabaster Way (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	4	3	0	0	0	2	0	0	0	0	0	0	0	0	8	0	0	0	0	17	
4:15 PM	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	1	0	0	0	0	9	
4:30 PM	0	2	2	0	0	0	4	0	0	0	0	0	0	0	0	4	0	0	0	0	12	
4:45 PM	0	11	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	14	52
5:00 PM	0	8	3	0	0	0	8	0	0	0	0	0	0	0	0	2	0	0	0	0	21	56
5:15 PM	0	7	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	14	61
5:30 PM	0	8	0	0	0	0	4	0	0	0	0	0	0	0	0	1	0	0	0	0	13	62
5:45 PM	0	10	0	0	0	0	5	0	0	0	0	0	0	0	0	4	0	0	0	0	19	67

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	32	12	0	0	0	32	0	0	0	0	0	0	0	0	8	0	0	0	0	84
Heavy Trucks	0	0	0			0	0	0			0	0	0			0	0	0			0
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Railroad																					
Stopped Buses																					

Comments:

Report generated on 9/17/2013 7:30 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

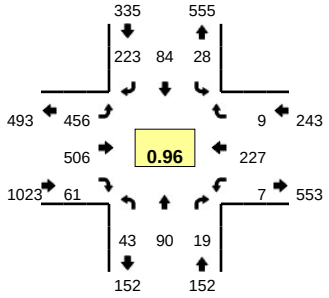
Type of peak hour being reported: Intersection Peak

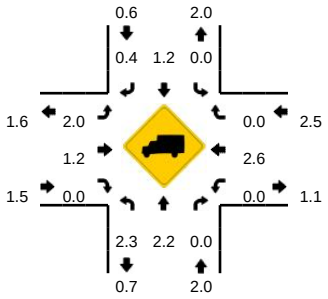
Method for determining peak hour: Total Entering Volume

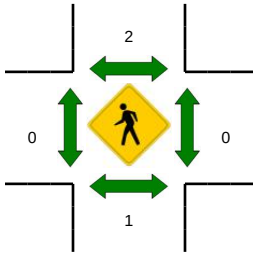
LOCATION: Tivoli Dr -- Saxon Blvd
CITY/STATE: Deltona, FL

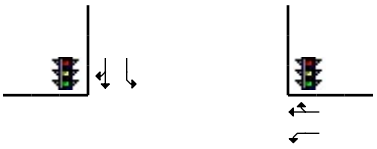
QC JOB #: 11213808
DATE: Wed, Sep 11 2013

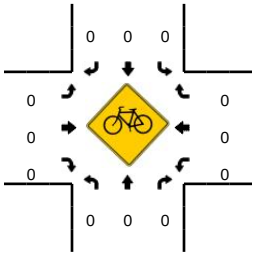
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

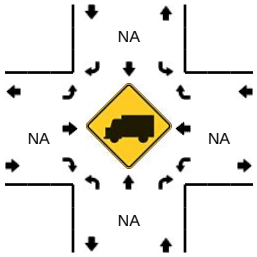


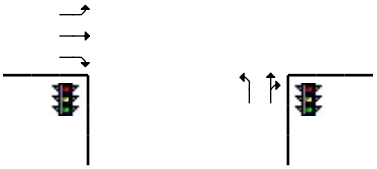


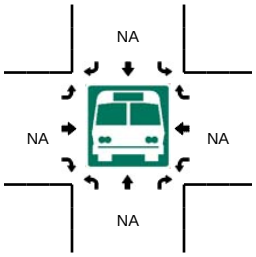












R* = RTOR

15-Min Count Period Beginning At	Tivoli Dr (Northbound)					Tivoli Dr (Southbound)					Saxon Blvd (Eastbound)					Saxon Blvd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	3	23	1	0	1	2	16	22	0	18	114	84	5	0	4	2	73	1	0	0	369	
4:15 PM	8	25	1	0	0	3	18	26	0	26	106	98	10	0	3	2	62	0	0	0	388	
4:30 PM	10	24	1	0	0	7	15	45	0	15	97	108	9	0	4	1	69	1	0	0	406	
4:45 PM	11	16	0	0	0	2	21	38	0	25	101	102	8	0	7	4	68	1	0	0	404	1567
5:00 PM	7	24	0	0	3	3	28	40	0	19	116	117	8	0	6	1	67	3	0	0	442	1640
5:15 PM	12	17	1	0	1	1	10	15	0	33	123	118	9	0	2	2	63	2	0	0	409	1661
5:30 PM	12	22	8	0	0	10	23	37	0	22	126	128	6	0	5	3	49	4	0	0	455	1710
5:45 PM	12	27	4	0	2	14	23	39	0	18	91	143	16	0	9	1	48	0	0	0	447	1753

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	48	88	32	0	0	40	92	148	0	88	504	512	24	0	20	12	196	16	0	0	1820
Heavy Trucks	0	4	0			0	0	0			8	12	0			0	8	0			32
Pedestrians		4					0					0					0				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Railroad																					
Stopped Buses																					

Comments:

Report generated on 9/17/2013 7:30 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

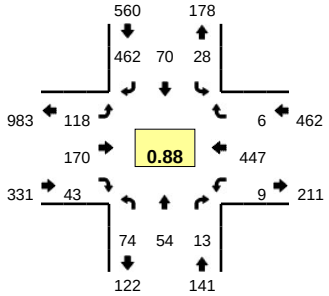
Type of peak hour being reported: Intersection Peak

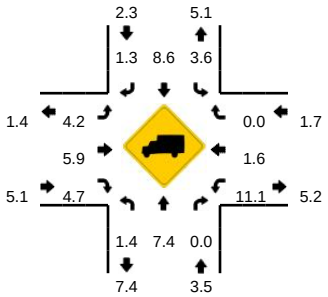
Method for determining peak hour: Total Entering Volume

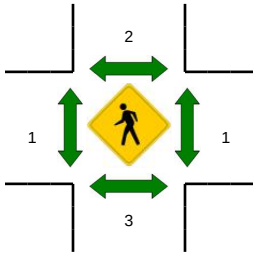
LOCATION: Tivoli Dr -- Saxon Blvd
CITY/STATE: Deltona, FL

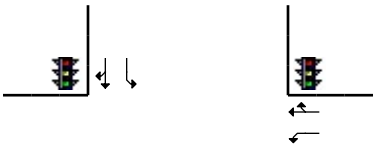
QC JOB #: 11213807
DATE: Wed, Sep 11 2013

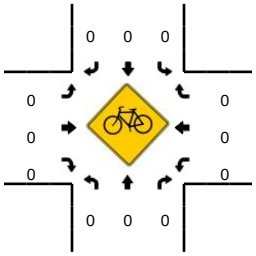
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

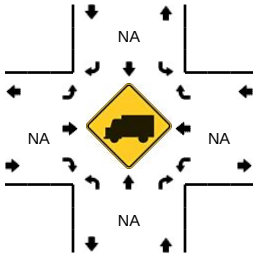


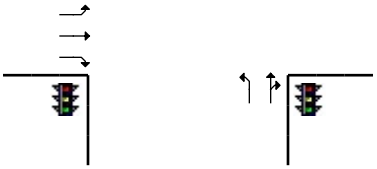


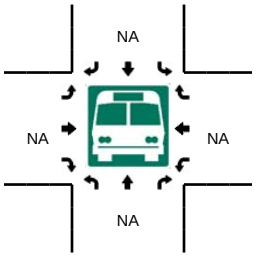












R* = RTOR

15-Min Count Period Beginning At	Tivoli Dr (Northbound)					Tivoli Dr (Southbound)					Saxon Blvd (Eastbound)					Saxon Blvd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	15	7	1	0	0	0	9	76	0	20	28	27	0	0	2	0	100	0	0	0	285	
7:15 AM	17	15	1	0	1	3	12	81	0	28	30	41	4	0	7	1	111	2	0	1	355	
7:30 AM	23	19	2	0	2	8	21	114	0	16	27	53	8	0	7	2	123	0	0	0	425	
7:45 AM	20	9	3	0	0	10	14	100	0	23	26	32	5	0	3	2	110	2	0	1	360	1425
8:00 AM	14	11	2	0	2	7	23	81	0	19	35	44	7	0	2	4	103	0	0	0	354	1494
8:15 AM	12	10	2	0	0	4	17	63	0	20	36	31	7	0	1	1	86	1	0	0	291	1430
8:30 AM	22	21	0	0	1	2	18	54	0	23	34	30	4	0	2	2	100	5	0	0	318	1323
8:45 AM	10	15	0	0	0	0	18	49	0	26	42	44	2	0	1	1	88	4	0	1	301	1264

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	92	76	8	0	8	32	84	456	0	64	108	212	32	0	28	8	492	0	0	0	1700
Heavy Trucks	0	8	0			0	8	8			8	4	0			0	8	0			44
Pedestrians		8					8					0					0				16
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Railroad																					
Stopped Buses																					

Comments:

Report generated on 9/17/2013 7:30 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

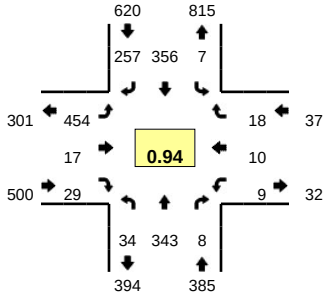
Type of peak hour being reported: Intersection Peak

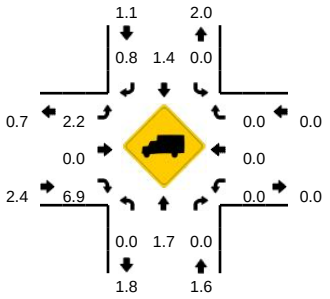
Method for determining peak hour: Total Entering Volume

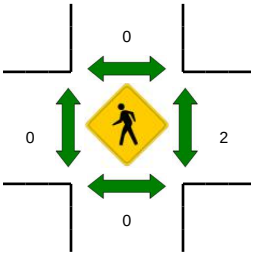
LOCATION: Providence Blvd -- Tivoli Dr
CITY/STATE: Deltona, FL

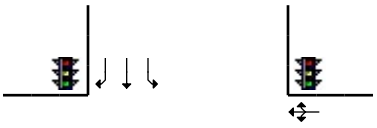
QC JOB #: 11213810
DATE: Wed, Sep 11 2013

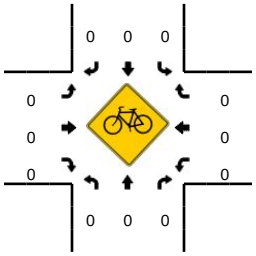
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

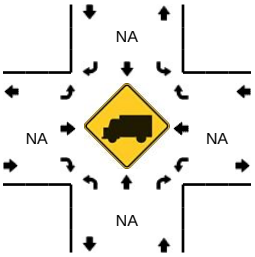


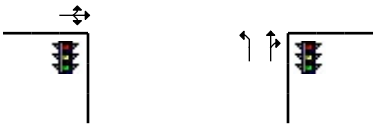


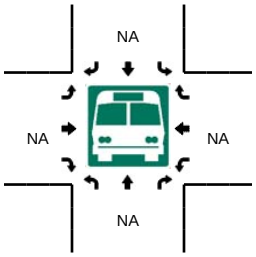












R* = RTOR

15-Min Count Period Beginning At	Providence Blvd (Northbound)					Providence Blvd (Southbound)					Tivoli Dr (Eastbound)					Tivoli Dr (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	9	54	1	0	0	3	60	23	0	26	119	3	3	0	1	2	1	3	0	0	308	
4:15 PM	5	56	1	0	0	1	77	31	0	22	116	2	4	0	1	2	0	2	0	1	321	
4:30 PM	3	53	1	0	0	0	69	31	0	22	92	3	9	0	1	2	1	2	0	0	289	
4:45 PM	6	98	3	0	1	5	59	43	0	26	97	5	4	0	1	1	2	2	0	3	356	1274
5:00 PM	5	77	6	0	0	2	73	30	0	33	102	4	13	0	0	6	3	3	0	2	359	1325
5:15 PM	8	75	1	0	0	2	85	22	0	28	133	5	4	0	0	1	4	4	0	3	375	1379
5:30 PM	11	92	0	0	0	1	101	31	0	38	122	5	5	0	1	1	0	2	0	1	411	1501
5:45 PM	10	99	1	0	0	2	97	40	0	35	97	3	6	0	0	1	3	2	0	1	397	1542

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	44	368	0	0	0	4	404	124	0	152	488	20	20	0	4	4	0	8	0	4	1644
Heavy Trucks	0	0	0			0	4	0			8	0	0			0	0	0			12
Pedestrians		0					0					0					4				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Railroad																					
Stopped Buses																					

Comments:

Report generated on 9/17/2013 7:30 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

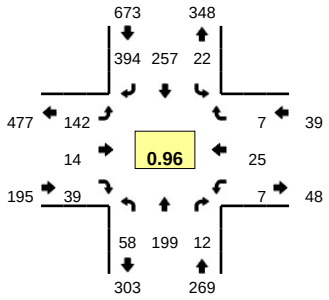
Type of peak hour being reported: Intersection Peak

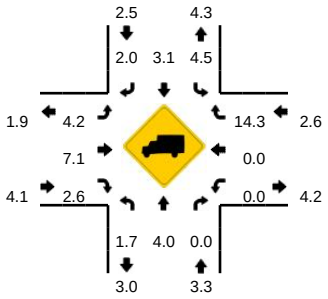
Method for determining peak hour: Total Entering Volume

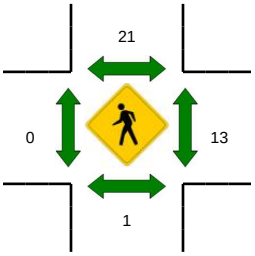
LOCATION: Providence Blvd -- Tivoli Dr
CITY/STATE: Deltona, FL

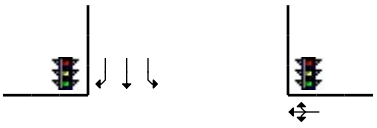
QC JOB #: 11213809
DATE: Wed, Sep 11 2013

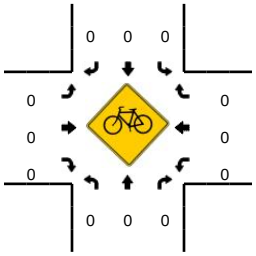
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

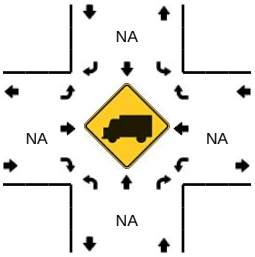


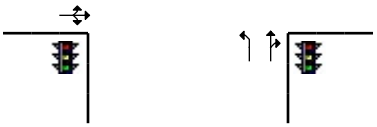


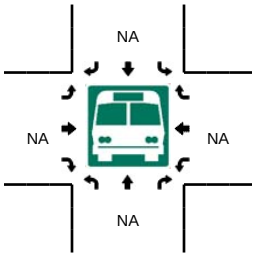












R* = RTOR

15-Min Count Period Beginning At	Providence Blvd (Northbound)					Providence Blvd (Southbound)					Tivoli Dr (Eastbound)					Tivoli Dr (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	12	40	0	0	0	3	43	74	0	2	30	1	2	0	2	0	1	0	0	2	212	
7:15 AM	10	42	3	0	1	9	50	104	0	0	36	3	3	0	3	0	6	1	0	2	273	
7:30 AM	26	45	1	0	0	6	63	103	0	2	39	3	8	0	0	3	5	0	0	1	305	
7:45 AM	14	49	2	0	0	4	82	84	0	6	35	3	8	0	1	1	5	1	0	0	295	1085
8:00 AM	8	63	5	0	0	3	62	75	0	20	32	5	12	0	4	3	9	2	0	0	303	1176
8:15 AM	6	43	3	0	0	10	40	51	0	15	41	1	6	0	0	0	7	2	0	3	228	1131
8:30 AM	2	55	2	0	0	4	47	49	0	19	46	4	6	0	3	4	3	8	0	1	253	1079
8:45 AM	7	58	0	0	0	0	58	48	0	22	47	1	4	0	1	0	1	0	0	0	247	1031

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	104	180	4	0	0	24	252	412	0	8	156	12	32	0	0	12	20	0	0	4	1220
Heavy Trucks	4	4	0			0	12	12			4	0	4			0	0	0			40
Pedestrians		0					12					0					4				16
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Railroad																					
Stopped Buses																					

Comments:

Report generated on 9/17/2013 7:30 AM

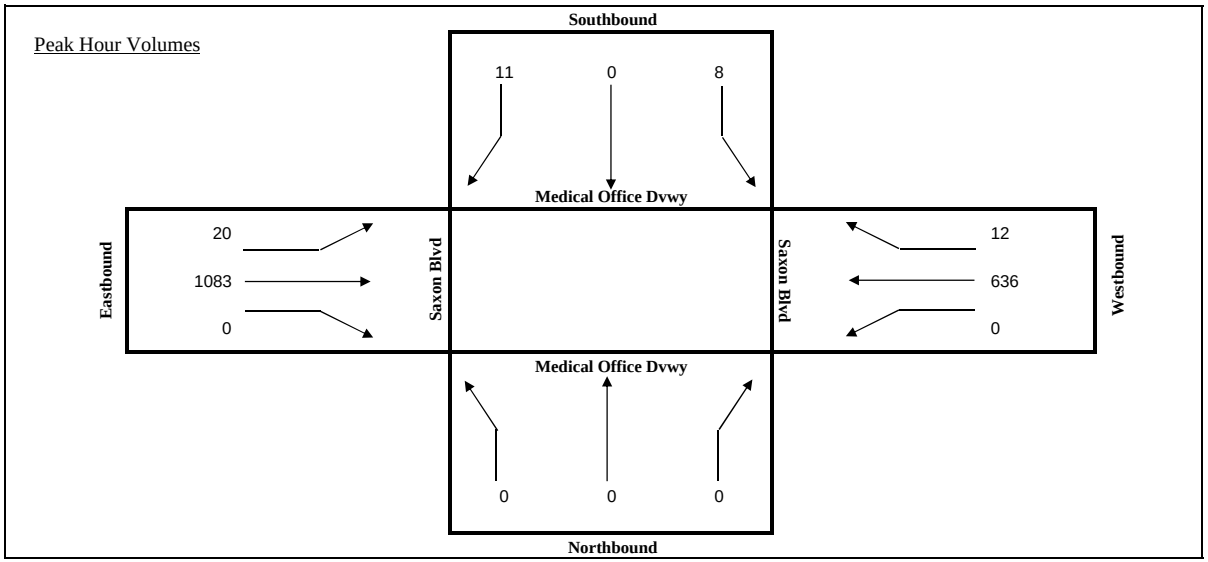
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): **Medical Office Dvwy**
Intersection (E/W): **Saxon Blvd**
Date: **2/27/2014**

		Medical Office Dvwy			Medical Office Dvwy			Saxon Blvd			Saxon Blvd			
		NB			SB			EB			WB			
Start	**End**	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**TOTAL**
4:00 PM	4:15 PM	0	0	0	0	0	3	6	198	0	0	139	2	348
4:15 PM	4:30 PM	0	0	0	2	0	8	8	234	0	0	170	0	422
4:30 PM	4:45 PM	0	0	0	1	0	1	6	250	0	0	151	0	409
4:45 PM	5:00 PM	0	0	0	2	0	4	6	273	0	0	151	3	439
5:00 PM	5:15 PM	0	0	0	1	0	6	5	265	0	0	153	2	432
5:15 PM	5:30 PM	0	0	0	2	0	2	6	263	0	0	146	5	424
5:30 PM	5:45 PM	0	0	0	4	0	0	4	288	0	0	175	2	473
5:45 PM	6:00 PM	0	0	0	1	0	3	5	267	0	0	162	3	441
Total for:	4:00 PM	5:00 PM	0	0	0	5	0	16	26	955	0	0	611	5	1618
Total for:	5:00 PM	6:00 PM	0	0	0	8	0	11	20	1083	0	0	636	12	1770
Tota Peak Hour:	5:00 PM	6:00 PM	0	0	0	8	0	11	20	1083	0	0	636	12	1770
Overall PHF:	0.94														

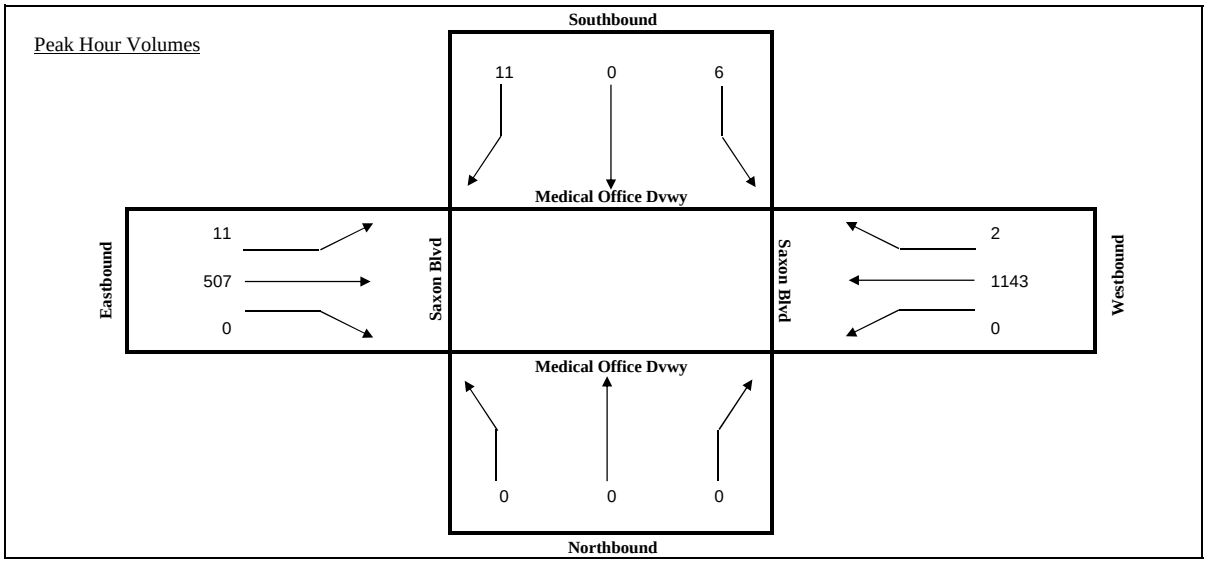


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): **Medical Office Dvwy**
Intersection (E/W): **Saxon Blvd**
Date: **2/27/2014**

		Medical Office Dvwy			Medical Office Dvwy			Saxon Blvd			Saxon Blvd			
		NB			SB			EB			WB			
Start	**End**	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**TOTAL**
7:00 AM	7:15 AM	0	0	0	1	0	2	2	109	0	0	248	0	362
7:15 AM	7:30 AM	0	0	0	3	0	2	2	128	0	0	271	0	406
7:30 AM	7:45 AM	0	0	0	0	0	4	4	164	0	0	326	1	499
7:45 AM	8:00 AM	0	0	0	2	0	3	3	106	0	0	298	1	413
8:00 AM	8:15 AM	0	0	0	0	0	0	0	94	0	0	227	0	321
8:15 AM	8:30 AM	0	0	0	0	0	2	2	86	0	0	188	1	279
8:30 AM	8:45 AM	0	0	0	1	0	5	0	74	0	0	177	1	258
8:45 AM	9:00 AM	0	0	0	2	0	3	2	60	0	0	154	0	221
Total for:	7:00 AM	8:00 AM	0	0	0	6	0	11	11	507	0	0	1143	2	1680
Total for:	8:00 AM	9:00 AM	0	0	0	3	0	10	4	314	0	0	746	2	1079
Tota Peak Hour:	7:00 AM	8:00 AM	0	0	0	6	0	11	11	507	0	0	1143	2	1680
Overall PHF:	0.84														



Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

Site Code: 11213801 & 02

Date: 9-11-13

Weather: Clear

City: Deltona

County: Volusia

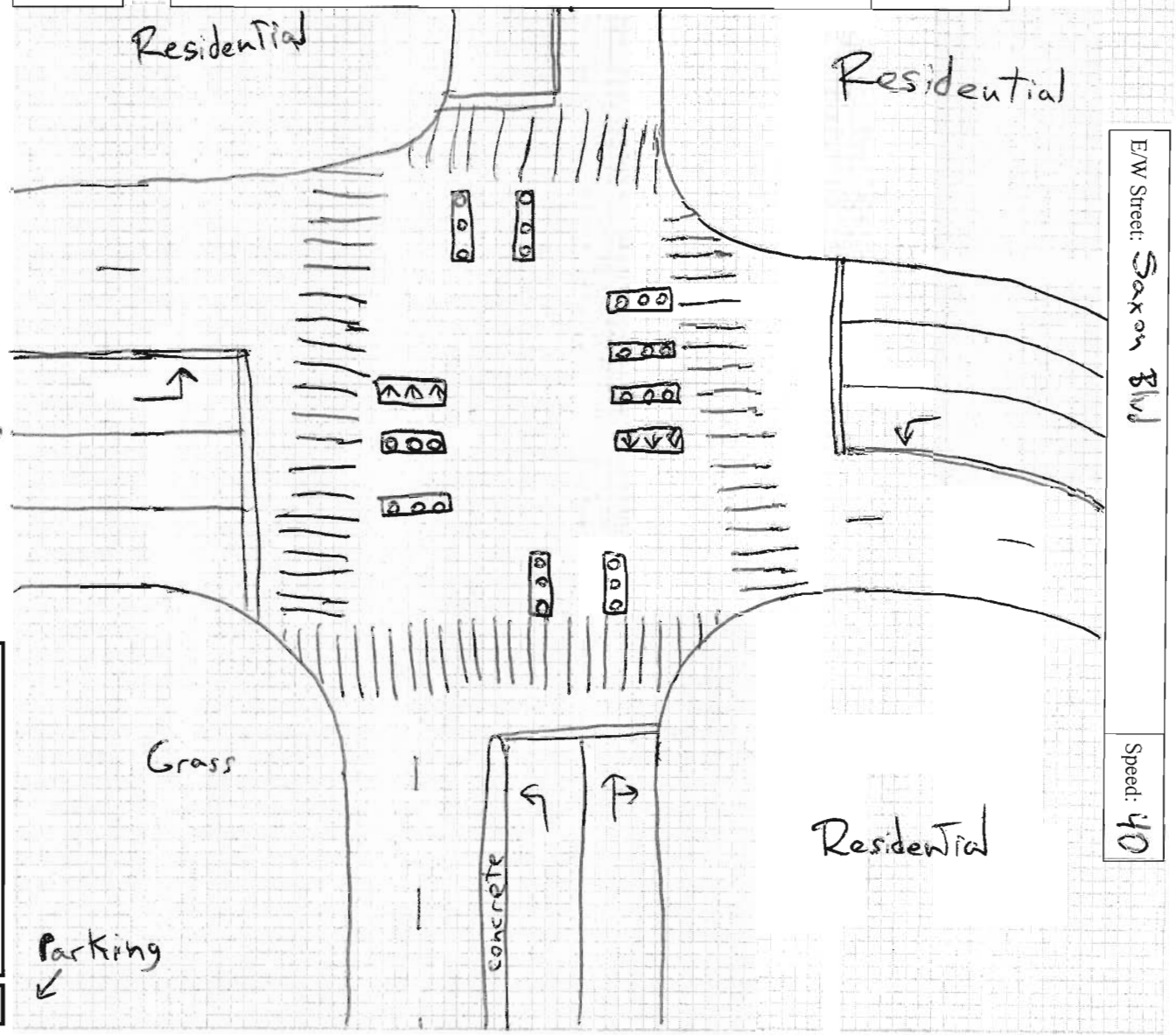
Count Times: 7:00AM - 9:00AM
& 4:00PM - 6:00PM

N/S Street: Finland Dr

Speed: 30

E/W Street: Saxon Blvd

Speed: 40



	AM			PM		
	1	2	3	1	2	3
A	:13	X	X	:14	:14	:18
B	A :07	X	A :22	A :10	A :11	A :08
C	1:19	1:23	1:00	1:21	1:12	1:16
	:33	:34	:30	:30	:23	:38
Total	2:12	1:57	1:52	2:15	2:00	2:20

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICE

Site Code: 11213803 + 04

Date: 9-11-13

Weather: Clear

City: Deltona

County: Volusia

Count Times: 7:00AM-9:00AM
4:00PM-6:00PM

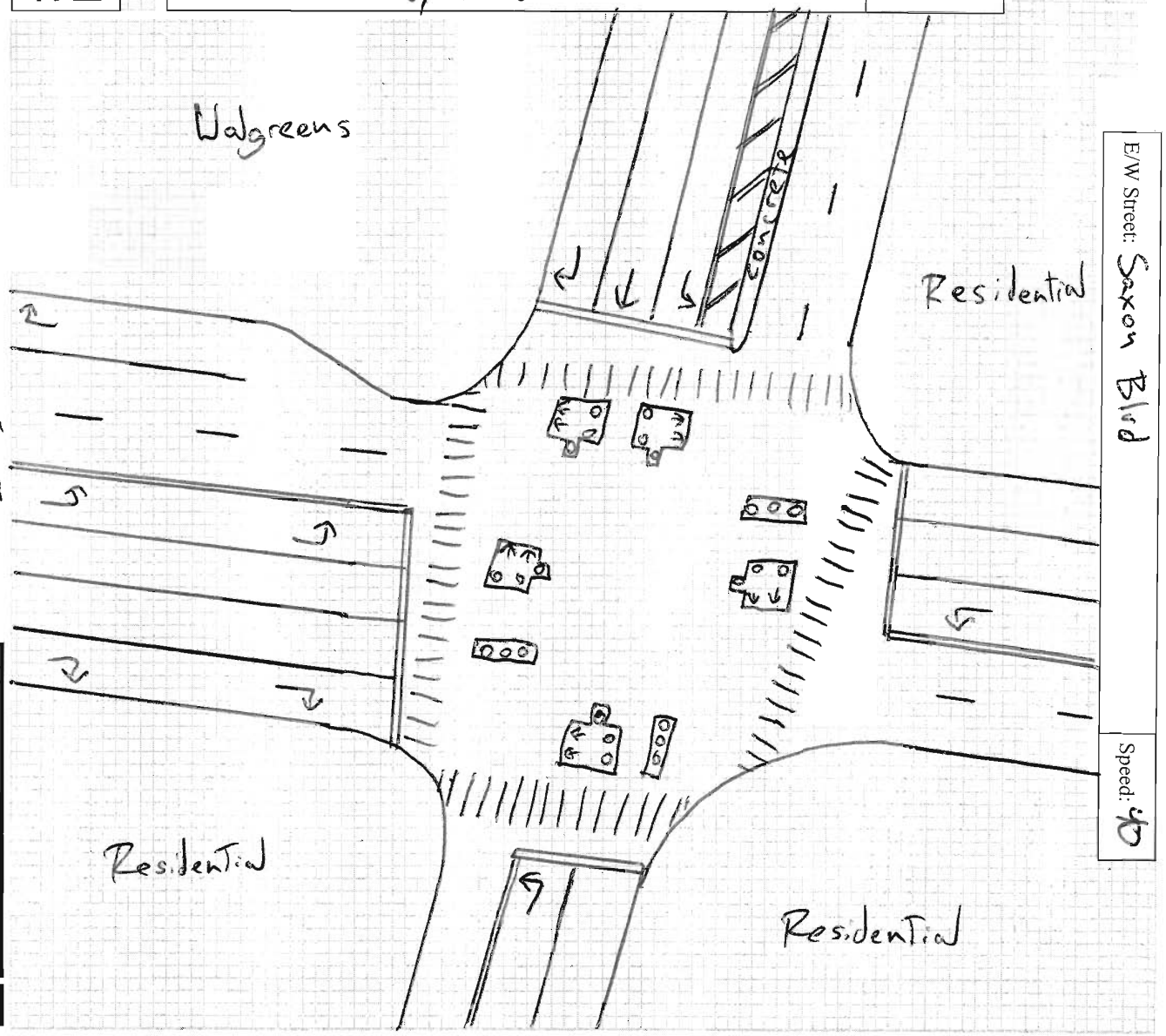
N Δ

N/S Street: Normandy Blvd

Speed: 35

E/W Street: Saxon Blvd

Speed: 40



	AM			PM		
	1	2	3	1	2	3
A	:17	X	X	:19	X	X
B	:05	:16	:16	:22	:24	:16
C	:46	:54	:54	:40	:56	1:10
	X	X	:18	:15	:16	:18
	:24	:24	:05	:07	:08	:05
	:22	:21	:22	:22	:22	:23
Total	1:54	1:55	1:55	2:05	2:06	2:12

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

Site Code: 11213805 + 06

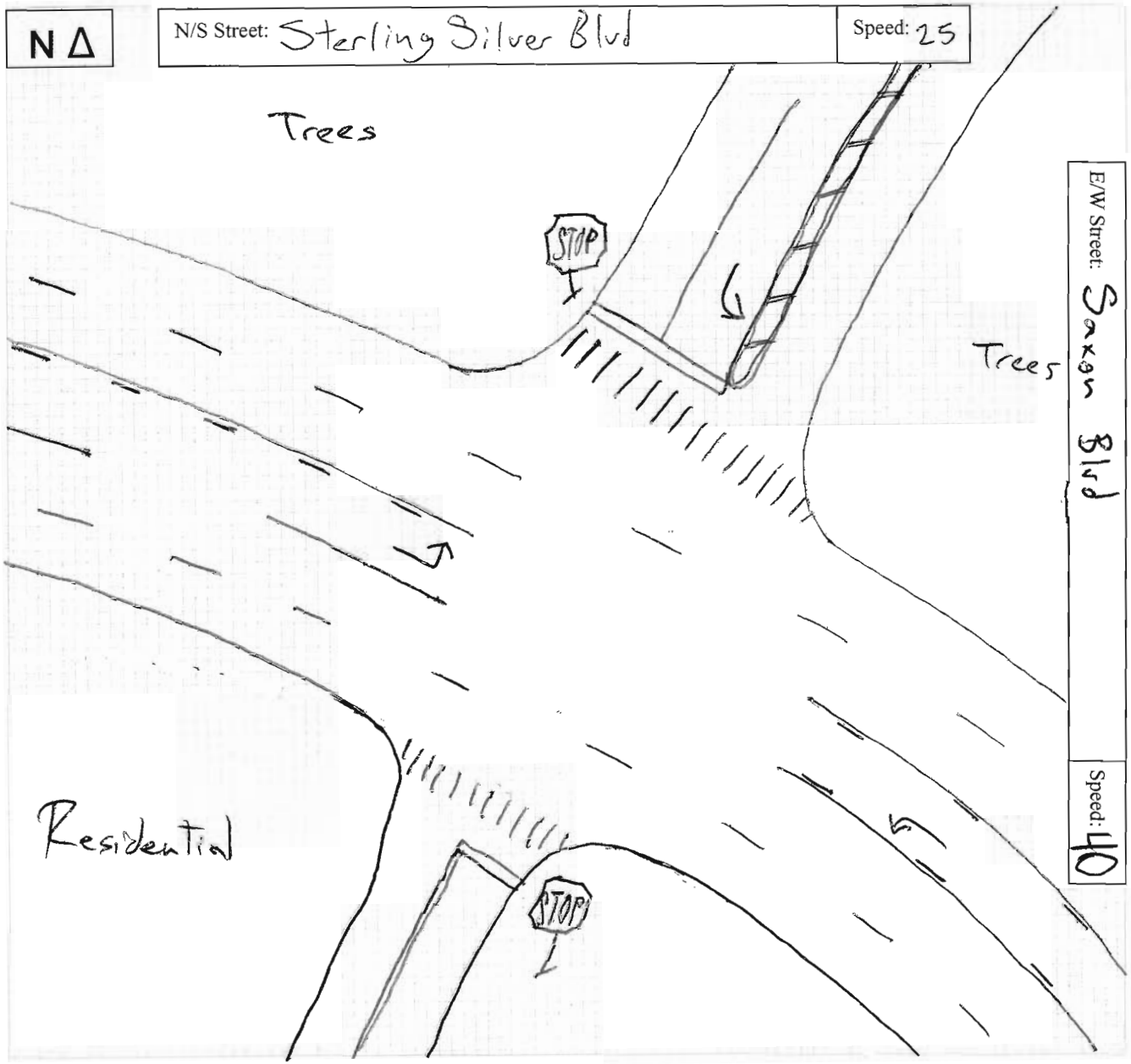
Date: 9-11-13

Weather: Clear

City: Deltona

County: Volusia

Count Times: 7:00AM - 9:00AM
&
4:00PM - 6:00PM



Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

Site Code: 11213807 + 08

Date: 9-11-13

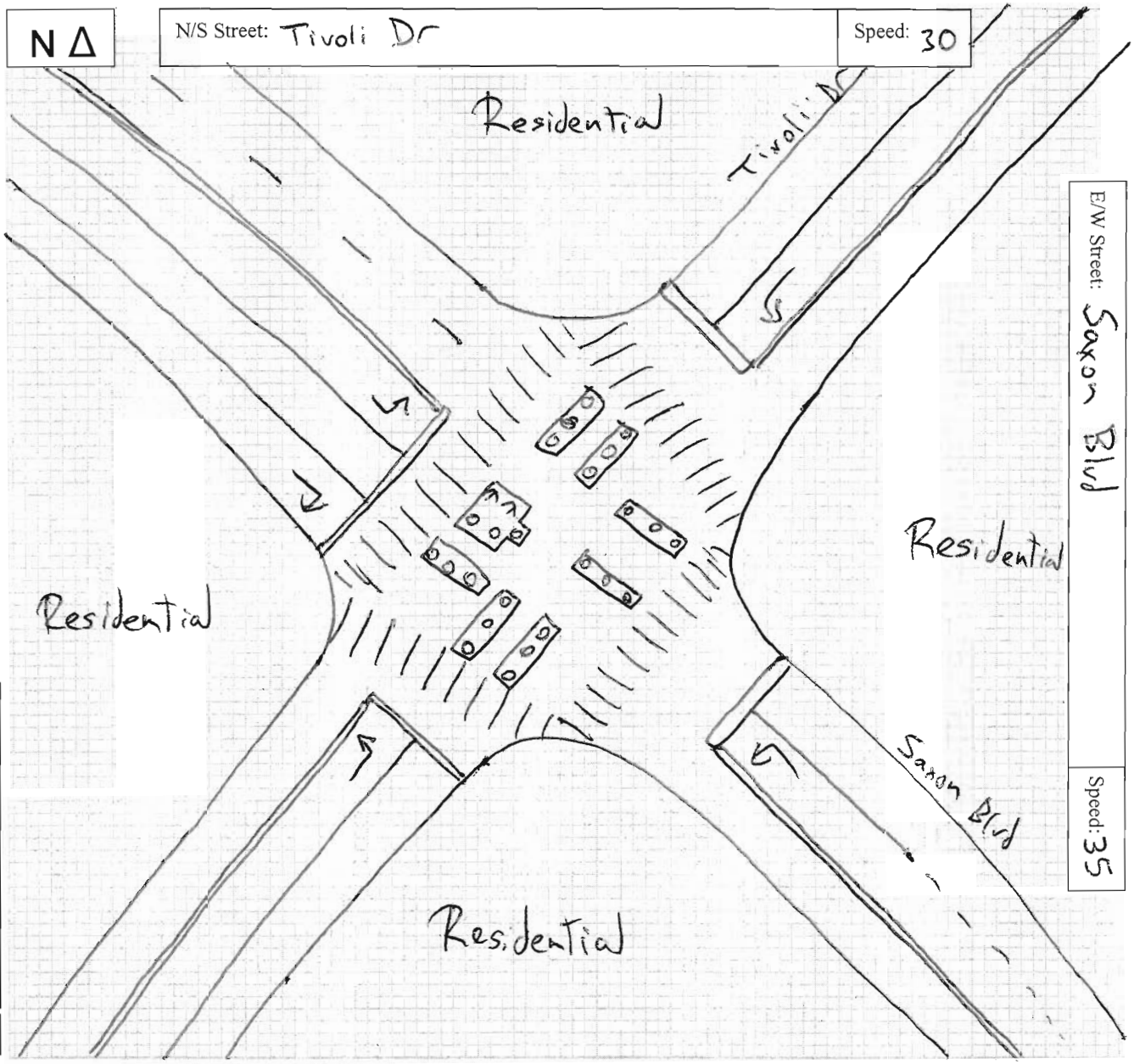
Weather: Clear

City: Deltona

County: Volusia

Count Times: 7:00AM-9:00AM + 4:00PM-6:00PM

	AM			PM		
	1	2	3	1	2	3
A	:12	:19	X	:31	:29	:25
B	:22	:25	:22	:21	:22	:23
C	:34	:15	:15	:16	:13	:26
Total	1:08	:59	:37	1:08	1:09	1:14



Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

Site Code: 11213809 + 10

Date: 9-11-13

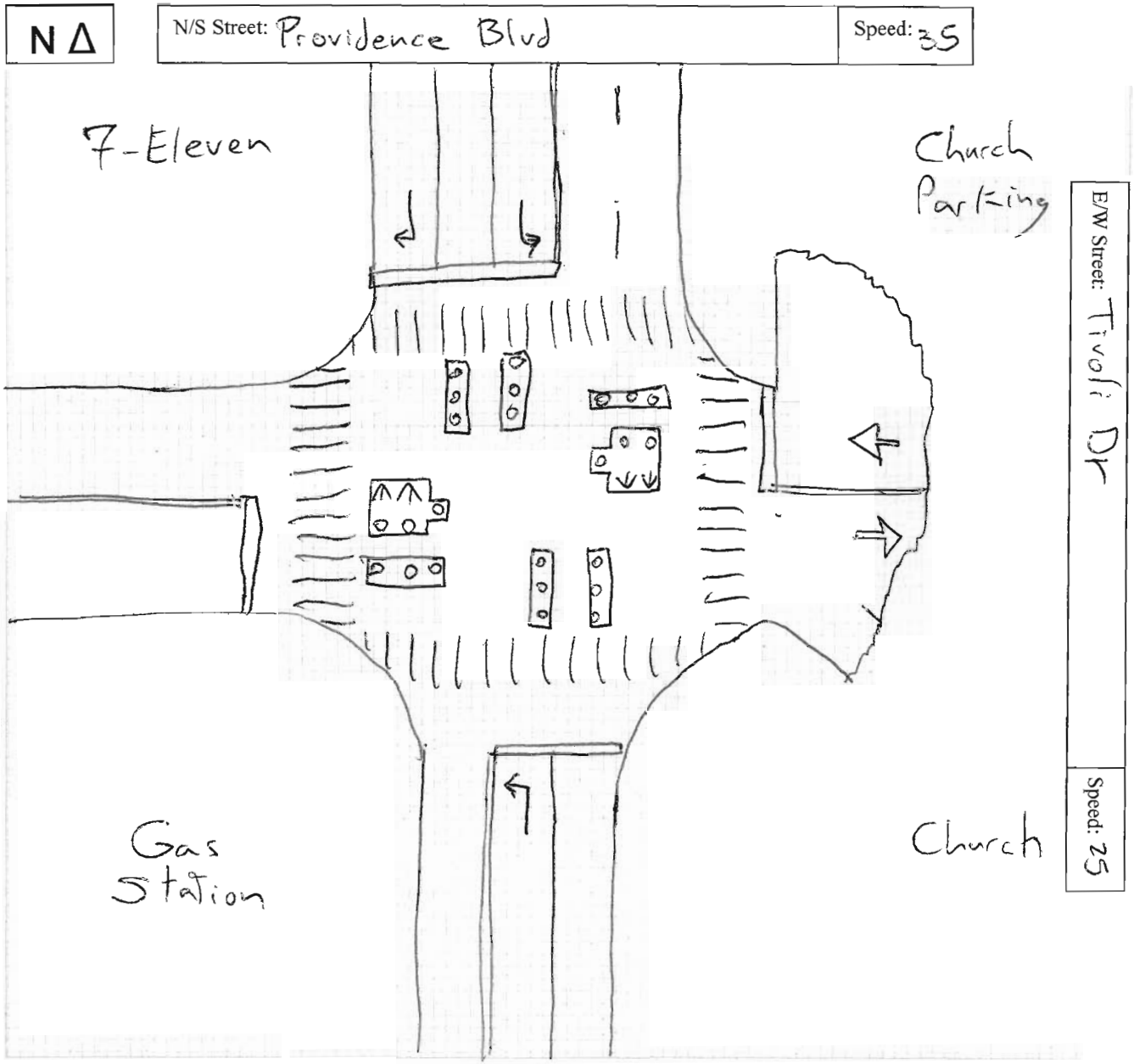
Weather: Clear

City: Deltona

County: Volusia

Count Times: 7:00AM-9:00AM + 4:00PM-6:00PM

	A	B	C	AM 1	AM 2	AM 3	PM 1	PM 2	PM 3
↰				:00	:43	:21	:42	:42	:49
↱				:15	:15	:18	:25	:28	:32
↰↱				X	X	X	:21	X	:17
Total				1:15	:58	:39	1:28	1:10	1:38



Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

Site Code: 11213811 +12

Date: 9-11-13

Weather: Clear

City: Deltona

County: Volusia

Count Times: 7:00AM-9:00AM
+
4:00 PM - 6:00PM

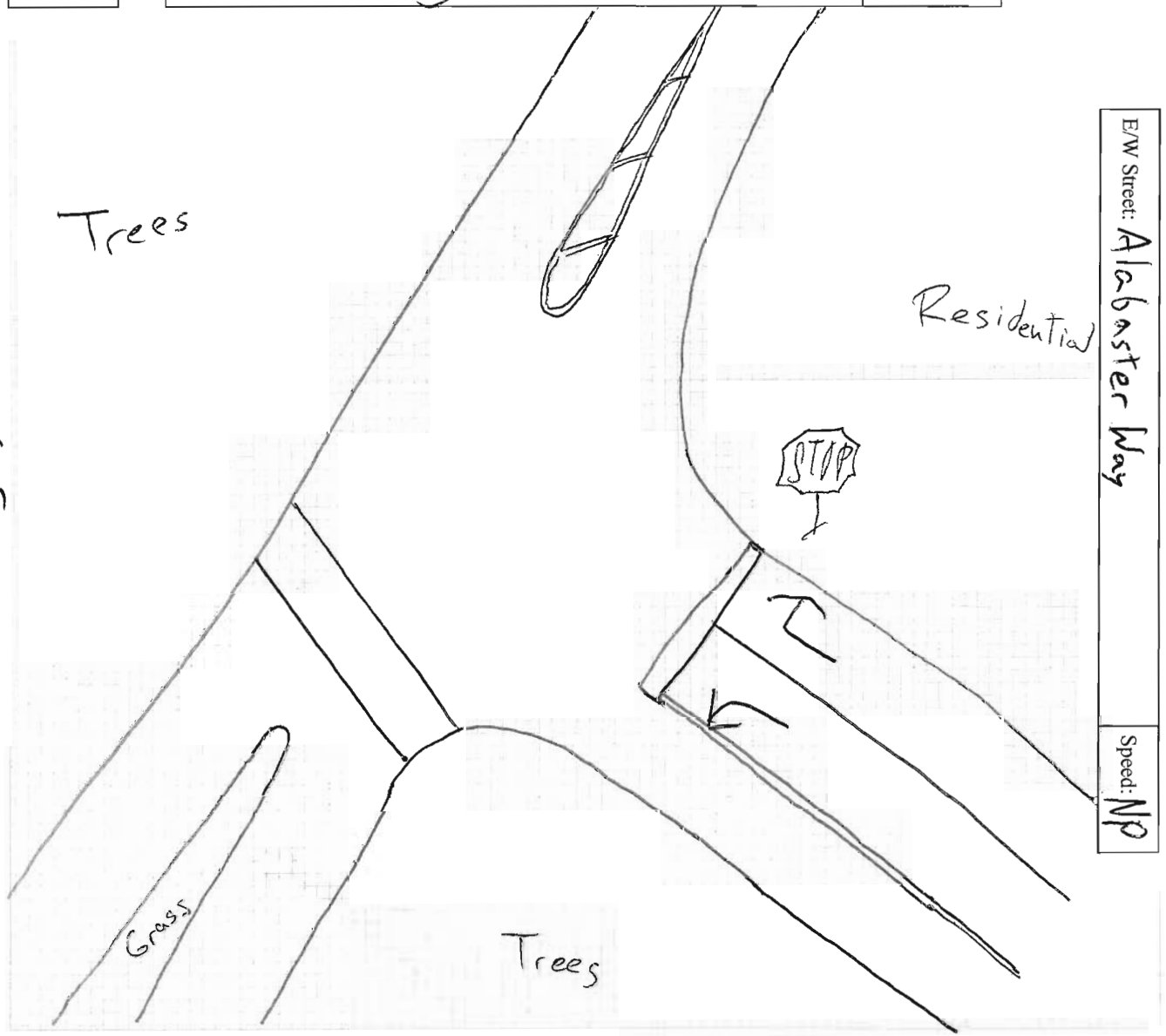
N Δ

N/S Street: Sterling Silver Blvd

Speed: 25

E/W Street: Alabaster Way

Speed: NP



2012 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 7900 VOLUSIA COUNTYWIDE

MOCF: 0.95

WEEK	DATES	SF	PSCF
1	01/01/2012 - 01/07/2012	1.01	1.07
2	01/08/2012 - 01/14/2012	1.00	1.06
3	01/15/2012 - 01/21/2012	1.00	1.06
4	01/22/2012 - 01/28/2012	0.98	1.04
* 5	01/29/2012 - 02/04/2012	0.97	1.03
* 6	02/05/2012 - 02/11/2012	0.95	1.00
* 7	02/12/2012 - 02/18/2012	0.94	0.99
* 8	02/19/2012 - 02/25/2012	0.93	0.98
* 9	02/26/2012 - 03/03/2012	0.93	0.98
*10	03/04/2012 - 03/10/2012	0.93	0.98
*11	03/11/2012 - 03/17/2012	0.92	0.97
*12	03/18/2012 - 03/24/2012	0.93	0.98
*13	03/25/2012 - 03/31/2012	0.94	0.99
*14	04/01/2012 - 04/07/2012	0.95	1.00
*15	04/08/2012 - 04/14/2012	0.96	1.01
*16	04/15/2012 - 04/21/2012	0.97	1.03
*17	04/22/2012 - 04/28/2012	0.98	1.04
18	04/29/2012 - 05/05/2012	0.99	1.05
19	05/06/2012 - 05/12/2012	1.00	1.06
20	05/13/2012 - 05/19/2012	1.01	1.07
21	05/20/2012 - 05/26/2012	1.02	1.08
22	05/27/2012 - 06/02/2012	1.02	1.08
23	06/03/2012 - 06/09/2012	1.02	1.08
24	06/10/2012 - 06/16/2012	1.03	1.09
25	06/17/2012 - 06/23/2012	1.03	1.09
26	06/24/2012 - 06/30/2012	1.04	1.10
27	07/01/2012 - 07/07/2012	1.04	1.10
28	07/08/2012 - 07/14/2012	1.04	1.10
29	07/15/2012 - 07/21/2012	1.05	1.11
30	07/22/2012 - 07/28/2012	1.05	1.11
31	07/29/2012 - 08/04/2012	1.05	1.11
32	08/05/2012 - 08/11/2012	1.05	1.11
33	08/12/2012 - 08/18/2012	1.05	1.11
34	08/19/2012 - 08/25/2012	1.05	1.11
35	08/26/2012 - 09/01/2012	1.04	1.10
36	09/02/2012 - 09/08/2012	1.04	1.10
37	09/09/2012 - 09/15/2012	1.04	1.10
38	09/16/2012 - 09/22/2012	1.03	1.09
39	09/23/2012 - 09/29/2012	1.02	1.08
40	09/30/2012 - 10/06/2012	1.01	1.07
41	10/07/2012 - 10/13/2012	1.00	1.06
42	10/14/2012 - 10/20/2012	0.99	1.05
43	10/21/2012 - 10/27/2012	1.00	1.06
44	10/28/2012 - 11/03/2012	1.00	1.06
45	11/04/2012 - 11/10/2012	1.00	1.06
46	11/11/2012 - 11/17/2012	1.00	1.06
47	11/18/2012 - 11/24/2012	1.01	1.07
48	11/25/2012 - 12/01/2012	1.01	1.07
49	12/02/2012 - 12/08/2012	1.01	1.07
50	12/09/2012 - 12/15/2012	1.01	1.07
51	12/16/2012 - 12/22/2012	1.01	1.07
52	12/23/2012 - 12/29/2012	1.00	1.06
53	12/30/2012 - 12/31/2012	1.00	1.06

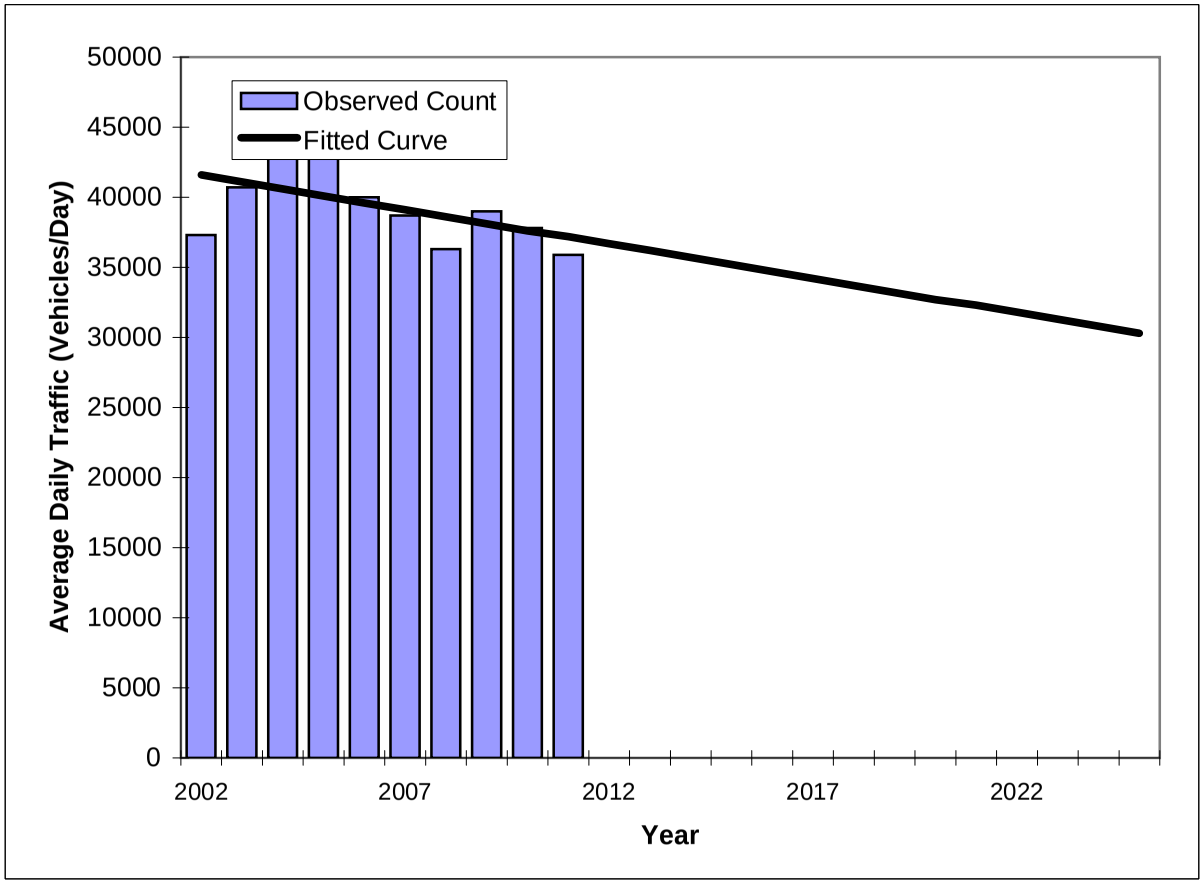
* PEAK SEASON

08-FEB-2013 12:30:05 830UPD [1,0,0,1] 5_7900_PKSEASON.TXT

TRAFFIC TRENDS

Saxon Blvd. -- Finland to Normandy

County:	Volusia
Station #:	1676
Highway:	Saxon Blvd.



Year	Traffic (ADT/AADT) Count*	Trend**
2002	37300	41600
2003	40700	41100
2004	43400	40600
2005	44500	40100
2006	40000	39600
2007	38700	39100
2008	36300	38600
2009	39000	38100
2010	37800	37600
2011	35900	37200
2015 Opening Year Trend		
2015	N/A	35200
2016 Mid-Year Trend		
2016	N/A	34700
2020 Design Year Trend		
2020	N/A	32700
TRANPLAN Forecasts/Trends		

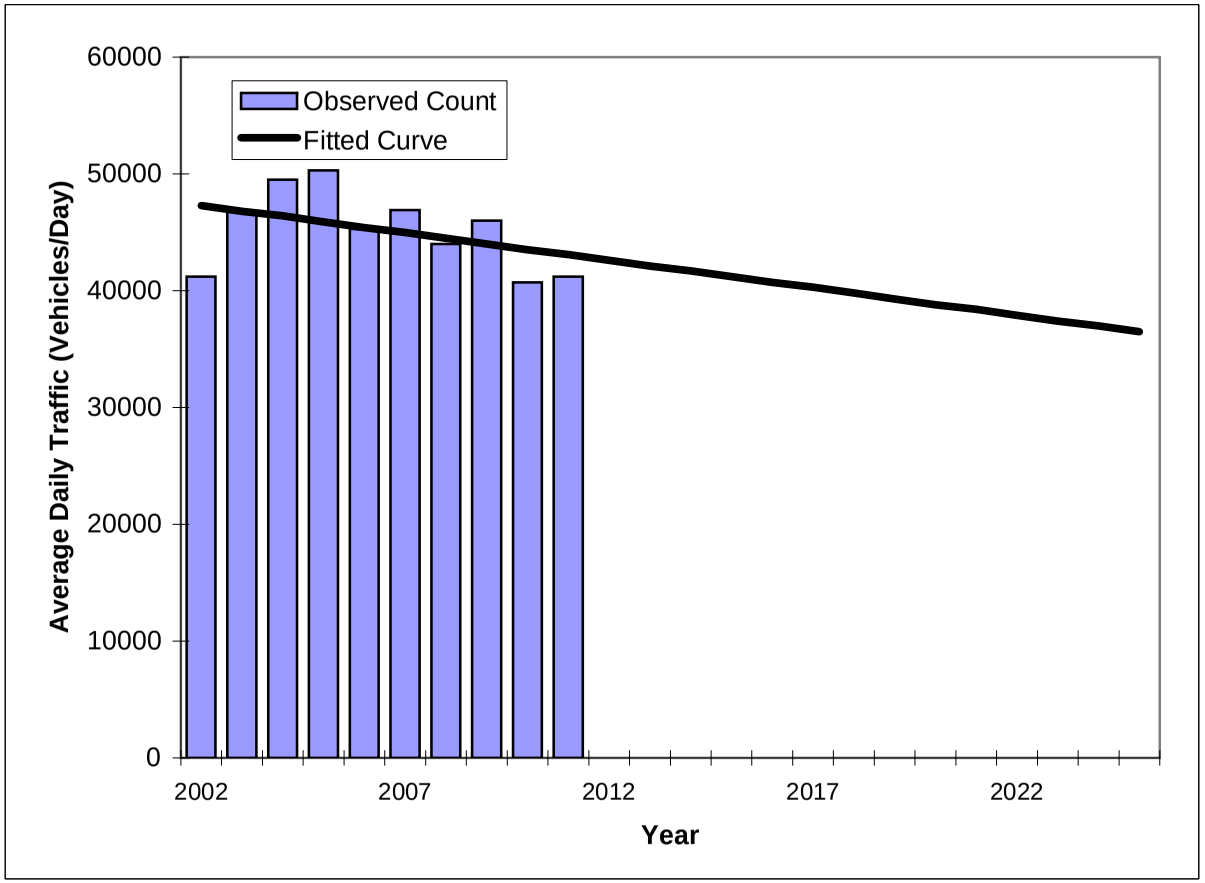
*Axle-Adjusted

** Annual Trend Increase:	-490
Trend R-squared:	26.9%
Trend Annual Historic Growth Rate:	-1.18%
Trend Growth Rate (2011 to Design Year):	-1.34%
Printed:	5-Aug-13
Straight Line Growth Option	

TRAFFIC TRENDS

Saxon Blvd. -- I-4 to Finland

County:	Volusia
Station #:	1675
Highway:	Saxon Blvd.



Year	Traffic (ADT/AADT) Count*	Trend**
2002	41200	47300
2003	46800	46800
2004	49500	46400
2005	50300	45900
2006	45300	45400
2007	46900	45000
2008	44000	44500
2009	46000	44000
2010	40700	43500
2011	41200	43100
2015 Opening Year Trend		
2015	N/A	41200
2016 Mid-Year Trend		
2016	N/A	40700
2020 Design Year Trend		
2020	N/A	38800
TRANPLAN Forecasts/Trends		

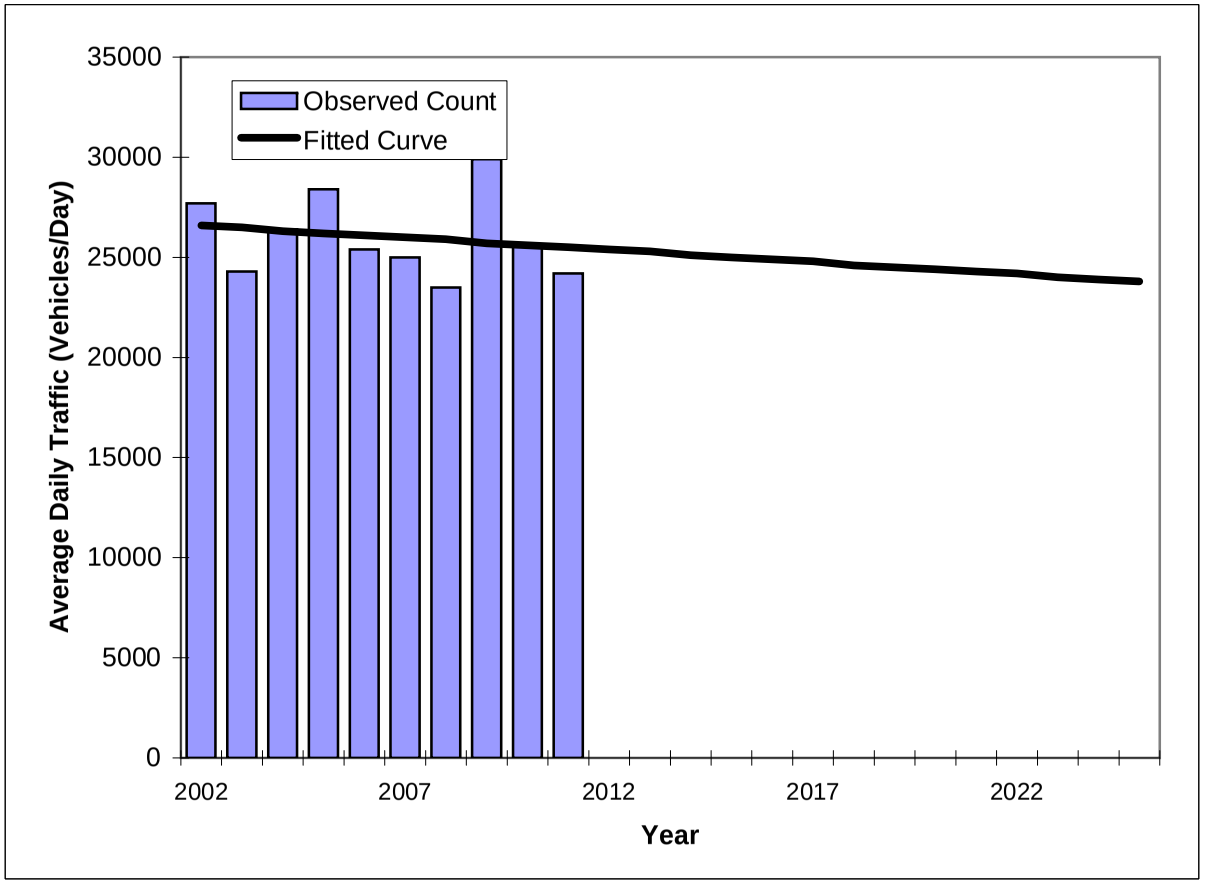
*Axle-Adjusted

** Annual Trend Increase:	-470
Trend R-squared:	17.5%
Trend Annual Historic Growth Rate:	-0.99%
Trend Growth Rate (2011 to Design Year):	-1.11%
Printed:	5-Aug-13
Straight Line Growth Option	

TRAFFIC TRENDS

Saxon Blvd. -- Normandy Blvd. to Tivoli Drive

County:	Volusia
Station #:	1677
Highway:	Saxon Blvd.



Year	Traffic (ADT/AADT) Count*	Trend**
2002	27700	26600
2003	24300	26500
2004	26400	26300
2005	28400	26200
2006	25400	26100
2007	25000	26000
2008	23500	25900
2009	29900	25700
2010	25600	25600
2011	24200	25500
2015 Opening Year Trend		
2015	N/A	25000
2016 Mid-Year Trend		
2016	N/A	24900
2020 Design Year Trend		
2020	N/A	24400
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

** Annual Trend Increase:	-121
Trend R-squared:	3.2%
Trend Annual Historic Growth Rate:	-0.46%
Trend Growth Rate (2011 to Design Year):	-0.48%
Printed:	23-Jul-13
Straight Line Growth Option	

Appendix E

24 Hour Traffic Volume Counts

Type of report: Tube Count - Volume Data

LOCATION: Saxon Blvd west of Sterling Silver Blvd
SPECIFIC LOCATION: 200 ft from Sterling Silver Blvd
CITY/STATE: Deltona, FL

QC JOB #: 11213813
DIRECTION: EB
DATE: Sep 11 2013 - Sep 11 2013

Start Time	Mon	Tue	Wed 11-Sep-13	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			95			95			95	
1:00 AM			52			52			52	
2:00 AM			34			34			34	
3:00 AM			21			21			21	
4:00 AM			26			26			26	
5:00 AM			55			55			55	
6:00 AM			146			146			146	
7:00 AM			488			488			488	
8:00 AM			379			379			379	
9:00 AM			377			377			377	
10:00 AM			483			483			483	
11:00 AM			**500**			**500**			**500**	
12:00 PM			671			671			671	
1:00 PM			644			644			644	
2:00 PM			683			683			683	
3:00 PM			819			819			819	
4:00 PM			955			955			955	
5:00 PM			**1142**			**1142**			**1142**	
6:00 PM			860			860			860	
7:00 PM			704			704			704	
8:00 PM			611			611			611	
9:00 PM			470			470			470	
10:00 PM			253			253			253	
11:00 PM			176			176			176	
Day Total			10644			10644			10644	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			11:00 AM 500			11:00 AM 500			11:00 AM 500	
PM Peak Volume			5:00 PM 1142			5:00 PM 1142			5:00 PM 1142	

Comments:

Report generated on 9/17/2013 8:12 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Saxon Blvd west of Sterling Silver Blvd
SPECIFIC LOCATION: 200 ft from Sterling Silver Blvd
CITY/STATE: Deltona, FL

QC JOB #: 11213813
DIRECTION: WB
DATE: Sep 11 2013 - Sep 11 2013

Start Time	Mon	Tue	Wed 11-Sep-13	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			42			42			42	
1:00 AM			27			27			27	
2:00 AM			21			21			21	
3:00 AM			38			38			38	
4:00 AM			107			107			107	
5:00 AM			331			331			331	
6:00 AM			751			751			751	
7:00 AM			**1093**			**1093**			**1093**	
8:00 AM			846			846			846	
9:00 AM			659			659			659	
10:00 AM			569			569			569	
11:00 AM			596			596			596	
12:00 PM			562			562			562	
1:00 PM			**679**			**679**			**679**	
2:00 PM			578			578			578	
3:00 PM			643			643			643	
4:00 PM			589			589			589	
5:00 PM			617			617			617	
6:00 PM			532			532			532	
7:00 PM			441			441			441	
8:00 PM			377			377			377	
9:00 PM			217			217			217	
10:00 PM			114			114			114	
11:00 PM			66			66			66	
Day Total			10495			10495			10495	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			7:00 AM 1093			7:00 AM 1093			7:00 AM 1093	
PM Peak Volume			1:00 PM 679			1:00 PM 679			1:00 PM 679	

Comments:

Report generated on 9/17/2013 8:12 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: Sterling Silver Blvd north of Saxon Blvd
SPECIFIC LOCATION: 200 ft from Saxon Blvd
CITY/STATE: Deltona, FL

QC JOB #: 11213814
DIRECTION: SB
DATE: Sep 11 2013 - Sep 11 2013

Start Time	Mon	Tue	Wed 11-Sep-13	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			3			3			3	
1:00 AM			0			0			0	
2:00 AM			0			0			0	
3:00 AM			2			2			2	
4:00 AM			2			2			2	
5:00 AM			10			10			10	
6:00 AM			16			16			16	
7:00 AM			**36**			**36**			**36**	
8:00 AM			27			27			27	
9:00 AM			28			28			28	
10:00 AM			21			21			21	
11:00 AM			30			30			30	
12:00 PM			21			21			21	
1:00 PM			23			23			23	
2:00 PM			25			25			25	
3:00 PM			**32**			**32**			**32**	
4:00 PM			25			25			25	
5:00 PM			30			30			30	
6:00 PM			22			22			22	
7:00 PM			23			23			23	
8:00 PM			14			14			14	
9:00 PM			7			7			7	
10:00 PM			7			7			7	
11:00 PM			0			0			0	
Day Total			404			404			404	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			7:00 AM 36			7:00 AM 36			7:00 AM 36	
PM Peak Volume			3:00 PM 32			3:00 PM 32			3:00 PM 32	

Comments:

Quality Counts
TRANSPORTATION DATA COLLECTION

Appendix F
Planned or Programmed Improvements

Volusia County Road Program

5 Year Road Program

IMPACT FEE ZONE 1 - Northeast Volusia

Project	Section	Fund	Scope	PRIOR YEAR ENG	PRIOR YEAR R/W	PRIOR YEAR CON	FY 12/13 ENG	FY 12/13 R/W	FY 12/13 CON	FY 13/14 R/W	FY 13/14 CON	FY 14/15 ENG	FY 14/15 R/W	FY 14/15 CON	FY 15/16 ENG	FY 15/16 R/W	FY 15/16 CON	FY 16/17 ENG	FY 16/17 R/W	FY 16/17 CON
LPGA Blvd Widening	Jimmy Ann Dr to E. of Derbyshire Rd	LOGT	4 LN		750			1750	0											
"	"	BOND	"						1549											
"	"	TRIP	"						239											
"	"	CIGP	"						213											
Orange Av - Reconst/Resurface	Nova Rd to Beach St	LOGT	Resurfacing						650											
" Drainage Repairs	Nova Rd to Ridgewood Av	ONE	Repairs						350											
" Utility Repairs	Nova Rd to Ridgewood Av	CITY	Repairs						200											
Tymber Creek Rd Widening	SR 40 to Peruvian Ln	BOND	4 LN		400	0		550	5000											
"	"	LOGT	"			0			1133											
"	"	CITY	Utilities						277											
Veterans Memorial Bridge (Orange Av) over Halifax River		LAP	Replace Bridge				3100	679						47950						
Williamson Blvd Extension	Airport Rd to Pioneer Trail	LOGT	4 LN				738				9062									
Debt Service for Bonds		IMPACT				600			600		600			600			600			600
Debt Service for Bonds		LOGT				1455			1455		1455			1455			1455			1455
Loan Repayment for S. Williamson Blvd Extension	Pioneer Tr to Airport Rd	LOGT	4 LN	0			738		0		1100			1100			1100			1100

BOND - Bond Funding CBIR - Community Budget Issue Request (State Funding) CIGP - County Incentive Grant Program (State Grant) CITY - Cost sharing with City DEV - Developer Funding FED GRANT - Federal Grant
IMPACT - Road Impact Fee Funding LAP - Local Agency Program (Federal Grant) LOGT - Local Option Gas Tax Funding ONE - One Cent Gas Tax Funding TRIP - Transportation Regional Incentive Program (State Grant)

IMPACT FEE ZONE 2 - Southeast Volusia

Project	Section	Fund	Scope	PRIOR YEAR ENG	PRIOR YEAR R/W	PRIOR YEAR CON	FY 12/13 ENG	FY 12/13 R/W	FY 12/13 CON	FY 13/14 R/W	FY 13/14 CON	FY 14/15 ENG	FY 14/15 R/W	FY 14/15 CON	FY 15/16 ENG	FY 15/16 R/W	FY 15/16 CON	FY 16/17 ENG	FY 16/17 R/W	FY 16/17 CON
Pioneer Trail at Turnbull Bay Rd Intersection		LAP	Intersection		300				185											
"	"	LOGT	"		47	0			1400											
Tenth St Widening	Myrtle Av to US 1	BOND	4 LN	80	150	0			4475											
"	"	CBIR	"			0			2800											
Turnbull Bay Rd Bridge Replacement over Turnbull Creek		LOGT	Replace Bridge	50																
"	"	LAP	"	576				511			3016									
Debt Service for Bonds		IMPACT				538			250		250			100			100			90
Debt Service for Bonds		LOGT							288		288			438			438			448

BOND - Bond Funding CBIR - Community Budget Issue Request (State Funding) CIGP - County Incentive Grant Program (State Grant) CITY - Cost sharing with City DEV - Developer Funding FED GRANT - Federal Grant
IMPACT - Road Impact Fee Funding LAP - Local Agency Program (Federal Grant) LOGT - Local Option Gas Tax Funding ONE - One Cent Gas Tax Funding TRIP - Transportation Regional Incentive Program (State Grant)

Volusia County Road Program

5 Year Road Program

IMPACT FEE ZONE 3 - Southwest Volusia

Project	Section	Fund	Scope	PRIOR YEAR ENG	PRIOR YEAR R/W	PRIOR YEAR CON	FY 12/13 ENG	FY 12/13 R/W	FY 13/14 CON	FY 13/14 R/W	FY 13/14 CON	FY 14/15 ENG	FY 14/15 R/W	FY 14/15 CON	FY 15/16 ENG	FY 15/16 R/W	FY 15/16 CON	FY 16/17 ENG	FY 16/17 R/W	FY 16/17 CON
Howland Blvd Widening	Courtland Blvd to N of SR415	BOND	4 LN	50			100		4870											
"	"	TRIP	"						5130											
"	3 Laning of Ft Smith east & west of Howland	CITY	"						540											
Saxon Blvd Medians/6 Lanes	Enterprise Rd to I-4	BOND	6 LN/Median						2750											
"	"	CIGP	"						1427											
"	"	TRIP	"						16											
Debt Service for Bonds		IMPACT				300			300		300			300			300			300
Debt Service for Bonds		LOGT				1608			1608		1608			1608			1608			1608

BOND - Bond Funding CBIR - Community Budget Issue Request (State Funding) CIGP - County Incentive Grant Program (State Grant) CITY - Cost sharing with City DEV - Developer Funding FED GRANT - Federal Grant
IMPACT - Road Impact Fee Funding LAP - Local Agency Program (Federal Grant) LOGT - Local Option Gas Tax Funding ONE - One Cent Gas Tax Funding TRIP - Transportation Regional Incentive Program (State Grant)

IMPACT FEE ZONE 4 - Northwest Volusia

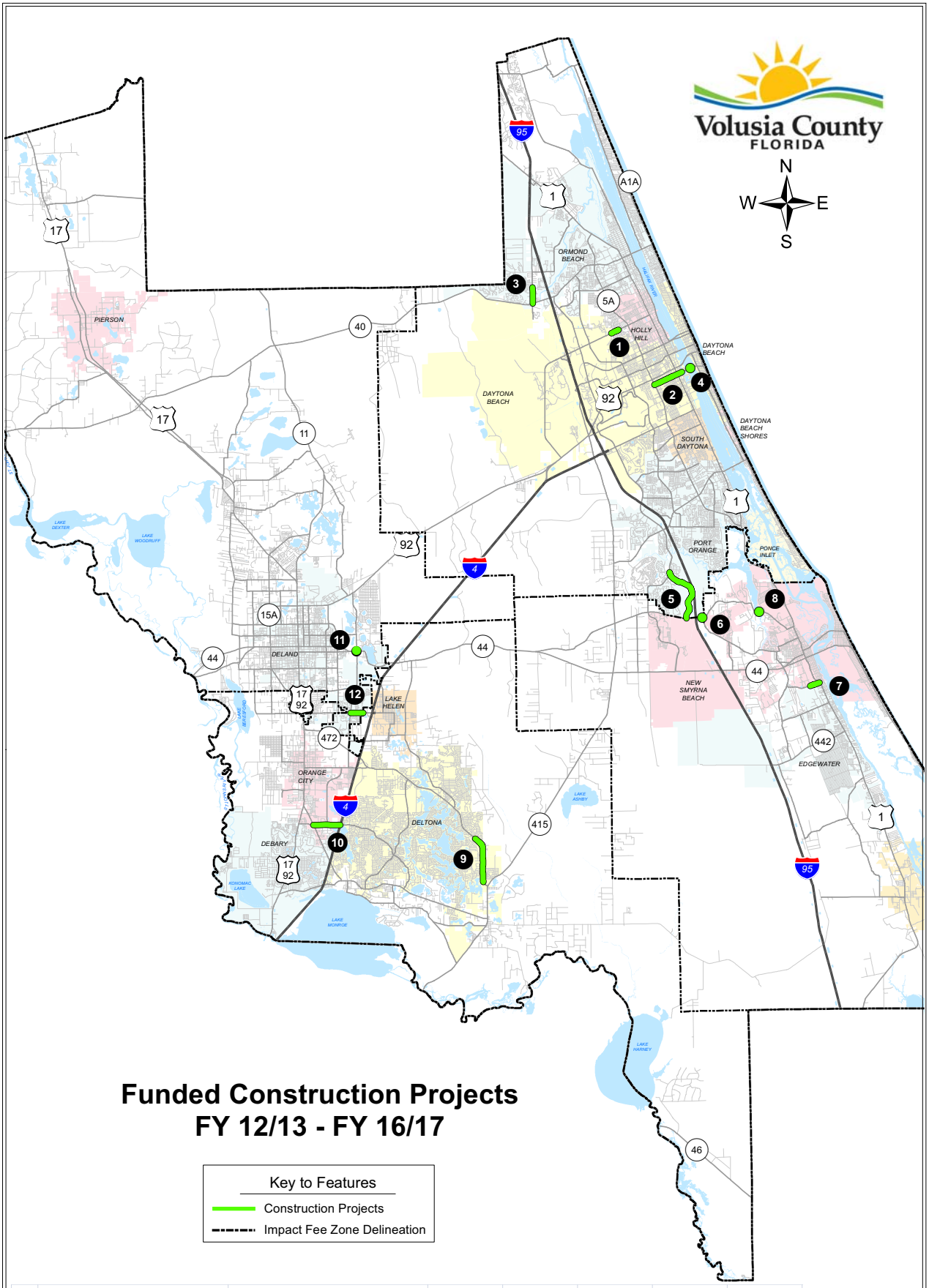
Project	Section	Fund	Scope	PRIOR YEAR ENG	PRIOR YEAR R/W	PRIOR YEAR CON	FY 12/13 ENG	FY 12/13 R/W	FY 13/14 CON	FY 13/14 R/W	FY 13/14 CON	FY 14/15 ENG	FY 14/15 R/W	FY 14/15 CON	FY 15/16 ENG	FY 15/16 R/W	FY 15/16 CON	FY 16/17 ENG	FY 16/17 R/W	FY 16/17 CON
Kepler Rd at SR44	Kepler N 1000'/SR44 E to Lk Winnemissett	IMPACT	Intersection				500	2000			2979									
"	"	CIGP									821									
Orange Camp Rd Widening	MLK Blvd to W of I-4 incl frontage rd stubout	IMPACT	4 LN						0		440									
"	"	BOND	"	100			185	774	0		4060									
Debt Service for Bonds		IMPACT				392			392		392			392			392			392

BOND - Bond Funding CBIR - Community Budget Issue Request (State Funding) CIGP - County Incentive Grant Program (State Grant) CITY - Cost sharing with City DEV - Developer Funding FED GRANT - Federal Grant
IMPACT - Road Impact Fee Funding LAP - Local Agency Program (Federal Grant) LOGT - Local Option Gas Tax Funding ONE - One Cent Gas Tax Funding TRIP - Transportation Regional Incentive Program (State Grant)

MISCELLANEOUS

Project	Fund	Scope	PRIOR YEAR ENG	PRIOR YEAR R/W	PRIOR YEAR CON	FY 12/13 ENG	FY 12/13 R/W	FY 13/14 CON	FY 13/14 R/W	FY 13/14 CON	FY 14/15 ENG	FY 14/15 R/W	FY 14/15 CON	FY 15/16 ENG	FY 15/16 R/W	FY 15/16 CON	FY 16/17 ENG	FY 16/17 R/W	FY 16/17 CON
Advanced Engineering & Permitting	LOGT		500			500					500			500			500		
"	IMPACT ZONE 1																		
"	IMPACT ZONE 2																		
"	IMPACT ZONE 3																		
"	IMPACT ZONE 4																		
Advanced Right-of-Way Acquistion	LOGT			500			500		500			500			500			500	
"	IMPACT ZONE 1																		
"	IMPACT ZONE 2																		
"	IMPACT ZONE 3																		
"	IMPACT ZONE 4																		
Major Bridge Repairs	LOGT		68		685	125		325		200	50		200	50		200	50		200
Countywide Sidewalks (to be determined)	ONE				250			250		250			250			250			250
Resurfacing (annual contract)	ONE				4294			1850		1900			1950			2000			2050
"	LOGT				850			200		850			850			850			850
Railroad Crossings	LOGT				100			100		100			100			100			100
Safety Projects, county wide (to be determined)	LOGT				1000			1000		1000			1000			1000			1000

BOND - Bond Funding CBIR - Community Budget Issue Request (State Funding) CIGP - County Incentive Grant Program (State Grant) CITY - Cost sharing with City DEV - Developer Funding FED GRANT - Federal Grant
IMPACT - Road Impact Fee Funding LAP - Local Agency Program (Federal Grant) LOGT - Local Option Gas Tax Funding ONE - One Cent Gas Tax Funding TRIP - Transportation Regional Incentive Program (State Grant)



Funded Construction Projects
FY 12/13 - FY 16/17

Key to Features

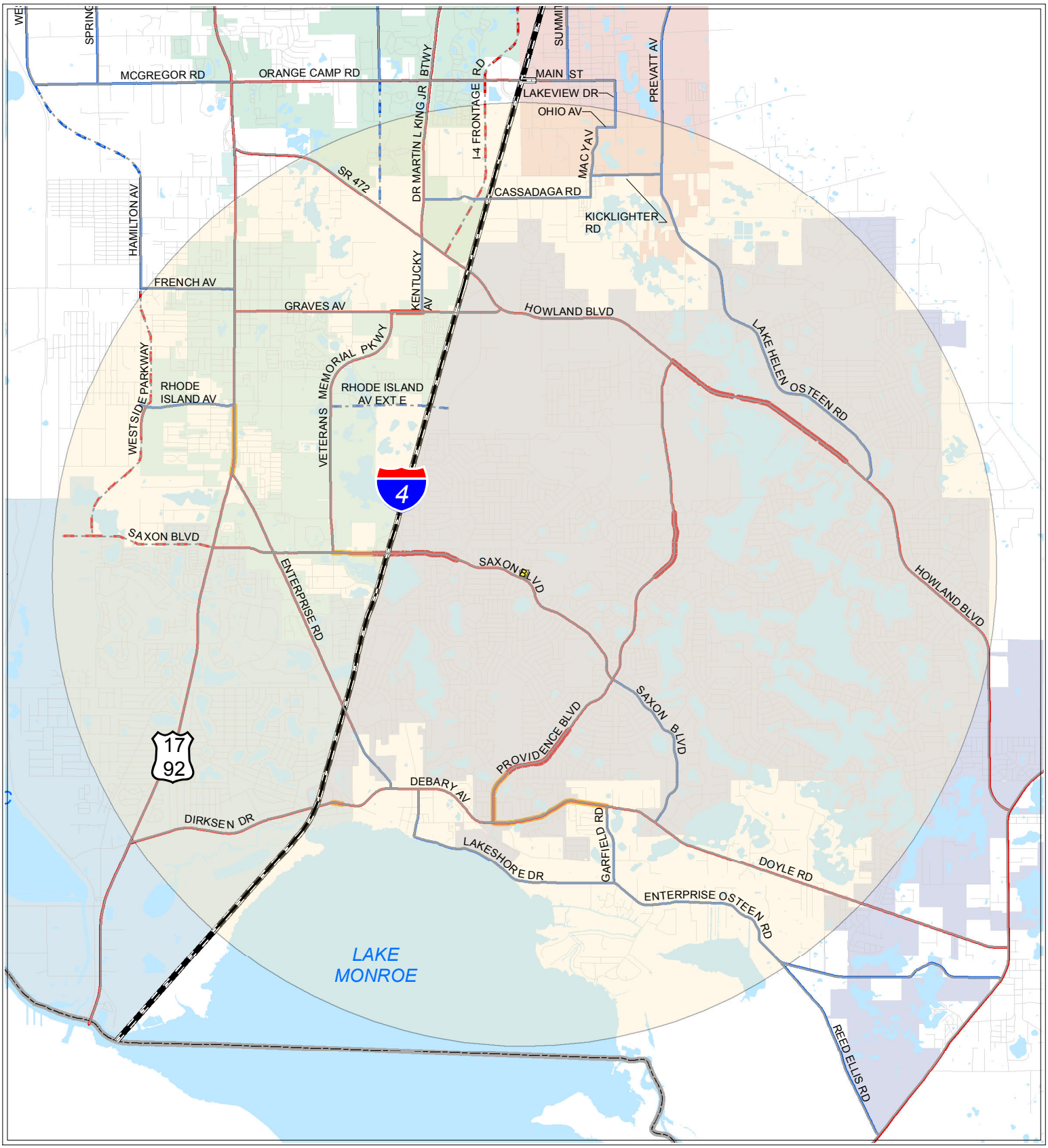
Construction Projects

Impact Fee Zone Delineation

	Road Name	Limits	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17
1	LPGA Blvd Widening	Jimmy Ann Dr to E of Derbyshire Rd	$ 2,001,000				
2	Orange Av Reconstruction	Nova Rd to Beach St	$ 1,000,000				
3	Tymber Creek Rd Widening	SR 40 to Peruvian Ln	$ 6,133,000				
4	Veterans Mem Bridge Replacement over Halifax River				$47,950,000		
5	Williamson Blvd Extension	Airport Rd to Pioneer Trl		$ 9,062,000			
6	Pioneer Trl at Turnbull Bay Rd	Intersection	$ 1,585,000				
7	Tenth St Widening	Myrtle Av to US 1	$ 7,275,000				
8	Turnbull Bay Bridge Replacement over Turnbull Creek			$ 3,016,000			
9	Howland Blvd Widening	Courtland Blvd to N of SR 415	$10,000,000				
10	Saxon Blvd Medians	Enterprise Rd to I-4	$ 4,193,000				
11	Kepler Rd at SR 44	Intersection		$ 3,800,000			
12	Orange Camp Rd Widening	MLK Blvd to W of I-4, incl. frontage road stubout		$ 4,500,000			

G:\Ongoing\ConstEng\RoadProgram\yr2012\ProjFile\ConstructionOverall.mxd

Date: 10/8/12



Legend

- buffer
- 8130-78-00-0010
- Hydrology
- LOS2011_NearCritical
- LOS2011_Critical

Impact Area - 5 mile radius

8130-78-00-0010

N W E S

COUNTY OF VOLUSIA

Road Program

CAPITAL IMPROVEMENT EXPENDITURE

Project Title	Prior Years	FY 2012-13 Year 1	FY 2013-14 Year 2	FY 2014-15 Year 3	FY 2015-16 Year 4	FY 2016-17 Year 5	Total Amount
Advanced Permits & Engineering	0	500,000	500,000	500,000	500,000	500,000	2,500,000
Advanced R/W Acquisition	0	500,000	500,000	500,000	500,000	500,000	2,500,000
Bridge Repair Program	0	450,000	250,000	250,000	250,000	250,000	1,450,000
Countywide Safety Projects	0	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	5,000,000
Howland Bl-Courtland-Sr415	1,644,038	10,640,000	0	0	0	0	12,284,038
Kepler-Sr44	322	2,500,000	3,800,000	0	0	0	6,300,322
LPGA Bl-Jimmy Ann-Nova 5 Lane	5,103,675	3,893,000	0	0	0	0	8,996,675
Orange Camp Rd - MLK to I-4 incl frontage Rd stubout	65,111	959,000	4,500,000	0	0	0	5,524,111
Pioneer Trail/Turnbull Bay Rd	344,764	1,585,000	0	0	0	0	1,929,764
Plymouth Av-15A-Us1792 4 Ln	0	0	950,000	1,500,000	0	0	2,450,000
Saxon Blvd 6 LN Median	150,414	4,193,726	0	0	0	0	4,344,140
Signal Upgrade	500,000	250,000	250,000	250,000	250,000	250,000	1,750,000
Tenth St Phase 2 - Myrtle Ave to US 1	2,327,792	7,275,000	0	0	0	0	9,602,792
Tymber Ck Rd-Sr40-Airport Rd	5,049,030	7,210,000	0	0	0	0	12,259,030
Williamson Blvd Ext	0	738,000	1,100,000	1,100,000	1,100,000	1,100,000	5,138,000
TOTAL EXPEDITURES	**15,185,146**	**41,693,726**	**12,850,000**	**5,100,000**	**3,600,000**	**3,600,000**	**82,028,872**

REVENUE SOURCE

Budget Object Name	Prior Years	FY 2012-13 Year 1	FY 2013-14 Year 2	FY 2014-15 Year 3	FY 2015-16 Year 4	FY 2016-17 Year 5	Total Amount
Bond Funded Road Program	35,360,140	0	0	0	0	0	35,360,140
City of Deltona	0	540,000	0	0	0	0	540,000
City of Ormond Beach	0	277,000	0	0	0	0	277,000
Federal Funds	61,057	185,000	0	0	0	0	246,057
Gas Tax-Local Option	5,889,557	6,289,000	3,600,000	3,600,000	3,600,000	3,600,000	26,578,557
Road Impact Fees Z4/NW	11,392	2,500,000	4,369,000	1,500,000	0	0	8,380,392
State Funds	0	9,825,726	821,000	0	0	0	10,646,726
TOTAL REVENUES	**41,322,146**	**19,616,726**	**8,790,000**	**5,100,000**	**3,600,000**	**3,600,000**	**82,028,872**

COUNTY OF VOLUSIA

Saxon Blvd 6 LN Median

Project No.: 5585
CIP Category: Road Program
Sub Category/Class: Roads / New Construction - 6 Lane
Project Request Code: 3347108632

CIP Class: A - Concurrency
Impact Fee Zone/Quad: 3
Location: Orange City
Account Number: 334-710-8632

Description/Justification for Capital and Operating

Saxon Boulevard from Enterprise Road to I-4, 6 laning and median. This project includes $1,427,000 in County Incentive Grant Program (CIGP) Funds and $16,000 in Transportation Regional Incentive Program (TRIP) Funds from a FDOT grant. A Local Match of 50% is also included. The project length is 1.3 miles.

Relationship To Other Projects/Plans:

Consistent with the Volusia County Five Year Road Program.

CAPITAL IMPROVEMENT EXPENDITURE:

Budget Object Name	Prior Years	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	Total Years 1-5	Total Amount
Construction Projects	150,414	4,193,726	0	0	0	0	4,193,726	4,344,140
Total Expenses	**150,414**	**4,193,726**	**0**	**0**	**0**	**0**	**4,193,726**	**4,344,140**

REVENUE SOURCE:

Budget Object Name	Prior Years	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	Total Years 1-5	Total Amount
Bond Funded Road Program	2,900,414	0	0	0	0	0	0	2,900,414
State Funds	0	1,443,726	0	0	0	0	1,443,726	1,443,726
Total Revenues	**2,900,414**	**1,443,726**	**0**	**0**	**0**	**0**	**1,443,726**	**4,344,140**

Appendix G
Intersection Capacity Worksheets

HCM 2010 Signalized Intersection Summary
3: Finland Blvd & Saxon Blvd

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	552	22	31	2077	12	131	9	19	17	13	267
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	190.0	190.0	186.3	190.0
Lanes	1	2	0	1	2	0	1	1	0	0	1	0
Cap, veh/h	68	2288	91	43	2325	14	242	71	157	163	112	0
Arrive On Green	0.04	0.64	0.64	0.03	0.84	0.84	0.14	0.14	0.14	0.14	0.14	0.00
Sat Flow, veh/h	1774	3560	141	1774	3700	22	1394	515	1145	774	814	0
Grp Volume(v), veh/h	53	304	300	33	1100	1100	138	0	29	32	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1838	1774	1863	1859	1394	0	1661	1588	0	0
Q Serve(g_s), s	2.9	6.9	6.9	1.8	44.8	45.2	9.6	0.0	1.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.9	6.9	6.9	1.8	44.8	45.2	11.1	0.0	1.5	1.5	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.01	1.00		0.69	0.56		0.00
Lane Grp Cap(c), veh/h	68	1197	1181	43	1171	1168	242	0	228	274	0	0
V/C Ratio(X)	0.78	0.25	0.25	0.77	0.94	0.94	0.57	0.00	0.13	0.12	0.00	0.00
Avail Cap(c_a), veh/h	152	1197	1181	152	1171	1168	465	0	493	522	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	47.4	7.6	7.6	47.9	6.7	6.7	42.5	0.0	37.7	37.7	0.0	0.0
Incr Delay (d2), s/veh	17.1	0.1	0.1	2.7	2.0	2.1	2.1	0.0	0.2	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	2.9	4.9	4.9	1.3	8.1	8.2	6.3	0.0	1.2	1.3	0.0	0.0
Lane Grp Delay (d), s/veh	64.5	7.7	7.7	50.6	8.7	8.8	44.6	0.0	37.9	37.9	0.0	0.0
Lane Grp LOS	E	A	A	D	A	A	D		D	D		
Approach Vol, veh/h		657			2232			167			32	
Approach Delay, s/veh		12.3			9.4			43.5			37.9	
Approach LOS		B			A			D			D	

Timer												
Assigned Phs	7	4		3	8			2			6	
Phs Duration (G+Y+Rc), s	10.3	70.4		8.9	69.0			20.1			20.1	
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5			6.5			6.5	
Max Green Setting (Gmax), s	8.5	62.5		8.5	62.5			29.5			29.5	
Max Q Clear Time (g_c+I1), s	4.9	8.9		3.8	47.2			13.1			3.5	
Green Ext Time (p_c), s	0.0	40.3		0.0	13.8			0.6			0.7	

Intersection Summary	
HCM 2010 Ctrl Delay	12.1
HCM 2010 LOS	B

Notes

HCM 2010 Signalized Intersection Summary
6: Normandy Blvd & Saxon Blvd

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	138	344	98	44	1276	62	257	134	15	86	145	507
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3
Lanes	1	2	1	1	2	0	1	1	0	1	1	1
Cap, veh/h	210	1806	767	506	1597	77	317	279	32	280	169	143
Arrive On Green	0.06	0.48	0.48	0.03	0.45	0.45	0.14	0.17	0.17	0.06	0.09	0.09
Sat Flow, veh/h	1774	3725	1583	1774	3525	170	1774	1643	186	1774	1863	1583
Grp Volume(v), veh/h	145	362	103	46	709	699	271	0	157	91	153	369
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1833	1774	0	1830	1774	1863	1583
Q Serve(g_s), s	4.7	6.4	4.2	1.6	38.9	39.1	14.1	0.0	9.0	5.3	9.4	10.5
Cycle Q Clear(g_c), s	4.7	6.4	4.2	1.6	38.9	39.1	14.1	0.0	9.0	5.3	9.4	10.5
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	210	1806	767	506	844	830	317	0	310	280	169	143
V/C Ratio(X)	0.69	0.20	0.13	0.09	0.84	0.84	0.85	0.00	0.51	0.33	0.91	2.57
Avail Cap(c_a), veh/h	267	1806	767	619	844	830	323	0	310	334	169	143
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	17.0	16.5	16.1	28.0	28.0	33.1	0.0	43.7	44.0	52.2	52.7
Incr Delay (d2), s/veh	5.1	0.1	0.1	0.1	9.8	10.1	19.3	0.0	5.8	0.7	48.2	727.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	8.0	5.1	0.0	1.2	26.9	26.7	14.8	0.0	8.2	4.3	11.0	52.3
Lane Grp Delay (d), s/veh	29.9	17.1	16.5	16.2	37.8	38.2	52.4	0.0	49.5	44.7	100.4	780.1
Lane Grp LOS	C	B	B	B	D	D	D		D	D	F	F
Approach Vol, veh/h		610			1454			428			613	
Approach Delay, s/veh		20.0			37.3			51.3			501.3	
Approach LOS		C			D			D			F	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	14.3	63.7		10.6	60.0		23.6	27.1		14.5	18.0	
Change Period (Y+Rc), s	7.5	7.5		7.5	7.5		7.5	7.5		7.5	7.5	
Max Green Setting (Gmax), s	10.5	52.5		10.5	52.5		16.5	16.5		10.5	10.5	
Max Q Clear Time (g_c+I1), s	6.7	8.4		3.6	41.1		16.1	11.0		7.3	12.5	
Green Ext Time (p_c), s	0.1	18.0		0.0	8.1		0.0	1.5		0.0	0.0	

Intersection Summary	
HCM 2010 Ctrl Delay	127.4
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
16: Tivoli Dr & Saxon Blvd

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	130	187	47	10	492	7	81	59	14	31	77	508
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	190.0
Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Cap, veh/h	264	870	740	451	590	8	227	553	134	553	113	508
Arrive On Green	0.07	0.47	0.47	0.32	0.32	0.32	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1774	1863	1583	1129	1834	25	941	1450	351	1317	296	1331
Grp Volume(v), veh/h	137	197	49	11	0	525	85	0	77	33	0	445
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1129	0	1858	941	0	1801	1317	0	1628
Q Serve(g_s), s	4.0	5.2	1.4	0.6	0.0	22.0	7.0	0.0	2.3	1.4	0.0	19.2
Cycle Q Clear(g_c), s	4.0	5.2	1.4	0.6	0.0	22.0	26.2	0.0	2.3	3.7	0.0	19.2
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.19	1.00		0.82
Lane Grp Cap(c), veh/h	264	870	740	451	0	598	227	0	687	553	0	621
V/C Ratio(X)	0.52	0.23	0.07	0.02	0.00	0.88	0.37	0.00	0.11	0.06	0.00	0.72
Avail Cap(c_a), veh/h	543	1263	1074	511	0	698	227	0	687	553	0	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.3	13.1	12.1	19.2	0.0	26.5	32.9	0.0	16.5	17.7	0.0	21.7
Incr Delay (d2), s/veh	1.6	0.1	0.0	0.0	0.0	11.0	4.7	0.0	0.3	0.2	0.0	7.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	3.3	4.0	0.9	0.3	0.0	17.0	3.4	0.0	1.8	0.8	0.0	13.3
Lane Grp Delay (d), s/veh	20.8	13.2	12.1	19.2	0.0	37.5	37.6	0.0	16.8	17.9	0.0	28.7
Lane Grp LOS	C	B	B	B		D	D		B	B		C
Approach Vol, veh/h		383			536			162			478	
Approach Delay, s/veh		15.8			37.1			27.7			27.9	
Approach LOS		B			D			C			C	

Timer												
Assigned Phs	7	4			8			2			6	
Phs Duration (G+Y+Rc), s	12.0	44.6			32.6			38.0			38.0	
Change Period (Y+Rc), s	6.0	6.0			6.0			6.5			6.5	
Max Green Setting (Gmax), s	19.0	56.0			31.0			31.5			31.5	
Max Q Clear Time (g_c+I1), s	6.0	7.2			24.0			28.2			21.2	
Green Ext Time (p_c), s	0.3	5.1			2.5			1.2			2.7	

Intersection Summary	
HCM 2010 Ctrl Delay	28.1
HCM 2010 LOS	C

Notes

HCM 2010 Signalized Intersection Summary
20: Providence & Tivoli Dr

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	156	15	43	8	28	8	64	219	13	24	283	433
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	190.0	186.3	190.0	190.0	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3
Lanes	0	1	0	0	1	0	1	1	0	1	1	1
Cap, veh/h	230	22	0	45	164	45	596	1147	69	801	1228	1044
Arrive On Green	0.14	0.14	0.00	0.14	0.14	0.14	0.66	0.66	0.66	0.66	0.66	0.66
Sat Flow, veh/h	1623	158	0	318	1154	318	810	1739	105	1130	1863	1583
Grp Volume(v), veh/h	180	0	0	45	0	0	67	0	245	25	298	309
Grp Sat Flow(s),veh/h/ln	1782	0	0	1791	0	0	810	0	1844	1130	1863	1583
Q Serve(g_s), s	6.1	0.0	0.0	1.4	0.0	0.0	2.3	0.0	3.3	0.6	4.1	5.2
Cycle Q Clear(g_c), s	6.1	0.0	0.0	1.4	0.0	0.0	6.4	0.0	3.3	3.8	4.1	5.2
Prop In Lane	0.91		0.00	0.18		0.18	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	253	0	0	254	0	0	596	0	1216	801	1228	1044
V/C Ratio(X)	0.71	0.00	0.00	0.18	0.00	0.00	0.11	0.00	0.20	0.03	0.24	0.30
Avail Cap(c_a), veh/h	679	0	0	455	0	0	596	0	1216	801	1228	1044
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	0.0	0.0	23.8	0.0	0.0	5.6	0.0	4.2	5.0	4.3	4.5
Incr Delay (d2), s/veh	3.7	0.0	0.0	0.3	0.0	0.0	0.4	0.0	0.4	0.1	0.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	5.0	0.0	0.0	1.1	0.0	0.0	0.8	0.0	2.3	0.3	2.8	3.2
Lane Grp Delay (d), s/veh	29.5	0.0	0.0	24.1	0.0	0.0	6.0	0.0	4.6	5.0	4.8	5.3
Lane Grp LOS	C			C			A		A	A	A	A
Approach Vol, veh/h		180			45			312			632	
Approach Delay, s/veh		29.5			24.1			4.9			5.0	
Approach LOS		C			C			A			A	

Timer				
Assigned Phs	4	8	2	6
Phs Duration (G+Y+Rc), s	14.9	14.9	48.0	48.0
Change Period (Y+Rc), s	6.0	6.0	6.5	6.5
Max Green Setting (Gmax), s	24.0	16.0	41.5	41.5
Max Q Clear Time (g_c+I1), s	8.1	3.4	8.4	7.2
Green Ext Time (p_c), s	1.0	0.9	5.2	5.2

Intersection Summary	
HCM 2010 Ctrl Delay	9.5
HCM 2010 LOS	A

Notes

HCM 2010 TWSC
9: Sterling Silver Blvd & Saxon Blvd

3/5/2014

Intersection	
Intersection Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	525	4	6	1266	8	6	0	9	11	1	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	300	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	553	4	6	1333	8	6	0	9	12	1	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1341	0	0	557	0	0	1257	1932	278	1648	1929	671
Stage 1	-	-	-	-	-	-	578	578	-	1349	1349	-
Stage 2	-	-	-	-	-	-	679	1354	-	299	580	-
Follow-up Headway	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Capacity-1 Maneuver	510	-	-	1010	-	-	128	65	719	65	66	399
Stage 1	-	-	-	-	-	-	468	499	-	159	217	-
Stage 2	-	-	-	-	-	-	408	216	-	685	498	-
Time blocked-Platoon, %		-	-		-	-						
Mov Capacity-1 Maneuver	510	-	-	1010	-	-	114	63	719	63	64	399
Mov Capacity-2 Maneuver	-	-	-	-	-	-	235	154	-	130	160	-
Stage 1	-	-	-	-	-	-	457	487	-	155	216	-
Stage 2	-	-	-	-	-	-	371	215	-	660	486	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	14.5	20.6
HCM LOS			B	C

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	394	510	-	-	1010	-	-	130	318
HCM Lane V/C Ratio	0.04	0.023	-	-	0.006	-	-	0.059	0.118
HCM Control Delay (s)	14.5	12.223	-	-	8.587	-	-	34.4	17.8
HCM Lane LOS	B	B			A			D	C
HCM 95th %tile Q(veh)	0.125	0.07	-	-	0.019	-	-	0.187	0.397

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

HCM 2010 TWSC
23: Sterling Silver Blvd & Alabaster Way

3/5/2014

Intersection	
Intersection Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	2	0	1	0	13	0	0	37	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	2	0	1	0	14	0	0	39	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	53	53	39	53	53	14	39	0	0	14	0	0
Stage 1	39	39	-	14	14	-	-	-	-	-	-	-
Stage 2	14	14	-	39	39	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	946	838	1033	946	838	1066	1571	-	-	1604	-	-
Stage 1	976	862	-	1006	884	-	-	-	-	-	-	-
Stage 2	1006	884	-	976	862	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	945	838	1033	946	838	1066	1571	-	-	1604	-	-
Mov Capacity-2 Maneuver	945	838	-	946	838	-	-	-	-	-	-	-
Stage 1	976	862	-	1006	884	-	-	-	-	-	-	-
Stage 2	1005	884	-	976	862	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	8.7	0	0
HCM LOS	A	A		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1571	-	-	0	946	1015	1604	-	-
HCM Lane V/C Ratio	-	-	-	+	0.001	0.002	-	-	-
HCM Control Delay (s)	0	-	-	0	8.8	8.6	0	-	-
HCM Lane LOS	A			A	A	A	A		
HCM 95th %tile Q(veh)	0	-	-	+	0.004	0.005	0	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

HCM 2010 Signalized Intersection Summary
3: Finland Blvd & Saxon Blvd

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	54	594	24	33	2237	13	141	10	20	18	14	288
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	190.0	190.0	186.3	190.0
Lanes	1	2	0	1	2	0	1	1	0	0	1	0
Cap, veh/h	73	2262	90	44	2291	14	251	84	160	168	118	0
Arrive On Green	0.04	0.64	0.64	0.03	0.82	0.82	0.15	0.15	0.15	0.15	0.15	0.00
Sat Flow, veh/h	1774	3558	142	1774	3700	22	1393	574	1096	768	805	0
Grp Volume(v), veh/h	57	327	323	35	1185	1185	148	0	32	34	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1838	1774	1863	1859	1393	0	1669	1574	0	0
Q Serve(g_s), s	3.2	7.8	7.8	2.0	62.5	62.5	10.5	0.0	1.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.2	7.8	7.8	2.0	62.5	62.5	12.2	0.0	1.7	1.7	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.01	1.00		0.66	0.56		0.00
Lane Grp Cap(c), veh/h	73	1184	1168	44	1153	1151	251	0	244	286	0	0
V/C Ratio(X)	0.78	0.28	0.28	0.80	1.03	1.03	0.59	0.00	0.13	0.12	0.00	0.00
Avail Cap(c_a), veh/h	149	1184	1168	149	1153	1151	455	0	488	512	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	47.9	8.1	8.1	48.5	8.9	8.9	42.8	0.0	37.5	37.5	0.0	0.0
Incr Delay (d2), s/veh	15.9	0.1	0.1	3.0	16.1	16.9	2.2	0.0	0.2	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	3.1	5.5	5.4	1.4	18.5	18.8	6.8	0.0	1.3	1.4	0.0	0.0
Lane Grp Delay (d), s/veh	63.8	8.2	8.2	51.6	25.0	25.8	45.0	0.0	37.7	37.7	0.0	0.0
Lane Grp LOS	E	A	A	D	F	F	D		D	D		
Approach Vol, veh/h		707			2404			180			34	
Approach Delay, s/veh		12.7			25.8			43.7			37.7	
Approach LOS		B			C			D			D	

Timer												
Assigned Phs	7	4		3	8			2			6	
Phs Duration (G+Y+Rc), s	10.7	70.7		9.0	69.0			21.3			21.3	
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5			6.5			6.5	
Max Green Setting (Gmax), s	8.5	62.5		8.5	62.5			29.5			29.5	
Max Q Clear Time (g_c+I1), s	5.2	9.8		4.0	64.5			14.2			3.7	
Green Ext Time (p_c), s	0.0	43.7		0.0	0.0			0.6			0.7	

Intersection Summary												
HCM 2010 Ctrl Delay			24.1									
HCM 2010 LOS			C									

Notes

HCM 2010 Signalized Intersection Summary
6: Normandy Blvd & Saxon Blvd

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	149	370	106	47	1374	67	277	144	16	93	156	546
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3
Lanes	1	2	1	1	2	0	1	1	0	1	1	1
Cap, veh/h	194	1804	767	489	1585	78	314	275	31	275	168	142
Arrive On Green	0.06	0.48	0.48	0.03	0.45	0.45	0.14	0.17	0.17	0.06	0.09	0.09
Sat Flow, veh/h	1774	3725	1583	1774	3523	172	1774	1646	184	1774	1863	1583
Grp Volume(v), veh/h	157	389	112	49	763	754	292	0	169	98	164	410
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1832	1774	0	1830	1774	1863	1583
Q Serve(g_s), s	5.1	7.0	4.6	1.7	44.5	44.9	15.5	0.0	9.9	5.8	10.3	10.5
Cycle Q Clear(g_c), s	5.1	7.0	4.6	1.7	44.5	44.9	15.5	0.0	9.9	5.8	10.3	10.5
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	194	1804	767	489	838	824	314	0	306	275	168	142
V/C Ratio(X)	0.81	0.22	0.15	0.10	0.91	0.92	0.93	0.00	0.55	0.36	0.98	2.88
Avail Cap(c_a), veh/h	244	1804	767	600	838	824	314	0	306	321	168	142
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.3	17.3	16.7	16.5	29.9	30.0	33.7	0.0	44.6	44.2	53.0	53.1
Incr Delay (d2), s/veh	14.4	0.1	0.1	0.1	15.7	16.4	32.9	0.0	7.0	0.8	64.1	864.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	9.2	5.7	0.0	1.3	31.5	31.6	17.1	0.0	8.9	4.8	12.5	60.0
Lane Grp Delay (d), s/veh	40.8	17.4	16.8	16.5	45.6	46.5	66.6	0.0	51.6	45.0	117.1	917.3
Lane Grp LOS	D	B	B	B	D	D	E		D	D	F	F
Approach Vol, veh/h		658			1566			461			672	
Approach Delay, s/veh		22.9			45.1			61.1			594.8	
Approach LOS		C			D			E			F	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	14.7	64.0		10.7	60.0		24.0	27.0		15.0	18.0	
Change Period (Y+Rc), s	7.5	7.5		7.5	7.5		7.5	7.5		7.5	7.5	
Max Green Setting (Gmax), s	10.5	52.5		10.5	52.5		16.5	16.5		10.5	10.5	
Max Q Clear Time (g_c+I1), s	7.1	9.0		3.7	46.9		17.5	11.9		7.8	12.5	
Green Ext Time (p_c), s	0.1	20.4		0.0	4.6		0.0	1.5		0.0	0.0	

Intersection Summary	
HCM 2010 Ctrl Delay	153.0
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
16: Tivoli Dr & Saxon Blvd

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	140	201	51	11	530	8	87	64	15	33	83	547
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	190.0
Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Cap, veh/h	257	899	764	458	616	9	173	539	129	530	107	496
Arrive On Green	0.08	0.48	0.48	0.34	0.34	0.34	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1774	1863	1583	1109	1832	26	901	1454	347	1310	288	1339
Grp Volume(v), veh/h	147	212	54	12	0	566	92	0	83	35	0	492
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1109	0	1858	901	0	1801	1310	0	1626
Q Serve(g_s), s	4.3	5.7	1.6	0.6	0.0	24.7	8.3	0.0	2.6	1.5	0.0	23.2
Cycle Q Clear(g_c), s	4.3	5.7	1.6	0.6	0.0	24.7	31.5	0.0	2.6	4.1	0.0	23.2
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.19	1.00		0.82
Lane Grp Cap(c), veh/h	257	899	764	458	0	625	173	0	667	530	0	603
V/C Ratio(X)	0.57	0.24	0.07	0.03	0.00	0.91	0.53	0.00	0.12	0.07	0.00	0.82
Avail Cap(c_a), veh/h	520	1227	1043	489	0	678	173	0	667	530	0	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.8	12.8	11.8	18.9	0.0	26.9	38.6	0.0	17.7	19.0	0.0	24.1
Incr Delay (d2), s/veh	2.0	0.1	0.0	0.0	0.0	15.1	11.3	0.0	0.4	0.2	0.0	11.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	4.0	4.2	1.0	0.3	0.0	19.5	4.4	0.0	2.1	0.9	0.0	16.1
Lane Grp Delay (d), s/veh	21.8	13.0	11.8	18.9	0.0	42.0	49.9	0.0	18.0	19.3	0.0	35.8
Lane Grp LOS	C	B	B	B		D	D		B	B		D
Approach Vol, veh/h		413			578			175			527	
Approach Delay, s/veh		16.0			41.5			34.8			34.7	
Approach LOS		B			D			C			C	

Timer												
Assigned Phs	7	4			8			2			6	
Phs Duration (G+Y+Rc), s	12.4	47.0			34.6			38.0			38.0	
Change Period (Y+Rc), s	6.0	6.0			6.0			6.5			6.5	
Max Green Setting (Gmax), s	19.0	56.0			31.0			31.5			31.5	
Max Q Clear Time (g_c+I1), s	6.3	7.7			26.7			33.5			25.2	
Green Ext Time (p_c), s	0.3	5.6			1.9			0.0			2.2	

Intersection Summary	
HCM 2010 Ctrl Delay	32.5
HCM 2010 LOS	C

Notes

HCM 2010 Signalized Intersection Summary
20: Providence & Tivoli Dr

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	168	16	46	9	30	9	69	236	14	26	305	466
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	190.0	186.3	190.0	190.0	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3
Lanes	0	1	0	0	1	0	1	1	0	1	1	1
Cap, veh/h	245	24	0	49	173	49	559	1135	69	775	1216	1033
Arrive On Green	0.15	0.15	0.00	0.15	0.15	0.15	0.65	0.65	0.65	0.65	0.65	0.65
Sat Flow, veh/h	1625	156	0	322	1145	322	768	1739	105	1112	1863	1583
Grp Volume(v), veh/h	194	0	0	50	0	0	73	0	263	27	321	344
Grp Sat Flow(s),veh/h/ln	1781	0	0	1790	0	0	768	0	1844	1112	1863	1583
Q Serve(g_s), s	6.6	0.0	0.0	1.6	0.0	0.0	2.8	0.0	3.7	0.6	4.6	6.1
Cycle Q Clear(g_c), s	6.6	0.0	0.0	1.6	0.0	0.0	7.4	0.0	3.7	4.3	4.6	6.1
Prop In Lane	0.91		0.00	0.18		0.18	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	269	0	0	270	0	0	559	0	1203	775	1216	1033
V/C Ratio(X)	0.72	0.00	0.00	0.19	0.00	0.00	0.13	0.00	0.22	0.03	0.26	0.33
Avail Cap(c_a), veh/h	672	0	0	450	0	0	559	0	1203	775	1216	1033
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	0.0	0.0	23.6	0.0	0.0	6.2	0.0	4.5	5.4	4.6	4.9
Incr Delay (d2), s/veh	3.6	0.0	0.0	0.3	0.0	0.0	0.5	0.0	0.4	0.1	0.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	5.3	0.0	0.0	1.2	0.0	0.0	0.9	0.0	2.6	0.3	3.4	3.9
Lane Grp Delay (d), s/veh	29.4	0.0	0.0	23.9	0.0	0.0	6.7	0.0	4.9	5.4	5.2	5.8
Lane Grp LOS	C			C			A		A	A	A	A
Approach Vol, veh/h		194			50			336			692	
Approach Delay, s/veh		29.4			23.9			5.3			5.5	
Approach LOS		C			C			A			A	

Timer				
Assigned Phs	4	8	2	6
Phs Duration (G+Y+Rc), s	15.6	15.6	48.0	48.0
Change Period (Y+Rc), s	6.0	6.0	6.5	6.5
Max Green Setting (Gmax), s	24.0	16.0	41.5	41.5
Max Q Clear Time (g_c+I1), s	8.6	3.6	9.4	8.1
Green Ext Time (p_c), s	1.1	1.0	5.7	5.7

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A

Notes

HCM 2010 TWSC
9: Sterling Silver Blvd & Saxon Blvd

3/5/2014

Intersection	
Intersection Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	565	4	6	1363	9	8	0	10	12	0	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	300	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	595	4	6	1435	9	8	0	11	13	0	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1444	0	0	599	0	0	1352	2079	299	1775	2076	722
Stage 1	-	-	-	-	-	-	622	622	-	1452	1452	-
Stage 2	-	-	-	-	-	-	730	1457	-	323	624	-
Follow-up Headway	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Capacity-1 Maneuver	465	-	-	974	-	-	109	53	697	52	53	369
Stage 1	-	-	-	-	-	-	441	477	-	137	194	-
Stage 2	-	-	-	-	-	-	380	193	-	663	476	-
Time blocked-Platoon, %		-	-		-	-						
Mov Capacity-1 Maneuver	465	-	-	974	-	-	96	51	697	50	51	369
Mov Capacity-2 Maneuver	-	-	-	-	-	-	213	136	-	112	143	-
Stage 1	-	-	-	-	-	-	429	464	-	133	193	-
Stage 2	-	-	-	-	-	-	342	192	-	635	463	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	16	22.7
HCM LOS			C	C

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	347	465	-	-	974	-	-	112	296
HCM Lane V/C Ratio	0.055	0.027	-	-	0.006	-	-	0.075	0.132
HCM Control Delay (s)	16	12.958	-	-	8.72	-	-	39.7	19
HCM Lane LOS	C	B			A			E	C
HCM 95th %tile Q(veh)	0.173	0.084	-	-	0.02	-	-	0.239	0.448

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

HCM 2010 TWSC
23: Sterling Silver Blvd & Alabaster Way

3/5/2014

Intersection	
Intersection Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	2	0	1	0	13	0	0	37	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	2	0	1	0	14	0	0	39	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	53	53	39	53	53	14	39	0	0	14	0	0
Stage 1	39	39	-	14	14	-	-	-	-	-	-	-
Stage 2	14	14	-	39	39	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	946	838	1033	946	838	1066	1571	-	-	1604	-	-
Stage 1	976	862	-	1006	884	-	-	-	-	-	-	-
Stage 2	1006	884	-	976	862	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	945	838	1033	946	838	1066	1571	-	-	1604	-	-
Mov Capacity-2 Maneuver	945	838	-	946	838	-	-	-	-	-	-	-
Stage 1	976	862	-	1006	884	-	-	-	-	-	-	-
Stage 2	1005	884	-	976	862	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	8.7	0	0
HCM LOS	A	A		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1571	-	-	0	946	1015	1604	-	-
HCM Lane V/C Ratio	-	-	-	+	0.001	0.002	-	-	-
HCM Control Delay (s)	0	-	-	0	8.8	8.6	0	-	-
HCM Lane LOS	A			A	A	A	A		
HCM 95th %tile Q(veh)	0	-	-	+	0.004	0.005	0	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

HCM 2010 Signalized Intersection Summary
3: Finland Blvd & Saxon Blvd

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	54	628	24	33	2249	13	141	10	20	18	14	288
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	190.0	190.0	186.3	190.0
Lanes	1	2	0	1	2	0	1	1	0	0	1	0
Cap, veh/h	73	2268	86	44	2291	14	251	84	160	168	118	0
Arrive On Green	0.04	0.64	0.64	0.03	0.82	0.82	0.15	0.15	0.15	0.15	0.15	0.00
Sat Flow, veh/h	1774	3567	135	1774	3700	22	1393	574	1096	768	805	0
Grp Volume(v), veh/h	57	345	341	35	1191	1191	148	0	32	34	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1839	1774	1863	1859	1393	0	1669	1574	0	0
Q Serve(g_s), s	3.2	8.4	8.4	2.0	62.5	62.5	10.5	0.0	1.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.2	8.4	8.4	2.0	62.5	62.5	12.2	0.0	1.7	1.7	0.0	0.0
Prop In Lane	1.00		0.07	1.00		0.01	1.00		0.66	0.56		0.00
Lane Grp Cap(c), veh/h	73	1184	1169	44	1153	1151	251	0	244	286	0	0
V/C Ratio(X)	0.78	0.29	0.29	0.80	1.03	1.03	0.59	0.00	0.13	0.12	0.00	0.00
Avail Cap(c_a), veh/h	149	1184	1169	149	1153	1151	455	0	488	512	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	47.9	8.2	8.2	48.5	8.9	8.9	42.8	0.0	37.5	37.5	0.0	0.0
Incr Delay (d2), s/veh	15.9	0.1	0.1	3.0	18.1	18.9	2.2	0.0	0.2	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	3.1	5.9	5.9	1.4	19.3	19.6	6.8	0.0	1.3	1.4	0.0	0.0
Lane Grp Delay (d), s/veh	63.8	8.3	8.4	51.6	27.0	27.8	45.0	0.0	37.7	37.7	0.0	0.0
Lane Grp LOS	E	A	A	D	F	F	D		D	D		
Approach Vol, veh/h		743			2416			180			34	
Approach Delay, s/veh		12.6			27.7			43.7			37.7	
Approach LOS		B			C			D			D	

Timer												
Assigned Phs	7	4		3	8			2			6	
Phs Duration (G+Y+Rc), s	10.7	70.7		9.0	69.0			21.3			21.3	
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5			6.5			6.5	
Max Green Setting (Gmax), s	8.5	62.5		8.5	62.5			29.5			29.5	
Max Q Clear Time (g_c+I1), s	5.2	10.4		4.0	64.5			14.2			3.7	
Green Ext Time (p_c), s	0.0	43.9		0.0	0.0			0.6			0.7	

Intersection Summary												
HCM 2010 Ctrl Delay			25.3									
HCM 2010 LOS			C									

Notes

HCM 2010 Signalized Intersection Summary
6: Normandy Blvd & Saxon Blvd

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	149	404	106	53	1386	73	277	144	35	112	156	546
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3
Lanes	1	2	1	1	2	0	1	1	0	1	1	1
Cap, veh/h	190	1799	764	473	1578	83	314	226	55	263	168	142
Arrive On Green	0.06	0.48	0.48	0.03	0.45	0.45	0.14	0.16	0.16	0.08	0.09	0.09
Sat Flow, veh/h	1774	3725	1583	1774	3508	185	1774	1448	352	1774	1863	1583
Grp Volume(v), veh/h	157	425	112	56	773	763	292	0	189	118	164	410
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1830	1774	0	1801	1774	1863	1583
Q Serve(g_s), s	5.2	7.8	4.6	2.0	45.5	46.0	15.8	0.0	11.6	6.9	10.3	10.5
Cycle Q Clear(g_c), s	5.2	7.8	4.6	2.0	45.5	46.0	15.8	0.0	11.6	6.9	10.3	10.5
Prop In Lane	1.00		1.00	1.00		0.10	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	190	1799	764	473	838	823	314	0	281	263	168	142
V/C Ratio(X)	0.82	0.24	0.15	0.12	0.92	0.93	0.93	0.00	0.67	0.45	0.98	2.88
Avail Cap(c_a), veh/h	240	1799	764	581	838	823	314	0	281	289	168	142
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	17.6	16.8	16.5	30.2	30.3	34.6	0.0	46.4	43.6	53.0	53.1
Incr Delay (d2), s/veh	16.0	0.1	0.1	0.1	17.1	18.0	32.9	0.0	12.2	1.2	64.2	864.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	9.3	6.2	0.0	1.5	32.5	32.6	17.1	0.0	10.3	5.7	12.5	60.0
Lane Grp Delay (d), s/veh	42.5	17.7	16.9	16.6	47.3	48.3	67.5	0.0	58.6	44.8	117.2	917.5
Lane Grp LOS	D	B	B	B	D	D	E		E	D	F	F
Approach Vol, veh/h		694			1592			481			692	
Approach Delay, s/veh		23.2			46.7			64.0			579.0	
Approach LOS		C			D			E			F	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	14.7	63.9		10.9	60.0		24.0	25.7		16.3	18.0	
Change Period (Y+Rc), s	7.5	7.5		7.5	7.5		7.5	7.5		7.5	7.5	
Max Green Setting (Gmax), s	10.5	52.5		10.5	52.5		16.5	16.5		10.5	10.5	
Max Q Clear Time (g_c+I1), s	7.2	9.8		4.0	48.0		17.8	13.6		8.9	12.5	
Green Ext Time (p_c), s	0.1	21.1		0.0	3.9		0.0	1.1		0.0	0.0	

Intersection Summary	
HCM 2010 Ctrl Delay	150.9
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
16: Tivoli Dr & Saxon Blvd

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	148	212	56	11	561	8	100	64	15	33	83	572
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	190.0
Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Cap, veh/h	250	918	781	461	635	9	140	528	126	518	99	490
Arrive On Green	0.08	0.49	0.49	0.35	0.35	0.35	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1774	1863	1583	1093	1834	25	880	1454	347	1310	273	1351
Grp Volume(v), veh/h	156	223	59	12	0	599	105	0	83	35	0	518
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1093	0	1858	880	0	1801	1310	0	1624
Q Serve(g_s), s	4.6	6.0	1.7	0.6	0.0	27.0	5.6	0.0	2.7	1.6	0.0	25.9
Cycle Q Clear(g_c), s	4.6	6.0	1.7	0.6	0.0	27.0	31.5	0.0	2.7	4.3	0.0	25.9
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.19	1.00		0.83
Lane Grp Cap(c), veh/h	250	918	781	461	0	643	140	0	654	518	0	589
V/C Ratio(X)	0.62	0.24	0.08	0.03	0.00	0.93	0.75	0.00	0.13	0.07	0.00	0.88
Avail Cap(c_a), veh/h	500	1202	1022	473	0	664	140	0	654	518	0	589
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.2	12.7	11.6	18.8	0.0	27.4	41.9	0.0	18.5	19.9	0.0	25.9
Incr Delay (d2), s/veh	2.6	0.1	0.0	0.0	0.0	19.7	30.6	0.0	0.4	0.3	0.0	16.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	6.2	4.5	1.1	0.3	0.0	21.5	6.2	0.0	2.2	0.9	0.0	18.5
Lane Grp Delay (d), s/veh	22.7	12.8	11.6	18.8	0.0	47.1	72.4	0.0	18.9	20.1	0.0	42.8
Lane Grp LOS	C	B	B	B		D	E		B	C		D
Approach Vol, veh/h		438			611			188			553	
Approach Delay, s/veh		16.2			46.5			48.8			41.3	
Approach LOS		B			D			D			D	

Timer												
Assigned Phs	7	4			8			2			6	
Phs Duration (G+Y+Rc), s	12.8	48.8			36.0			38.0			38.0	
Change Period (Y+Rc), s	6.0	6.0			6.0			6.5			6.5	
Max Green Setting (Gmax), s	19.0	56.0			31.0			31.5			31.5	
Max Q Clear Time (g_c+I1), s	6.6	8.0			29.0			33.5			27.9	
Green Ext Time (p_c), s	0.3	6.1			1.0			0.0			1.5	

Intersection Summary	
HCM 2010 Ctrl Delay	37.7
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
20: Providence & Tivoli Dr

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	176	16	46	9	30	9	70	236	14	26	305	490
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	190.0	186.3	190.0	190.0	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3
Lanes	0	1	0	0	1	0	1	1	0	1	1	1
Cap, veh/h	254	23	0	50	178	50	544	1128	68	769	1209	1027
Arrive On Green	0.16	0.16	0.00	0.16	0.16	0.16	0.65	0.65	0.65	0.65	0.65	0.65
Sat Flow, veh/h	1631	150	0	322	1145	322	750	1739	105	1112	1863	1583
Grp Volume(v), veh/h	202	0	0	50	0	0	74	0	263	27	321	369
Grp Sat Flow(s),veh/h/ln	1781	0	0	1790	0	0	750	0	1844	1112	1863	1583
Q Serve(g_s), s	6.9	0.0	0.0	1.6	0.0	0.0	3.0	0.0	3.7	0.7	4.7	6.8
Cycle Q Clear(g_c), s	6.9	0.0	0.0	1.6	0.0	0.0	7.6	0.0	3.7	4.4	4.7	6.8
Prop In Lane	0.92		0.00	0.18		0.18	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	277	0	0	279	0	0	544	0	1197	769	1209	1027
V/C Ratio(X)	0.73	0.00	0.00	0.18	0.00	0.00	0.14	0.00	0.22	0.04	0.27	0.36
Avail Cap(c_a), veh/h	668	0	0	448	0	0	544	0	1197	769	1209	1027
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	0.0	0.0	23.5	0.0	0.0	6.4	0.0	4.6	5.5	4.8	5.1
Incr Delay (d2), s/veh	3.7	0.0	0.0	0.3	0.0	0.0	0.5	0.0	0.4	0.1	0.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	5.6	0.0	0.0	1.2	0.0	0.0	1.0	0.0	2.6	0.3	3.4	4.2
Lane Grp Delay (d), s/veh	29.4	0.0	0.0	23.8	0.0	0.0	6.9	0.0	5.0	5.6	5.3	6.1
Lane Grp LOS	C			C			A		A	A	A	A
Approach Vol, veh/h		202			50			337			717	
Approach Delay, s/veh		29.4			23.8			5.4			5.7	
Approach LOS		C			C			A			A	

Timer				
Assigned Phs	4	8	2	6
Phs Duration (G+Y+Rc), s	16.0	16.0	48.0	48.0
Change Period (Y+Rc), s	6.0	6.0	6.5	6.5
Max Green Setting (Gmax), s	24.0	16.0	41.5	41.5
Max Q Clear Time (g_c+I1), s	8.9	3.6	9.6	8.8
Green Ext Time (p_c), s	1.2	1.1	5.9	5.9

Intersection Summary	
HCM 2010 Ctrl Delay	10.0
HCM 2010 LOS	B

Notes

HCM 2010 TWSC
9: Sterling Silver Blvd & Saxon Blvd

3/5/2014

Intersection	
Intersection Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	76	579	4	6	1396	35	8	0	10	31	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	300	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	80	609	4	6	1469	37	8	0	11	33	0	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1506	0	0	614	0	0	1519	2291	307	1966	2275	753
Stage 1	-	-	-	-	-	-	772	772	-	1501	1501	-
Stage 2	-	-	-	-	-	-	747	1519	-	465	774	-
Follow-up Headway	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Capacity-1 Maneuver	441	-	-	961	-	-	82	39	689	37	40	352
Stage 1	-	-	-	-	-	-	358	407	-	128	183	-
Stage 2	-	-	-	-	-	-	371	180	-	547	406	-
Time blocked-Platoon, %		-	-		-	-						
Mov Capacity-1 Maneuver	441	-	-	961	-	-	60	32	689	# 31	33	352
Mov Capacity-2 Maneuver	-	-	-	-	-	-	146	79	-	85	120	-
Stage 1	-	-	-	-	-	-	293	333	-	105	182	-
Stage 2	-	-	-	-	-	-	314	179	-	441	332	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.7	0	19.9	35.5
HCM LOS			C	E

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	260	441	-	-	961	-	-	85	229
HCM Lane V/C Ratio	0.073	0.181	-	-	0.007	-	-	0.256	0.277
HCM Control Delay (s)	19.9	14.964	-	-	8.771	-	-	61.3	26.6
HCM Lane LOS	C	B			A			F	D
HCM 95th %tile Q(veh)	0.234	0.655	-	-	0.02	-	-	0.924	1.093

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

HCM 2010 TWSC
23: Sterling Silver Blvd & Alabaster Way

3/5/2014

Intersection	
Intersection Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	3	15	19	3	1	53	13	41	0	37	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	3	16	20	3	1	56	14	43	0	39	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	188	207	39	195	186	35	39	0	0	57	0	0
Stage 1	39	39	-	147	147	-	-	-	-	-	-	-
Stage 2	149	168	-	48	39	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	772	690	1033	764	708	1038	1571	-	-	1547	-	-
Stage 1	976	862	-	856	775	-	-	-	-	-	-	-
Stage 2	854	759	-	965	862	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	747	664	1033	728	682	1038	1571	-	-	1547	-	-
Mov Capacity-2 Maneuver	747	664	-	728	682	-	-	-	-	-	-	-
Stage 1	940	862	-	824	746	-	-	-	-	-	-	-
Stage 2	818	731	-	947	862	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.9	10	3.7	0
HCM LOS	A	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1571	-	-	945	728	735	1547	-	-
HCM Lane V/C Ratio	0.036	-	-	0.02	0.018	0.015	-	-	-
HCM Control Delay (s)	7.376	0	-	8.9	10	10	0	-	-
HCM Lane LOS	A	A		A	B	B	A		
HCM 95th %tile Q(veh)	0.11	-	-	0.061	0.056	0.045	0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

HCM 2010 Signalized Intersection Summary
3: Finland Blvd & Saxon Blvd

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	190	1999	62	79	1036	79	113	53	133	19	26	110
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	190.0	190.0	186.3	190.0
Lanes	1	2	0	1	2	0	1	1	0	0	1	0
Cap, veh/h	226	2175	67	104	1833	139	193	112	196	106	128	0
Arrive On Green	0.13	0.60	0.60	0.12	1.00	1.00	0.18	0.18	0.18	0.18	0.18	0.00
Sat Flow, veh/h	1774	3596	110	1774	3420	260	1378	609	1066	358	697	0
Grp Volume(v), veh/h	200	1085	1085	83	594	580	119	0	154	47	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1843	1774	1863	1817	1378	0	1675	1054	0	0
Q Serve(g_s), s	14.2	70.4	72.2	5.8	0.0	0.0	10.9	0.0	10.6	0.3	0.0	0.0
Cycle Q Clear(g_c), s	14.2	70.4	72.2	5.8	0.0	0.0	21.7	0.0	10.6	10.8	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.14	1.00		0.64	0.43		0.00
Lane Grp Cap(c), veh/h	226	1127	1115	104	999	974	193	0	308	234	0	0
V/C Ratio(X)	0.89	0.96	0.97	0.80	0.59	0.60	0.62	0.00	0.50	0.20	0.00	0.00
Avail Cap(c_a), veh/h	257	1127	1115	201	999	974	193	0	308	234	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.66	0.66	0.66	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	54.8	23.9	24.2	55.7	0.0	0.0	56.7	0.0	46.9	43.9	0.0	0.0
Incr Delay (d2), s/veh	26.5	19.2	21.1	8.9	1.7	1.8	5.8	0.0	1.3	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	12.8	46.0	47.3	5.0	0.9	0.9	7.5	0.0	8.1	2.5	0.0	0.0
Lane Grp Delay (d), s/veh	81.3	43.1	45.4	64.6	1.7	1.8	62.5	0.0	48.1	44.3	0.0	0.0
Lane Grp LOS	F	D	D	E	A	A	E		D	D		
Approach Vol, veh/h		2369			1257			273			47	
Approach Delay, s/veh		47.3			5.9			54.4			44.3	
Approach LOS		D			A			D			D	

Timer												
Assigned Phs	7	4		3	8			2			6	
Phs Duration (G+Y+Rc), s	22.8	83.8		14.0	75.0			30.0			30.0	
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5			6.5			6.5	
Max Green Setting (Gmax), s	18.5	72.5		14.5	68.5			23.5			23.5	
Max Q Clear Time (g_c+I1), s	16.2	74.2		7.8	2.0			23.7			12.8	
Green Ext Time (p_c), s	0.1	0.0		0.1	54.8			0.0			1.1	

Intersection Summary	
HCM 2010 Ctrl Delay	34.6
HCM 2010 LOS	C

Notes

HCM 2010 Signalized Intersection Summary
6: Normandy Blvd & Saxon Blvd

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	416	1376	292	36	659	51	221	183	35	95	187	241
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3
Lanes	1	2	1	1	2	0	1	1	0	1	1	1
Cap, veh/h	483	1737	738	129	1036	81	304	294	56	252	253	215
Arrive On Green	0.06	0.15	0.15	0.02	0.30	0.30	0.12	0.19	0.19	0.06	0.14	0.14
Sat Flow, veh/h	1774	3725	1583	1774	3413	265	1774	1520	291	1774	1863	1583
Grp Volume(v), veh/h	438	1448	307	38	379	369	233	0	230	100	197	89
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1816	1774	0	1811	1774	1863	1583
Q Serve(g_s), s	18.6	43.9	20.4	1.7	20.7	20.7	12.0	0.0	13.7	5.6	11.9	6.0
Cycle Q Clear(g_c), s	18.6	43.9	20.4	1.7	20.7	20.7	12.0	0.0	13.7	5.6	11.9	6.0
Prop In Lane	1.00		1.00	1.00		0.15	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	483	1737	738	129	565	551	304	0	350	252	253	215
V/C Ratio(X)	0.91	0.83	0.42	0.29	0.67	0.67	0.77	0.00	0.66	0.40	0.78	0.41
Avail Cap(c_a), veh/h	706	1802	766	306	565	551	304	0	350	252	253	215
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.2	44.9	34.9	30.0	35.4	35.4	33.1	0.0	43.4	40.3	48.6	46.1
Incr Delay (d2), s/veh	1.3	0.3	0.0	1.2	6.2	6.4	11.1	0.0	9.3	1.0	20.8	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	15.8	24.7	10.1	1.4	15.9	15.6	10.7	0.0	11.5	4.6	11.4	4.9
Lane Grp Delay (d), s/veh	36.5	45.2	35.0	31.2	41.6	41.8	44.3	0.0	52.7	41.3	69.4	51.9
Lane Grp LOS	D	D	C	C	D	D	D		D	D	E	D
Approach Vol, veh/h		2193			786			463			386	
Approach Delay, s/veh		42.0			41.2			48.4			58.1	
Approach LOS		D			D			D			E	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	29.3	61.8		10.3	42.8		21.0	30.0		14.3	23.3	
Change Period (Y+Rc), s	7.5	7.5		7.5	7.5		7.5	7.5		7.5	7.5	
Max Green Setting (Gmax), s	36.4	56.3		14.4	34.3		13.5	22.5		6.8	15.8	
Max Q Clear Time (g_c+I1), s	20.6	45.9		3.7	22.7		14.0	15.7		7.6	13.9	
Green Ext Time (p_c), s	1.2	8.4		0.0	9.7		0.0	1.5		0.0	0.5	

Intersection Summary	
HCM 2010 Ctrl Delay	44.2
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
16: Tivoli Dr & Saxon Blvd

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	502	557	67	8	250	10	47	99	21	31	92	245
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	190.0
Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Cap, veh/h	617	995	846	244	362	15	366	472	100	420	287	257
Arrive On Green	0.26	0.53	0.53	0.20	0.20	0.20	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	773	1775	74	1195	1492	316	1260	906	813
Grp Volume(v), veh/h	528	586	71	8	0	274	49	0	126	33	0	184
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	773	0	1850	1195	0	1807	1260	0	1719
Q Serve(g_s), s	18.2	17.9	1.8	0.7	0.0	11.6	2.7	0.0	4.3	1.7	0.0	6.9
Cycle Q Clear(g_c), s	18.2	17.9	1.8	0.7	0.0	11.6	9.6	0.0	4.3	5.9	0.0	6.9
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.17	1.00		0.47
Lane Grp Cap(c), veh/h	617	995	846	244	0	377	366	0	572	420	0	544
V/C Ratio(X)	0.86	0.59	0.08	0.03	0.00	0.73	0.13	0.00	0.22	0.08	0.00	0.34
Avail Cap(c_a), veh/h	857	1357	1154	289	0	486	366	0	572	420	0	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.5	13.3	9.5	26.8	0.0	31.2	25.6	0.0	21.0	23.2	0.0	21.9
Incr Delay (d2), s/veh	6.3	0.6	0.0	0.1	0.0	3.9	0.8	0.0	0.9	0.4	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	14.7	11.5	1.1	0.2	0.0	9.5	1.6	0.0	3.5	1.0	0.0	5.4
Lane Grp Delay (d), s/veh	23.8	13.8	9.6	26.9	0.0	35.0	26.3	0.0	21.9	23.6	0.0	23.6
Lane Grp LOS	C	B	A	C		D	C		C	C		C
Approach Vol, veh/h		1185			282			175			217	
Approach Delay, s/veh		18.0			34.8			23.1			23.6	
Approach LOS		B			C			C			C	

Timer												
Assigned Phs	7	4			8			2			6	
Phs Duration (G+Y+Rc), s	27.7	50.7			23.1			33.0			33.0	
Change Period (Y+Rc), s	6.0	6.0			6.0			6.5			6.5	
Max Green Setting (Gmax), s	33.0	61.0			22.0			26.5			26.5	
Max Q Clear Time (g_c+I1), s	20.2	19.9			13.6			11.6			8.9	
Green Ext Time (p_c), s	1.4	6.3			3.5			1.7			1.8	

Intersection Summary	
HCM 2010 Ctrl Delay	21.7
HCM 2010 LOS	C

Notes

HCM 2010 Signalized Intersection Summary
20: Providence & Tivoli Dr

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	499	19	32	10	11	20	37	377	9	8	392	283
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	190.0	186.3	190.0	190.0	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3
Lanes	0	1	0	0	1	0	1	1	0	1	1	1
Cap, veh/h	884	34	0	219	239	418	198	570	13	217	585	497
Arrive On Green	0.52	0.52	0.00	0.52	0.52	0.52	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1712	65	0	425	463	811	843	1814	41	975	1863	1583
Grp Volume(v), veh/h	545	0	0	44	0	0	39	0	406	8	413	151
Grp Sat Flow(s),veh/h/ln	1777	0	0	1698	0	0	843	0	1855	975	1863	1583
Q Serve(g_s), s	15.8	0.0	0.0	0.9	0.0	0.0	3.1	0.0	14.1	0.5	14.4	5.3
Cycle Q Clear(g_c), s	15.8	0.0	0.0	0.9	0.0	0.0	17.5	0.0	14.1	14.7	14.4	5.3
Prop In Lane	0.96		0.00	0.25		0.48	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	917	0	0	877	0	0	198	0	583	217	585	497
V/C Ratio(X)	0.59	0.00	0.00	0.05	0.00	0.00	0.20	0.00	0.70	0.04	0.71	0.30
Avail Cap(c_a), veh/h	917	0	0	877	0	0	248	0	693	275	696	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.4	0.0	0.0	8.8	0.0	0.0	30.0	0.0	22.2	28.6	22.3	19.1
Incr Delay (d2), s/veh	2.8	0.0	0.0	0.0	0.0	0.0	0.5	0.0	2.4	0.1	2.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	10.6	0.0	0.0	0.6	0.0	0.0	1.2	0.0	11.0	0.2	11.1	3.7
Lane Grp Delay (d), s/veh	15.3	0.0	0.0	8.9	0.0	0.0	30.5	0.0	24.6	28.7	24.9	19.5
Lane Grp LOS	B			A			C		C	C	C	B
Approach Vol, veh/h		545			44			445			572	
Approach Delay, s/veh		15.3			8.9			25.1			23.5	
Approach LOS		B			A			C			C	

Timer												
Assigned Phs		4			8			2			6	
Phs Duration (G+Y+Rc), s		44.0			44.0			29.6			29.6	
Change Period (Y+Rc), s		6.0			6.0			6.5			6.5	
Max Green Setting (Gmax), s		38.0			16.0			27.5			27.5	
Max Q Clear Time (g_c+I1), s		17.8			2.9			19.5			16.7	
Green Ext Time (p_c), s		3.8			3.1			3.6			4.4	

Intersection Summary												
HCM 2010 Ctrl Delay			20.8									
HCM 2010 LOS			C									

Notes

HCM 2010 TWSC
9: Sterling Silver Blvd & Saxon Blvd

3/5/2014

Intersection	
Intersection Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	33	1224	9	7	663	11	8	0	10	11	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	300	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	1288	9	7	698	12	8	0	11	12	0	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	709	0	0	1298	0	0	1727	2087	649	1432	2085	355
Stage 1	-	-	-	-	-	-	1363	1363	-	718	718	-
Stage 2	-	-	-	-	-	-	364	724	-	714	1367	-
Follow-up Headway	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Capacity-1 Maneuver	886	-	-	530	-	-	57	52	412	95	52	641
Stage 1	-	-	-	-	-	-	156	214	-	386	431	-
Stage 2	-	-	-	-	-	-	627	429	-	388	213	-
Time blocked-Platoon, %		-	-		-	-						
Mov Capacity-1 Maneuver	886	-	-	530	-	-	53	49	412	89	49	641
Mov Capacity-2 Maneuver	-	-	-	-	-	-	123	143	-	206	142	-
Stage 1	-	-	-	-	-	-	150	206	-	371	425	-
Stage 2	-	-	-	-	-	-	598	423	-	363	205	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	24.7	15.3
HCM LOS			C	C

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	202	886	-	-	530	-	-	206	483
HCM Lane V/C Ratio	0.094	0.039	-	-	0.014	-	-	0.037	0.052
HCM Control Delay (s)	24.7	9.229	-	-	11.888	-	-	23.2	12.9
HCM Lane LOS	C	A			B			C	B
HCM 95th %tile Q(veh)	0.306	0.122	-	-	0.042	-	-	0.116	0.163

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

HCM 2010 TWSC
23: Sterling Silver Blvd & Alabaster Way

3/5/2014

Intersection	
Intersection Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	7	0	1	0	35	0	0	23	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	7	0	1	0	37	0	0	24	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	61	61	24	61	61	37	24	0	0	37	0	0
Stage 1	24	24	-	37	37	-	-	-	-	-	-	-
Stage 2	37	37	-	24	24	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	934	830	1052	934	830	1035	1591	-	-	1574	-	-
Stage 1	994	875	-	978	864	-	-	-	-	-	-	-
Stage 2	978	864	-	994	875	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	933	830	1052	934	830	1035	1591	-	-	1574	-	-
Mov Capacity-2 Maneuver	933	830	-	934	830	-	-	-	-	-	-	-
Stage 1	994	875	-	978	864	-	-	-	-	-	-	-
Stage 2	977	864	-	994	875	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	8.9	0	0
HCM LOS	A	A		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1591	-	-	0	934	962	1574	-	-
HCM Lane V/C Ratio	-	-	-	+	0.005	0.004	-	-	-
HCM Control Delay (s)	0	-	-	0	8.9	8.8	0	-	-
HCM Lane LOS	A			A	A	A	A		
HCM 95th %tile Q(veh)	0	-	-	+	0.016	0.011	0	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

HCM 2010 Signalized Intersection Summary
3: Finland Blvd & Saxon Blvd

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	205	2153	67	85	1116	20	122	57	143	20	28	118
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	190.0	190.0	186.3	190.0
Lanes	1	2	0	1	2	0	1	1	0	0	1	0
Cap, veh/h	241	2172	68	110	1937	35	175	108	196	97	119	0
Arrive On Green	0.14	0.60	0.60	0.12	1.00	1.00	0.18	0.18	0.18	0.18	0.18	0.00
Sat Flow, veh/h	1774	3594	112	1774	3649	65	1375	594	1079	316	655	0
Grp Volume(v), veh/h	216	1169	1169	89	600	596	128	0	169	50	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1843	1774	1863	1851	1375	0	1672	971	0	0
Q Serve(g_s), s	15.5	78.0	78.0	6.3	0.0	0.0	11.1	0.0	11.9	0.5	0.0	0.0
Cycle Q Clear(g_c), s	15.5	78.0	78.0	6.3	0.0	0.0	23.5	0.0	11.9	12.4	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.04	1.00		0.64	0.42		0.00
Lane Grp Cap(c), veh/h	241	1126	1114	110	989	983	175	0	305	217	0	0
V/C Ratio(X)	0.90	1.04	1.05	0.81	0.61	0.61	0.73	0.00	0.55	0.23	0.00	0.00
Avail Cap(c_a), veh/h	254	1126	1114	199	989	983	175	0	305	217	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.52	0.52	0.52	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	54.9	25.5	25.5	55.7	0.0	0.0	59.3	0.0	48.0	45.1	0.0	0.0
Incr Delay (d2), s/veh	30.1	37.1	40.8	7.0	1.4	1.4	14.7	0.0	2.2	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	14.0	58.3	59.6	4.9	0.7	0.7	8.6	0.0	9.0	2.5	0.0	0.0
Lane Grp Delay (d), s/veh	85.0	62.7	66.3	62.7	1.4	1.4	74.0	0.0	50.2	45.6	0.0	0.0
Lane Grp LOS	F	F	F	E	A	A	E		D	D		
Approach Vol, veh/h		2553			1285			297			50	
Approach Delay, s/veh		66.2			5.7			60.5			45.6	
Approach LOS		E			A			E			D	

Timer												
Assigned Phs	7	4		3	8			2			6	
Phs Duration (G+Y+Rc), s	24.0	84.5		14.5	75.0			30.0			30.0	
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5			6.5			6.5	
Max Green Setting (Gmax), s	18.5	72.5		14.5	68.5			23.5			23.5	
Max Q Clear Time (g_c+I1), s	17.5	80.0		8.3	2.0			25.5			14.4	
Green Ext Time (p_c), s	0.1	0.0		0.1	58.3			0.0			1.1	

Intersection Summary	
HCM 2010 Ctrl Delay	47.0
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
6: Normandy Blvd & Saxon Blvd

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	448	1842	314	39	710	55	238	197	38	102	201	260
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3
Lanes	1	2	1	1	2	0	1	1	0	1	1	1
Cap, veh/h	514	1803	766	106	970	75	278	283	55	225	244	207
Arrive On Green	0.07	0.16	0.16	0.02	0.28	0.28	0.11	0.19	0.19	0.06	0.13	0.13
Sat Flow, veh/h	1774	3725	1583	1774	3414	265	1774	1518	293	1774	1863	1583
Grp Volume(v), veh/h	472	1939	331	41	407	398	251	0	247	107	212	109
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1816	1774	0	1811	1774	1863	1583
Q Serve(g_s), s	23.9	58.4	22.8	2.0	24.2	24.2	13.5	0.0	15.5	6.3	13.5	7.8
Cycle Q Clear(g_c), s	23.9	58.4	22.8	2.0	24.2	24.2	13.5	0.0	15.5	6.3	13.5	7.8
Prop In Lane	1.00		1.00	1.00		0.15	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	514	1803	766	106	529	516	278	0	338	225	244	207
V/C Ratio(X)	0.92	1.08	0.43	0.39	0.77	0.77	0.90	0.00	0.73	0.48	0.87	0.53
Avail Cap(c_a), veh/h	651	1803	766	274	529	516	278	0	338	225	244	207
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.7	50.7	35.7	34.3	39.6	39.6	36.2	0.0	46.2	42.8	51.4	48.9
Incr Delay (d2), s/veh	1.9	35.3	0.0	2.3	10.3	10.6	29.9	0.0	13.1	1.6	31.9	9.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	17.7	44.4	11.3	2.4	18.6	18.2	15.3	0.0	13.1	5.2	13.3	6.6
Lane Grp Delay (d), s/veh	44.6	86.0	35.8	36.6	49.9	50.2	66.0	0.0	59.4	44.3	83.3	58.2
Lane Grp LOS	D	F	D	D	D	D	E		E	D	F	E
Approach Vol, veh/h		2742			846			498			428	
Approach Delay, s/veh		72.8			49.4			62.7			67.2	
Approach LOS		E			D			E			E	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	34.6	65.9		10.5	41.8		21.0	30.0		14.3	23.3	
Change Period (Y+Rc), s	7.5	7.5		7.5	7.5		7.5	7.5		7.5	7.5	
Max Green Setting (Gmax), s	36.4	56.3		14.4	34.3		13.5	22.5		6.8	15.8	
Max Q Clear Time (g_c+I1), s	25.9	60.4		4.0	26.2		15.5	17.5		8.3	15.5	
Green Ext Time (p_c), s	1.1	0.0		0.0	7.6		0.0	1.3		0.0	0.1	

Intersection Summary	
HCM 2010 Ctrl Delay	66.8
HCM 2010 LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
16: Tivoli Dr & Saxon Blvd

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	541	600	72	9	269	11	51	107	23	33	99	264
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	190.0
Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Cap, veh/h	632	1029	874	238	373	16	323	453	96	391	256	264
Arrive On Green	0.27	0.55	0.55	0.21	0.21	0.21	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	738	1774	75	1166	1490	317	1247	843	867
Grp Volume(v), veh/h	569	632	76	9	0	295	54	0	137	35	0	211
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	738	0	1849	1166	0	1807	1247	0	1710
Q Serve(g_s), s	20.3	20.0	2.0	0.8	0.0	13.1	3.4	0.0	5.0	1.9	0.0	8.5
Cycle Q Clear(g_c), s	20.3	20.0	2.0	0.8	0.0	13.1	11.9	0.0	5.0	6.9	0.0	8.5
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.18	1.00		0.51
Lane Grp Cap(c), veh/h	632	1029	874	238	0	389	323	0	550	391	0	520
V/C Ratio(X)	0.90	0.61	0.09	0.04	0.00	0.76	0.17	0.00	0.25	0.09	0.00	0.41
Avail Cap(c_a), veh/h	820	1304	1109	269	0	467	323	0	550	391	0	520
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.7	13.2	9.2	27.5	0.0	32.3	28.8	0.0	22.8	25.4	0.0	24.1
Incr Delay (d2), s/veh	10.7	0.6	0.0	0.1	0.0	5.8	1.1	0.0	1.1	0.5	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	20.0	12.7	1.2	0.3	0.0	10.6	1.9	0.0	4.1	1.1	0.0	6.8
Lane Grp Delay (d), s/veh	28.4	13.8	9.2	27.6	0.0	38.1	29.9	0.0	23.9	25.9	0.0	26.4
Lane Grp LOS	C	B	A	C		D	C		C	C		C
Approach Vol, veh/h		1277			304			191			246	
Approach Delay, s/veh		20.1			37.8			25.6			26.3	
Approach LOS		C			D			C			C	

Timer												
Assigned Phs	7	4			8			2			6	
Phs Duration (G+Y+Rc), s	29.8	54.1			24.3			33.0			33.0	
Change Period (Y+Rc), s	6.0	6.0			6.0			6.5			6.5	
Max Green Setting (Gmax), s	33.0	61.0			22.0			26.5			26.5	
Max Q Clear Time (g_c+I1), s	22.3	22.0			15.1			13.9			10.5	
Green Ext Time (p_c), s	1.5	7.0			3.3			1.8			2.0	

Intersection Summary	
HCM 2010 Ctrl Delay	24.0
HCM 2010 LOS	C

Notes

HCM 2010 Signalized Intersection Summary
20: Providence & Tivoli Dr

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	537	20	34	11	12	22	40	406	10	9	422	305
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	190.0	186.3	190.0	190.0	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3
Lanes	0	1	0	0	1	0	1	1	0	1	1	1
Cap, veh/h	867	32	0	215	233	412	190	593	15	209	611	519
Arrive On Green	0.51	0.51	0.00	0.51	0.51	0.51	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1713	64	0	424	460	814	802	1808	47	947	1863	1583
Grp Volume(v), veh/h	586	0	0	48	0	0	42	0	438	9	444	174
Grp Sat Flow(s),veh/h/ln	1777	0	0	1698	0	0	802	0	1855	947	1863	1583
Q Serve(g_s), s	18.3	0.0	0.0	1.1	0.0	0.0	3.7	0.0	15.6	0.6	15.8	6.2
Cycle Q Clear(g_c), s	18.3	0.0	0.0	1.1	0.0	0.0	19.5	0.0	15.6	16.2	15.8	6.2
Prop In Lane	0.96		0.00	0.25		0.48	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	899	0	0	859	0	0	190	0	608	209	611	519
V/C Ratio(X)	0.65	0.00	0.00	0.06	0.00	0.00	0.22	0.00	0.72	0.04	0.73	0.34
Avail Cap(c_a), veh/h	899	0	0	859	0	0	221	0	679	246	682	580
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.7	0.0	0.0	9.4	0.0	0.0	30.9	0.0	22.2	29.4	22.3	19.1
Incr Delay (d2), s/veh	3.7	0.0	0.0	0.0	0.0	0.0	0.6	0.0	3.3	0.1	3.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	12.5	0.0	0.0	0.7	0.0	0.0	1.4	0.0	12.0	0.3	12.1	4.4
Lane Grp Delay (d), s/veh	17.4	0.0	0.0	9.5	0.0	0.0	31.5	0.0	25.5	29.5	25.7	19.4
Lane Grp LOS	B			A			C		C	C	C	B
Approach Vol, veh/h		586			48			480			627	
Approach Delay, s/veh		17.4			9.5			26.0			24.1	
Approach LOS		B			A			C			C	

Timer												
Assigned Phs		4			8			2			6	
Phs Duration (G+Y+Rc), s		44.0			44.0			31.1			31.1	
Change Period (Y+Rc), s		6.0			6.0			6.5			6.5	
Max Green Setting (Gmax), s		38.0			16.0			27.5			27.5	
Max Q Clear Time (g_c+I1), s		20.3			3.1			21.5			18.2	
Green Ext Time (p_c), s		3.9			3.4			3.2			4.3	

Intersection Summary												
HCM 2010 Ctrl Delay			21.9									
HCM 2010 LOS			C									

Notes

HCM 2010 TWSC
9: Sterling Silver Blvd & Saxon Blvd

3/5/2014

Intersection	
Intersection Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	36	1318	10	8	714	12	9	0	11	12	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	300	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	1387	11	8	752	13	9	0	12	13	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	764	0	0	1398	0	0	1861	2249	699	1544	2249	382
Stage 1	-	-	-	-	-	-	1468	1468	-	775	775	-
Stage 2	-	-	-	-	-	-	393	781	-	769	1474	-
Follow-up Headway	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Capacity-1 Maneuver	845	-	-	485	-	-	45	41	382	78	41	616
Stage 1	-	-	-	-	-	-	134	190	-	357	406	-
Stage 2	-	-	-	-	-	-	603	403	-	360	189	-
Time blocked-Platoon, %		-	-		-	-						
Mov Capacity-1 Maneuver	845	-	-	485	-	-	42	39	382	72	39	616
Mov Capacity-2 Maneuver	-	-	-	-	-	-	105	125	-	185	125	-
Stage 1	-	-	-	-	-	-	128	181	-	341	399	-
Stage 2	-	-	-	-	-	-	581	396	-	333	181	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	28.4	18.3
HCM LOS			D	C

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	175	845	-	-	485	-	-	185	389
HCM Lane V/C Ratio	0.12	0.045	-	-	0.017	-	-	0.046	0.043
HCM Control Delay (s)	28.4	9.46	-	-	12.554	-	-	25.4	14.7
HCM Lane LOS	D	A			B			D	B
HCM 95th %tile Q(veh)	0.402	0.141	-	-	0.053	-	-	0.142	0.135

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

HCM 2010 TWSC
23: Sterling Silver Blvd & Alabaster Way

3/5/2014

Intersection	
Intersection Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	7	0	1	0	35	0	0	23	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	7	0	1	0	37	0	0	24	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	61	61	24	61	61	37	24	0	0	37	0	0
Stage 1	24	24	-	37	37	-	-	-	-	-	-	-
Stage 2	37	37	-	24	24	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	934	830	1052	934	830	1035	1591	-	-	1574	-	-
Stage 1	994	875	-	978	864	-	-	-	-	-	-	-
Stage 2	978	864	-	994	875	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	933	830	1052	934	830	1035	1591	-	-	1574	-	-
Mov Capacity-2 Maneuver	933	830	-	934	830	-	-	-	-	-	-	-
Stage 1	994	875	-	978	864	-	-	-	-	-	-	-
Stage 2	977	864	-	994	875	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	8.9	0	0
HCM LOS	A	A		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1591	-	-	0	934	962	1574	-	-
HCM Lane V/C Ratio	-	-	-	+	0.005	0.004	-	-	-
HCM Control Delay (s)	0	-	-	0	8.9	8.8	0	-	-
HCM Lane LOS	A			A	A	A	A		
HCM 95th %tile Q(veh)	0	-	-	+	0.016	0.011	0	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

HCM 2010 Signalized Intersection Summary
3: Finland Blvd & Saxon Blvd

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	205	2193	67	85	1168	20	122	57	143	20	28	118
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	190.0	190.0	186.3	190.0
Lanes	1	2	0	1	2	0	1	1	0	0	1	0
Cap, veh/h	241	2174	67	110	1939	33	175	108	196	97	119	0
Arrive On Green	0.14	0.60	0.60	0.12	1.00	1.00	0.18	0.18	0.18	0.18	0.18	0.00
Sat Flow, veh/h	1774	3596	110	1774	3652	62	1375	594	1079	316	655	0
Grp Volume(v), veh/h	216	1190	1190	89	627	623	128	0	169	50	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1843	1774	1863	1852	1375	0	1672	971	0	0
Q Serve(g_s), s	15.5	78.0	78.0	6.3	0.0	0.0	11.1	0.0	11.9	0.5	0.0	0.0
Cycle Q Clear(g_c), s	15.5	78.0	78.0	6.3	0.0	0.0	23.5	0.0	11.9	12.4	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.03	1.00		0.64	0.42		0.00
Lane Grp Cap(c), veh/h	241	1126	1114	110	989	983	175	0	305	217	0	0
V/C Ratio(X)	0.90	1.06	1.07	0.81	0.63	0.63	0.73	0.00	0.55	0.23	0.00	0.00
Avail Cap(c_a), veh/h	254	1126	1114	199	989	983	175	0	305	217	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.42	0.42	0.42	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	54.9	25.5	25.5	55.7	0.0	0.0	59.3	0.0	48.0	45.1	0.0	0.0
Incr Delay (d2), s/veh	30.1	43.1	47.0	5.7	1.3	1.3	14.7	0.0	2.2	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	14.0	61.4	62.8	4.7	0.6	0.6	8.6	0.0	9.0	2.5	0.0	0.0
Lane Grp Delay (d), s/veh	85.0	68.6	72.5	61.4	1.3	1.3	74.0	0.0	50.2	45.6	0.0	0.0
Lane Grp LOS	F	F	F	E	A	A	E		D	D		
Approach Vol, veh/h		2595			1339			297			50	
Approach Delay, s/veh		71.7			5.3			60.5			45.6	
Approach LOS		E			A			E			D	

Timer												
Assigned Phs	7	4		3	8			2			6	
Phs Duration (G+Y+Rc), s	24.0	84.5		14.5	75.0			30.0			30.0	
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5			6.5			6.5	
Max Green Setting (Gmax), s	18.5	72.5		14.5	68.5			23.5			23.5	
Max Q Clear Time (g_c+I1), s	17.5	80.0		8.3	2.0			25.5			14.4	
Green Ext Time (p_c), s	0.1	0.0		0.1	59.5			0.0			1.1	

Intersection Summary	
HCM 2010 Ctrl Delay	49.9
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
6: Normandy Blvd & Saxon Blvd

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	448	1522	314	68	762	85	238	197	61	125	201	260
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3
Lanes	1	2	1	1	2	0	1	1	0	1	1	1
Cap, veh/h	511	1774	754	145	919	102	271	250	77	198	239	203
Arrive On Green	0.08	0.16	0.16	0.04	0.28	0.28	0.11	0.18	0.18	0.06	0.13	0.13
Sat Flow, veh/h	1774	3725	1583	1774	3295	366	1774	1366	422	1774	1863	1583
Grp Volume(v), veh/h	472	1602	331	72	453	438	251	0	271	132	212	109
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1798	1774	0	1788	1774	1863	1583
Q Serve(g_s), s	26.4	51.9	23.3	3.5	28.5	28.5	13.5	0.0	17.9	6.8	13.8	7.9
Cycle Q Clear(g_c), s	26.4	51.9	23.3	3.5	28.5	28.5	13.5	0.0	17.9	6.8	13.8	7.9
Prop In Lane	1.00		1.00	1.00		0.20	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	511	1774	754	145	520	502	271	0	327	198	239	203
V/C Ratio(X)	0.92	0.90	0.44	0.50	0.87	0.87	0.93	0.00	0.83	0.67	0.89	0.54
Avail Cap(c_a), veh/h	613	1774	754	279	520	502	271	0	327	198	239	203
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.5	49.0	37.0	33.8	42.3	42.3	37.8	0.0	48.4	46.5	52.7	50.2
Incr Delay (d2), s/veh	2.3	0.7	0.0	2.6	18.0	18.6	35.8	0.0	20.9	8.3	34.8	9.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	18.0	29.0	11.5	4.2	22.3	21.8	16.2	0.0	15.2	2.2	13.7	6.7
Lane Grp Delay (d), s/veh	48.8	49.8	37.0	36.4	60.3	60.8	73.6	0.0	69.3	54.9	87.5	59.9
Lane Grp LOS	D	D	D	D	E	E	E		E	D	F	E
Approach Vol, veh/h		2405			963			522			453	
Approach Delay, s/veh		47.8			58.8			71.3			71.4	
Approach LOS		D			E			E			E	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	36.9	66.0		12.6	41.8		21.0	30.0		14.3	23.3	
Change Period (Y+Rc), s	7.5	7.5		7.5	7.5		7.5	7.5		7.5	7.5	
Max Green Setting (Gmax), s	36.4	56.3		14.4	34.3		13.5	22.5		6.8	15.8	
Max Q Clear Time (g_c+I1), s	28.4	53.9		5.5	30.5		15.5	19.9		8.8	15.8	
Green Ext Time (p_c), s	1.0	2.2		0.1	3.6		0.0	0.8		0.0	0.0	

Intersection Summary	
HCM 2010 Ctrl Delay	55.5
HCM 2010 LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
16: Tivoli Dr & Saxon Blvd

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	580	648	92	9	306	11	67	107	23	33	99	294
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	190.0
Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Cap, veh/h	652	1080	918	229	390	15	266	426	90	361	208	276
Arrive On Green	0.30	0.58	0.58	0.22	0.22	0.22	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1774	1863	1583	690	1785	67	1133	1490	317	1247	727	965
Grp Volume(v), veh/h	611	682	97	9	0	334	71	0	137	35	0	242
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	690	0	1851	1133	0	1807	1247	0	1692
Q Serve(g_s), s	24.2	22.5	2.5	1.0	0.0	16.0	5.2	0.0	5.4	2.1	0.0	11.1
Cycle Q Clear(g_c), s	24.2	22.5	2.5	1.0	0.0	16.0	16.2	0.0	5.4	7.5	0.0	11.1
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.18	1.00		0.57
Lane Grp Cap(c), veh/h	652	1080	918	229	0	405	266	0	516	361	0	483
V/C Ratio(X)	0.94	0.63	0.11	0.04	0.00	0.82	0.27	0.00	0.27	0.10	0.00	0.50
Avail Cap(c_a), veh/h	757	1224	1041	241	0	439	266	0	516	361	0	483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.9	12.9	8.7	28.7	0.0	34.6	34.4	0.0	25.6	28.5	0.0	27.6
Incr Delay (d2), s/veh	17.7	0.9	0.1	0.1	0.0	11.4	2.4	0.0	1.3	0.5	0.0	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	23.9	14.1	1.5	0.3	0.0	13.3	2.9	0.0	4.6	1.2	0.0	8.7
Lane Grp Delay (d), s/veh	37.6	13.8	8.8	28.8	0.0	46.0	36.8	0.0	26.9	29.1	0.0	31.3
Lane Grp LOS	D	B	A	C		D	D		C	C		C
Approach Vol, veh/h		1390			343			208			277	
Approach Delay, s/veh		23.9			45.5			30.3			31.0	
Approach LOS		C			D			C			C	

Timer												
Assigned Phs	7	4			8			2			6	
Phs Duration (G+Y+Rc), s	33.5	59.8			26.3			33.0			33.0	
Change Period (Y+Rc), s	6.0	6.0			6.0			6.5			6.5	
Max Green Setting (Gmax), s	33.0	61.0			22.0			26.5			26.5	
Max Q Clear Time (g_c+I1), s	26.2	24.5			18.0			18.2			13.1	
Green Ext Time (p_c), s	1.3	8.0			2.3			1.6			2.1	

Intersection Summary	
HCM 2010 Ctrl Delay	28.7
HCM 2010 LOS	C

Notes

HCM 2010 Signalized Intersection Summary
20: Providence & Tivoli Dr

3/5/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	573	20	34	11	12	22	56	406	10	9	422	333
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	190.0	186.3	190.0	190.0	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3
Lanes	0	1	0	0	1	0	1	1	0	1	1	1
Cap, veh/h	857	30	0	212	229	406	196	609	16	220	628	534
Arrive On Green	0.50	0.50	0.00	0.50	0.50	0.50	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1717	60	0	424	460	814	780	1808	47	947	1863	1583
Grp Volume(v), veh/h	624	0	0	48	0	0	59	0	438	9	444	204
Grp Sat Flow(s),veh/h/ln	1777	0	0	1698	0	0	780	0	1855	947	1863	1583
Q Serve(g_s), s	20.7	0.0	0.0	1.1	0.0	0.0	5.4	0.0	15.6	0.6	15.8	7.5
Cycle Q Clear(g_c), s	20.7	0.0	0.0	1.1	0.0	0.0	21.2	0.0	15.6	16.2	15.8	7.5
Prop In Lane	0.97		0.00	0.25		0.48	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	886	0	0	847	0	0	196	0	625	220	628	534
V/C Ratio(X)	0.70	0.00	0.00	0.06	0.00	0.00	0.30	0.00	0.70	0.04	0.71	0.38
Avail Cap(c_a), veh/h	886	0	0	847	0	0	214	0	669	242	672	572
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.7	0.0	0.0	9.8	0.0	0.0	31.2	0.0	21.9	29.0	22.0	19.2
Incr Delay (d2), s/veh	4.7	0.0	0.0	0.0	0.0	0.0	0.9	0.0	3.0	0.1	3.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (95%), veh/ln	14.1	0.0	0.0	0.7	0.0	0.0	2.0	0.0	11.9	0.3	12.1	5.2
Lane Grp Delay (d), s/veh	19.4	0.0	0.0	9.9	0.0	0.0	32.1	0.0	24.9	29.0	25.1	19.7
Lane Grp LOS	B			A			C		C	C	C	B
Approach Vol, veh/h		624			48			497			657	
Approach Delay, s/veh		19.4			9.9			25.8			23.5	
Approach LOS		B			A			C			C	

Timer												
Assigned Phs		4			8			2			6	
Phs Duration (G+Y+Rc), s		44.0			44.0			32.2			32.2	
Change Period (Y+Rc), s		6.0			6.0			6.5			6.5	
Max Green Setting (Gmax), s		38.0			16.0			27.5			27.5	
Max Q Clear Time (g_c+I1), s		22.7			3.1			23.2			18.2	
Green Ext Time (p_c), s		4.0			3.7			2.4			4.4	

Intersection Summary	
HCM 2010 Ctrl Delay	22.4
HCM 2010 LOS	C

Notes

HCM 2010 TWSC
9: Sterling Silver Blvd & Saxon Blvd

3/5/2014

Intersection	
Intersection Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	115	1332	10	8	758	60	9	0	11	118	0	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	300	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	121	1402	11	8	798	63	9	0	12	124	0	78

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	861	0	0	1413	0	0	2065	2527	706	1789	2501	431
Stage 1	-	-	-	-	-	-	1649	1649	-	846	846	-
Stage 2	-	-	-	-	-	-	416	878	-	943	1655	-
Follow-up Headway	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Capacity-1 Maneuver	776	-	-	478	-	-	32	27	378	# 51	28	573
Stage 1	-	-	-	-	-	-	103	155	-	323	377	-
Stage 2	-	-	-	-	-	-	585	364	-	282	154	-
Time blocked-Platoon, %		-	-		-	-						
Mov Capacity-1 Maneuver	776	-	-	478	-	-	24	22	378	# 43	23	573
Mov Capacity-2 Maneuver	-	-	-	-	-	-	71	86	-	131	91	-
Stage 1	-	-	-	-	-	-	87	131	-	273	371	-
Stage 2	-	-	-	-	-	-	497	358	-	231	130	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.1	38.6	46.4
HCM LOS			E	E

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	128	776	-	-	478	-	-	131	264
HCM Lane V/C Ratio	0.164	0.156	-	-	0.018	-	-	0.632	0.452
HCM Control Delay (s)	38.6	10.495	-	-	12.666	-	-	70.8	29.4
HCM Lane LOS	E	B			B			F	D
HCM 95th %tile Q(veh)	0.567	0.551	-	-	0.054	-	-	3.322	2.205

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

HCM 2010 TWSC
23: Sterling Silver Blvd & Alabaster Way

3/5/2014

Intersection	
Intersection Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	3	15	19	3	1	53	13	41	0	37	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	3	16	20	3	1	56	14	43	0	39	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	188	207	39	195	186	35	39	0	0	57	0	0
Stage 1	39	39	-	147	147	-	-	-	-	-	-	-
Stage 2	149	168	-	48	39	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	772	690	1033	764	708	1038	1571	-	-	1547	-	-
Stage 1	976	862	-	856	775	-	-	-	-	-	-	-
Stage 2	854	759	-	965	862	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	747	664	1033	728	682	1038	1571	-	-	1547	-	-
Mov Capacity-2 Maneuver	747	664	-	728	682	-	-	-	-	-	-	-
Stage 1	940	862	-	824	746	-	-	-	-	-	-	-
Stage 2	818	731	-	947	862	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.9	10	3.7	0
HCM LOS	A	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1571	-	-	945	728	735	1547	-	-
HCM Lane V/C Ratio	0.036	-	-	0.02	0.018	0.015	-	-	-
HCM Control Delay (s)	7.376	0	-	8.9	10	10	0	-	-
HCM Lane LOS	A	A		A	B	B	A		
HCM 95th %tile Q(veh)	0.11	-	-	0.061	0.056	0.045	0	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Appendix H
Driveway Capacity (HCS) Worksheets

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*TMC*	Intersection	
Agency/Co.	*TMC*	Jurisdiction	*DELTONA*
Date Performed	*3/3/2014*	Analysis Year	*BUILDOUT*
Analysis Time Period	*AM PEAK*		

Project Description *SAXON STERLING*

East/West Street: *SAXON BLVD* | North/South Street: *DRIVEWAY 1*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*659*			*1425*	*29*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*1.00*	*1.00*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*0*	*693*	*0*	*0*	*1500*	*30*
Percent Heavy Vehicles	*2*	--	--	*0*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*2*	*0*
Configuration		*T*			*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						*5*
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*	*0*	*0*	*5*
Percent Heavy Vehicles	*0*	*0*	*0*	*2*	*0*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*1*
Configuration						*R*

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration								*R*
v (veh/h)								*5*
C (m) (veh/h)								*401*
v/c								*0.01*
95% queue length								*0.04*
Control Delay (s/veh)								*14.1*
LOS								*B*
Approach Delay (s/veh)	--	--				*14.1*		
Approach LOS	--	--				*B*		

Copyright © 2010 University of Florida, All Rights Reserved *HCS+*™ Version 5.6 Generated: 3/5/2014 11:52 AM

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*TMC*	Intersection	*DRIVEWAY 1 & SAXON*
Agency/Co.	*TMC*	Jurisdiction	*DELTONA*
Date Performed	*3/3/2014*	Analysis Year	*BUILDOUT*
Analysis Time Period	*PM PEAK*		

Project Description *SAXON STERLING*

East/West Street: *SAXON BLVD* North/South Street: *DRIVEWAY 1*

Intersection Orientation: *East-West* Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*1457*			*831*	*10*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*1.00*	*1.00*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*0*	*1533*	*0*	*0*	*874*	*10*
Percent Heavy Vehicles	*2*	--	--	*0*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*2*	*0*
Configuration		*T*			*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						*35*
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*	*0*	*0*	*36*
Percent Heavy Vehicles	*0*	*0*	*0*	*2*	*0*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*1*
Configuration						*R*

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration								*R*
v (veh/h)								*36*
C (m) (veh/h)								*614*
v/c								*0.06*
95% queue length								*0.19*
Control Delay (s/veh)								*11.2*
LOS								*B*
Approach Delay (s/veh)	--	--				*11.2*		
Approach LOS	--	--				*B*		

Copyright © 2010 University of Florida, All Rights Reserved *HCS+*™ Version 5.6 Generated: 3/5/2014 11:52 AM

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*TMC*	Intersection	*DRIVEWAY 2 & SAXON*
Agency/Co.	*TMC*	Jurisdiction	*DELTONA*
Date Performed	*3/3/2014*	Analysis Year	*BUILDOUT*
Analysis Time Period	*AM PEAK*		

Project Description *SAXON STERLING*

East/West Street: *SAXON BLVD* | North/South Street: *DRIVEWAY 2*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*38*	*596*			*1407*	*43*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*1.00*	*1.00*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*40*	*627*	*0*	*0*	*1481*	*45*
Percent Heavy Vehicles	*2*	--	--	*0*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*23*		*42*
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*	*24*	*0*	*44*
Percent Heavy Vehicles	*0*	*0*	*0*	*2*	*0*	*2*
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*

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*					*L*		*R*
v (veh/h)	*40*					*24*		*44*
C (m) (veh/h)	*433*					*137*		*402*
v/c	*0.09*					*0.18*		*0.11*
95% queue length	*0.30*					*0.61*		*0.37*
Control Delay (s/veh)	*14.2*					*36.8*		*15.1*
LOS	*B*					*E*		*C*
Approach Delay (s/veh)	--	--				*22.7*		
Approach LOS	--	--				*C*		

Copyright © 2010 University of Florida, All Rights Reserved *HCS+*™ Version 5.6 Generated: 3/5/2014 11:33 AM

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*TMC*	Intersection	*DRIVEWAY 2 & SAXON*
Agency/Co.	*TMC*	Jurisdiction	*DELTONA*
Date Performed	*3/3/2014*	Analysis Year	*BUILDOUT*
Analysis Time Period	*PM PEAK*		

Project Description *SAXON STERLING*

East/West Street: *SAXON BLVD* | North/South Street: *DRIVEWAY 2*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*99*	*1372*			*732*	*87*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*1.00*	*1.00*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*104*	*1444*	*0*	*0*	*770*	*91*
Percent Heavy Vehicles	*2*	--	--	*0*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*74*		*95*
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*	*77*	*0*	*100*
Percent Heavy Vehicles	*0*	*0*	*0*	*2*	*0*	*2*
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*

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*					*L*		*R*
v (veh/h)	*104*					*77*		*100*
C (m) (veh/h)	*776*					*185*		*623*
v/c	*0.13*					*0.42*		*0.16*
95% queue length	*0.46*					*1.88*		*0.57*
Control Delay (s/veh)	*10.4*					*37.7*		*11.9*
LOS	*B*					*E*		*B*
Approach Delay (s/veh)	--	--				*23.1*		
Approach LOS	--	--				*C*		

Copyright © 2010 University of Florida, All Rights Reserved *HCS+*™ Version 5.6 Generated: 3/5/2014 11:31 AM

Appendix I

Signal Warrant Analysis Worksheets

Form 750-020-01
TRAFFIC ENGINEERING - 07/99
Page 1 of 5

TRAFFIC SIGNAL WARRANT SUMMARY

City: DELTONA
County: VOLUSIA
Engineer: TMC
Date: March 5, 2014

Major Street: SAXON BLVD — Lanes: 2 — Critical Approach Speed: 40
Minor Street: STERLING SILVER BLVD — Lanes: 2 — Scenario: Projected

Volume Level Criteria

1. Is the critical speed of major street traffic > 70 km/h (40 mph) ? ☐ Yes ☒ No
2. Is the intersection in a built-up area of isolated community of <10,000 population? ☐ Yes ☒ No

If Question 1 or 2 above is answered "Yes", then use "70%" volume level ☐ 70% ☒ 100%

WARRANT 1 - EIGHT-HOUR VEHICULAR VOLUME

Applicable: ☒ Yes ☐ No
Satisfied: ☐ Yes ☒ No

Warrant 1 is satisfied if Condition A or Condition B is "100%" satisfied.
Warrant is also satisfied if both Condition A and Condition B are "80%" satisfied.

Condition A - Minimum Vehicular Volume

100% Satisfied: ☐ Yes ☒ No
80% Satisfied: ☐ Yes ☒ No

(volumes in veh/hr)	Minimum Requirements (80% Shown in Brackets)				Eight Highest Hours							
Approach Lanes	1		2 or more									
Volume Level	100%	70%	100%	70%	12:00 PM - 1:00 PM	1:00 PM - 2:00 PM	2:00 PM - 3:00 PM	3:00 PM - 4:00 PM	4:00 PM - 5:00 PM	5:00 PM - 6:00 PM	6:00 PM - 7:00 PM	7:00 PM - 8:00 PM
Both Approaches on Major Street	500 (400)	350	600 (480)	420	1,597	1,686	1,605	1,845	1,944	2,205	1,764	1,470
Highest Approach on Minor Street	150 (120)	105	200 (160)	140	160	168	175	182	175	185	149	145

Record 8 highest hours and the corresponding volumes in boxes provided. Condition is 100% satisfied if the minimum volumes are met for eight hours . Condition is 80% satisfied if parenthetical volumes are met for eight hours.

Condition B - Interruption of Continuous Traffic

Condition B is intended for application where the traffic volume is so heavy that traffic on the minor street suffers excessive delay.

Applicable: ☒ Yes ☐ No
Excessive Delay: ☒ Yes ☐ No
100% Satisfied: ☒ Yes ☐ No
80% Satisfied: ☐ Yes ☒ No

(volumes in veh/hr)	Minimum Requirements (80% Shown in Brackets)				Eight Highest Hours							
Approach Lanes	1		2 or more									
Volume Level	100%	70%	100%	70%	12:00 PM - 1:00 PM	1:00 PM - 2:00 PM	2:00 PM - 3:00 PM	3:00 PM - 4:00 PM	4:00 PM - 5:00 PM	5:00 PM - 6:00 PM	6:00 PM - 7:00 PM	7:00 PM - 8:00 PM
Both Approaches on Major Street	750 (600)	525	900 (720)	630	1,597	1,686	1,605	1,845	1,944	2,205	1,764	1,470
Highest Approach on Minor Street	75 (60)	53	100 (80)	70	160	168	175	182	175	185	149	145

Record 8 highest hours and the corresponding volumes in boxes provided. Condition is 100% satisfied if the minimum volumes are met for eight hours . Condition is 80% satisfied if parenthetical volumes are met for eight hours.

Source: Revised from NCHRP Report 457

TRAFFIC SIGNAL WARRANT SUMMARY

City: DELTONA
County: VOLUSIA
Engineer: TMC
Date: March 5, 2014

Major Street: SAXON BLVD — Lanes: 2 — Critical Approach Speed: 40
Minor Street: STERLING SILVER BLVD — Lanes: 2 — Scenario: Projected

Volume Level Criteria

1. Is the critical speed of major street traffic > 70 km/h (40 mph) ? ☐ Yes ☒ No
2. Is the intersection in a built-up area of isolated community of <10,000 population? ☐ Yes ☒ No

If Question 1 or 2 above is answered "Yes", then use "70%" volume level ☐ 70% ☒ 100%

WARRANT 2 - FOUR-HOUR VEHICULAR VOLUME

If all four points lie above the appropriate line, then the warrant is satisfied.

Applicable: ☒ Yes ☐ No
Satisfied: ☒ Yes ☐ No

Plot four volume combinations on the applicable figure below.

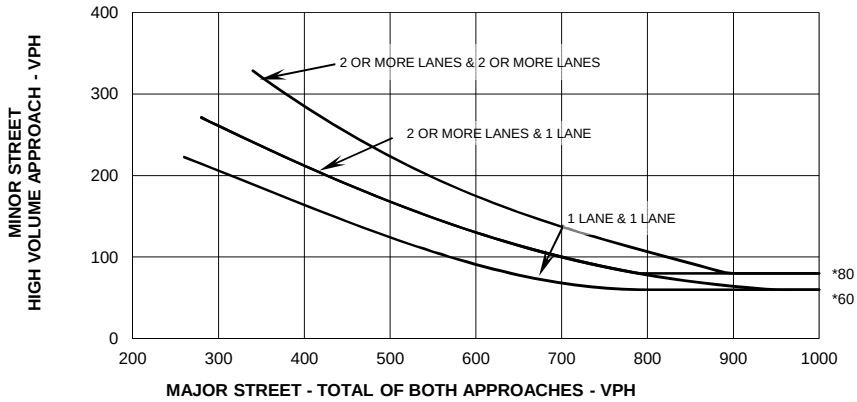
Four Highest Hours	Volumes	
	Major Street	Minor Street
4:00 PM 5:00 PM	1,605	175
5:00 PM 6:00 PM	1,845	182
6:00 PM 7:00 PM	1,944	175
7:00 PM 8:00 PM	2,205	185

FIGURE 4C-1: Criteria for "100%" Volume Level

** Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume threshold for a minor street approach with one lane.*

FIGURE 4C-2: Criteria for "70%" Volume Level

(Community Less than 10,000 population or above 70 km/hr (40 mph) on Major Street)



** Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume threshold for a minor street approach with one lane.*

Source: Revised from NCHRP Report 457

Form 750-020-01
TRAFFIC ENGINEERING - 07/99
Page 3 of 5

TRAFFIC SIGNAL WARRANT SUMMARY

City: DELTONA
County: VOLUSIA
Engineer: TMC
Date: March 5, 2014

Major Street: SAXON BLVD — Lanes: 2 — Critical Approach Speed: 40
Minor Street: STERLING SILVER BLVD — Lanes: 2 — Scenario: Projected

Volume Level Criteria

1. Is the critical speed of major street traffic > 70 km/h (40 mph) ? ☐ Yes ☒ No
2. Is the intersection in a built-up area of isolated community of <10,000 population? ☐ Yes ☒ No

If Question 1 or 2 above is answered "Yes", then use "70%" volume level ☐ 70% ☒ 100%

WARRANT 3 - PEAK HOUR

Applicable: ☐ Yes ☒ No
Satisfied: ☐ Yes ☐ No

If all three criteria are fullfilled or the plotted point lies above the appropriate line, then the warrant is satisfed.

Unusual condition justifying use of warrant:

Record hour when criteria are fulfilled and the corresponding delay or volume in boxes provided.

Peak Hour		

Criteria

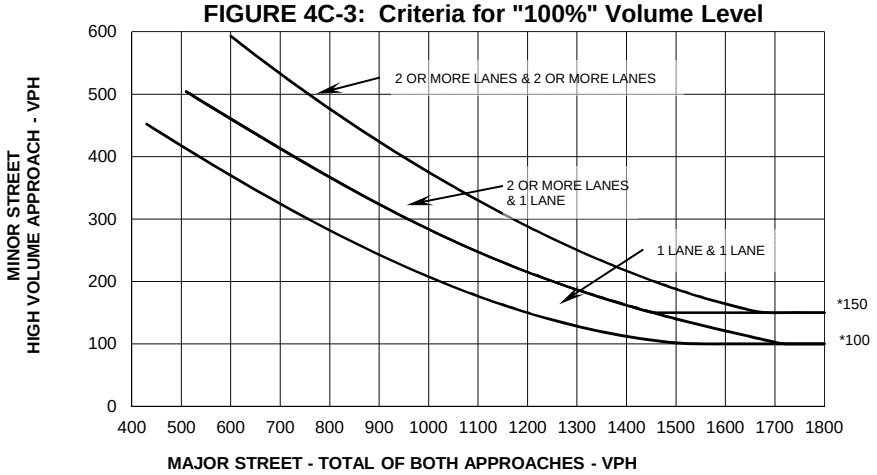
1. Delay on Minor Approach *(vehicle-hours)		
Approach Lanes		
Delay Criteria*		
Delay*		
Fulfilled?: ☐ Yes	☐ No	

2. Volume on Minor Approach *(vehicles per hour)		
Approach Lanes		
Volume Criteria*		
Volume*		
Fulfilled?: ☐ Yes	☐ No	

3. Total Entering Volume *(vehicles per hour)		
No. of Approaches		
Volume Criteria*		
Volume*		
Fulfilled?: ☐ Yes	☐ No	

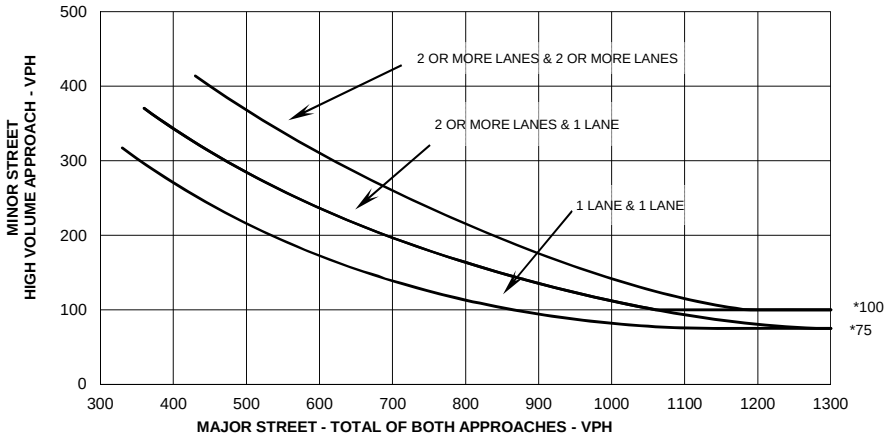
Plot volume combination on the applicable figure below.

FIGURE 4C-3: Criteria for "100%" Volume Level



** Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume threshold for a minor street approach with one lane.*

FIGURE 4C-4: Criteria for "70%" Volume Level
(Community Less than 10,000 population or above 70 km/hr (40 mph) on Major Street)



** Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume threshold for a minor street approach with one lane.*

Source: Revised from NCHRP Report 457

Form 750-020-01
TRAFFIC ENGINEERING - 07/99
Page 4 of 5

TRAFFIC SIGNAL WARRANT SUMMARY

City: DELTONA
County: VOLUSIA
Engineer: TMC
Date: March 5, 2014

Major Street: SAXON BLVD — Lanes: 2 — Critical Approach Speed: 40
Minor Street: STERLING SILVER BLVD — Lanes: 2 — Scenario: Projected

WARRANT 4 - PEDESTRIAN VOLUME

Applicable: ☐ Yes ☒ No
Satisfied: ☐ Yes ☐ No

Record hours where criteria are fulfilled and the corresponding volume or gap frequency in the boxes provided. The warrant is satisfied if condition 1 or 2 is fulfilled and condition 3 is fulfilled.

Criteria	Hour	Pedestrian Volume	Pedestrian Gaps	Fulfilled? Yes	Fulfilled? No
1. Pedestrian volume crossing the major street is 100 ped/hr or more for each of any four hours and there are less than 60 gaps per hour in the major street traffic stream of adequate length.					
2. Pedestrian volume crossing the major street is 190 ped/hr or more for any one hour and there are less than 60 gaps per hour in the major street traffic stream of adequate length.					
3. The nearest traffic signal along the major street is located more ## is within 90 m (300 ft) but the proposed traffic signal will not restrict the progressive movement of traffic.					

WARRANT 5 - SCHOOL CROSSING

Applicable: ☐ ☒ No
Satisfied: ☐ Yes ☐ No

Record hours where criteria are fulfilled and the corresponding volume or gap frequency in the boxes provided. The warrant is satisfied if all three of the criteria are fulfilled.

Criteria				Fulfilled? Yes	Fulfilled? No
1. There are a minimum of 20 students crossing the major street during the highest crossing hour.	Students:	Hour:			
2. There are fewer adequate gaps in the major street traffic stream during the period when the children are using the crossing than the number of minutes in the same period.		Minutes:	Gaps:		
3. The nearest traffic signal along the major street is located more than 90 m (300 ft) away, or the nearest signal is within 90 m (300 ft) but the proposed traffic signal will not restrict the progressive movement of traffic.					

WARRANT 6 - COORDINATED SIGNAL SYSTEM

Applicable: ☐ Yes ☒ No
Satisfied: ☐ Yes ☐ No

Indicate if the criteria are fulfilled in the boxes provided. The warrant is satisfied if either criterion is fulfilled. This warrant should not be applied when the resulting signal spacing would be less than 300 m (1,000 ft).

Criteria	Fulfilled? Yes	Fulfilled? No
1. On a one-way street or a street that has traffic predominately in one direction, the adjacent signals are so far apart that they do not provide the necessary degree of vehicle platooning.		
2. On a two-way street, adjacent signals do not provide the necessary degree of platooning, and the proposed and adjacent signals will collectively provide a progressive operation.		

Source: Revised from NCHRP Report 457

Form 750-020-01
TRAFFIC ENGINEERING - 07/99
Page 5 of 5

TRAFFIC SIGNAL WARRANT SUMMARY

City: DELTONA
County: VOLUSIA
Engineer: TMC
Date: March 5, 2014

Major Street: SAXON BLVD — Lanes: 2 — Critical Approach Speed: 40
Minor Street: STERLING SILVER BLVD — Lanes: 2 — Scenario: Projected

WARRANT 7 - CRASH EXPERIENCE

Applicable: ☐ Yes ☒ No
Satisfied: ☐ Yes ☐ No

Record hours where criteria are fulfilled, the corresponding volume, and other information in the boxes provided. The warrant is satisfied if all three of the criteria are fulfilled.

Criteria		Hour	Volume	Met? Yes	Met? No	Fulfilled? Yes	Fulfilled? No
1. One of the warrants to the right is met.	Warrant 1, Condition A (80% satisfied)						
	Warrant 1, Condition B (80% satisfied)						
	Warrant 4, Pedestrian Volume at 80% of volume requirements: 80 ped/hr for four (4) hours or 152 ped/hr for one (1) hour						
2. Adequate trial of other remedial measure has failed to reduce crash frequency.		Measure tried:					
3. Five or more reported crashes, of types susceptible to correction by signal, have occurred within a 12-mo. period.		Number of crashes per 12 months:					

WARRANT 8 - ROADWAY NETWORK

Applicable: ☐ ☐ No
Satisfied: ☐ Yes ☐ No

Record hours where criteria are fulfilled, and the corresponding volume or other information in the boxes provided. The warrant is satisfied if at least one of the criteria is fulfilled and if all intersecting routes have one or more of the characteristics listed.

Criteria							Met? Yes	Met? No	Fulfilled? Yes	Fulfilled? No
1. Both of the criteria to the right are met.	a. Total entering volume of at least 1,000 veh/hr during a typical weekday peak hour.			Entering Volume:						
	b. Five-year projected volumes that satisfy one or more of Warrants 1, 2, or 3.		Warrant:							
			Satisfied?:							
2. Total entering volume at least 1,000 veh/hr for each of any 5 hrs of a non-normal business day (Sat. or Sun.)							← Hour			
							← Volume			

Characteristics of Major Routes		Met? Yes	Met? No	Fulfilled? Yes	Fulfilled? No
1. Part of the street or highway system that serves as the principal roadway network for through traffic flow.	Major Street:				
	Minor Street:				
2. Rural or suburban highway outside of, entering, or traversing a city.	Major Street:				
	Minor Street:				
3. Appears as a major route on an official plan.	Major Street:				
	Minor Street:				

CONCLUSIONS

Warrants Satisfied: 1 2

Remarks: Warrants 1 and 2 satisfied based on projections. Further analysis is recommended prior to final approval of a signal.

Source: Revised from NCHRP Report 457

GMB ENGINEERS & PLANNERS, INC.

TO: Mr. Ron Paradise
FROM: Jorge Tolosa, P.E.
DATE: January 27, 2014
RE: Saxon Sterling Silver BPUD
Transportation Impact Analysis
GMB Project No.: 13-162.01

The purpose of this memorandum is to provide a review of the Saxon Sterling Silver BPUD Transportation Impact Analysis (TIA) dated November 2013. Specific comments and findings are provided below.

Comment # 1 (General Comment):

The TIA only addresses scenario one which is comprised of retail (14,000 square feet), fast food (two buildings each being 4,500 square feet), convenience store with gas pumps (5,700 square feet), and a grocery store (44,000 square feet). The second scenario that features the medical office use was not included in the TIA. Please note that additional comments may be provided upon the submittal of a TIA addressing the second scenario.

Comment # 2 (Site Access):

As seen in the site plan included in page 6, a 1 foot non-vehicular easement prohibits the proposed Driveways 1 and 2. As such the traffic analysis should be revised based on access to the site being provided only at Sterling Silver Boulevard and Alabaster Way. In addition, Figure 2-2 (page 6) shows four (4) access points along Alabaster Way. However, the site access description in page 3 of the report only references three (3) access points to Alabaster Way. Please revise this discrepancy.

Comment # 3 (Table 3-1):

Please use the equations (instead of the rates) provided in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition to estimate the trip generation for the 44 KSF supermarket (ITE Code 850) during the p.m. peak hour and the 14 KSF shopping center (ITE Code 820) during the a.m. peak hour. Please revise Table 3-1 and all the associated analysis accordingly.

GMB Orlando
2602 E. Livingston St.
Orlando, FL 32803
Office: 407.898.5424
Fax: 407.898.5425

www.GMB.cc

Comment # 4 (Pass-By Capture):

The methodology document included in Appendix A states that "*the pass-by trips will be checked to be less than 14% of the adjacent street peak hour traffic*". However, based on a review of the trip generation calculations included in Appendix B, the pass by trip capture is anticipated to be 373 trips (171 NE Corner and 202 NW Corner) during the a.m. peak hour and 456 trips (282 NE Corner and 174 NW Corner) during the p.m. peak hour. Furthermore, Appendix B also includes a pass-by capture check calculation which shows that Saxon Boulevard from Normandy Boulevard to Tivoli Drive has a year 2011 peak hour background traffic of 2,223 trips. As such, it is noted that the pass by trip capture reduction for the development during both, the a.m. peak hour and p.m. peak hour is higher than 14% of the adjacent street peak hour traffic (2,223 trips x 14% = 311 trips). Please ensure that the pass by capture trips from the **total** development does not exceed 14% of the adjacent street peak hour traffic. Please revise Table 3-2 and all the corresponding analysis accordingly.

Comment # 5 (LOS Standard):

Pursuant to Policy T1-4.3 of the City of Deltona Transportation Element, the adopted LOS standard for local roadways is D. As such, please revise the LOS standard for Tivoli Drive from Normandy Boulevard to Providence Boulevard from E to D in Tables 4-1 and 5-1.

Comment # 6 (Table 4-1):

Please revise Table 4-1 based on the following comments and recommendations:

- The number of lanes along Normandy Boulevard from Deltona Boulevard to Providence Boulevard should be revised from 3 lanes to 2 lanes.
- The number of lanes along Normandy Boulevard from Providence Boulevard to Saxon Boulevard should be revised from 2 lanes to 3 lanes. As such the peak hour two way capacity for this segment should be revised from 1,269 to 1,332 (1,410 service volumes at LOS E x 0.9 adjustment for non-state roadways x 1.05 adjustment for 2 lane divided roadways).

- Please revise the project trip calculations in this table. For example, the project traffic along Saxon Boulevard from Normandy Boulevard to Sterling Boulevard should be revised from 275 to 278 (524 p.m. peak hour net external trips x 53% distribution = 278 trips).

Comment # 7 (Project Traffic Distribution):

Please provide a model plot showing the distributions for Saxon Boulevard from Enterprise Road to I-4.

Comment # 8 (Table 5-1):

It is noted that Table 5-1 indicates that the development is anticipated to have an adverse impact on two (2) roadway segments along Saxon Boulevard (from I-4 to Finland Drive and from Finland Drive to Normandy Boulevard) during the future year 2016 conditions. It is recommended that the TIA provides remedial actions to address these deficiencies. In addition, please revise Table 5-1 based on the following comments and recommendations to ensure that no additional roadway segments are anticipated to be adversely impacted by the development:

- Please revise the number of lanes along Saxon Boulevard from Sterling Silver Boulevard to Tivoli Drive from 2 lanes to 4 lanes.
- The peak hour two way capacities, included in Table 5-1, for the roadway segments of Saxon Boulevard (from Sterling Silver Boulevard to Normandy Boulevard), Tivoli Drive (from Saxon Boulevard to Providence Boulevard), and Normandy Boulevard (from Saxon Boulevard to Deltona Boulevard) should be revised to be consistent with the capacities included in Table 4-1.
- Please ensure that there is consistency between Tables 4-1 and 5-1. For example, the project traffic along Saxon Boulevard from Normandy Boulevard to Sterling Boulevard is shown as 275 in Table 4-1 and 276 in Table 5-1.
- It is noted that the existing year 2013 traffic volumes were grown (by an annual growth rate of 2.5%) from the year 2012 volumes provided in the Volusia County 2012 Average Annual Daily Traffic & Historical Counts

spreadsheet. Please make sure to include the base year for the existing conditions in the table header to facilitate any further reviews. Likewise, please indicate the future analysis year in the table header.

- Please revise the existing year 2013 volumes for the roadway segments of Saxon Boulevard from Sterling Silver Boulevard to Tivoli Drive from 896 to 2,239.
- Please revise the existing year 2013 volumes for the roadway segments of Saxon Boulevard from Tivoli Drive to Providence Boulevard from 771 to 896.
- Please revise the existing year 2013 volumes for the roadway segments of Saxon Boulevard from Providence Boulevard to Normandy Boulevard from 509 to 771.
- Please provide an explanation of how the year 2013 volumes were derived for the roadway segment of Normandy Boulevard from Saxon Boulevard to Deltona Boulevard. Based on a review of Figure 1, it is noted that the two way p.m. peal hour volume along this roadway segment is currently 954 trips (439 NB and 515 SB) while Table 5-1 shows a p.m. peak two way traffic volume of 693 trips. Please explain this discrepancy and revise as necessary.

Comment # 9 (Appendix C):

Please provide the intersection traffic movement count for the intersection of Tivoli Drive and Providence Boulevard during the a.m. peak hour conditions.

Comment # 10 (Appendix D):

Please revise the intersection traffic volume derivations included in Appendix C (and all the associated intersection analyses) based on the following comments and recommendations:

- Please ensure that the a.m. peak and p.m. peak hour project traffic distributions along the movements of the study area intersections included in Figures 3A and 3B are consistent with the project trip distributions included in Figure 4-1. For example, the project traffic

distributions along the movements of the intersection of Saxon Boulevard and Normandy Boulevard should be revised as follows:

- Eastbound thru from 47% to 27%.
- Northbound right from 2% to 13%
- Southbound left from 4% to 13%.
- Westbound left from 2% to 13%.
- Westbound thru from 47% to 27%.
- Westbound right from 4% to 13%.

- Please revise the calculations used in deriving the project traffic volumes included in Figure 5A for the a.m. peak and p.m. peak hour conditions. For example, under the assumption that the project traffic distribution percentages included in Figure 3A were correct, the project traffic volumes at the intersection of Saxon Boulevard and Tivoli Drive would have to be revised as follows:
  - Eastbound left from 8 to 14 (21% x 67 outbound trips = 14 trips).
  - Eastbound thru from 9 to 15 (23% x 67 outbound trips = 15 trips).
  - Eastbound right from 1 to 2 (3% x 67 outbound trips = 2 trips).
  - Southbound right from 24 to 18 (21% x 85 inbound trips = 18 trips).
  - Westbound thru from 12 to 20 (23% x 85 inbound trips = 20 trips).
  - Northbound left from 2 to 3 (3% x 85 inbound trips = 3 trips).
- We were not able to figure out how the pass by trips were assigned at the intersection of Saxon Boulevard and Sterling Silver Boulevard and the project entrances. Please provide a stand-alone figure showing the pass by trips during the a.m. peak and the p.m. peak hours.
- Please revise the a.m. peak and p.m. peak future total intersection traffic volumes derivation based on the above comments and revise the intersection analyses. Please ensure to include all the calculations used in deriving the future total intersection traffic volumes. For example, the Figure should show Future Background Traffic + NE Quadrant Project Traffic + NE Quadrant Pass By Traffic + NW Quadrant Project Traffic + NW Quadrant Pass By Traffic = Total Traffic.

Comment # 11 (Appendix E):

The traffic volumes shown in the HCS summary sheets included in Appendix E and the future total traffic volumes included in Figure 6 of Appendix C are not consistent for all of the analysis intersections. For example, the a.m. peak hour total traffic volumes at the intersection of Saxon Boulevard and Sterling Silver Boulevard in the eastbound approach should be revised from 171 to 120 for the left turn movement and 509 to 531 for the thru movement. Please ensure that the 2016 future total traffic volumes included in Appendix C are inputted correctly in HCS. In addition, please revise the analysis results as necessary.

Comment # 12 (Table 5-2):

Please revise Table 5-2 and all the associated analysis based on the following comments and recommendations:

- As mentioned on **Comment # 5**, the City adopted LOS standard for Tivoli Drive from Normandy Boulevard to Providence Boulevard is D. As such, please revise the LOS standard for the intersections of Saxon Boulevard and Tivoli Drive and Providence Boulevard to Tivoli Drive from E to D. In addition, since the intersection of Saxon Boulevard and Tivoli Drive is anticipated to operate at LOS E during the year 2016, please identify the improvements necessary to alleviate the anticipated adversities at this intersection.
- As noted in this table, the intersection of the Saxon Blvd and Finland Drive is anticipated to operate at LOS F during the 2016 future total a.m. peak hour conditions. The applicant states that by modifying the cycle length from 120 to 125 seconds during the a.m. peak hour, the intersection is expected to operate at an acceptable LOS. It is to be noted however, that in order to modify the cycle length at this intersection, all the signalized intersections along the Saxon Boulevard corridor would have to be retimed since this is part of a computerized signal system and there are traffic impacts to the interchange ramps.
- It is indicated in page 15 of the report that "*The intersection of Saxon Boulevard & Normandy Boulevard is operating at LOS F in existing and future*

background conditions. In future total conditions, with the addition of project traffic this intersection continues to operate at LOS F. However, the intersection delay is anticipated to increase by only 4.6 seconds, which is less than 5% of the future background conditions intersection delay." Please provide analysis to identify the improvements that would be needed at this intersection to alleviate the expected adversities during the existing, future background traffic, and future total traffic conditions.

Comment # 13 (Table 5-3):

Please revise the LOS for the future p.m. peak hour conditions along the westbound approach of the unsignalized intersection of Sterling Silver Blvd and Alabaster Way from E to F. In addition, please provide analysis of this intersection for the total future conditions with the addition of the recommended northbound right turn lane and the northbound left turn lane (as indicated in the turn lane analysis) to ensure that all the intersection movements will operate at an acceptable LOS D (as mentioned in Comment # 5, the City of Deltona adopted LOS standard for local roadways is D).

Comment # 14 (Appendix H):

Please revise the signal warrant analysis based on the previous comments. In addition, the signal warrant analysis must be revised to account for the anticipated year 2016 conditions. As such, please grow the traffic volumes on the major and minor approach volumes by the agreed upon annual rate of 2.5%. Furthermore, please provide a table showing the derivation of traffic volumes along the minor approach. The minor approach should include future background conditions in addition to project traffic as identified in the "Shopping Center Hourly Trip Generation Determination Table" included in Appendix H. It is to be noted that the County will allow the signal at this intersection to be built and placed on flash mode until traffic volumes warrant.

Comment # 15 (Crash Data):

Please provide a figure showing the crash analysis at the intersection of Saxon Boulevard and Sterling Silver Boulevard. Please provide the crash data in an Appendix.

Comment # 16 (Turn Lane Analysis):

Please revise the Turn Lane Analysis Section based on the above comments and the following recommendations and observations:

- The traffic volumes included in the Turn Lane Analysis in Appendix F are consistent with the traffic volumes used in the HCS analysis (included in Appendix E). However, the traffic volumes are inconsistent with the traffic volumes included in Figure 6 of Appendix C. Please explain this discrepancy and update the analysis if necessary.
- The City of Deltona Land Development Code (LDC) Section 96-37(a)(10)(c)(5)(ii) indicates that a right-turn lane with a minimum of 150 feet of storage and 100 feet of transition shall be required at each driveway when the speed limit equals or exceeds 35 miles per hour or if the development will generate 100 or more right-turn movements during the peak hour. Since the westbound right turn movement of the intersection of Saxon Boulevard and Sterling Silver Boulevard is anticipated to have more than 100 trips during both the a.m. and p.m. peak hours, it is recommended that a right turn lane in the westbound approach of this intersection be provided. Furthermore, the northbound right turn movement at the intersection of Sterling Silver Boulevard and Alabaster Way (Driveway 3) is anticipated to service 242 trips during the year 2016 p.m. peak hour conditions. As such, it is recommended that Table 7-1 be revised to indicate that a minimum of 150 feet of storage and 100 feet of transition will be required at the northbound right turn lane of this intersection.

- Please determine if right turn lanes or left turn lanes are required at the project driveways along Alabaster Way based on the requirements included in the City of Deltona LDC Section 96-37(a)(10)(c)(5).

Comment # 17 (Driveway 1):

As mentioned in **Comment # 2** above, a 1 foot non-vehicular easement prohibits the proposed Driveway 1. Consistent with **Comment # 16**, a right turn lane with a minimum of 150 feet of storage and 100 feet of transition is required in the westbound approach of the intersection of Saxon Boulevard and Sterling Silver Boulevard. Furthermore, in accordance with the City of Deltona LDC Section 96-37(a)(10)(c)(5)(ii), a right turn lane of at least 250 feet (a minimum of 150 feet of storage and 100 feet transition) would be required at the proposed Driveway 1, since Saxon Boulevard in front of the development has a posted speed limit of 40 mph. Based on the requirements to provide a 250 feet right turn lane along the westbound approach of Saxon Boulevard at Sterling Silver Boulevard and a 250 feet right turn lane at the proposed Driveway 1, it is noted that nearly all the property frontage on Saxon Boulevard should be devoted to a deceleration/right turn lane.

As noted in the City of Deltona's Agenda Memorandum to the Planning and Zoning Board (dated December 18, 2013), the right turn lane for Driveway 1 will commence immediately after the existing access to the existing Saxon Medical Park site to the south. The construction of Driveway 1 would create additional traffic conflicts where cars attempting a right or left turn onto Saxon Boulevard from the Medical Park would have to negotiate with cars slowing and maneuvering to transition to the deceleration lane leading to the proposed Driveway 1. This is compounded by the fact that the posted speed of 40 mph, in conjunction with the convex curve, makes traffic management in the area more difficult to navigate and is an unsafe design.

In addition, Table 96-6B included in the City of Deltona LDC Section 96-37(a)(10)(c)(2)(iv) includes the driveway centerline spacing requirements for thoroughfares with a speed limit higher than 35 mph. According to Table 96-6B,

the minimum distance between centerlines of the intersection of Saxon Boulevard (a proposed signalized intersection) and the proposed Driveway 1 (an intermediate driveway with more than 50 vehicles but less than 150 vehicles) is 380 feet. Similarly, the minimum distance between the proposed Driveway 1 (an intermediate driveway) and the Saxon Medical Park driveway (assumed to be an intermediate driveway) is 360 feet. It is to be noted that the distance between the centerlines of the intersection of Saxon Boulevard at Sterling Silver Boulevard and the Saxon Medical Park driveway is approximately 570 feet which is less than the combined driveway spacing of 740 feet that would be required if Driveway 1 was constructed (380 feet between Saxon Boulevard at Sterling Silver Boulevard and Driveway 1 in addition to 360 feet between Driveway 1 and the Saxon Medical Park driveway).

Comment # 18 (Alternative Mode Analysis):

As noted in the Volusia County Comments (dated December 3, 2013), the TPO Guidelines section 4(d) specify a requirement to assess sidewalks, bikeways, and transit routes of users (including special needs). The site plan needs to address how walking, biking, and transit ridership will be encouraged. Please review this section of the guidelines, with particular focus on VOTRAN's Transit Development Guidelines. Specifically, the county will be looking for safe cross-Saxon access between the commercial properties and the nearby residences and also students. The Guidelines can be found on the Volusia TPO website: www.volusiatpo.org. Please specifically show how transit riders will be able to access the site.

Comment # 19 (General Comment):

It is recommended that the applicant provides a revised TIA addressing the above comments as they relate to site access, trip generation, project traffic distribution, project traffic assignment, existing LOS assessment, future LOS assessment, and alternative mode analysis. The revised TIA should identify if any additional roadway segments or intersections are anticipated to be adversely impacted by the development during the year 2016 conditions.

Conclusions:

In summary, based on the peer review relating to the TIA supporting the Saxon Silver BPUD, it is noted that the proposed development will have adverse impacts on the City of Deltona transportation network. Therefore, GMB recommends that the City of Deltona transmits these comments to the Applicant and that a revised TIA be provided addressing these comments. Should you have any questions on the above, please feel free to call me at (407) 898-5424 ext. 208 or email me at jtolosa@gmb.cc.

Volusia County
Traffic Engineering

Project Name: Saxon Sterling Silver BPUD
Subject: TIA comments
Date: 12-03-13

No.	Comment
1.	The report overall relies on references to the numerous appendices in the back. Please consider bringing into the body of the report key information to better assist the readers in following/understanding the report. Also consider placing tabs to assist the reader in getting to aforementioned and relevant appendices.
2	Page 2, Executive Summary: 1) Regarding the intersection of Saxon Blvd/Finland Drive am peak hour cycle length being modified, please understand that the corridor between Finland Drive and Enterprise Road would have to be retimed since this is part of a computerized signal system and there are traffic impacts to the interchange ramps. 2) With regard to the signalization of Sterling Silver Blvd/Saxon Blvd, the county will allow the signal to be built and placed on flash mode until traffic volumes warrant. 3) Regarding the right-turn lane lengths at Driveways 1 and 2, a 1 foot non-vehicular easement prohibits driveways. Therefore, please redo the TIA. If the city will allow a cross-access easement, Driveway 1 TMCs should be included with the existing driveway. 4) A westbound right turn lane will be needed at Sterling Silver Drive.
3	Page 3, Site access, bullet 1: The two specified right-in/right-out driveways are not allowed per the 1 foot non-vehicular easement. The TIA will need to be redone to demonstrate new traffic flow patterns.
4	Page 6, Site Plan: Related to comments in #2 and #3, the two right-in/right-out driveways are not allowed.
5	Table 3-2, Net new trips: Please revise the TIA to demonstrate how the net new trips were derived; i.e, show gross, internal capture, pass-by and new trips. Please document the source for internal capture and pass-by rates. We see that the information is contained in the methodology, but the data needs to be brought into the analysis for clarity.
6	Page 9, Trip Distribution and Assignment: Please provide the CFRPM plot showing traffic volume distribution on the network. Appendix D does not include a distribution plot.
7	Figure 4-1, Project Traffic Distribution: Please show the percentage of the project traffic that is present west of the interstate on Saxon Blvd.
8	Table 4-1, Significance Test, page 11: 1) Please include "New Net PM Peak Trips" in the table title. 2) Please document how capacities were determined. Why are they different from the LOS service volumes in Table 5-1? 3) Please highlight the 5%

significance links.

9 Page 12, Traffic Data Collection (Appendix C): The signal timings at Providence Blvd/Tivoli Drive are missing.

10 Future Traffic Conditions, Page 13/Appendix D: Several of the AM and PM TMC percentages do not match Figure 4-1. Please revise the TMCs. For example, 47% of net new AM peak trips are shown in Figure 3A where Figure 4-1 shows that this link is supposed to show 23%.

11 Table 5-1, PM Peak Hour 2-way Roadway Analysis: 1) The Saxon Blvd segment between Sterling Silver Blvd and Tivoli is 4 Lane divided. 2) Please check with the City of Deltona to confirm the LOS standard on Tivoli Drive. 3) Please explain how the LOS standard service volume for the roads on the bottom four rows of the table.

12 Signal Warrant Analysis, Page 17: 1) Related to the TMCs, please see our comment regarding the lack of consistency in #9. 2) Please check that the 8 highest hourly volumes were used. Our review indicates otherwise.

13 Signal Warrant Analysis, Results, Page 18: The warrant analysis needs to be redone considering comments made on this TIA (especially TMCs and access issues related to the non-vehicular easement). The county will allow the installation of a signal to be operated on flash mode until the traffic volumes warrant full operation.

14 Table 7-1, Turn Lane Analysis, page 19: 1) Please strike the first two site driveway intersections listed on the table since they are not allowed per the BPUD. 2) Related to the intersection of Saxon Blvd/Sterling Silver Blvd, please redo the turn lane analysis based upon a revised site plan (eliminating both right-in/right-out driveways), as more traffic volume will be accessing the site via Sterling Silver Blvd.

15 Recommendations, Page 20: 1) Please omit bullets 3 and 4 listed for reasons identified previously. 2) Include commitment for signal retiming for the loop system between Finland Drive and Enterprise Road. 3) Include commitment for construction of a westbound right-turn lane at Sterling Silver Blvd/Saxon Blvd.

16 The TPO Guidelines section 4(d) specify a requirement to assess sidewalks, bikeways, and transit routes of users (including special needs). The site plan needs to address how walking, biking, and transit ridership will be encouraged. Please review this section of the guidelines, with particular focus on VOTRAN's Transit Development Guidelines. Specifically, the county will be looking for safe cross-Saxon access between the commercial properties and the nearby residences and also students. The Guidelines can be found on the Volusia TPO website: www.volusiatpo.org. Please specifically show how transit riders will be able to access the site.

ORDINANCE NO. 02-2014

AN ORDINANCE OF THE CITY OF DELTONA, FLORIDA, REZONING LOTS 1, 2, AND 4 AND TRACTS "B" AND "C" AND ROAD "B" OF THE RETIREMENT COMMUNITY AT STERLING PARK MPUD SUBDIVISION ACCORDING TO THE PLAT THEREOF AS RECORDED IN MAP BOOK 53, PAGES 59 AND 60 OF THE PUBLIC RECORD OF VOLUSIA COUNTY, FLORIDA, FROM MIXED USE PLANNED UNIT DEVELOPMENT TO BUSINESS PLANNED UNIT DEVELOPMENT, LOCATED ALONG SAXON BOULEVARD AT AND NORTH OF THE INTERSECTION OF STERLING SILVER AND SAXON BOULEVARDS; PROVIDING FOR SEVERABILITY; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City has received an application to rezone lots 1, 2 and 4 and tracts "B" and "C" and road "B' of the Saxon Sterling Sliver Mixed Use Planned Unit Development plat, to Business Planned Unit Development from Mixed Use Planned Unit Development;

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

WHEREAS, after said public hearing, the City Commission of the City of Deltona, Florida, has determined that the lots 1, 2, and 4 and tracts "B" and "C" and road "B" of the Retirement Community at Sterling Park MPUD plat will be rezoned to Business Planned Unit Development from Mixed Use Planned Unit Development and has further determined that the said zoning action is consistent with the Comprehensive Plan of the City of Deltona, Florida.

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

SECTION 1. Lots 1, 2, and 4 and tracts "B" and "C" and road "B" of the Retirement Community at Sterling Park MPUD plat as recorded in Map Book 53, Pages 59 and 60 of the public record of Volusia County, Florida, located in the City of Deltona, Florida, is hereby rezoned to Business Planned Unit Development.

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 Land 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, 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 5. Effective Date. This Ordinance shall become effective immediately upon its final passage and adoption.

ADOPTED BY THE CITY COMMISSION OF THE CITY OF DELTONA, FLORIDA THIS _____ DAY OF_____ 2014.

FIRST READING: _____

ADVERTISED: _____

SECOND READING: _____

BY: _____
JOHN C. MASIARCZYK, MAYOR

ATTEST:

_____
JOYCE RAFTERY, CMC, CITY CLERK

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

_____
GRETCHEN R. H. VOSE, CITY ATTORNEY

AGENDA MEMO

TO: Mayor & City Commission **AGENDA DATE:** 4/7/2014

FROM: William D. Denny, City Manager **AGENDA ITEM:** 8 - B

SUBJECT: Public Hearing - Ordinance No. 04-2014, Zoning Map Amendment (RZ13-009) for eleven (11) parcels located at the northeast corner of the Saxon Boulevard/Finland Drive intersection, at first reading.

LOCATION:

Generally located along the northeast corner of Saxon Boulevard and Finland Drive.

BACKGROUND:

The subject site includes an assemblage of eleven (11) parcels with an either Office Residential (OR) or Public (P) zoning designation. The applicant proposes a rezoning of those tracts from OR and P to (C-2) General Commercial, which could accommodate a range of commercial land uses. The applicant desires to perform the rezoning action to accommodate a gas station with convenience store, as proposed.

The proposed rezoning is consistent with the Comprehensive Plan for the general health, safety, welfare of the City and furthers Deltona's economic development and employment goals. The proposed rezoning to C-2 is located along a City thoroughfare, as defined in the Comprehensive Plan, is near a major interstate interchange, is similar to existing C-2 zoning designations to the east and west of the site, and would promote a non-residential tax base that is currently reliant upon residential land uses.

The City of Deltona Planning and Zoning Board (Board) heard the rezoning request on March 19, 2014, and recommended that the City Commission approve the rezoning to C-2 with the added statement that the Board would be able to review future site plans for development of the property that currently differs from the Land Development Code development review process.

Because the rezoning request is for conventional zoning (C-2), the zoning action is for the application of the C-2 regulations to the subject site. While a gas station with convenience store is the desired use for this rezoning

application, any permitted or conditional C-2 land use could be development on-site with the established Citywide standards for that zoning district. Finally, the Board and local residents had concerns with access management, site grading, area-wide drainage patterns, and neighborhood compatibility.

ORIGINATING DEPARTMENT: Planning and Development Services

SOURCE OF FUNDS: N/A

COST: N/A

REVIEWED BY: Planning Director, Finance Director, City Attorney

STAFF RECOMMENDATION PRESENTED BY:

Chris Bowley, AICP, Director, Planning and Development Services - Staff recommends that the City Commission approve Ordinance No. 04-2014, rezoning eleven (11) of parcels of land located at the northeast corner of Saxon Boulevard and Finland Drive from Office Residential (OR) and Public (P) to General Commercial (C-2).

POTENTIAL MOTION:

"I move to approve Ordinance No. 04-2014, to rezone lots 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, and Tract 'K', Block 101, Deltona Lakes, Unit 3, Map Book 25, Pages 105 - 120, from Office Residential (OR) and Public (P) to General Commercial (C-2), at first reading."

AGENDA ITEM APPROVED BY:

_____

William D. Denny, City Manager

ATTACHMENTS:

- Ordinance No. 04-2014
- Staff Report 032114
- TEDS Traffic Impact Study 0114
- Traffic Impact Study Peer Review 031114

ORDINANCE NO. 04-2014

AN ORDINANCE OF THE CITY OF DELTONA, FLORIDA, AMENDING THE OFFICIAL ZONING MAP FOR THE FOLLOWING PARCELS: A TRACT OF LAND, BEING LOTS 23, 24, 25, 26, 27, 28, 29, 30, 31, 32 AND TRACT "K", BLOCK 101, DELTONA LAKES UNIT THREE, ACCORDING TO THE PLAT THEREOF AS RECORDED IN MAP BOOK 25, PAGES 105 THROUGH 120, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA. CONTAINING 3.9 ACRES MORE OR LESS, LOCATED AT THE NORTH SIDE OF THE 2000 BLOCK OF SAXON BOULEVARD; PROVIDING FOR SEVERABILITY; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City has received an application to amend the Official Zoning Map from Office Residential (OR) and Public (P) to General Commercial (C-2), for 11 parcels of land; and

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

WHEREAS, after said public hearing, the City Commission of the City of Deltona, Florida, has determined that the subject property will be amended to the General Commercial (C-2) zoning classification, and has further determined that said zoning action is consistent with the Comprehensive Plan of the City of Deltona, Florida.

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

SECTION 1. The zoning classification for the subject property, located in the City of Deltona, Florida, is hereby amended from Office Residential (OR) and Public (P) to General Commercial (C-2) for the following property:

A TRACT OF LAND, BEING LOTS 23, 24, 25, 26, 27, 28, 29, 30, 31, 32 AND TRACT “K”, BLOCK 101, DELTONA LAKES UNIT THREE, ACCORDING TO THE PLAT THEREOF AS RECORDED IN MAP BOOK 25, PAGES 105 THROUGH 120, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, BEING DESCRIBED AS FOLLOWS.

COMMENCE AT THE NORTHWEST CORNER OF SAID LOT 32, FOR A POINT OF BEGINNING; THENCE RUN NORTH 89˚23'36” EAST, ALONG THE NORTH LINE OF SAID LOT 32, A DISTANCE OF 125.00 FEET TO THE NORTHEAST CORNER OF SAID LOT 32; THENCE RUN NORTH 00°50'10" WEST, ALONG THE WEST LINE OF SAID TRACT "K", 100.00 FEET TO THE NORTHWEST CORNER OF SAID TRACT "K", THE RUN NORTH 89°29'56" EAST ALONG THE NORTH LINE OF SAID TRACT "K", LOT 24 AND LOT 23, A DISTANCE OF 403.76 FEET TO THE NORTHEAST CORNER OF SAID LOT 23; THENCE RUN SOUTH 09°42'25" EAST, ALONG THE EAST LINE OF SAID LOT 23, A DISTANCE OF 128.53 FEET TO THE SOUTHEAST CORNER OF SAID LOT 23 AND A POINT LYING ON THE WEST RIGHT-OF-WAY LINE OF W. APACHE CIRCLE AS RECORDED IN AFORESAID PLAT OF DELTONA LAKES UNIT THREE, SAID POINT ALSO LIES ON A NON-TANGENT CURVE CONCAVE SOUTHEASTERLY; THENCE RUN SOUTHWESTERLY, ALONG SAID WEST RIGHT-OF-WAY LINE AND SAID CURVE, HAVING A RADIUS OF 130.00 FEET, A CENTRAL ANGLE OF 77˚00"37”, AN ARC LENGTH OF 174.73 FEET, A CHORD LENGTH OF 161.87 FEET AND A CHORD BEARING OF SOUTH 41˚47'17” WEST TO THE POINT OF TANGENCY; THENCE RUN SOUTH 03˚16'58” WEST, ALONG SAID WEST RIGHT-OF-WAY LINE, 159.13 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE NORTHWESTERLY; THENCE RUN SOUTHWESTERLY, ALONG SAID WEST RIGHT-OF-WAY LINE AND SAID CURVE, HAVING A RADIUS OF 25.00 FEET, A CENTRAL ANGLE OF 49˚18'42”, AN ARC LENGTH OF 21.52 FEET, A CHORD LENGTH OF 20.86 FEET AND A CHORD BEARING OF SOUTH 27˚56'20” WEST TO A POINT LYING ON THE NORTHERLY RIGHT-OF-WAY LINE OF SAXON BOULEVARD, AS DESCRIBED IN THAT CERTAIN WARRANTY DEED AS RECORDED IN OFFICIAL RECORDS BOOK 4981, PAGE 3204, OF SAID PUBLIC RECORDS; SAID POINT ALSO LIES ON A NON-TANGENT CURVE CONCAVE NORTHEASTERLY; THENCE RUN NORTHWESTERLY, ALONG SAID NORTHERLY RIGHT-OF-WAY LINE PER SAID OFFICIAL RECORDS BOOK 4981, PAGE 3204 AND THE FOLLOWING OFFICIAL RECORDS BOOKS 6233 PAGE 3574, OFFICIAL RECORDS BOOK 4716 PAGE 4217, OFFICIAL RECORDS BOOK 4857 PAGE 1546 OF SAID PUBLIC RECORDS AND SAID CURVE, HAVING A RADIUS OF 1088.00 FEET A CENTRAL ANGLE OF 11˚50'21”, AN ARC LENGTH OF 224.81 FEET, A CHORD LENGTH OF 224.41 FEET AND A CHORD BEARING OF NORTH 79˚05'56” WEST TO THE POINT OF TANGENCY; THENCE RUN NORTH 73˚10'46” WEST, ALONG SAID NORTHERLY RIGHT-OF-WAY LINE, 55.15 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY; THENCE RUN NORTHWESTERLY, ALONG SAID NORTHERLY RIGHT-OF-WAY LINE AND SAID CURVE, HAVING A RADIUS OF 807.00 FEET, A CENTRAL ANGLE OF 08˚27'39”, AN ARC LENGTH OF 119.17 FEET, A CHORD LENGTH OF 119.06 FEET AND A CHORD BEARING OF NORTH 77˚24'35” WEST TO THE POINT OF REVERSE CURVATURE OF A CURVE CONCAVE NORTHEASTERLY; THENCE RUN NORTHWESTERLY, ALONG SAID NORTHERLY RIGHT-OF-WAY LINE AND SAID CURVE, HAVING A RADIUS OF 35.00 FEET, A CENTRAL ANGLE OF 80˚48'15”, AN ARC LENGTH OF 49.36 FEET, A CHORD LENGTH OF 45.37 FEET AND A CHORD BEARING OF NORTH 41˚14'18” WEST TO THE POINT OF TANGENCY, SAID POINT LYING ON THE EASTERLY RIGHT-OF-WAY LINE OF FINLAND DRIVE, AS RECORDED IN THE AFORESAID PLAT OF DELTONA LAKES UNIT THREE, THENCE RUN NORTH 00˚50'10” WEST, ALONG SAID EASTERLY RIGHT-OF-WAY LINE, 201.39 FEET TO THE POINT OF BEGINNING.

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 Land

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, 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 5. Effective Date. This Ordinance shall become effective immediately upon its final passage and adoption.

ADOPTED BY THE CITY COMMISSION OF THE CITY OF DELTONA, FLORIDA THIS _____ DAY OF_____ 2014.

FIRST READING:_____

ADVERTISED:_____

SECOND READING:_____

BY:_____
JOHN C. MASIARCZYK, SR. MAYOR

ATTEST:

_____
JOYCE RAFTERY, CMC, CITY CLERK

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

_____
GRETCHEN R. H. VOSE, CITY ATTORNEY

CITY OF DELTONA

Memorandum

To: **Planning and Zoning Board**

From: **Chris Bowley, AICP**

Date: **February 4, 2014 and updated on March 21, 2014**

Re: **Project No. RZ13-009, Amendment to the Official Zoning Map**

I. SUMMARY OF APPLICATION:

APPLICANT: Brian Potts P.E.
Tannath Design
2494 Rose Spring Drive
Orlando, FL 32825

Request: The City of Deltona Planning and Development Services Department has received an application to amend the Official Zoning Map from Office Residential (OR) and Public (P) to General Commercial (C-2) for an assemblage of parcels located at the northeast corner of Saxon Boulevard and Finland Drive. The applicant requests the ability to rezone eleven (11) lots as an assemblage for commercial use to construct a fueling station with a convenience store. The proposed assemblage includes of seven (7) existing single family lots, demolition of the homes on them, and four (4) vacant lots. One of the vacant lots is Tract 'K', sold to the property seller by the City. This rezoning action would allow for a range of land uses permitted within the C-2 zoning district, including the use desired by the applicant.

A. SITE INFORMATION:

1. Tax Parcel No.: 30-18-31-03-40-0280, 30-18-31-03-40-0270
30-18-31-03-40-0290, 30-18-31-03-40-0310
30-18-31-03-40-0230, 30-18-31-03-40-0240
30-18-31-03-40-0250, 30-18-31-03-40-0260
30-18-31-03-40-0300, 30-18-31-03-40-0320
30-18-31-03-00-0110

2. Property Addresses: Varies

3. **Property Acreage:** ±3.9 acres

4. **Property Location:** At the northeast corner of Saxon Boulevard and Finland Drive (see Figure 1).

5. **Property Legal Description:**

A TRACT OF LAND, BEING LOTS 23, 24, 25, 26, 27, 28, 29, 30, 31, 32 AND TRACT "K", BLOCK 101, DELTONA LAKES UNIT THREE, ACCORDING TO THE PLAT THEREOF AS RECORDED IN MAP BOOK 25, PAGES 105 THROUGH 120, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, BEING DESCRIBED AS FOLLOWS.

COMMENCE AT THE NORTHWEST CORNER OF SAID LOT 32, FOR A POINT OF BEGINNING; THENCE RUN NORTH 89˚23'36" EAST, ALONG THE NORTH LINE OF SAID LOT 32, A DISTANCE OF 125.00 FEET TO THE NORTHEAST CORNER OF SAID LOT 32; THENCE RUN NORTH 00°50'10" WEST, ALONG THE WEST LINE OF SAID TRACT "K", 100.00 FEET TO THE NORTHWEST CORNER OF SAID TRACT "K", THE RUN NORTH 89°29'56" EAST ALONG THE NORTH LINE OF SAID TRACT "K", LOT 24 AND LOT 23, A DISTANCE OF 403.76 FEET TO THE NORTHEAST CORNER OF SAID LOT 23; THENCE RUN SOUTH 09°42'25" EAST, ALONG THE EAST LINE OF SAID LOT 23, A DISTANCE OF 128.53 FEET TO THE SOUTHEAST CORNER OF SAID LOT 23 AND A POINT LYING ON THE WEST RIGHT-OF-WAY LINE OF W. APACHE CIRCLE AS RECORDED IN AFORESAID PLAT OF DELTONA LAKES UNIT THREE, SAID POINT ALSO LIES ON A NON-TANGENT CURVE CONCAVE SOUTHEASTERLY; THENCE RUN SOUTHWESTERLY, ALONG SAID WEST RIGHT-OF-WAY LINE AND SAID CURVE, HAVING A RADIUS OF 130.00 FEET, A CENTRAL ANGLE OF 77˚00"37", AN ARC LENGTH OF 174.73 FEET, A CHORD LENGTH OF 161.87 FEET AND A CHORD BEARING OF SOUTH 41˚47'17" WEST TO THE POINT OF TANGENCY; THENCE RUN SOUTH 03˚16'58" WEST, ALONG SAID WEST RIGHT-OF-WAY LINE, 159.13 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE NORTHWESTERLY; THENCE RUN SOUTHWESTERLY, ALONG SAID WEST RIGHT-OF-WAY LINE AND SAID CURVE, HAVING A RADIUS OF 25.00 FEET, A CENTRAL ANGLE OF 49˚18'42", AN ARC LENGTH OF 21.52 FEET, A CHORD LENGTH OF 20.86 FEET AND A CHORD BEARING OF SOUTH 27˚56'20" WEST TO A POINT LYING ON THE NORTHERLY RIGHT-OF-WAY LINE OF SAXON BOULEVARD, AS DESCRIBED IN THAT CERTAIN WARRANTY DEED AS RECORDED IN OFFICIAL RECORDS BOOK 4981, PAGE 3204, OF SAID PUBLIC RECORDS; SAID POINT ALSO LIES ON A NON-TANGENT CURVE CONCAVE NORTHEASTERLY; THENCE RUN NORTHWESTERLY, ALONG SAID NORTHERLY RIGHT-OF-WAY LINE PER SAID OFFICIAL RECORDS BOOK 4981, PAGE 3204 AND THE FOLOWING OFFICIAL RECORDS BOOKS 6233 PAGE 3574, OFFICIAL RECORDS BOOK 4716 PAGE 4217, OFFICIAL RECORDS BOOK 4857 PAGE 1546 OF SAID PUBLIC RECORDS AND SAID CURVE, HAVING A RADIUS OF 1088.00 FEET A CENTRAL ANGLE OF 11˚50'21", AN ARC LENGTH OF 224.81 FEET, A CHORD LENGTH OF 224.41 FEET

AND A CHORD BEARING OF NORTH 79˚05'56” WEST TO THE POINT OF TANGENCY; THENCE RUN NORTH 73˚10'46” WEST, ALONG SAID NORTHERLY RIGHT-OF-WAY LINE, 55.15 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY; THENCE RUN NORTHWESTERLY, ALONG SAID NORTHERLY RIGHT-OF-WAY LINE AND SAID CURVE, HAVING A RADIUS OF 807.00 FEET, A CENTRAL ANGLE OF 08˚27'39”, AN ARC LENGTH OF 119.17 FEET, A CHORD LENGTH OF 119.06 FEET AND A CHORD BEARING OF NORTH 77˚24'35” WEST TO THE POINT OF REVERSE CURVATURE OF A CURVE CONCAVE NORTHEASTERLY; THENCE RUN NORTHWESTERLY, ALONG SAID NORTHERLY RIGHT-OF-WAY LINE AND SAID CURVE, HAVING A RADIUS OF 35.00 FEET, A CENTRAL ANGLE OF 80˚48'15”, AN ARC LENGTH OF 49.36 FEET, A CHORD LENGTH OF 45.37 FEET AND A CHORD BEARING OF NORTH 41˚14'18” WEST TO THE POINT OF TANGENCY, SAID POINT LYING ON THE EASTERLY RIGHT-OF-WAY LINE OF FINLAND DRIVE, AS RECORDED IN THE AFORESAID PLAT OF DELTONA LAKES UNIT THREE, THENCE RUN NORTH 00˚50'10” WEST, ALONG SAID EASTERLY RIGHT-OF-WAY LINE, 201.39 FEET TO THE POINT OF BEGINNING.

CONTAINING 3.9 ACRES, MORE OR LESS.

Figure 1: Location Map

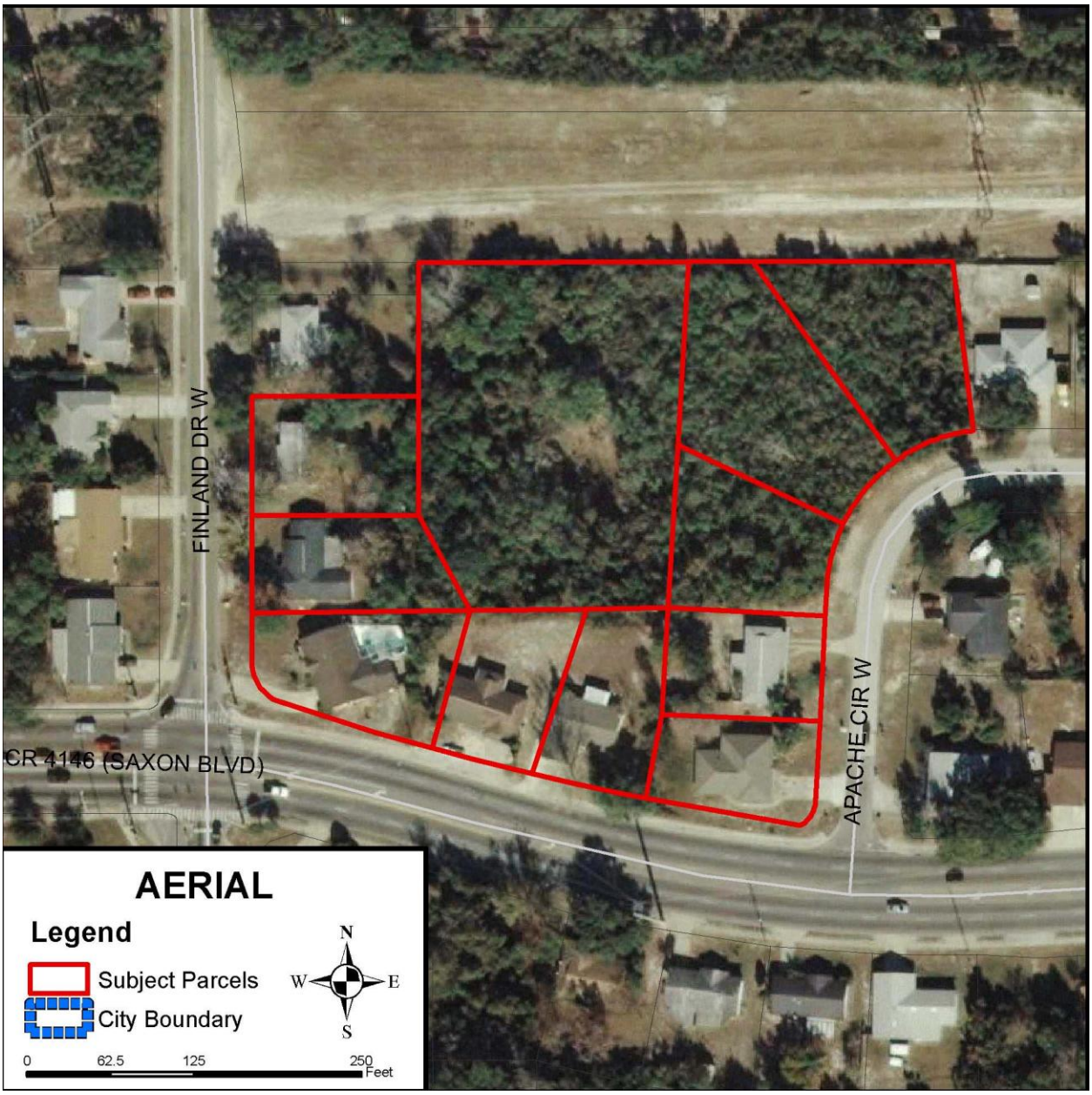


Figure 2: Aerial Photo

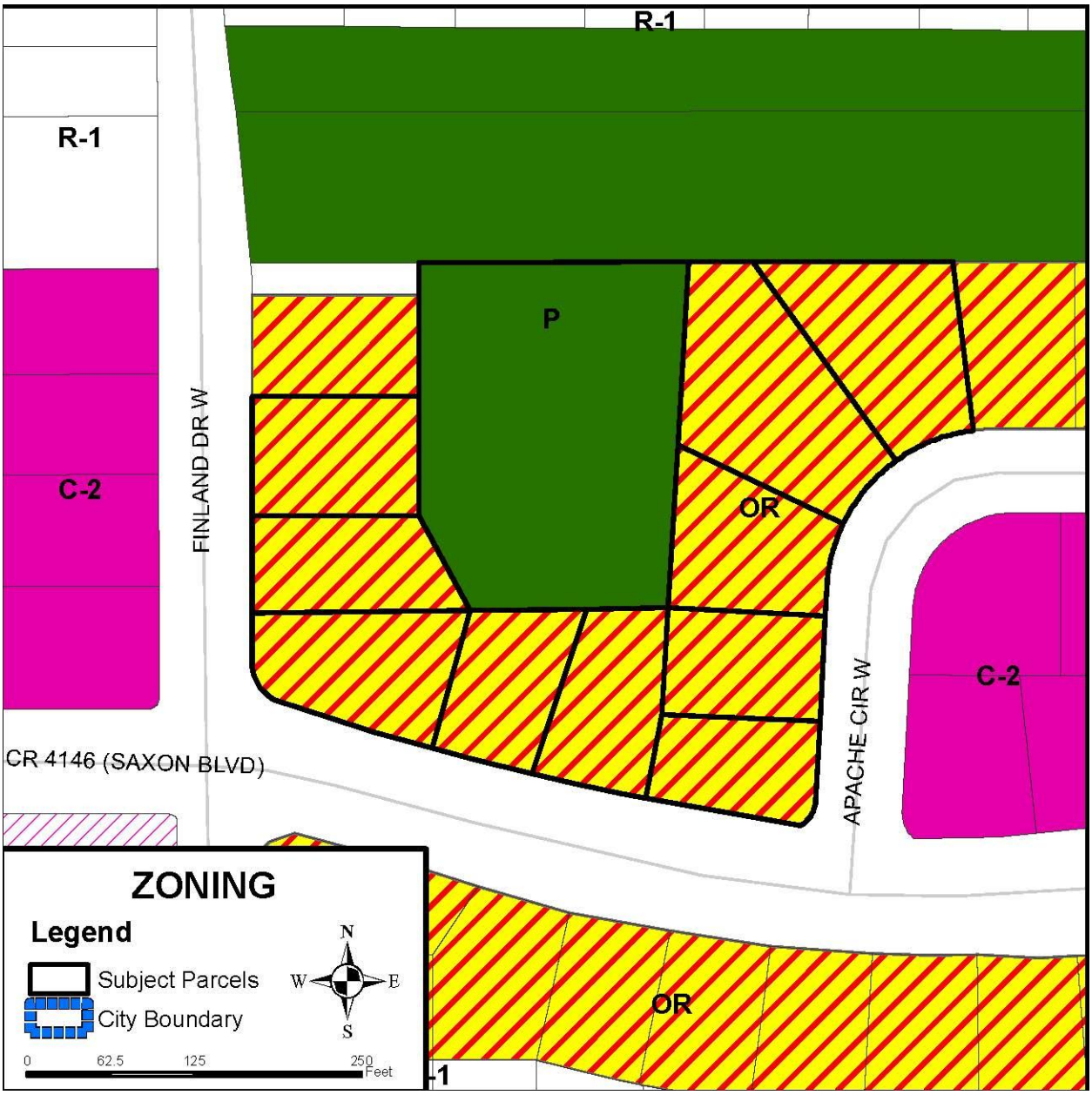


Figure 3: Existing Zoning

B. Existing Zoning:

1. Subject Property:

Existing: Office Residential (OR) and Public (P)

Requested: General Commercial (C-2)

2. Adjacent Properties:

North: Public (P)

South: Office Residential (OR)

East: General Commercial (C-2)

West: General Commercial, C-2

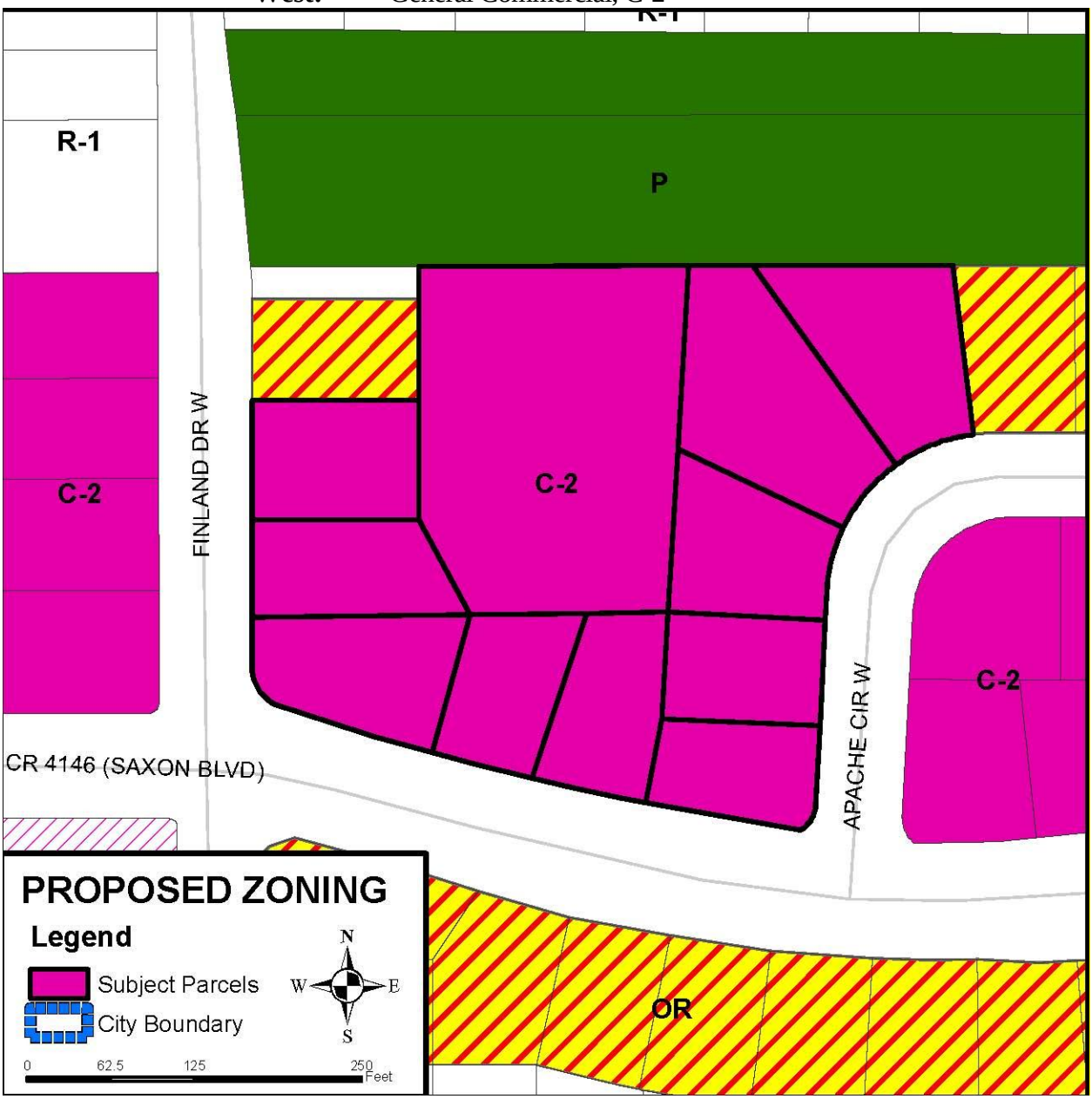


Figure 4: Proposed Zoning

C. Proposed Zoning:

General Commercial District (C-2) (Section 110-316 Purpose and Intent.) The purpose and intent of the General Commercial (C-2) zoning classification is to encourage the development of intensive commercial areas that provide a wide range of non-residential goods and services, located and adjoining at least one major collector or arterial road. The C-2 classification is intended to be applied to strip-retail areas, Interstate Highway interchange areas, and other intersections that are characterized by high traffic volumes appropriate for highway-oriented commercial development and shopping centers. This district is not intended to be applied within established residential areas or areas of lesser intensity; except when those areas are either in transition, blighted, or designated in the Commercial future land use category on the adopted Future Land Use Map, as it may be amended from time to time.

D. Back Ground:

The subject property is proposed to be rezoned based on an application to accommodate an automobile service station, type C (fueling station with convenience store). However, the proposed zoning amendment is for conventional zoning to C-2 and any of the land uses listed within that district (see Section 110-316 of the Code of Ordinances) would have the potential to be development on the subject site whether a permitted or conditional uses. Conditional uses on-site can only be approved through additional City Commission action. Thus, this zoning application is requesting the ability to allow for a range of land uses and development rights on the assembled parcels that despite the use included with the zoning application could be changed by the applicant.

Since the area-wide rezoning event in this corridor several years ago, this is one of the first redevelopment activities located along Saxon Boulevard between I-4 and Normandy Boulevard in nearly a decade. The prospect of this development has created interest by others in redeveloping the Saxon Boulevard corridor, as evidenced through increased due diligence activity. The proposed rezoning at this location has also supported a study to extend/upgrade sewer service from the Saxon Boulevard interchange to the Fisher Water Reclamation Facility. The sanitary sewer installation would facilitate more commercial development opportunities in the area.

E. Support Information

Public Facilities:

a.	Potable Water:	Deltona Water
b.	Sanitary Sewer:	Deltona Water (once available)
c.	Fire Protection:	City Fire Station 62
d.	Law Enforcement:	Volusia County Sheriff's Office (VCSO)
e.	Electricity:	Duke Energy (formerly Progress Energy)

F. 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.**
   The amendment to the Official Zoning Map will not diminish the vision of the goals or the policies of the Comprehensive Plan. The current future land use designation for the site is Commercial. The C-2 zoning is consistent with the Commercial future land use designation.

2. **Its impact upon the environment or natural resources.**
   The subject property along the roads is developed with single family residences and the interior portion is undeveloped with a mixture of palms and scrub oaks. There is a depressional area in this portion of the property featuring steep slopes that appears to be a sinkhole. Water is ponded at the bottom of this area and exhibits wetland characteristics. The wetland is likely less than one-third of an acre and development within the wetland may be considered exempt under Chapter 98 of the City Land Development Code. The soils on-site are well-drained and classified as Paola Fine Sand. According to the February 19, 2014, a FEMA flood zone map, the subject property is not located within the 100 year floodplain.

   The site is home to a variety of small animals, such as rabbits, armadillos, squirrels, etc. that are tolerant of developed areas. Burrows were observed on the site; however, it was unclear if they were created by gopher tortoises. Before property development, the applicant will to need to survey the site for gopher tortoises and permit and relocate them to a suitable mitigation bank site, if any are present on-site. There are no other known listed species that utilize the property.

3. **Its impact upon the economy of any affected area.**
   The proposed impact upon the local economy would be the creation of retail commercial jobs and an increase in the non-residential tax base for the City. The proposed rezoning may facilitate retail commercial development on nearby sites, given its visible location. The area utilized for existing residential uses is impacted by the close proximity to the interchange and the high volumes of traffic along Saxon Boulevard and Finland Drive.

   Further, that portion of the property zoned (P) Public, formerly owned by the City and sold to the applicant, has not generated commercial property taxes while in City control. Therefore, the rezoning to the requested C-2 would result in the property being zoned consistent with C-2 zoning to the east and west of the site, existing commercial uses in the area, and taxed at a commercial rate. Commercial uses will generate employment, lower the City's unemployment rate, and utilize the visible corner to match the adjacent roadway network.

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 Volusia County School Board staff has indicated that this rezoning will not affect local schools.

   b. **Sewage Disposal:** City sewer capacity is available at the central sewer plant. However, suitable transmission lines are more the quarter mile away that are required for development. Therefore, the site will be served by an on-site septic system in the interim, until central sewer service is available. The City is currently undertaking a feasibility study to provide sewer to this area. The sewer system will be required to be installed as 'dry', until central sewer service becomes available.

   c. **Potable Water:** Deltona Water will serve the site and sufficient potable water capacity is available.

   d. **Drainage:** All site related stormwater will be managed on-site and will be constructed in accordance with the necessary requirements of the City's Land Development Code and other permitting agencies. Off-site drainage impacts will also be designed and engineered for site permitting.

   e. **Transportation Systems:** The subject property is located near the intersection of Interstate 4 and Saxon Boulevard; a congested area. The segment of Saxon Boulevard (I-4 to Normandy Boulevard) adjacent to the subject site is operating at a Level of Service "F". A Level of Service (LOS) "F" indicates that vehicle flow is sometimes halted by heavy traffic volumes typically at peak hours (morning and evening rush hours). The current traffic condition of the Saxon Boulevard segment from I-4 to Normandy Boulevard, at peak hours, has very slow speeds, limited maunverabilty, turn-lane storage issues, and occasionally grid-lock at AM and PM peak hours.

      The Comprehensive Plan has established a policy that the LOS on City thoroughfares generally should not be allowed to operate below a LOS of E. A level of service (LOS) E represents the maximization of the important and expensive public resource of roads. From a user standpoint, a roadway facility operates at a LOS E represents flowing traffic, at times below the speed limit and limited maneuvering opportunity. The purpose of implementing LOS standards is to maintain a level of mobility within the City. Mobility is critical to ensuring convenient travel throughout the City. However, LOS standards, while being a

good way to quantifiably maintain and protect roadway capacity, can result in the limitation of land use opportunity offered by major thoroughfares.

At the same time, traffic volume is used an indicator by potential businesses for site selection. This dichotomy of commercial uses looking for heavy traffic volumes to support viable business and a local government establishing a policy to protect roadway capacity counters each other. The City has a policy provision accommodate redevelopment of areas before public roadway improvements are made and contemplates traffic volumes above the LOS E threshold, as follows:

Policy CIE1-1.4
The determination of concurrency for backlogged facilities, included in the Thoroughfare System segments shall be consistent with the revised Land Development Regulations and established in the following manner:
9J-5.016(3)(c)(1,3,4&6):
a. Establish Benchmark Traffic Counts
The most recent twenty-four hour traffic counts taken prior to the adoption of this Comprehensive Plan shall be used as the benchmark counts for each backlogged road identified in the Transportation Element.

b. Set Percent Thresholds of Benchmark Traffic Counts
Each of these backlogged thoroughfare roads shall not be allowed to degrade its operational service standards on a peak hour basis (using the most recent sanction FDOT Highway Capacity Tables) by allowing no more than twenty (20) percent of the peak hour bench mark counts for such facilities in The City. Some backlogged thoroughfare roads will only be allowed to be degraded ten (10) or fifteen (15) percent from the adopted Level of Service.

c. Track Development - Trip Generation/Distribution
The City shall track all proposed new developments and based on generally accepted traffic modeling procedures identify the likely number of trips generated by such developments and their distribution specifically for this objective to the previously identified backlogged thoroughfare roads. Tracking shall start upon the Comprehensive Plan's effective date of the revised Land Development Regulations.

d. Tracking on a Cumulative Basis
This tracking of the additional trips to the twenty percent threshold of the benchmark counts and trips originating within the boundaries of the Future Transportation Map shall be done on a cumulative basis following the adoption of this plan.

e. Cumulative Thresholds Twenty, Fifteen and Ten Percent
The City shall not approve any additional final development orders, (excluding vested properties) including building permits, once the percent threshold for projects that would generate trips in excess of ten/fifteen/twenty percent on a peak hour basis; unless a final development order is subject to the adoption and implementation of an Area-wide Traffic Action Mitigation Plan. An Area-wide Traffic Action Mitigation Plan shall include, but not be limited to, the following activities: additional or modified turn lanes; additional or modified signalization; incentives for mass transit use where available; incentives for van/carpooling programs; promote staggered work hours; or operating lanes.

f. It shall be the goal of each Area-wide Traffic Action Mitigation Plan to achieve 100 percent mitigation of the impacts of a proposed development.
Such plans shall include, when applicable, participants in addition to the property owner or applicant in question such as but not limited to adjacent property owners and business establishments.

While this policy indicates capacity on a City thoroughfare roadway may be allowed to exceed a LOS E by up to 20%, there is a requirement for traffic mitigation. According to policy CIE1-1.4, mitigation options include, but are not limited to, access management in the form of modified turn lanes. The access management element of this policy will be implemented during the City land development review phase. According to the applicant's traffic impact analysis submitted as part of this rezoning request, a Saxon Boulevard right-in and right-out access to the site is proposed for Saxon Boulevard. This right-in right-out on Saxon Boulevard does not comport with the City Land Development Code driveway spacing requirements. The right-in, right-out will also result in more turning maneuvers on Saxon Boulevard More turning on the Saxon Boulevard thoroughfare further constraining traffic flow and creating safety problems. The safety problems with the right-in, right-out are more acute when traffic speeds, road curvature and limited sight distances associated with the subject segment of Saxon Boulevard are factored.

A significant component regarding access to the site will be a driveway cut-off of Finland Drive. According to the City Land Development Code, the entrance should be no closer than 250 feet to the intersection of Saxon Boulevard and Finland Drive. The intent of the 250 foot separation is to protect the flow and function of major intersections. This distance will be needed along Finland Drive.

Lot 33 along Finland Drive and adjacent to the subject site is owned by the seller of this land assemblage, but has elected to exclude this parcel from sale and, thus the rezoning application. This exclusion will affect access management and design of the subject site for any future development. For this rezoning application, the applicant cannot elect to include Lot 33 without reapplying and

going back through the Planning and Zoning Board, because the legal description associated with due public notice does not include Lot 33.

The applicant prepared a Traffic Impact Analysis (TIA) with this application that included a proposed fueling facility with convenience store use. As proposed, this use will generate 3,256 trips per day, which is a significant amount of new trip-ends on a failing segment of Saxon Boulevard. However, with the City's ability to accommodate LOS thresholds to facilitate redevelopment (per policy CIE 1-1.4), the Saxon Boulevard LOS could be exceeded by up to 20%. The proposed project, along with background traffic, would create a condition where Saxon Boulevard operates at an LOS E + 6.9%. To assist in relief of over-capacity of roadways, Votran transit transportation is also available via bus routes 23. In summary, the applicant will be required to design the subject site to be safe, functional, and compatible to off-set transportation impacts in the area.

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

In Deltona, the Saxon Boulevard corridor has remained unchanged for some time now. Volusia County is preforming major renovations to the Orange City side of Saxon Boulevard on the other side of I-4. As stated, the City has hired a consultant to study the feasibility of installing a sewer transmission line to the area to serve commercial development along Saxon Boulevard from Normandy Boulevard to the I-4 interchange.

6. Any mistakes in the original classification.

No known mistakes.

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

Early in its history, the City changed the City Future Land Use Map for residential properties along Saxon Boulevard between I-4 and Normandy Boulevard from a residential land use category to Commercial to stimulate economic and non-residential development within this urban corridor. Aside of the current platting and existing residential development pattern, the change to Commercial on the Future Land Use Map represents a City policy that is desirous of adjacent land uses to be placed in strategic locations along accommodating roadways and near interchanges. The City followed the policy action by administratively rezoning the area to both C-2 and OR to transition the neighborhood from predominantly residential to commercial and office uses.

While residential uses currently dominate the existing land use pattern, the roadways, zoning designations, and future utility potential indicates that the area is designed to accommodate commercial and office uses. Walgreens at the northwest corner of Saxon Boulevard and Normandy Boulevard is one of the first redevelopment conversions in the area, as an example. This incremental conversion has impacts on the existing residential areas, in the form of traffic,

signage, light and noise pollution. The effort is to accommodate and mitigate those impacts to the greatest extent possible, while providing for business and economic opportunity appropriate and strategic areas of the City.

The OR zoning category is consistent with the underlying Commercial future land use designation, but predominantly commercial uses are not allowed in the OR zoning district. The subject property is under unified control, making development activity viable on the site. Therefore, the proposed C-2 designation would be appropriate to facilitate redevelopment for commercial uses on-site and is consistent and compatible with C-2 both east and west of the assembled tract. Rezoning the property to C-2 would represent a logical extension of the C-2 zoning.

CONCLUSION/STAFF RECOMMENDATION:

The proposed rezoning is consistent with the City's Comprehensive Plan goals for economic development, employment, and general public health, welfare, and safety. The requested C-2 zoning will support commercial development at this location, in proximity to the Interstate 4 interchange and along the existing Saxon Boulevard urban corridor. The proposed rezoning represents an incremental improvement of the City tax base, which is predominantly reliant on low density residential land uses. The potential for commercial development at this location is anticipated to facilitate more options to serve Deltona residents. Therefore, staff recommends approval of the rezoning application from OR and P to C-2.

TRAFFIC IMPACT STUDY

For
RaceTrac Gas Station
Saxon Boulevard at Finland Drive
Deltona, Florida

Prepared for:

RaceTrac Petroleum, Inc

Traffic Engineering Data Solutions, Inc.
80 Spring Vista Drive
DeBary, Florida 32713
January 2014

Professional Engineer:
Chris J. Walsh, P.E.

P.E. Number 57626

INTRODUCTION

Traffic Engineering Data Solutions, Inc. (TEDS) has been retained to conduct a traffic impact analysis for the proposed RaceTrac gas station in the northeast quadrant of the Saxon Boulevard/Finland Drive intersection in the City of Deltona, Florida (see ***Figure 1***). The proposed gas station will include 20 vehicle fueling positions along with a 5,928 square-foot convenience store. A preliminary site plan of the proposed development is included in the ***Appendix***.

This study, which evaluates the overall impact of the development on the adjacent roadway network, was prepared to meet the City of Deltona's transportation concurrency requirements. This study was conducted in accordance with the approved methodology as provided in the ***Appendix***.

PROJECT ACCESS

Access to the proposed development is proposed via three driveways. Driveway #1, a full access driveway, will be located on Finland Drive Williamson Boulevard approximately 130 feet north of Saxon Boulevard. Driveway #2 is a proposed right-in/right-out driveway on Saxon Boulevard approximately 230 feet east of Finland Drive. It is proposed to have a westbound right-turn lane on Saxon Boulevard at Driveway #2. Another full-access driveway, Driveway #3, is also proposed on Apache Circle approximately 130 feet north of Saxon Boulevard.

STUDY AREA

Because the proposed development is projected to generate between 100 and 300 PM peak-hour trips, the study area was determined based upon a three-percent level of significance as consistent with the Volusia TPO Transportation Impact Analysis (TIA) Guidelines. However, as summarized in the methodology, the development impact will not exceed three percent on any of the adjacent roadways. Regardless, the following roadways were analyzed.

- Saxon Boulevard from Interstate 4 to Finland Drive
- Saxon Boulevard from Finland Drive to Normandy Boulevard
- Finland Drive south of Saxon Boulevard
- Finland Drive north of Saxon Boulevard
- Apache Circle

The study intersections include the following:

- Saxon Boulevard at Finland Drive
- Saxon Boulevard at Apache Circle
- All access point intersections with public streets

Figure 1
Site Location Map

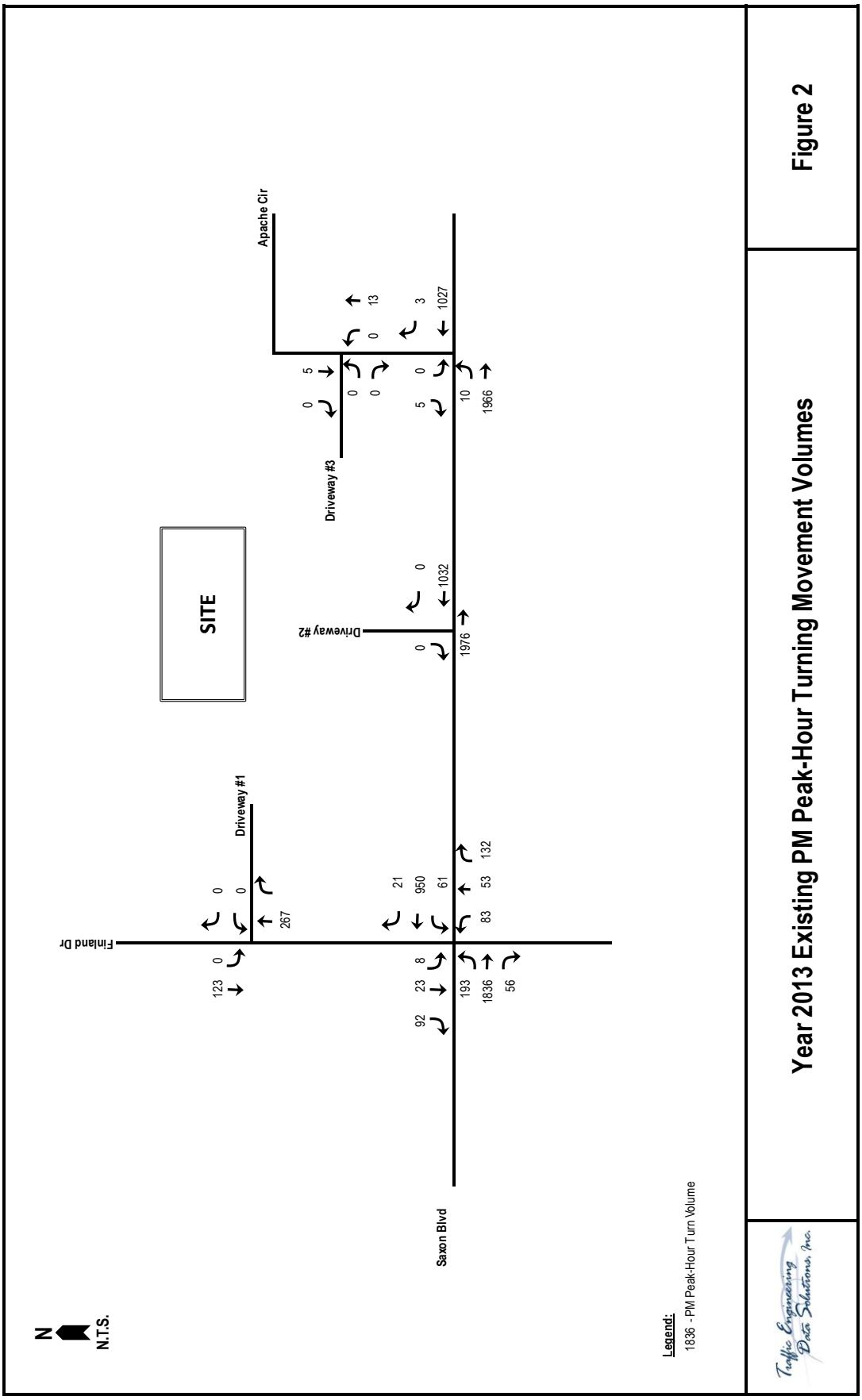
Aerial Image: Google Earth

EXISTING CONDITIONS

For purposes of this study, a PM peak-period turning movement count, from 4:00 PM to 6:00 PM, was conducted at the Saxon Boulevard/Finland Drive intersection as well as at Apache Circle. ***Figure 2*** summarizes the existing PM peak-hour turning movement volumes at the study intersections. Printout of the traffic counts are provided in the ***Appendix***.

The PM peak-hour two-way volumes on the roadway segments were calculated from the PM peak-hour turning movement volumes shown in ***Figure 2***. These 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 FDOT's 2012 Generalized Service Volume tables 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 study roadway segments are below the generalized service volume, thereby indicating that all roadway segments currently have acceptable operating conditions.

The PM peak-hour existing operating conditions for the Saxon Boulevard/Finland Drive intersection 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 Saxon Boulevard/Finland Drive intersection currently operates acceptably with an overall intersection level of service of C (average delay of 33.5 seconds/vehicle). The unsignalized intersection of Saxon Boulevard/Apache Circle was also analyzed using HCS 2010. Based on the analysis the southbound approach and eastbound left-turn movement both currently operate acceptably at level of service B. HCS printouts are provided in the ***Appendix***.



Year 2013 Existing PM Peak-Hour Turning Movement Volumes

Figure 2

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

Roadway Segment	Existing Number of Lanes	Adopted Level of Service Std.	Pk-Hr 2-Way Generalized Service Volume	Existing PM Pk-Hr 2-Way Volume	Year of Count	Existing Volume Exceeds Svc Vol?
Saxon Blvd						
Interstate 4 to Finland Dr	4	E	3,222	3,210	2013	no
Finland Dr to Normandy Blvd	4	E	3,222	3,008	2013	no
Apache Cir						
Saxon Blvd to Normandy Blvd	2	D	931	18	2013	no
Finland Dr						
South of Saxon Blvd	2	D	931	390	2013	no
Saxon Blvd to Sullivan St	2	D	931	390	2013	no

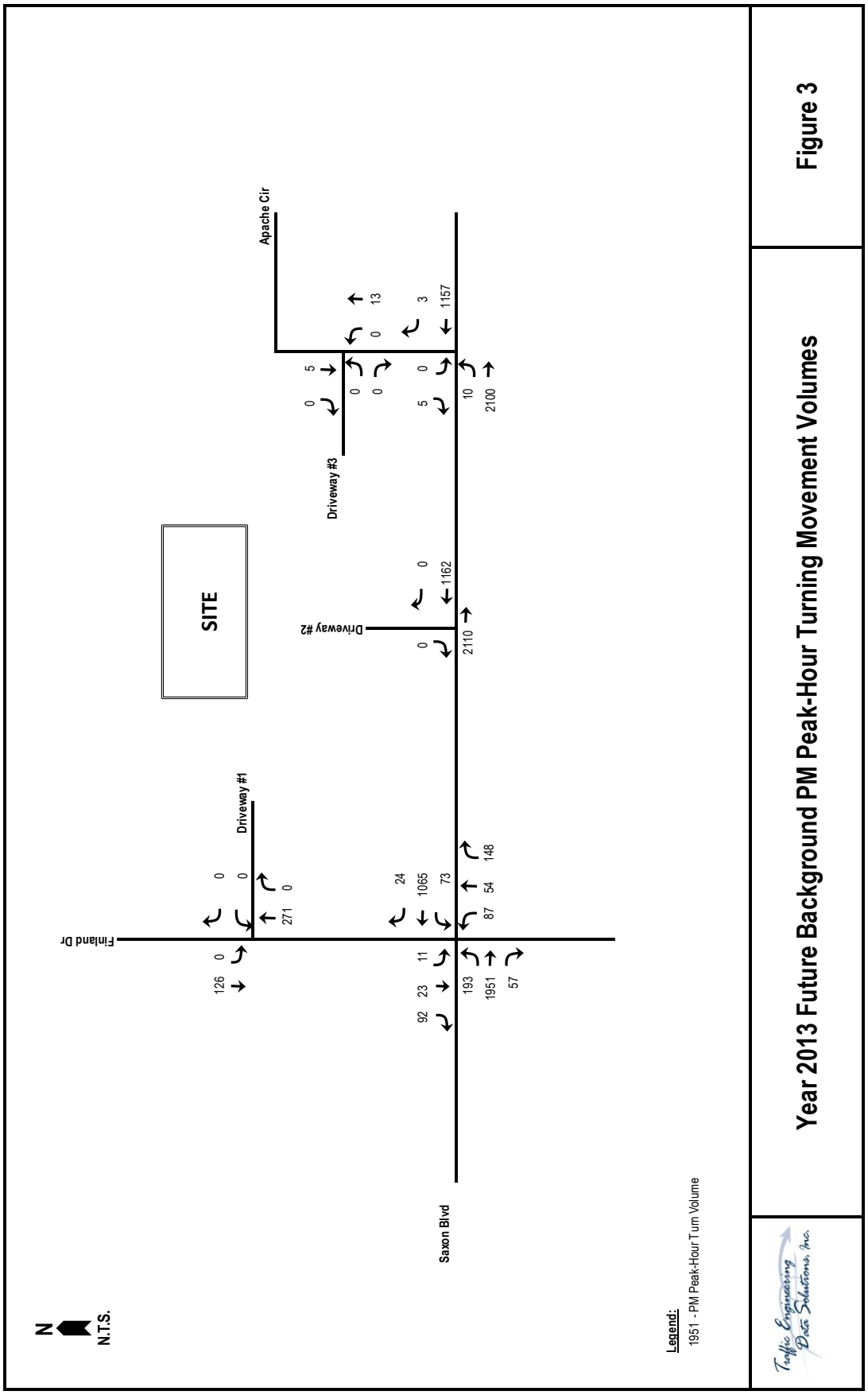
FUTURE BACKGROUND TRAFFIC

Future background traffic is the non-project-related traffic projected to utilize the study roadways and intersections. For the purposes of this analysis, trips from the proposed Saxon Sterling Silver retail development and the proposed Halifax Medical walk-in clinic (5,037 square feet) were added to the existing traffic volumes to obtain the future background traffic volumes on the study roadways and intersections. The trips from the Saxon Sterling Silver development were obtained from Transportation Impact Analysis dated November 2013 as prepared by CPH. The trips for the Halifax Medical clinic were calculated using ITE and assigning the trips to the study roadways. The resulting future background turning movement volumes are shown in ***Figure 3***. Supporting documentation regarding vested trip information is provided in the ***Appendix***.

The future background PM peak-hour bi-directional volumes on the study roadway segments were calculated based on the volumes in ***Figure 3*** and are summarized in ***Table 2***. The resulting annual growth rates from the vested trips were then calculated. Based on the vested trips, the resulting annual growth rate on Saxon Boulevard ranges between 7% and 8%. In reviewing the County's historical traffic data on Saxon Boulevard as maintained on the County website, this level of growth is conservatively high as traffic volumes over the last 5 years have been stagnant and/or decreased. Relative to the resulting growth on Finland Drive, current historical data is not available. However, recognizing that these roadways essentially serve areas that are built out, the resulting annual growth rate of 2% south of Finland Drive and 13% north of Finland Drive are conservatively high. As for Apache Circle, no traffic growth is expected. ***Table 2*** shows the future background PM peak-hour two-way volumes on the study roadway segments.

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

Roadway Segment	Existing PM Pk-Hr 2-Way Volume	Year of Count	Future Bckgrnd PM Pk-Hr 2-Way Volumes	Total Future Bckgrnd PM Pk-Hr 2-Way Volumes	Resulting Annual Growth Rate
Saxon Blvd					
Interstate 4 to Finland Dr	3,210	2013	235	3,445	7%
Finland Dr to Normandy Blvd	3,008	2013	249	3,257	8%
Apache Cir					
Saxon Blvd to Normandy Blvd	18	2013	0	18	0%
Finland Dr					
South of Saxon Blvd	390	2013	52	442	13%
Saxon Blvd to Sullivan St	390	2013	7	397	2%



Year 2013 Future Background PM Peak-Hour Turning Movement Volumes

Figure 3

TRIP GENERATION

The number of vehicle trips that will originate from, or are destined to, a development is dependent upon the type and amount of land uses contained within that development. 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) Informational Report, *Trip Generation, 9th Edition*. For the proposed development, ITE Land Use Code 945 (Gas Station with Convenience Store) was used. As summarized in ***Table 3***, the proposed development is projected to generate 3,256 total daily trips and 270 total PM peak-hour trips (135 in, 135 out).

In order to determine the net effect of the proposed development on the future road system, the trip generation volumes need to be adjusted to consider the effects of pass-by trips. Pass-by trips are those trips that will stop at the site while traveling by the site on the adjacent roadways. Because pass-by trips are effectively vehicles that are already on the roadway, pass-by trips do not create any new impacts on the adjacent roadway segments. Pass-by trips for the gas station were calculated based on the pass-by rate of 56% for ITE Land Use Code 945 (Gas Station with Convenience Store) as provided in ITE's *Trip Generation Handbook, 2nd Edition*. Of the total trip generation potential of the site, 151 PM peak-hour trips (76 in, 75 out) are expected to be pass-by trips. The Volusia TPO's TIA Guidelines limit pass-by trips to 14% of the background traffic on the adjacent streets. Based on ***Figure 3***, the future background traffic on Saxon Boulevard adjacent to the site is 3,272 PM trips, of which 14% equates to 458 trips. Therefore, the 151 pass-by trips as shown in ***Table 3*** are acceptable. As summarized in ***Table 3***, the proposed development is projected to generate 119 new external PM peak-hour trips (59 in, 60 out).

Table 3
Trip Generation Projection for Proposed RaceTrac Gas Station

Land Use	Intensity	Units	Daily			PM Peak		
			In	Out	Total	In	Out	Total
Gas/Svc Station with Convenience Market	20	Vehicle Fueling Positions	1628	1,628	3,256	135	135	270
Pass-By Trips	Pass-By %	56.0%	912	912	1,824	76	75	151
Net New External Trips			716	716	1,432	59	60	119

Gasoline/Service Station with Convience Market(ITE 9th Edition - Land Use Code 945)

Daily	T = 162.78 x (# of VFP)	50% In	50% Out
PM Peak Hour	T = 13.51 x (# of VFP)	50% In	50% Out

TRIP DISTRIBUTION

The trip distribution pattern defines the primary corridors that will be traveled by the traffic generated by the project. By reviewing the land use types in the vicinity of the site, proximity to competing sites such as the existing RaceTrac service station on the west side of Interstate 4, and applying engineering judgment with regard to the interaction with the project, a trip distribution pattern for the net new external trips was estimated. 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. Recognizing that the site will directly access on to Apache Circle, 25% of those trips traveling to the site from Normandy Boulevard north of Saxon Boulevard were assigned to Apache Circle. As for the 70% exiting the site to travel east, it is estimated that approximately 25% of these trips will instead use Apache Circle.

Pass-by trips were also assigned to the project driveways and study intersections. However, the assignment of pass-by trips considered the volume of traffic on the roadways adjacent to the site, ease of access to the site for each direction of travel, as well as the consideration of other service stations in close proximity to the proposed development. ***Figure 5*** and ***Figure 6*** show the PM peak-hour new external trips and pass-by trips, respectively, 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 7*** shows the total (year 2014) PM peak-hour turning movement projections at the study intersections at build out of the development. ***Table 4*** summarizes the total PM peak-hour two-way volumes in year 2014 on the roadway segments at build out of the development.

Table 4
Year 2014 Roadway Segment Volumes and Operating Conditions
(PM Peak Hour Two-Way)

Roadway Segment	Number of Lanes	Adopted Level of Service Std.	Pk-Hr 2-Way Generalized Service Volume	Total Future Bckgrnd PM Pk-Hr 2-Way Volumes	Percent Assignment	Pk-Hr 2-Way Project Trips	Future PM Pk-Hr 2-Way Volume	Future Total Volume Exceeds Svc Vol?
Saxon Blvd								
Interstate 4 to Finland Dr	4	E	3,222	3,445	15.0%	18	3,463	YES
Finland Dr to Normandy Blvd	4	E	3,222	3,257	58.0%	69	3,326	YES
Apache Cir								
Saxon Blvd to Normandy Blvd	2	D	931	18	12.0%	14	32	no
Finland Dr								
South of Saxon Blvd	2	D	931	442	5.0%	6	448	no
Saxon Blvd to Sullivan St	2	D	931	397	10.0%	12	409	no

Figure 4
Trip Distribution

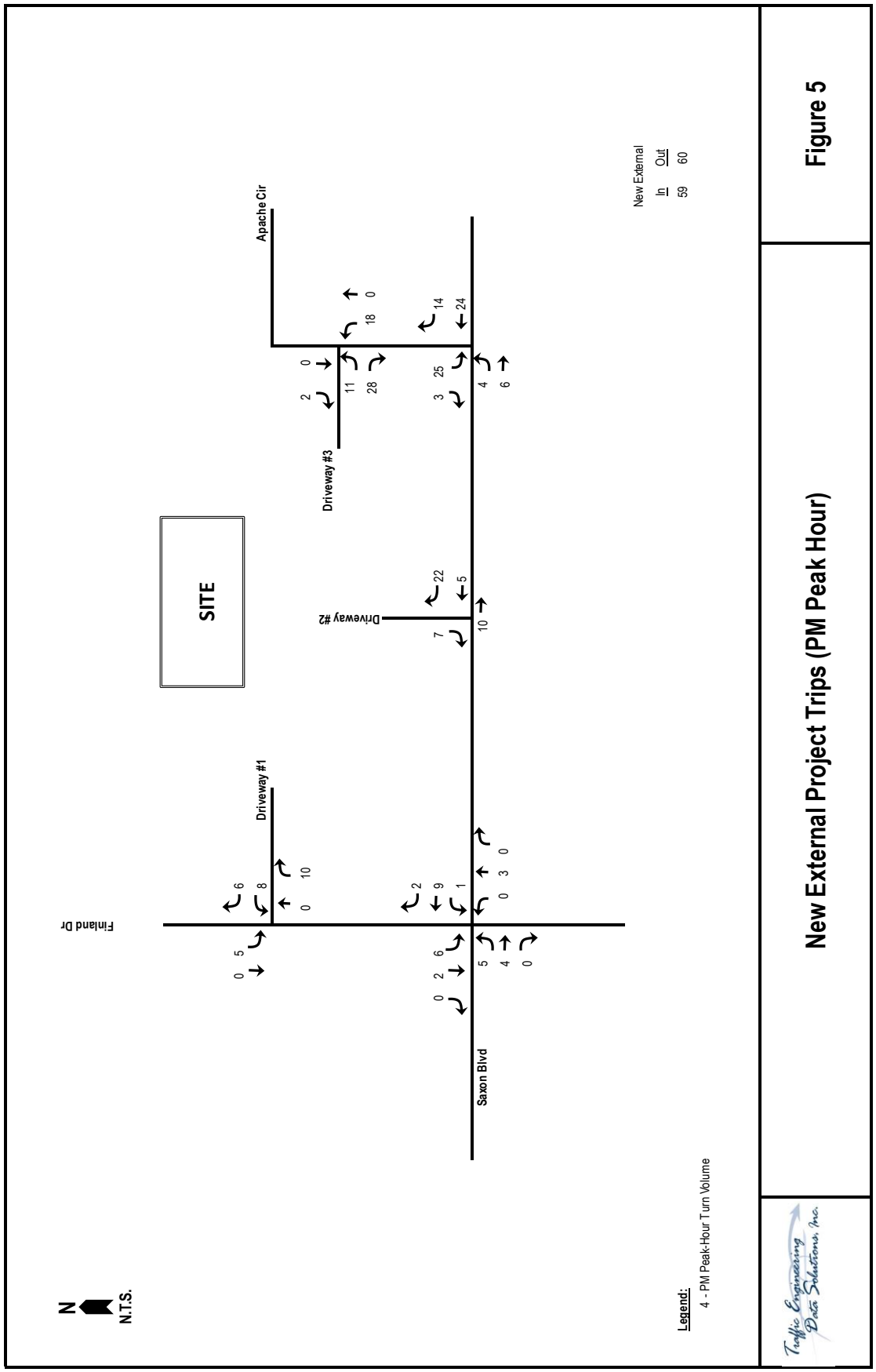
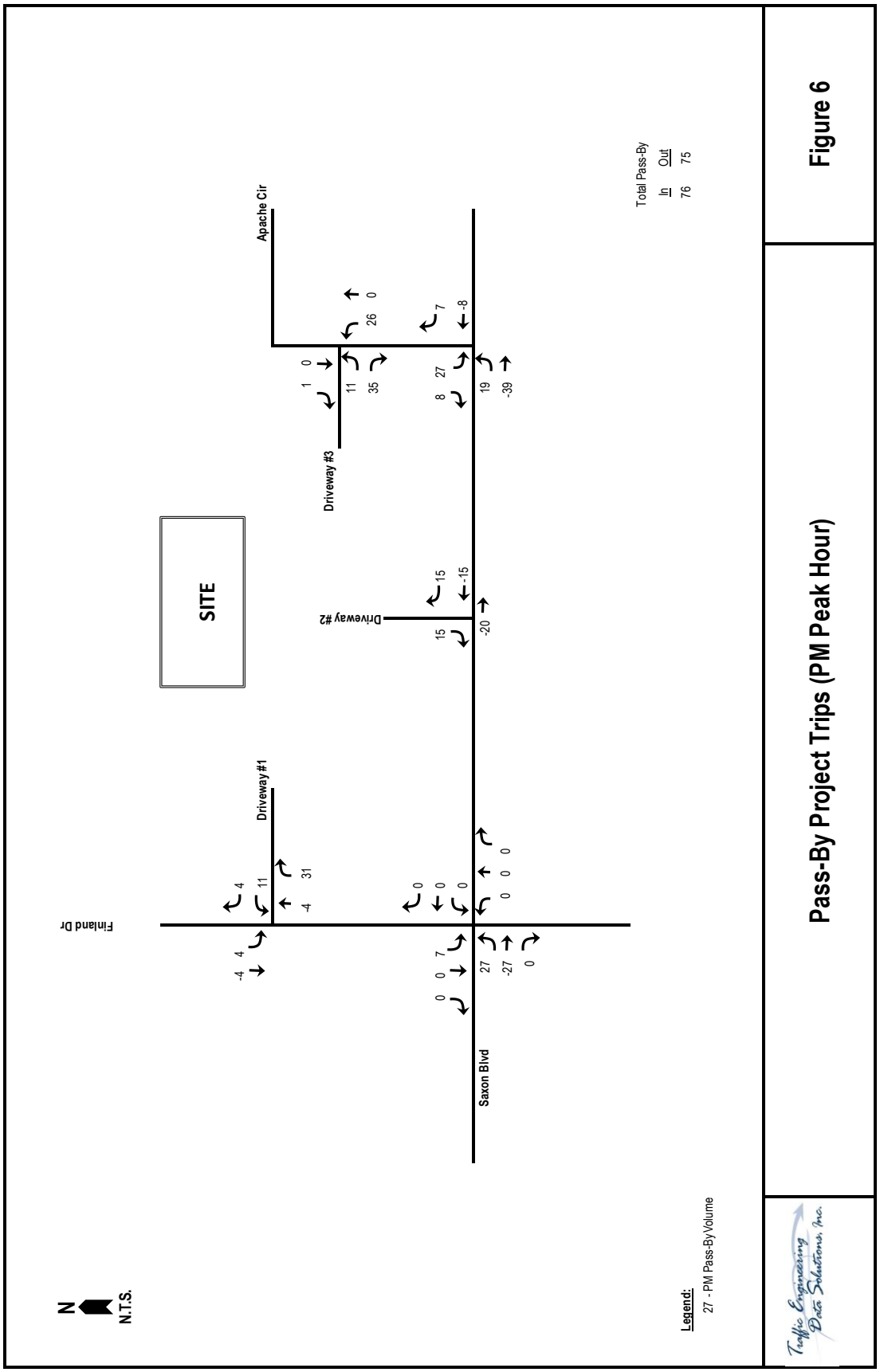


Figure 5

New External Project Trips (PM Peak Hour)



Pass-By Project Trips (PM Peak Hour)

Figure 6

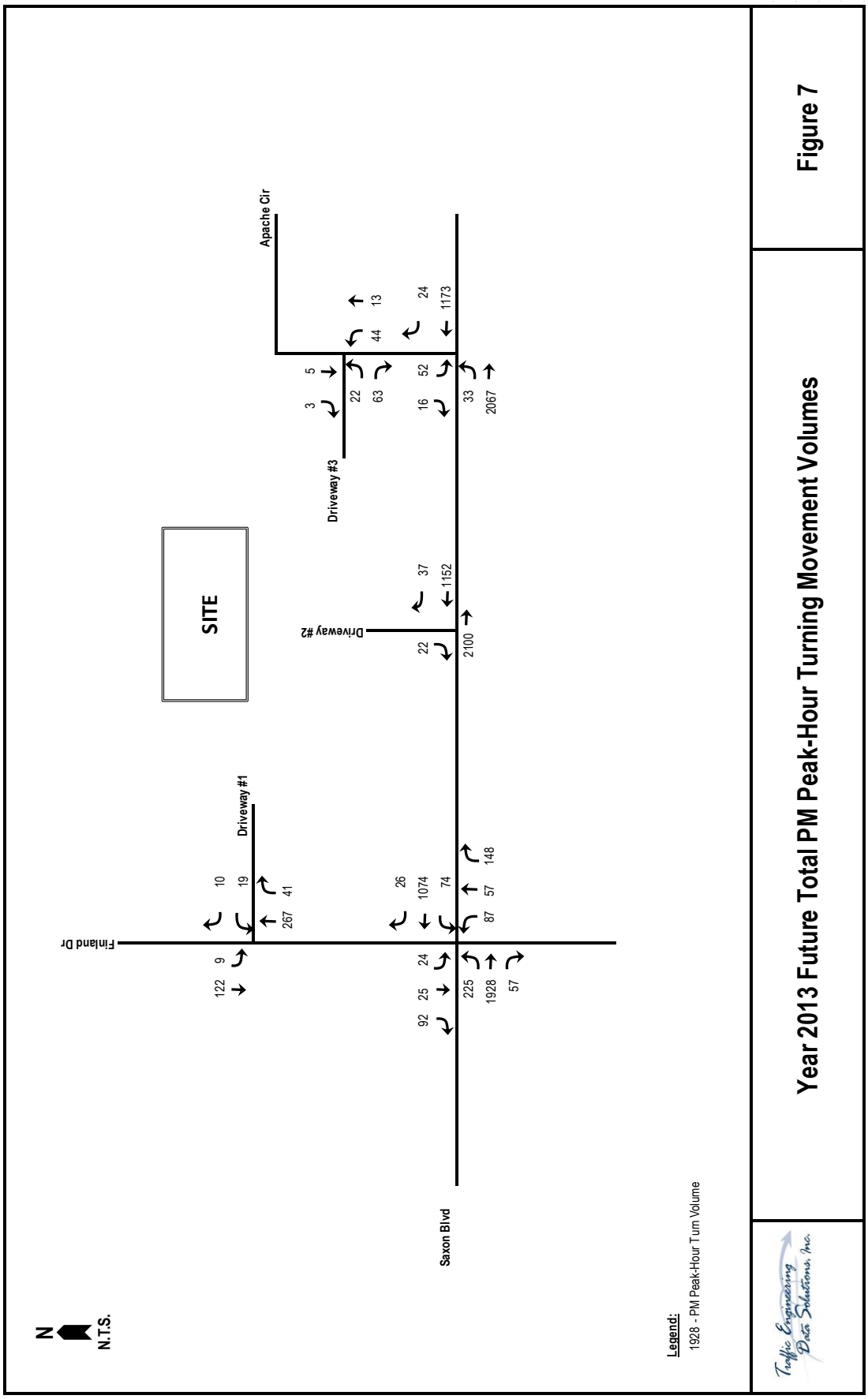


Figure 7

Year 2013 Future Total PM Peak-Hour Turning Movement Volumes

FUTURE CONDITIONS ANALYSIS

The PM peak-hour operating conditions of the roadway segments were analyzed by comparing total projected PM peak-hour two-way segment volumes to each roadway's generalized service volume. As summarized in ***Table 4***, the projected volumes on all study roadway segments are below the generalized service volumes, with the exception of Saxon Boulevard between Interstate 4 and Finland Drive and between Finland Drive and Normandy Boulevard. However, it should be noted that future background volumes on these two same roadway segments also exceed the generalized service volume thereby indicating that the deficiency is trigger by background traffic. Because a development is not required to mitigate deficiencies triggered by background traffic, the proposed development is not required to mitigate these deficiencies on Saxon Boulevard. All other study roadway segments are projected to have acceptable operating conditions in year 2014 at build out of the proposed RaceTrac gas station.

The PM peak-hour operating conditions of the Saxon Boulevard/Finland Drive intersection were analyzed at build out of the proposed development in year 2014 using HCS 2010 and the projected turning movements. Based on the HCS analysis, this intersection is projected to operate acceptably at overall level of service D (average delay of 40.0 seconds/vehicle) at build out of the proposed RaceTrac gas station. The HCS printout is provided in the ***Appendix***. Despite the intersection being shown to operate at an acceptable level of service, the developer is proposing to construct a southbound right-turn lane at the Saxon Boulevard/Finland Drive intersection to enhance operating conditions at the intersection. Based on the evaluation provided in the ***Appendix***, the project trips will increase the critical movement volume at the intersection by 8 PM peak-hour trips. However, the addition of a southbound right-turn lane increases the capacity of the critical movement sum by 92 PM peak-hour trips, thereby substantially offsetting the project's impact. Recognizing that the proposed improvement provides a capacity enhancement to City/County facilities, the engineering and construction costs for such improvement should be creditable against the project's transportation impact fees.

The unsignalized study intersections were also analyzed using HCS 2010 and the future turning movement volumes. As summarized in ***Table 5***, all movements at the unsignalized intersections are projected to operate with acceptable levels of service. HCS printouts are provided in the ***Appendix***.

Table 5
Summary of Unsignalized Intersection Analyses (PM Peak Hour)
Future Conditions (2014)

Intersection	Level of Service Standard	Delay (sec/veh)	Level of Service
Finland Drive at Driveway #1			
Southbound Left/Through	D	7.9	A
Westbound Left	D	11.4	B
Westbound Right	D	9.8	A
Saxon Boulevard at Driveway #2			
Southbound Right	E	12.2	B
Saxon Boulevard at Apache Circle			
Eastbound Left	E	11.5	B
Southbound Left/Right	E	42.0	E
Apache Circle at Driveway #3			
Northbound Left/Through	D	7.3	A
Eastbound Left/Right	D	8.9	A

CRITICAL/NEAR-CRITICAL ROADWAY SEGMENTS

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. The Volusia TPO Transportation Impact Analysis Guidelines specifies that convenience store developments are to analyze such roadways that are located within a one-mile radius. As conveyed in the approved methodology, due to the fact that another RaceTrac gas station is located on the west of the Saxon Boulevard/Interstate 4 interchange, no roadways will be evaluated west of I-95 as motorists would be expected to use that RaceTrac service station. The only other critical/near-critical roadway located within a one-mile radius is Saxon Boulevard between Interstate 4 and Normandy Boulevard. However, these roadway segments were already evaluated in a prior section of this study. Therefore, no other roadways are analyzed as part of this section.

CONCLUSIONS

Traffic Engineering Data Solutions, Inc. (TEDS) was retained to analyze the projected traffic impact for a proposed RaceTrac gas station proposed in the northeast quadrant of the Saxon Boulevard/Finland Drive intersection in Deltona, Florida.

Based on the analyses, the existing PM peak-hour two-way volumes for all study roadway segments are below the generalized service volume, thereby indicating that all roadway segments currently have acceptable operating conditions. Additionally, the Saxon Boulevard/Finland Drive intersection currently operates acceptably with an overall intersection level of service (LOS) of D during the PM peak hour. Also, the southbound approach and eastbound left-turn movement at the Saxon Boulevard/Apache Circle intersection both currently operate acceptably at level of service B.

At build out of the proposed RaceTrac in 2014, the projected volumes on all study roadway segments are below the generalized service volumes, with the exception of Saxon Boulevard between Interstate 4 and Finland Drive and between Finland Drive and Normandy Boulevard. However, it should be noted that future background volumes on these two same roadway segments also exceed the generalized service volume thereby indicating that the deficiency is trigger by background traffic. Because a development is not required to mitigate deficiencies triggered by background traffic, the proposed development is not required to mitigate these deficiencies on Saxon Boulevard. All other study roadway segments are projected to have acceptable operating conditions in year 2014 at build out of the proposed RaceTrac gas station.

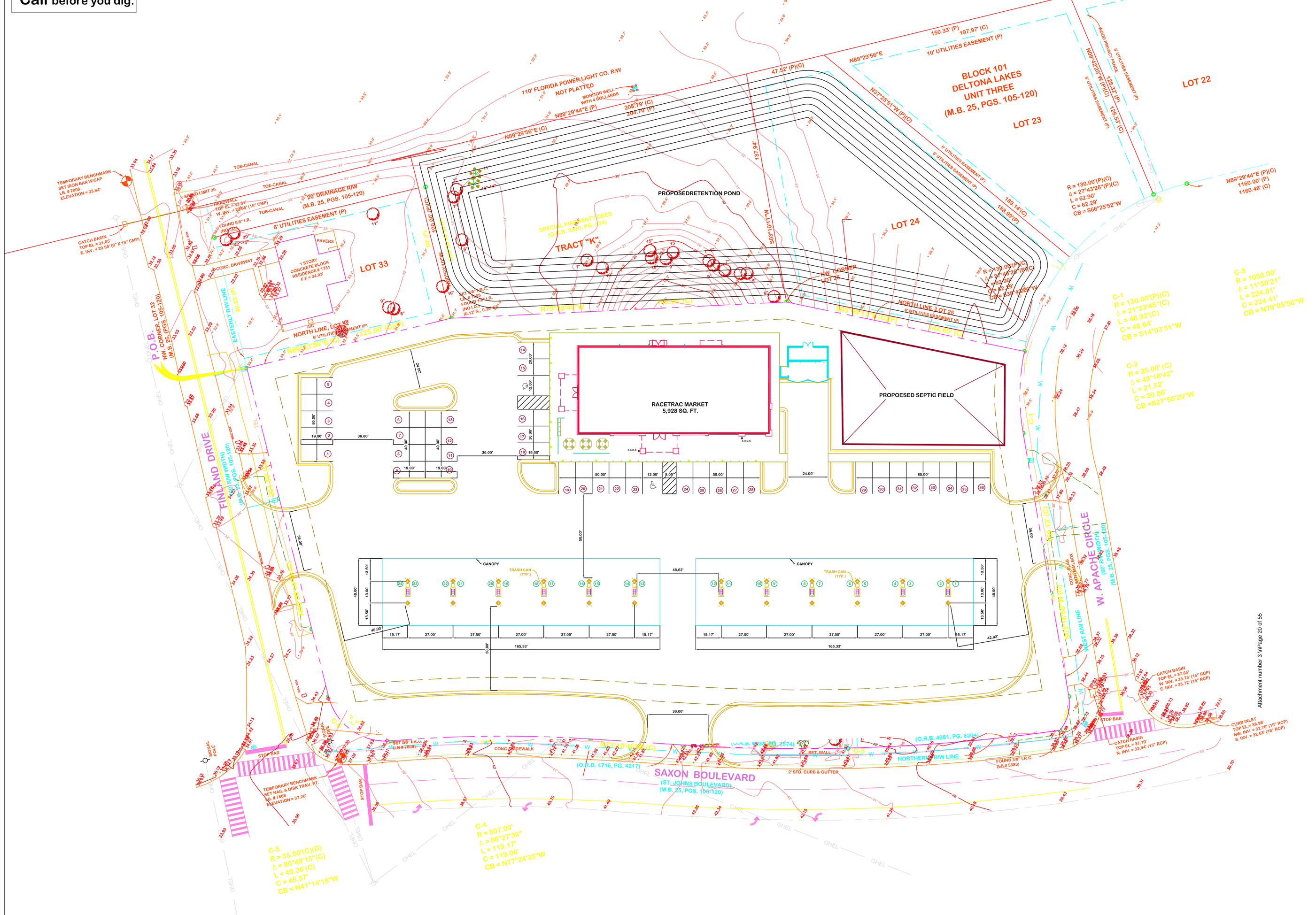
The Saxon Boulevard/Finland Drive intersection is projected to operate acceptably at LOS D at build out of the proposed development in 2014. Despite the intersection being shown to operate at an acceptable level of service, the developer is proposing to construct a southbound right-turn lane at the Saxon Boulevard/Finland Drive intersection to enhance operating conditions at the intersection. The addition of a southbound right-turn lane substantially offsets the project's impact. Recognizing that the proposed improvement provides a capacity enhancement to City/County facilities, the engineering and construction costs for such improvement should be creditable against the project's transportation impact fees.

With regard to the unsignalized intersections, all movements at the project driveways and the Saxon Boulevard/Apache Circle intersection are projected to operate acceptably at build out of the proposed RaceTrac service station in 2014.

Appendix

Preliminary Site Plan

Know what's **below.**
Call before you dig.



VICINITY MAP NTS

LEGEND

- PROPOSED ELEMENTS
- EXISTING ELEMENTS
- WATER LINE
- OVERHEAD ELECTRICAL LINE
- UNDERGROUND ELECTRICAL LINE
- TELEPHONE LINE
- GAS LINE
- SANITARY SEWER LINE
- DETAIL REFERENCE (4 / SD-4)
- N-5000.00 E-5000.00 NORTHING & EASTING COORDINATES
- ELECTRICAL TRANSFORMER PAD
- PARKING SPACE COUNT / DISPENSER NUMBER
- STORM CATCH BASIN
- STORM JUNCTION BOX
- STORM OUTLET CONTROL STRUCTURE
- SANITARY SEWER MANHOLE
- POWER POLE

SITE PLAN NOTES:

1. ALL WORK AND MATERIALS SHALL COMPLY WITH _____ COUNTY AND/OR CITY OF _____ REGULATIONS AND CODES AND O.S.H.A. STANDARDS.
2. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF TOWERS, SLOPE PAVING, COLUMNS, DOOR LOCATIONS, AND UTILITY ENTRANCES.
3. ALL DISTURBED AREAS SHALL RECEIVE 4 INCHES OF TOPSOIL, SEED, MULCH, AND WATER UNTIL A HEALTHY STAND OF GRASS IS ESTABLISHED.
4. EXISTING STRUCTURES WITHIN CONSTRUCTION LIMITS ARE TO BE ABANDONED, REMOVED, OR RELOCATED PER PLANS. ALL COST SHALL BE INCLUDED IN BASE BID.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS INCLUDING BUT NOT LIMITED TO, ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS AND POLES, ETC. AS REQUIRED PER PLANS. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. ALL COST SHALL BE INCLUDED IN BASE BID.
6. ALL CURB DIMENSIONS ARE TO THE FACE OF GUTTER OF CURB UNLESS OTHERWISE NOTED.
7. ALL BUILDING DIMENSIONS ARE TO THE FACE OF STRUCTURAL CMU.
8. THE BOTTOM OF CANOPY AT ITS LOWEST POINT IS TO BE 18 FEET ABOVE THE FINISH FLOOR ELEVATION OF THE BUILDING.
9. ALL STRIPING ON THIS PLAN IS TO BE PAINTED WITHIN 48 HOURS OF COMPLETED PAVING UNLESS OTHERWISE NOTED.

NOTE TO CEC:
- ALL NOTES MUST BE EDITED TO BE SITE SPECIFIC. ADDITIONAL CITY / COUNTY SPECIFIC NOTES MUST BE ADDED.

30 15 0 30 60 90 120
GRAPHIC SCALE IN FEET

NO.	DATE

THESE PLANS ARE SUBJECT TO FEDERAL COPYRIGHT LAWS: ANY USE OF SAME WITHOUT THE EXPRESSED WRITTEN PERMISSION OF RACETRAC PETROLEUM, INC. IS PROHIBITED.

RACETRAC PETROLEUM, INC.
3225 CUMBERLAND BOULEVARD
SUITE 100 ATLANTA, GA 30339
(770) 431-7600

SITE PLAN
RACETRAC MARKET
Saxon Boulevard @ Finland Drive
Deltona, Florida
Volusia County

DATE	04/12/2013
SCALE	1" = 30'
DRAWN-BY	TR
DRAWING NAME:	1061-RT6000.dwg
C-3.1	1
SHEET NO.	VERSION

CONTACT RACETRAC PETROLEUM, INC. PROJECT MANAGER PRIOR TO ANY REVISIONS TO THE PLAN SUPPLIED BY RACETRAC PETROLEUM, INC.

Methodology

Traffic Engineering Data Solutions, Inc.

Ref: 10560

TECHNICAL MEMORANDUM

To: Mr. Chris Bowley, AICP

From: Chris J. Walsh, P.E.

Subject: Traffic Impact Analysis Methodology – RaceTrac (Saxon Boulevard at Finland Drive) Deltona, Florida

Date: December 27, 2013

Introduction

Traffic Engineering Data Solutions, Inc. (TEDS) has been retained to conduct a traffic impact analysis for the proposed RaceTrac gas station in the northeast quadrant of the Saxon Boulevard/Finland Drive intersection in the City of Deltona, Florida (see ***Figure 1***). The proposed gas station will include 24 vehicle fueling positions along with a 5,928 square-foot convenience store. A preliminary site plan of the proposed development is attached. This letter summarizes the methodology for the City of Deltona concurrency study and for the Volusia County Use Permit Traffic Impact Analysis (TIA).

Project Access

Access to the proposed development is proposed via three driveways. One full access driveway is proposed on Finland Drive approximately 120 feet north of Saxon Boulevard. A right-in/right-out driveway is proposed on Saxon Boulevard approximately 185 feet east of Finland Drive. A full ingress and right-out egress access driveway is proposed on Apache Road, approximately 110 feet north of Saxon Boulevard.

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) Information Report, *Trip Generation, 9th Edition*. For the gas station with convenience market, Land Use Code 945 (Gas Station with Convenience Store) was used. As summarized in ***Table 1***, the proposed development is projected to generate 3,908 total daily trips and 324 total PM peak-hour trips (162 in, 162 out).

Pass-by trips for the gas station were calculated based on the pass-by rate of 56% for Land Use Code 945 (Gas Station with Convenience Store) as provided in ITE's *Trip Generation Handbook, 2nd Edition*. Of the total trip generation potential of the site, 181 PM peak-hour trips (91 in, 90 out) are expected to be pass-by trips. As summarized in ***Table 1***, the proposed development is projected to generate 143 new external PM peak-hour trips (71 in, 72 out).

80 Spring Vista Drive ● DeBary, Fl 32713 ● Phone 386.753.0558 ● Fax 386.753.0778
www.teds-fl.com

Figure 1
Site Location Map

Aerial Image: Google Earth

Table 1
Total Trip Generation Summary

Land Use	Intensity	Units	Daily			PM Peak		
			In	Out	Total	In	Out	Total
Gas/Svc Station with Convenience Market	24	Vehicle Fueling Positions	1954	1,954	3,908	162	162	324
Pass-By Trips	Pass-By %	56.0%	1,095	1,095	2,190	91	90	181
Net New External Trips			859	859	1,718	71	72	143

Gasoline/Service Station with Convience Market(ITE 9th Edition - Land Use Code 945)

Daily	T = 162.78 x (# of VFP)	50% In	50% Out
PM Peak Hour	T = 13.51 x (# of VFP)	50% In	50% Out

In addition to the trip generation calculations above, a trip generation comparison will also be provided for the maximum development intensity allowed under both the approved and existing zoning for the parcels of the site.

Trip Distribution & Assignment

Project trips will be assigned to the study area roadways based on applying engineering judgment. The proposed trip distribution is provided in ***Figure 2***.

Study Area

Because the proposed development is projected to generate more than 100 PM peak-hour trips, the study area was determined based upon a three-percent level of significance as consistent with the Volusia TPO Transportation Impact Analysis (TIA) Guidelines. A summary of the determination of the three-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 2012 Generalized Service Volume Tables.

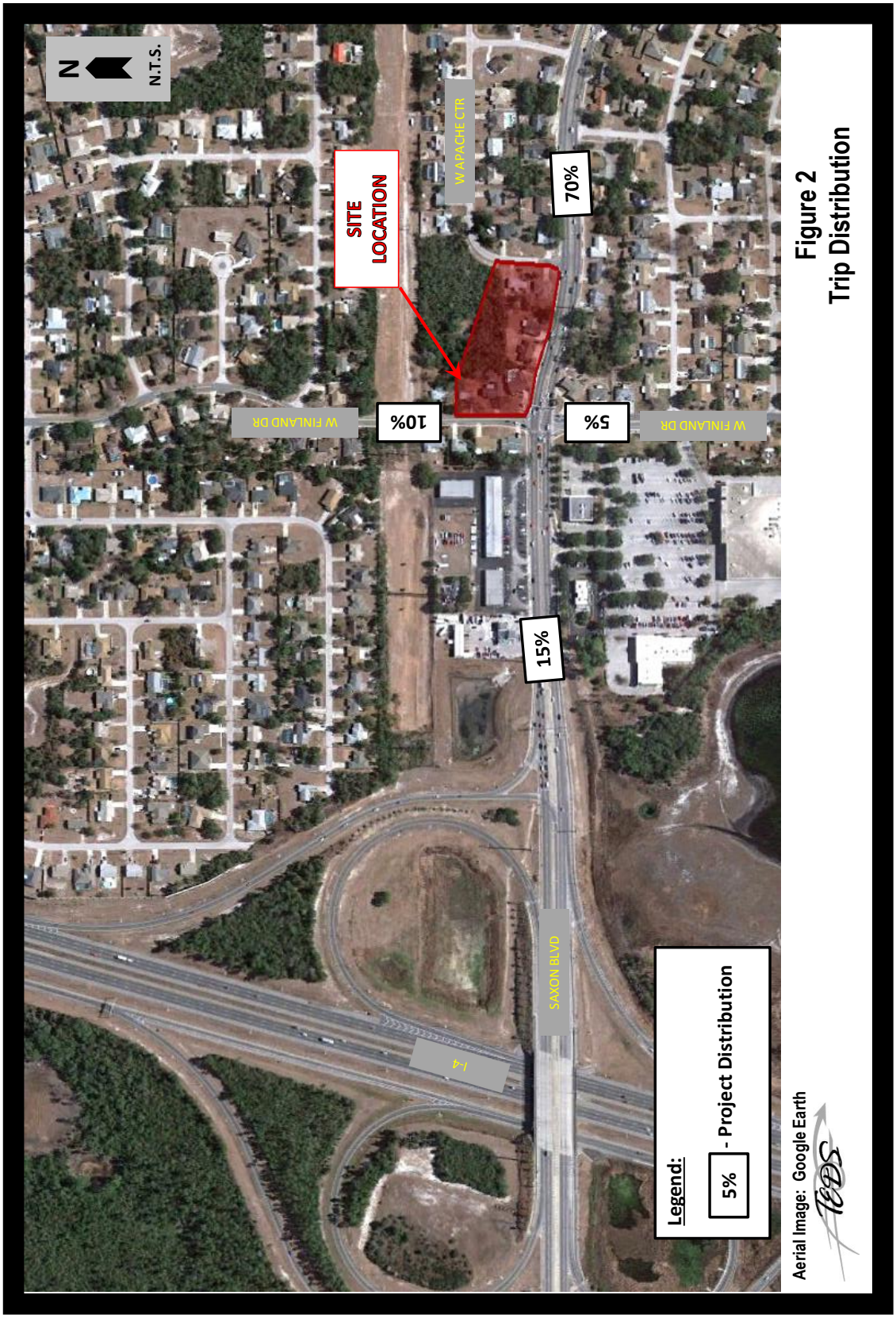


Figure 2
Trip Distribution

Table 2
Summary of Significant Impact Determination

Roadway Segment	Existing Number of Lanes	Adopted Level of Service Std.	Pk-Hr 2-Way Generalized Service Volume	Percent Assignment	Pk-Hr 2-Way Project Trips	Project Trips as % of Svc Vol.	Impact Exceeds 3%?
Saxon Blvd							
Interstate 4 to Finland Dr	4	E	3,222	15.0%	16	0.50%	no
Project to Normandy Blvd	4	E	3,222	70.0%	75	2.33%	no
Normandy Blvd to Tivoli Dr	4	E	3,222	70.0%	75	2.33%	no
Finland Dr							
South of Saxon Blvd	2	E	931	5.0%	5	0.54%	no
North of Project	2	E	931	10.0%	11	1.18%	no

Based on ***Table 2***, none of the adjacent roadway segments meet or exceed three percent. However, the following roadway segments will be analyzed:

- Saxon Boulevard from Interstate 4 to Finland Drive
- Saxon Boulevard from Finland Drive to Normandy Boulevard
- Finland Drive south of Saxon Boulevard
- Finland Drive north of Saxon Boulevard
- Apache Circle

The study intersections will include the following:

- Saxon Boulevard at Finland Drive
- Saxon Boulevard at Apache Circle
- All access point intersections with public streets

The PM peak-hour background traffic volumes for the roadway segments will be projected based on 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 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 Volusia 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. All critical, near critical, and hurricane critical roadway segments located within a five-mile travel distance of the development will be analyzed if the project's impact is deemed to be non-deminimus. It should be noted that due to the fact that another RaceTrac gas station is located on the west of the Saxon Boulevard/Interstate 4 interchange, no roadways will be evaluated west of I-95 as motorists would be expected to use that RaceTrac service station.

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.

Chris Walsh

From: Chris Walsh <cwalsh@teds-fl.com>
Sent: Friday, January 10, 2014 9:44 AM
To: 'Ron Paradise'
Cc: 'Chris Bowley'; 'Melissa Winsett (mwinsett@volusia.org)'; 'Scott McGrath'; 'Kathrine Kyp'
Subject: RE: RaceTrac (Saxon at Finland) - Traffic Methodology
Attachments: Saxon&Normandy-PM Counts.pdf

Good morning Ron,

Upon receiving the Saxon Sterling TIA, I reviewed the TMC for Normandy/Saxon and think our assignment of traffic to Normandy (north/south of Saxon) and to Saxon (east of Normandy) as conveyed in item 4 in my response-to-comments email is not appropriate and should be adjusted. As shown in the attached count sheet, of traffic on the west leg of the Normandy/Saxon intersection, approx. 20% is to/from the north on Normandy, 16% to/from the south on Normandy, and 64% to/from the east on Saxon. Recognizing that our project assignment on Saxon (east of the project) is 70%, this means our new proposed assignment is as follows:

To/from the north on Normandy = 70% x 20% = 14%
To/from the south on Normandy = 70% x 16% = 11%
To/from the east on Saxon (east of Normand) = 70% x 64% = 45%

Thus, we would like to revise our response to comment #4 to as follows:

4) Trip Distribution – Suggest that a certain percentage of trips will use Apache Circle and Apache needs to be modeled.

Response: Project-related trips will be assigned to Apache. However, access onto apache has not been finalized in terms of full access or turn restrictions. When considering the assignment of traffic it should be noted that of the 70% project trips to/from the east on Saxon, 11% will be to/from the south on Normandy (south of Saxon), 14% to/from the north on Normandy (north of Saxon), and the remaining 45% to/from the east on Saxon (east of Normandy).

I know you are probably jazzed up by reading this technical stuff….but that's what we do. Please call or email with any questions and also please let me know if you find this revised response acceptable.

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
www.teds-fl.com

From: Ron Paradise [mailto:RParadise@deltonafl.gov]
Sent: Thursday, January 09, 2014 10:34 AM

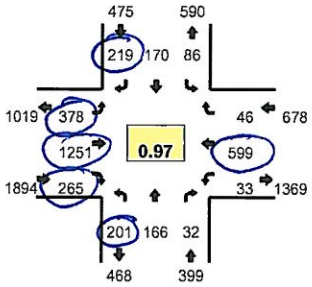
Type of peak hour being reported: Intersection Peak

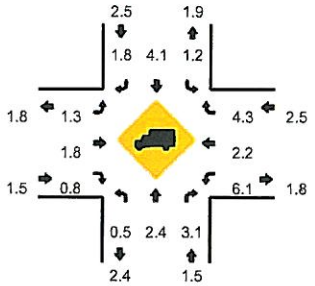
Method for determining peak hour: Total Entering Volume

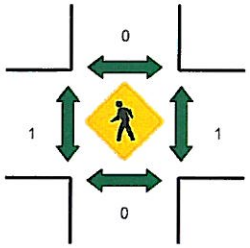
LOCATION: Normandy Blvd -- Saxon Blvd
CITY/STATE: Deltona, FL

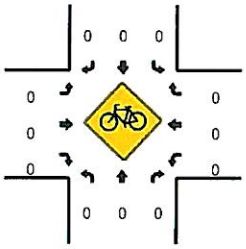
QC JOB #: 11213804
DATE: Wed, Sep 11 2013

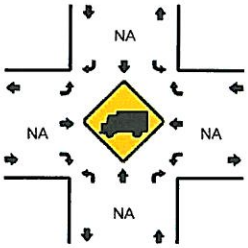
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

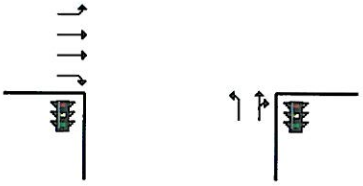


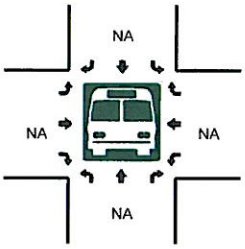












R* = RTOR

15-Min Count Period Beginning At	Normandy Blvd (Northbound)					Normandy Blvd (Southbound)					Saxon Blvd (Eastbound)					Saxon Blvd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	40	28	5	0	2	13	33	23	0	11	77	261	48	0	9	8	141	8	0	0	707	
4:15 PM	43	32	3	0	1	12	33	48	0	13	91	237	54	0	13	4	123	9	0	0	716	
4:30 PM	52	39	6	0	1	11	31	35	0	20	80	272	47	0	14	7	148	9	0	0	772	
4:45 PM	40	35	10	0	3	23	35	36	0	18	98	293	48	0	22	6	150	5	0	2	824	3019
5:00 PM	47	47	5	0	0	19	35	33	0	12	93	297	40	0	22	7	181	11	0	1	850	3162
5:15 PM	56	37	7	0	1	22	52	51	0	16	93	315	50	0	18	11	146	12	0	0	887	3333
5:30 PM	50	44	10	0	1	21	35	41	0	12	89	320	54	0	17	7	142	10	0	2	855	3416
5:45 PM	48	38	8	0	0	24	48	36	0	18	103	319	48	0	16	8	130	8	0	2	854	3446

219 + 378 + 1251 + 599 + 265 + 201 = 2913

To/From NORTH = 20% = $\left(\frac{219+378}{2913}\right)$

To/From SOUTH = $\left(\frac{201+265}{2913}\right)$ = 16%

To/From EAST = $\left(\frac{1251+599}{2913}\right)$ = 64%

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	224	148	28	0	4	88	208	204	0	64	372	1260	200	0	72	44	584	48	0	0	3548
Heavy Trucks	0	0	0			0	0	8			8	36	0			4	12	4			72
Pedestrians		0					0					0					4				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Railroad																					
Stopped Buses																					

Comments:

Report generated on 9/17/2013 7:30 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

To: Chris Walsh
Cc: Chris Bowley; Melissa Winsett (mwinsett@volusia.org); Scott McGrath; Kathrine Kyp
Subject: RE: RaceTrac (Saxon at Finland) - Traffic Methodology

Chris, thanks for the responses. Please be advised that both Apache and Finland are local roads have a LOS of "D" Comp Plan requirement.

With regard to access, it is understood that TEDS will model the traffic with the access off of Saxon. However, that access assumption will probably result in staff questions and will possibly create a condition for the City to engage in peer review – at the expense of the applicant. In addition, the process may be protracted.

Finally, modeling the access off of Saxon does not obligate the City to approve or otherwise acknowledge the appropriateness of such access during the rezoning or subsequent land development reviews/processes.

If there are any questions feel free to contact me at 878-8610.

Have a good day.

Ron Paradise

From: Chris Walsh [mailto:cwalsh@teds-fl.com]
Sent: Tuesday, January 07, 2014 1:22 PM
To: Ron Paradise
Cc: Chris Bowley; 'Melissa Winsett'; Scott McGrath; Kathrine Kyp
Subject: RE: RaceTrac (Saxon at Finland) - Traffic Methodology

Good afternoon Ron,

Below are responses to the methodology comments. Please let me know if these responses are acceptable to the City.

Thanks

Chris

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
www.teds-fl.com

From: Ron Paradise [mailto:RParadise@deltonafl.gov]
Sent: Tuesday, December 31, 2013 2:45 PM
To: Chris Walsh
Cc: Chris Bowley; Melissa Winsett (mwinsett@volusia.org); Scott McGrath; Kathrine Kyp
Subject: RE: RaceTrac (Saxon at Finland) - Traffic Methodology

Mr. Walsh, Mr. Bowley and I went over the methodology provided to us by TEDS. Thanks.

Below are some comments:

1) Project Access – The proposed right in and right out on Saxon does not comply with section 96-37(a)(10)(c)(5)(ii) of the City Land Development Code. That Section calls for 250' of turn lane for right turns. In addition, Table 96-6B of the City Code (Chapter 96) requires at least 335' of separation between access points. The site has about 420' of frontage. Also, City staff is concerned about the safety ramifications regarding a right in and right out on Saxon. There is no problem with the suggested full access points on Finland and Apache Circle being modeled. However, the exact distances from Saxon will be determined as project review matures.

Response: The TIA will reflect the proposed access. Should the proposed access be adjusted based on further discussion with the City/County, then the TIA will be adjusted accordingly.

2) Trip Generation - The 3,908 total daily trips seems reasonable.

Response: No comment

3) Location Map – The site location maps do not depict the entire property. (Picky I know.)

Response: The maps within the TIA will be modified accordingly.

4) Trip Distribution – Suggest that a certain percentage of trips will use Apache Circle and Apache needs to be modeled.

Response: Project-related trips will be assigned to Apache. However, access onto apache has not been finalized in terms of full access or turn restrictions. When considering the assignment of traffic it should be noted that of the 70% project trips to/from the east on Saxon, 20% will be to/from the south on Normandy, south of Saxon, 30% to/from the north on Normandy, north of Saxon, and the remaining 20% to/from the east on Saxon, east of Normandy.

5) Trip Distribution Map – Please provide directional information for traffic splits.

Response: The percentages shown in the distribution map reflect each direction. So, as an example, the 15% on Saxon west of Finland indicates that 15% of the inbound traffic and 15% of the outbound traffic will be assigned to this roadway segment.

6) Table 2 – Apache Circle should be included in Table 2. In addition, Apache and Finland are considered local roads and have a LOS threshold of "D" as articulated in Policy T1-4.3 of the City Comprehensive Plan.

Response: Apache will be added to Table 2

7) PM Peak Hour Volumes – With regard to volume projections and City growth rates, please be advised that the City utilizes a 2.5% annual growth rate as per the City CIE. In addition, there are several projects that will affect traffic volumes on the Saxon corridor associated with the project. The projects include the Saxon/Sterling Silver development (retail and office) and the Halifax medical clinic located near Publix.

Response: The background trips will account for trips to/from both developments.

Mr. Bowley and I will be calling you to discuss when you get back in the office.

Thanks and have a great day.

Ron

From: Chris Walsh [mailto:cwalsh@teds-fl.com]
Sent: Friday, December 27, 2013 2:55 PM
To: Ron Paradise
Cc: bpotts@tannathdesign.com; 'Sutapaha, Victor'
Subject: RaceTrac (Saxon at Finland) - Traffic Methodology

Good afternoon Ron,

Attached is a proposed methodology for a traffic impact study for the proposed RaceTrac service station in the northeast quadrant of the Saxon/Finland intersection. Please call or email with any questions.

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
www.teds-fl.com

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 Data

Traffic Engineering Data Solutions, Inc.

80 Spring Vista Drive
DeBary, FL 32713

File Name : Not Named 2
Site Code : 00000000
Start Date : 5/6/2013
Page No : 1

Groups Printed- All Vehicles

	FINLAND Northbound					FINLAND Southbound					SAXON Eastbound					SAXON Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	23	0	2	0	25	4	3	53	0	60	6	114	6	0	126	5	390	5	0	400	611
07:15 AM	28	1	5	0	34	8	3	43	0	54	7	135	2	0	144	5	474	2	0	481	713
07:30 AM	35	1	9	0	45	3	3	73	0	79	13	165	7	0	185	7	447	4	1	459	768
07:45 AM	25	1	8	0	34	10	2	50	0	62	9	154	2	0	165	8	485	2	0	495	756
Total	111	3	24	0	138	25	11	219	0	255	35	568	17	0	620	25	1796	13	1	1835	2848
08:00 AM	18	0	6	0	24	2	1	61	0	64	7	142	3	0	152	5	476	9	0	490	730
08:15 AM	27	1	4	0	32	4	6	42	1	53	6	126	2	2	136	3	317	3	0	323	544
08:30 AM	18	3	6	0	27	1	4	39	0	44	14	144	12	0	170	5	359	0	0	364	605
08:45 AM	11	3	7	0	21	3	2	45	1	51	16	150	6	0	172	8	330	5	1	344	588
Total	74	7	23	0	104	10	13	187	2	212	43	562	23	2	630	21	1482	17	1	1521	2467
*** BREAK ***																					
04:00 PM	22	16	29	0	67	4	5	39	0	48	34	404	11	0	449	8	193	5	2	208	772
04:15 PM	18	4	19	0	41	6	11	26	1	44	40	392	11	0	443	24	240	5	0	269	797
04:30 PM	23	11	25	0	59	5	11	26	0	42	32	380	6	0	418	9	231	1	0	241	760
04:45 PM	32	8	27	0	67	2	7	25	0	34	39	395	17	0	451	19	220	4	2	245	797
Total	95	39	100	0	234	17	34	116	1	168	145	1571	45	0	1761	60	884	15	4	963	3126
05:00 PM	23	13	35	0	71	1	5	24	1	31	56	435	15	0	506	13	247	2	0	262	870
05:15 PM	23	13	39	0	75	2	6	22	0	30	41	485	16	0	542	13	228	7	2	250	897
05:30 PM	20	15	26	0	61	3	3	19	0	25	49	479	13	2	543	18	242	7	0	267	896
05:45 PM	17	12	32	0	61	2	9	27	0	38	47	437	12	1	497	17	233	5	0	255	851
Total	83	53	132	0	268	8	23	92	1	124	193	1836	56	3	2088	61	950	21	2	1034	3514
Grand Total	363	102	279	0	744	60	81	614	4	759	416	4537	141	5	5099	167	5112	66	8	5353	11955
Apprch %	48.8	13.7	37.5	0		7.9	10.7	80.9	0.5		8.2	89	2.8	0.1		3.1	95.5	1.2	0.1		
Total %	3	0.9	2.3	0	6.2	0.5	0.7	5.1	0	6.3	3.5	38	1.2	0	42.7	1.4	42.8	0.6	0.1	44.8	

	FINLAND Northbound					FINLAND Southbound					SAXON Eastbound					SAXON Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	28	**1**	5	0	34	8	**3**	43	0	54	7	135	2	0	144	5	474	2	0	481	713
07:30 AM	**35**	1	**9**	0	**45**	3	3	**73**	0	**79**	**13**	**165**	**7**	0	**185**	7	447	4	**1**	459	**768**
07:45 AM	25	1	8	0	34	**10**	2	50	0	62	9	154	2	0	165	**8**	**485**	2	0	**495**	756
08:00 AM	18	0	6	0	24	2	1	61	0	64	7	142	3	0	152	5	476	**9**	0	490	730
Total Volume	106	3	28	0	137	23	9	227	0	259	36	596	14	0	646	25	1882	17	1	1925	2967
% App. Total	77.4	2.2	20.4	0		8.9	3.5	87.6	0		5.6	92.3	2.2	0		1.3	97.8	0.9	0.1		
PHF	.757	.750	.778	.000	.761	.575	.750	.777	.000	.820	.692	.903	.500	.000	.873	.781	.970	.472	.250	.972	.966

Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM					07:15 AM					07:15 AM					07:15 AM					
+0 mins.	23	0	2	0	25	8	3	43	0	54	7	135	2	0	144	5	474	2	0	481	
+15 mins.	28	1	5	0	34	3	3	73	0	79	13	165	7	0	185	7	447	4	1	459	
+30 mins.	35	1	9	0	45	10	2	50	0	62	9	154	2	0	165	8	485	2	0	495	
+45 mins.	25	1	8	0	34	2	1	61	0	64	7	142	3	0	152	5	476	9	0	490	
Total Volume	111	3	24	0	138	23	9	227	0	259	36	596	14	0	646	25	1882	17	1	1925	
% App. Total	80.4	2.2	17.4	0		8.9	3.5	87.6	0		5.6	92.3	2.2	0		1.3	97.8	0.9	0.1		
PHF	.793	.750	.667	.000	.767	.575	.750	.777	.000	.820	.692	.903	.500	.000	.873	.781	.970	.472	.250	.972	

Traffic Engineering Data Solutions, Inc.

80 Spring Vista Drive
DeBary, FL 32713

File Name : Not Named 2
Site Code : 00000000
Start Date : 5/6/2013
Page No : 2

	FINLAND Northbound					FINLAND Southbound					SAXON Eastbound					SAXON Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**23**	13	35	0	71	1	5	24	**1**	31	**56**	435	15	0	506	13	**247**	2	0	262	870
05:15 PM	23	13	**39**	0	**75**	2	6	22	0	30	41	**485**	**16**	0	542	13	228	**7**	**2**	250	**897**
05:30 PM	20	**15**	26	0	61	**3**	3	19	0	25	49	479	13	**2**	**543**	**18**	242	7	0	**267**	896
05:45 PM	17	12	32	0	61	2	**9**	**27**	0	**38**	47	437	12	1	497	17	233	5	0	255	851
Total Volume	83	53	132	0	268	8	23	92	1	124	193	1836	56	3	2088	61	950	21	2	1034	3514
% App. Total	31	19.8	49.3	0		6.5	18.5	74.2	0.8		9.2	87.9	2.7	0.1		5.9	91.9	2	0.2		
PHF	.902	.883	.846	.000	.893	.667	.639	.852	.250	.816	.862	.946	.875	.375	.961	.847	.962	.750	.250	.968	.979

Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM					04:00 PM					05:00 PM					05:00 PM					
+0 mins.	32	8	27	0	67	4	5	39	0	48	56	435	15	0	506	13	247	2	0	262	
+15 mins.	23	13	35	0	71	6	11	26	1	44	41	485	16	0	542	13	228	7	2	250	
+30 mins.	23	13	39	0	75	5	11	26	0	42	49	479	13	2	543	18	242	7	0	267	
+45 mins.	20	15	26	0	61	2	7	25	0	34	47	437	12	1	497	17	233	5	0	255	
Total Volume	98	49	127	0	274	17	34	116	1	168	193	1836	56	3	2088	61	950	21	2	1034	
% App. Total	35.8	17.9	46.4	0		10.1	20.2	69	0.6		9.2	87.9	2.7	0.1		5.9	91.9	2	0.2		
PHF	.766	.817	.814	.000	.913	.708	.773	.744	.250	.875	.862	.946	.875	.375	.961	.847	.962	.750	.250	.968	

Traffic Engineering Data Solutions, Inc.

80 Spring Vista Drive
DeBary, FL 32713

File Name : AM_PM Peak TMC
Site Code : 00000000
Start Date : 5/6/2013
Page No : 1

Groups Printed- Heavy Vehicles

	FINLAND Northbound					FINLAND Southbound					SAXON Eastbound					SAXON Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	0	1	0	1	0	2	0	0	2	1	8	0	0	9	1	1	0	0	2	14
07:15 AM	0	0	0	0	0	1	0	0	0	1	1	3	0	0	4	0	3	0	0	3	8
07:30 AM	1	0	0	0	1	0	0	0	0	0	0	2	0	0	2	0	4	0	1	5	8
07:45 AM	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2	4
Total	2	0	1	0	3	1	2	0	0	3	2	14	0	0	16	1	10	0	1	12	34
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	3	0	0	3	6
08:15 AM	1	0	0	0	1	1	0	0	0	1	0	4	0	2	6	0	1	0	0	1	9
08:30 AM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	3	0	0	3	5
08:45 AM	0	0	1	0	1	0	0	0	1	1	0	4	0	0	4	0	4	1	1	6	12
Total	1	0	1	0	2	1	1	0	1	3	0	12	0	2	14	0	11	1	1	13	32
*** BREAK ***																					
04:00 PM	0	0	0	0	0	1	0	0	0	1	0	5	0	0	5	0	1	0	2	3	9
04:15 PM	1	0	0	0	1	0	0	0	1	1	0	2	0	0	2	0	6	0	0	6	10
04:30 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	3	0	0	3	5
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	0	5	0	0	5	9
Total	2	0	0	0	2	2	0	0	1	3	0	11	0	0	11	0	15	0	2	17	33
05:00 PM	0	0	0	0	0	0	0	0	1	1	2	4	0	0	6	0	6	0	0	6	13
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	2	5	5
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	1	0	0	1	3
Total	0	0	0	0	0	0	0	0	1	1	2	5	0	1	8	0	12	0	2	14	23
Grand Total	5	0	2	0	7	4	3	0	3	10	4	42	0	3	49	1	48	1	6	56	122
Apprch %	71.4	0	28.6	0		40	30	0	30		8.2	85.7	0	6.1		1.8	85.7	1.8	10.7		
Total %	4.1	0	1.6	0	5.7	3.3	2.5	0	2.5	8.2	3.3	34.4	0	2.5	40.2	0.8	39.3	0.8	4.9	45.9	

	FINLAND Northbound					FINLAND Southbound					SAXON Eastbound					SAXON Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	**1**	0	**1**	0	**2**	0	0	**2**	**1**	**8**	0	0	**9**	**1**	1	0	0	2	**14**
07:15 AM	0	0	0	0	0	**1**	0	0	0	1	1	3	0	0	4	0	3	0	0	3	8
07:30 AM	**1**	0	0	0	1	0	0	0	0	0	0	2	0	0	2	0	**4**	0	**1**	**5**	8
07:45 AM	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2	4
Total Volume	2	0	1	0	3	1	2	0	0	3	2	14	0	0	16	1	10	0	1	12	34
% App. Total	66.7	0	33.3	0		33.3	66.7	0	0		12.5	87.5	0	0		8.3	83.3	0	8.3		
PHF	.500	.000	.250	.000	.750	.250	.250	.000	.000	.375	.500	.438	.000	.000	.444	.250	.625	.000	.250	.600	.607

Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM					07:00 AM					07:00 AM					07:15 AM				
+0 mins.	0	0	1	0	1	0	2	0	0	2	1	8	0	0	9	0	3	0	0	3
+15 mins.	0	0	0	0	0	1	0	0	0	1	1	3	0	0	4	0	4	0	1	5
+30 mins.	1	0	0	0	1	0	0	0	0	0	0	2	0	0	2	0	2	0	0	2
+45 mins.	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	3	0	0	3
Total Volume	2	0	1	0	3	1	2	0	0	3	2	14	0	0	16	0	12	0	1	13
% App. Total	66.7	0	33.3	0		33.3	66.7	0	0		12.5	87.5	0	0		0	92.3	0	7.7	
PHF	.500	.000	.250	.000	.750	.250	.250	.000	.000	.375	.500	.438	.000	.000	.444	.000	.750	.000	.250	.650

Traffic Engineering Data Solutions, Inc.

80 Spring Vista Drive
DeBary, FL 32713

File Name : AM_PM Peak TMC
Site Code : 00000000
Start Date : 5/6/2013
Page No : 2

	FINLAND Northbound					FINLAND Southbound					SAXON Eastbound					SAXON Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	**1**	0	0	0	**1**	0	0	0	**1**	**1**	0	2	0	0	2	0	**6**	0	0	**6**	10
04:30 PM	1	0	0	0	1	**1**	0	0	0	1	0	0	0	0	0	0	3	0	0	3	5
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	**4**	0	0	4	0	5	0	0	5	9
05:00 PM	0	0	0	0	0	0	0	0	1	1	**2**	4	0	0	**6**	0	6	0	0	6	**13**
Total Volume	2	0	0	0	2	1	0	0	2	3	2	10	0	0	12	0	20	0	0	20	37
% App. Total	100	0	0	0		33.3	0	0	66.7		16.7	83.3	0	0		0	100	0	0		
PHF	.500	.000	.000	.000	.500	.250	.000	.000	.500	.750	.250	.625	.000	.000	.500	.000	.833	.000	.000	.833	.712

Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:45 PM					03:45 PM					04:15 PM					04:15 PM				
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	6	0	0	6
+15 mins.	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	3	0	0	3
+30 mins.	1	0	0	0	1	0	0	0	1	1	0	4	0	0	4	0	5	0	0	5
+45 mins.	1	0	0	0	1	1	0	0	0	1	2	4	0	0	6	0	6	0	0	6
Total Volume	2	0	0	0	2	2	0	0	1	3	2	10	0	0	12	0	20	0	0	20
% App. Total	100	0	0	0		66.7	0	0	33.3		16.7	83.3	0	0		0	100	0	0	
PHF	.500	.000	.000	.000	.500	.500	.000	.000	.250	.750	.250	.625	.000	.000	.500	.000	.833	.000	.000	.833

File Name : Not Named 2
Site Code : 00000000
Start Date : 1/14/2014
Page No : 1

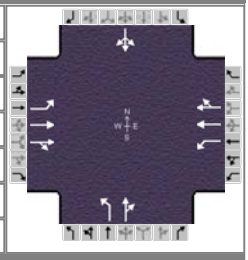
Groups Printed- All Vehicles

	APACHE Northbound					APACHE Southbound					SAXON Eastbound					SAXON Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	2
04:15 PM	0	0	0	0	0	0	0	3	0	3	3	0	0	0	3	0	0	1	0	1	7
04:30 PM	0	0	0	0	0	0	0	1	0	1	2	0	0	0	2	0	0	0	0	0	3
04:45 PM	0	0	0	0	0	0	0	3	0	3	1	0	0	0	1	0	0	0	0	0	4
Total	0	0	0	0	0	0	0	7	0	7	7	0	0	0	7	0	0	2	0	2	16
05:00 PM	0	0	0	0	0	0	0	3	0	3	3	0	0	0	3	0	0	0	0	0	6
05:15 PM	0	0	0	0	0	0	0	1	0	1	2	0	0	0	2	0	0	2	1	3	6
05:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	1	0	1	3
05:45 PM	0	0	0	0	0	0	0	1	0	1	3	0	0	1	4	0	0	0	0	0	5
Total	0	0	0	0	0	0	0	5	0	5	10	0	0	1	11	0	0	3	1	4	20
Grand Total	0	0	0	0	0	0	0	12	0	12	17	0	0	1	18	0	0	5	1	6	36
Apprch %	0	0	0	0		0	0	100	0		94.4	0	0	5.6		0	0	83.3	16.7		
Total %	0	0	0	0	0	0	0	33.3	0	33.3	47.2	0	0	2.8	50	0	0	13.9	2.8	16.7	

Existing Conditions HCS

HCS 2010 Signalized Intersection Results Summary

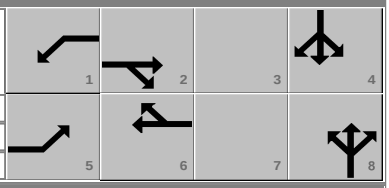
General Information				Intersection Information	
Agency	TEDS			Duration, h	0.25
Analyst	KJM	Analysis Date	May 14, 2013	Area Type	Other
Jurisdiction	Deltona	Time Period	PM Peak Hour	PHF	0.95
Intersection	Saxon Blvd at Finland Drive	Analysis Year	2013	Analysis Period	1> 7:00
File Name	Existing Conditions - PM Peak Hour.xus				
Project Description	Existing Conditions				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	193	1836	56	61	950	21	83	53	132	8	23	92

Signal Information			
Cycle, s	130.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	6.0	4.1	70.4	23.5	0.0	0.0
Yellow	4.5	4.5	4.5	4.0	0.0	0.0
Red	2.0	2.0	2.0	2.5	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	2.0	4.0	2.0	4.0		6.0		8.0
Phase Duration, s	23.1	87.5	12.5	76.9		30.0		30.0
Change Period, *(Y+Rc)*, s	6.5	6.5	6.5	6.5		6.5		6.5
Max Allow Headway *(MAH)*, s	4.0	0.0	4.0	0.0		5.3		5.3
Queue Clearance Time *(g_s)*, s	16.5		6.6			25.0		16.2
Green Extension Time *(g_e)*, s	0.1	0.0	0.1	0.0		0.0		1.4
Phase Call Probability	1.00		0.90			1.00		1.00
Max Out Probability	1.00		0.01			1.00		0.54

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	203	996	996	64	513	509	87	195			114	
Adjusted Saturation Flow Rate *(s)*, veh/h/ln	1792	1845	1825	1792	1881	1867	1296	1667			1609	
Queue Service Time *(g_s)*, s	14.5	57.5	58.8	4.6	22.4	22.4	8.7	14.1			0.0	
Cycle Queue Clearance Time *(g_c)*, s	14.5	57.5	58.8	4.6	22.4	22.4	23.0	14.1			14.2	
Capacity *(c)*, veh/h	229	1149	1137	83	1019	1011	147	301			321	
Volume-to-Capacity Ratio *(X)*	0.887	0.867	0.876	0.774	0.504	0.504	0.594	0.646			0.355	
Available Capacity *(c_a)*, veh/h	255	1149	1137	200	1019	1011	147	301			321	
Back of Queue *(Q)*, veh/ln (95th percentile)	12.8	32.7	33.3	4.3	14.8	14.7	5.7	10.5			6.0	
Overflow Queue *(Q_3)*, veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Queue Storage Ratio *(RQ)* (95th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.00			0.00	
Uniform Delay *(d_1)*, s/veh	55.8	20.1	20.3	61.3	18.8	18.8	60.2	49.4			46.8	
Incremental Delay *(d_2)*, s/veh	27.3	8.9	9.5	14.1	1.8	1.8	7.5	5.4			0.9	
Initial Queue Delay *(d_3)*, s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Control Delay *(d)*, s/veh	83.1	28.9	29.9	75.4	20.6	20.6	67.7	54.8			47.8	
Level of Service (LOS)	F	C	C	E	C	C	E	D			D	
Approach Delay, s/veh / LOS	34.4	C		23.8	C		58.8	E		47.8	D	
Intersection Delay, s/veh / LOS	33.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.2	B	2.1	B	2.9	C	2.9	C
Bicycle LOS Score / LOS	2.3	B	1.4	A	1.0	A	0.7	A

Copyright © 2014 University of Florida, All Rights Reserved.

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*TEDS*	Intersection	*Saxon at Apache*
Agency/Co.	*TEDS*	Jurisdiction	*Deltona*
Date Performed	*1/15/2014*	Analysis Year	*2013*
Analysis Time Period	*PM Peak*		

Project Description *Saxon Blvd at Apache - PM Peak - Existing Conditions*

East/West Street: *Saxon Blvd* | North/South Street: *Apache Circle*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*10*	*1966*			*1027*	*3*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*10*	*1966*	*0*	*0*	*1027*	*3*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*0*		*5*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*0*	*0*	*5*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

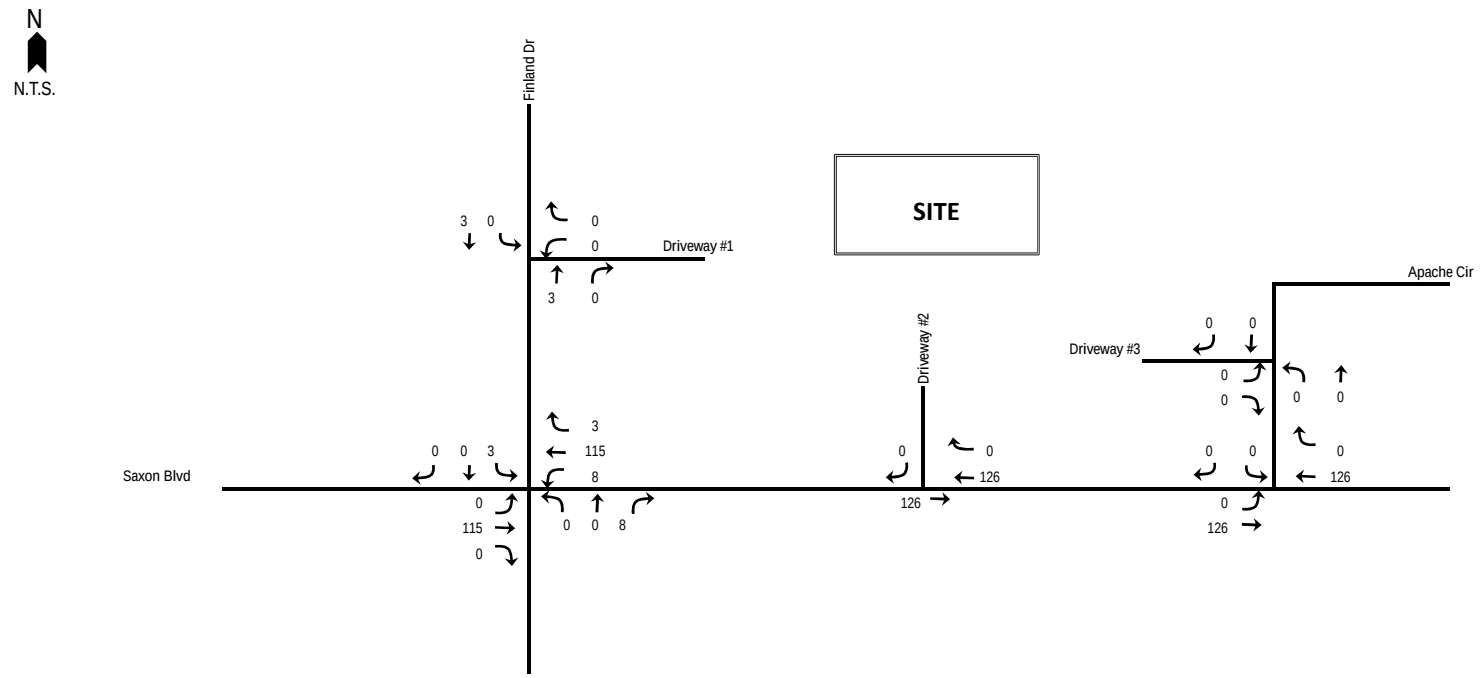
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*						*LR*	
v (veh/h)	*10*						*5*	
C (m) (veh/h)	*682*						*564*	
v/c	*0.01*						*0.01*	
95% queue length	*0.04*						*0.03*	
Control Delay (s/veh)	*10.4*						*11.4*	
LOS	*B*						*B*	
Approach Delay (s/veh)	--	--				*11.4*		
Approach LOS	--	--				*B*		

Copyright © 2010 University of Florida, All Rights Reserved *HCS+*™ Version 5.6 Generated: 1/15/2014 4:34 PM

Vested Development Information

FIGURE 5A, PM PEAK HOUR PROJECT TRAFFIC
(NE CORNER)
LEGEND:
SIGNALIZED INTERSECTION
UNSIGNALIZED INTERSECTION
XX NET-NEW PROJECT TRAFFIC
{XX} PASS-BY PROJECT TRAFFIC
PROVIDENCE BLVD.
TIVOLI DRIVE
ALABASTER WAY
PROJECT SITE
D-1
STERLING SILVER BLVD.
SAXON BLVD.
D-4
D-3
PROJECT SITE
D-2
NORMANDY BLVD.
FINLAND DRIVE
CPD
N
2(2)
2(2)
32(32)
2(2)
2(2)
32(32)
39(39)
5(5)
80(80)
35(35)
38(38)
5(5)
61(61)
18(18)
56(56)
78(78)
202(202)
199(199)
50(50)
24(24)
138(138)
64(64)
149(149)
-60(-60)
88(88)
89(89)
7(7)
78(78)
3(3)
3(3)
7(7)
79(79)
2(2)
71(71)
5(5)
5(5)
2(2)
72(72)

FIGURE 5B, PM PEAK HOUR PROJECT TRAFFIC
(NW CORNER)
PROVIDENCE BLVD.
TIVOLI DRIVE
ALABASTER WAY
PROJECT SITE
D-1
STERLING SILVER BLVD.
SAXON BLVD.
D-4
D-3
D-2
PROJECT SITE
NORMANDY BLVD.
FINLAND DRIVE
LEGEND:
SIGNALIZED INTERSECTION
UNSIGNALIZED INTERSECTION
XX NET-NEW PROJECT TRAFFIC
{XX} PASS-BY PROJECT TRAFFIC



Legend:

115 - PM Peak-Hour Turn Volume

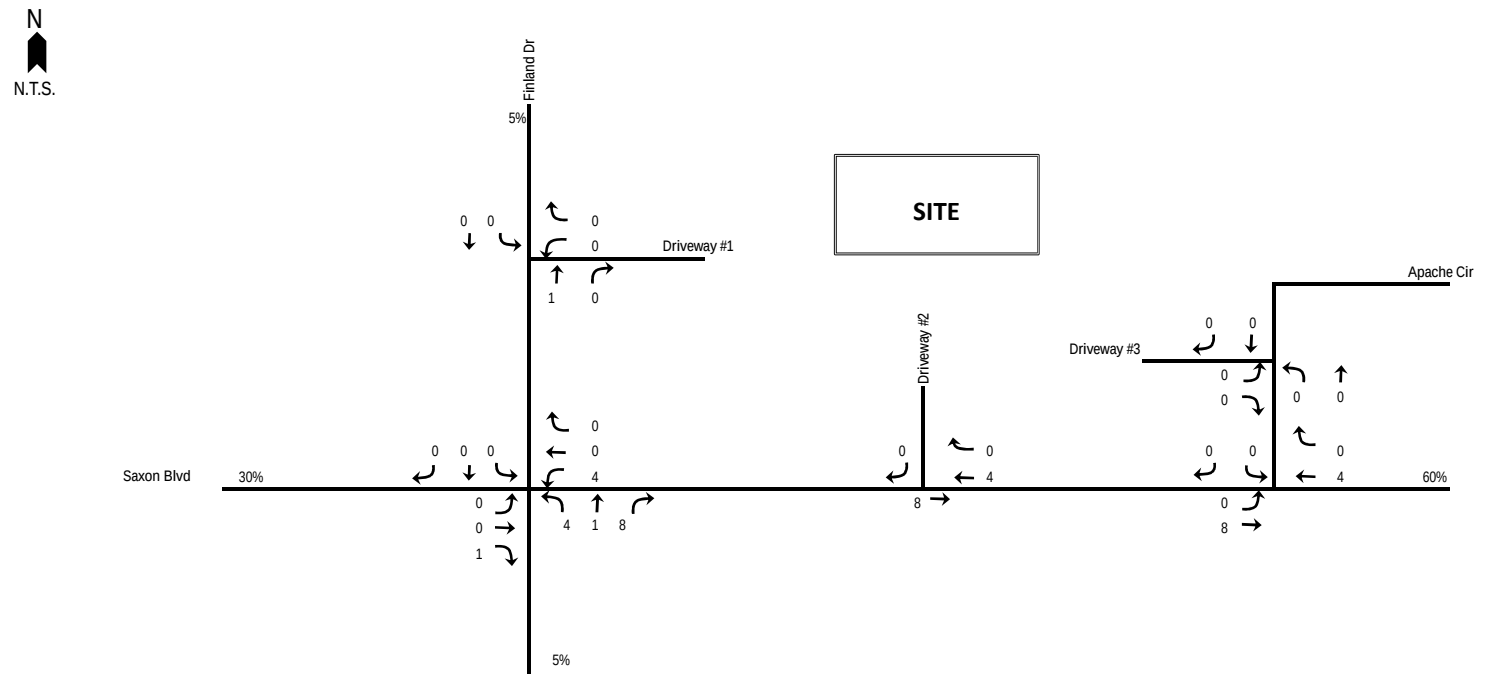
Traffic Engineering Data Solutions, Inc.	Saxon Sterling PM Peak-Hour Turning Movement Volumes	Figure

Halifax Medical Walk-In Clinic

Land Use	Intensity	Units	PM Peak		
			In	Out	Total
Medical-Dental Office	5,037	SF	6	14	20

Medical-Dental Office Building (ITE 9th Edition)

PM Peak Hour (ITE 720) Ln(T) = 0.9 x Ln(1000's of SF) + 1.53 28% In 72% Out



Legend:

8 - PM Peak-Hour Turn Volume

In	Out
6	14

Traffic Engineering Data Solutions, Inc.

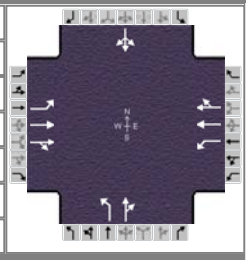
Halifax Clinic PM Peak-Hour Turning Movement Volumes

Figure

Future Conditions (2014) HCS

HCS 2010 Signalized Intersection Results Summary

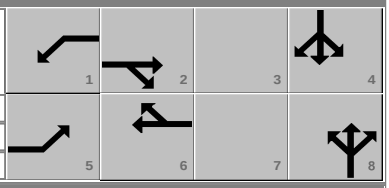
General Information				Intersection Information	
Agency	TEDS			Duration, h	0.25
Analyst	KJM	Analysis Date	May 14, 2013	Area Type	Other
Jurisdiction	Deltona	Time Period	PM Peak Hour	PHF	0.95
Intersection	Saxon Blvd at Finland Drive	Analysis Year	2014	Analysis Period	1> 7:00
File Name	Future Conditions - PM Peak Hour.xus				
Project Description	Build Out Conditions				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	225	1928	57	74	1074	26	87	57	148	24	25	92

Signal Information			
Cycle, s	130.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.3	4.7	68.5	23.5	0.0	0.0
Yellow	4.5	4.5	4.5	4.0	0.0	0.0
Red	2.0	2.0	2.0	2.5	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	2.0	4.0	2.0	4.0		6.0		8.0
Phase Duration, s	25.0	86.2	13.8	75.0		30.0		30.0
Change Period, $(Y+R_c)$, s	6.5	6.5	6.5	6.5		6.5		6.5
Max Allow Headway *(MAH)*, s	4.0	0.0	4.0	0.0		5.4		5.4
Queue Clearance Time (g_s), s	19.2		7.6			25.5		20.3
Green Extension Time (g_e), s	0.0	0.0	0.1	0.0		0.0		0.8
Phase Call Probability	1.00		0.94			1.00		1.00
Max Out Probability	1.00		0.04			1.00		1.00

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	237	1045	1045	78	581	577	92	216			133	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1863	1844	1774	1863	1847	1281	1649			1039	
Queue Service Time (g_s), s	17.2	64.2	65.7	5.6	27.9	27.9	5.2	16.0			2.3	
Cycle Queue Clearance Time (g_c), s	17.2	64.2	65.7	5.6	27.9	27.9	23.5	16.0			18.3	
Capacity (*c*), veh/h	253	1143	1131	99	981	973	106	298			221	
Volume-to-Capacity Ratio (*X*)	0.938	0.914	0.924	0.787	0.592	0.592	0.862	0.724			0.601	
Available Capacity (c_a), veh/h	253	1143	1131	198	981	973	106	298			221	
Back of Queue (*Q*), veh/ln (95th percentile)	15.6	37.5	38.3	5.1	17.9	17.8	7.9	11.8			8.0	
Overflow Queue (Q_3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Queue Storage Ratio (*RQ*) (95th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.00			0.00	
Uniform Delay (d_1), s/veh	55.2	22.1	22.4	60.6	21.1	21.2	63.6	50.2			48.8	
Incremental Delay (d_2), s/veh	40.0	12.7	13.8	12.8	2.6	2.7	48.3	9.1			5.3	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Control Delay (*d*), s/veh	95.2	34.8	36.2	73.4	23.8	23.8	111.9	59.3			54.1	
Level of Service (LOS)	F	C	D	E	C	C	F	E			D	
Approach Delay, s/veh / LOS	41.6	D		26.9	C		75.0	E		54.1	D	
Intersection Delay, s/veh / LOS	40.0						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.2	B	2.1	B	2.9	C	2.9	C
Bicycle LOS Score / LOS	2.4	B	1.5	A	1.0	A	0.7	A

Copyright © 2014 University of Florida, All Rights Reserved.

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*TEDS*	Intersection	*Finland at Driveway #1*
Agency/Co.	*TEDS*	Jurisdiction	*Deltona*
Date Performed	*1/15/2014*	Analysis Year	*2014*
Analysis Time Period	*PM Peak*		

Project Description *Finland Dr at D/W #1 - PM Peak - 2014*

East/West Street: *Driveway #1* North/South Street: *Finland Drive*

Intersection Orientation: *North-South* Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*267*	*41*	*9*	*122*	
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*267*	*41*	*9*	*122*	*0*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*19*		*10*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*19*	*0*	*10*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*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*

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*	*L*		*R*			
v (veh/h)		*9*	*19*		*10*			
C (m) (veh/h)		*1264*	*584*		*756*			
v/c		*0.01*	*0.03*		*0.01*			
95% queue length		*0.02*	*0.10*		*0.04*			
Control Delay (s/veh)		*7.9*	*11.4*		*9.8*			
LOS		*A*	*B*		*A*			
Approach Delay (s/veh)	--	--	*10.8*					
Approach LOS	--	--	*B*					

Copyright © 2010 University of Florida, All Rights Reserved *HCS+*™ Version 5.6 Generated: 1/15/2014 4:33 PM

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*TEDS*	Intersection	*Saxon at Driveway #2*
Agency/Co.	*TEDS*	Jurisdiction	*Deltona*
Date Performed	*1/15/2014*	Analysis Year	*2014*
Analysis Time Period	*PM Peak*		

Project Description *Saxon Blvd at D/W #2 - PM Peak - 2014*

East/West Street: *Saxon Blvd* | North/South Street: *Driveway #2*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*2100*			*1152*	*37*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*2100*	*0*	*0*	*1152*	*37*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*2*	*1*
Configuration		*T*			*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						*22*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*0*	*0*	*22*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*1*
Configuration						*R*

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration								*R*
v (veh/h)								*22*
C (m) (veh/h)								*521*
v/c								*0.04*
95% queue length								*0.13*
Control Delay (s/veh)								*12.2*
LOS								*B*
Approach Delay (s/veh)	--	--				*12.2*		
Approach LOS	--	--				*B*		

Copyright © 2010 University of Florida, All Rights Reserved *HCS+*™ Version 5.6 Generated: 1/15/2014 4:35 PM

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*TEDS*	Intersection	*Saxon at Apache*
Agency/Co.	*TEDS*	Jurisdiction	*Deltona*
Date Performed	*1/15/2014*	Analysis Year	*2014*
Analysis Time Period	*PM Peak*		

Project Description *Saxon Blvd at Apache - PM Peak - 2014*

East/West Street: *Saxon Blvd* | North/South Street: *Apache Circle*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*33*	*2067*			*1173*	*24*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*33*	*2067*	*0*	*0*	*1173*	*24*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*52*		*16*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*52*	*0*	*16*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*						*LR*	
v (veh/h)	*33*						*68*	
C (m) (veh/h)	*590*						*163*	
v/c	*0.06*						*0.42*	
95% queue length	*0.18*						*1.86*	
Control Delay (s/veh)	*11.5*						*42.0*	
LOS	*B*						*E*	
Approach Delay (s/veh)	--	--				*42.0*		
Approach LOS	--	--				*E*		

Copyright © 2010 University of Florida, All Rights Reserved *HCS+*™ Version 5.6 Generated: 1/15/2014 4:35 PM

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*TEDS*	Intersection	*Apache at Driveway #3*
Agency/Co.	*TEDS*	Jurisdiction	*Deltona*
Date Performed	*1/15/2014*	Analysis Year	*2014*
Analysis Time Period	*PM Peak*		

Project Description *Apache Cir at D/W #3 - PM Peak - 2014*

East/West Street: *Driveway #3* | North/South Street: *Apache Circle*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*44*	*13*			*3*	*5*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*44*	*13*	*0*	*0*	*3*	*5*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*22*		*63*			
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*22*	*0*	*63*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

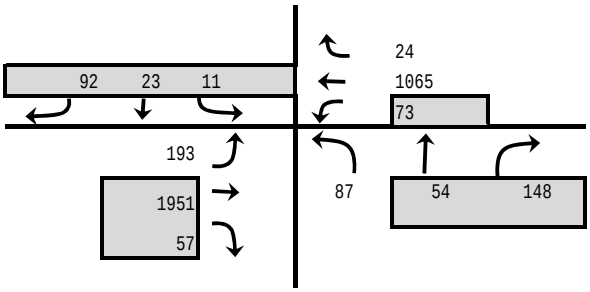
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
v (veh/h)	*44*						*85*	
C (m) (veh/h)	*1625*						*1019*	
v/c	*0.03*						*0.08*	
95% queue length	*0.08*						*0.27*	
Control Delay (s/veh)	*7.3*						*8.9*	
LOS	*A*						*A*	
Approach Delay (s/veh)	--	--	*8.9*					
Approach LOS	--	--	*A*					

Copyright © 2010 University of Florida, All Rights Reserved *HCS+*™ Version 5.6 Generated: 1/15/2014 4:36 PM

Critical Movement Evaluation for Saxon Boulevard/Finland Drive Southbound Right-Turn Lane Improvement

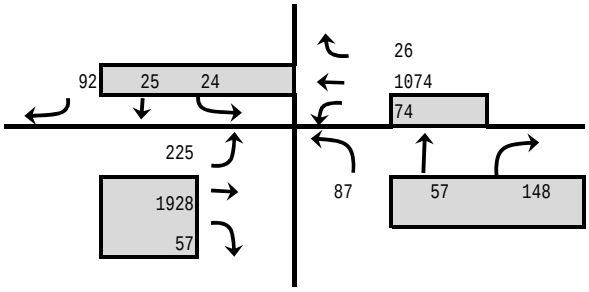
Critical Movement Evaluation of Southbound Right-Turn Lane Improvement at Saxon Boulevard/Finland Drive

Future Background Volumes



Critical Sum (Existing Geometry) = (92+23+11)/1 lane + (54+148)/1 lane + 73/1 lane + (1951+57)/2 lanes = **1405**

Future Total Volumes



Critical Sum (Existing Geometry) = (92+25+24)/1 lane + (57+148)/1 lane + 74/1 lane + (1928+57)/2 lanes = **1413**

Project impact on Critical Movements is 1413 - 1405 = 8 PM peak-hour trips

Critical Sum (with Southbound Right-Turn Lane) = (25+24)/1 lane + (57+148)/1 lane + 74/1 lane + (1928+57)/2 lanes = **1321**

Improvement impact on Critical Movements is 1321 - 1413 = 92 PM peak-hour trips

GMB ENGINEERS & PLANNERS, INC.

TO: Mr. Ron Paradise
FROM: Karl Krichbaum
DATE: March 11, 2014
RE: RaceTrac Gas Station- Saxon Boulevard at Finland Drive
Transportation Impact Analysis
GMB Project No.: 14-010.01

The purpose of this memorandum is to provide a review of the RaceTrac Gas Station at Saxon Boulevard and Finland Drive Transportation Impact Analysis (TIA) dated January 2014. Specific comments and findings are provided below.

Comment 1 - (General Comment):

The *Methodology* in the Appendix of the TIA indicates the proposed gas station will include 24 vehicle fueling positions. The Introduction of the TIA, and subsequent analyses, indicates the proposed gas station will include 20 vehicle fueling stations. Please revise, if necessary.

Comment 2 - Page 3

It appears that existing and background analysis revolves around existing turning movement counts (TMC), counts collected for Saxon Boulevard rather than utilizing the "2012 Volusia County Traffic Counts and LOS for Volusia County Roadways". Please determine if any findings using the Volusia County Counts are different from the study's final conclusions. The existing TMCs counts can be utilized for roadways not listed in the Volusia County or City of Deltona's Count programs. The K-factor of 0.09 should be used to determine the peak hour volumes. For example, if we use a K-factor of 0.09, and the correct total future PM peak hour 2-way volume on Saxon Boulevard, from Finland Drive to Normandy Boulevard, of 3,272, as discussed in Comment 4, the resulting AADT is 36,356, which does not correspond with the *Volusia County 2012 AADT & Historical Counts* spreadsheet.

GMB Orlando
2602 E. Livingston St.
Orlando, FL 32803
Office: 407.898.5424
Fax: 407.898.5425

www.GMB.cc

Comment 3 - (Table 1):

The total existing PM peak hour 2-way volume on Finland Drive, south of Saxon Boulevard, is 408, not 390. Please revise, both existing and future volumes, accordingly.

Comment 4 - (Table 2):

The total future PM peak hour 2-way volume on Saxon Boulevard, from Finland Drive to Normandy Boulevard, is 3,272. This is further corroborated in the *Trip Generation* section, in which the amount of 3,272 PM trips is quoted. Please revise as necessary.

Comment 5 - (Future Conditions (2014) Analyses):

The Two-Way-Stop-Controlled Analysis for Apache Circle at Driveway #3, during the PM peak, for 2014, contains an input error. The southbound volumes should read: 0 left, 5 through, and 3 right. According to Figure 7, the latter two movements were erroneously swapped. Please revise accordingly.

Comment 6 - Figure 5

The sum of 57 vehicles entering the site does not correspond to the trip generation presented within the study. Please revise study as needed.

Comment 7 - Figure 6

The sum of 77 vehicles entering the site does not correspond to Pass-By presented in the trip generation calculation. Please revise study as needed.

Conclusion:

In summary, based on the peer review relating to the TIA supporting the RaceTrac Gas Station at Saxon Boulevard and Finland Drive, GMB recommends that the City of Deltona transmits these comments to the Applicant and that a revised TIA be provided addressing these comments. Should you have any questions on the above, please feel free to call me at (407) 898-5424 ext. 218 or email me at kkrichbaum@gmb.cc.

GMB ENGINEERS & PLANNERS, INC.

AGENDA MEMO

TO: Mayor & City Commission **AGENDA DATE:** 4/7/2014

FROM: William D. Denny, City Manager **AGENDA ITEM:** 8 - C

SUBJECT: Public Hearing - Resolution No. 2014-06, Lakeshore Shared-Use Path Local Agency Program (LAP) Agreement between the Florida Department of Transportation (FDOT) and the City of Deltona (City) to secure design services.

LOCATION:

Generally located between Thornby Park and Green Springs Park.

BACKGROUND:

The City desires to increase pedestrian connectivity throughout the City and to expand its recreation network by interconnecting parks and trails. This also assists with bringing eco-tourism to the City. The City is located at the important connection of the Spring-to-Spring Trail and the East Central Florida Regional Rail Trail. That connection is a needed link for the state-wide interconnected trail network and is currently the recipient of major public capital expenditures for planning, design, engineering, construction, and land acquisition for this segment of the trail. Examples of that expenditure include the construction of the existing trail, Volusia County funding of trail extension to US 17-92 and a pedestrian overpass at SR 415, and the investments by the City and County for Thornby Park.

This segment of the trail (between US 17-92 and SR 415) connects four parks (Audubon, Green Springs, Thornby, and Gemini Springs) and is considered a linear park itself. Staff is pursuing a trail loop approximately 1.75 miles in length within the trail segment (Lakeshore Shared-Use Path) to provide users an opportunity to experience more of the City by connecting Thornby Park and the trail to Deltona's lakeshore. Specifically, the path will connect Thornby Park to the Deltona Community Center, Lakeshore Boat Ramp Park, and Volusia County's Green Springs Park, via a 12-foot wide paved trail. The trail will begin at the entrance of Thornby Park and head south along the west side of Providence Boulevard to Lakeshore Drive, then proceed east along the north side of Lakeshore Drive. The trail will utilize and pave portions of the existing trail within the Edgewater Condominium Apartments community and an

easement agreement allowing the use of this property has been executed and recorded with the condo association (see attached).

Finally, the City first applied for grant funding for this trail in the Spring of 2011 through the TPO XU funding process. The TPO awarded the trail funding and performed a feasibility study that resulted in the TPO adding the loop to the priority funding list for design and construction. This request is for design only and the total design cost is estimated to be $44,832.00. Per the grant application, 90% of the design and construction will be reimbursed by FDOT and the construction phase will be approved by FDOT in 2016. It is anticipated that the remaining 10% of the 2016 construction cost will be reimbursed by ECHO grants. The City is responsible for 10% of the trail design, or $4,483.00.

ORIGINATING DEPARTMENT: Planning and Development Services

SOURCE OF FUNDS: TPO

COST: $44,832.00

REVIEWED BY: Planning Director, Finance Director, City Attorney

STAFF RECOMMENDATION PRESENTED BY:

Scott McGrath, City Planner - Staff recommends approval of Resolution No. 2014-06, the FDOT LAP Agreement, to allow the Lakeshore Shared-Use Path design and City funding of up to 10% of that design.

POTENTIAL MOTION:

"I move to approve Resolution No. 2014-06, the FDOT LAP Agreement, to allow the Lakeshore Shared-Use Path design and City funding of up to 10% of that design."

AGENDA ITEM APPROVED BY:

_____

William D. Denny, City Manager

ATTACHMENTS:

- Resolution No. 2014-06
- Recommended Path Alignment
- FDOT LAP Agreement 031914
- Public ROW Easement Agreement

RESOLUTION NO. 2014-06

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF DELTONA, FLORIDA, AUTHORIZING THE EXECUTION AND DELIVERY TO THE STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION A LOCAL AGENCY PROGRAM AGREEMENT FOR THE LAKESHORE SHARED-USE PATH PROJECT.

WHEREAS, the State of Florida, Department of Transportation, and the City of Deltona desire to construct the Lakeshore Shared-Use Path project; and

WHEREAS, the State of Florida, Department of Transportation, has requested that the City of Deltona execute and deliver to the State of Florida Department of Transportation the Local Agency Program Agreement, for the Project No. FPN 435671-1-38-01.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF DELTONA, VOLUSIA COUNTY, FLORIDA, that the City Manager is hereby authorized to make, execute, and deliver to the State of Florida, Department of Transportation, the Local Agency Program Agreement, for the Project No. FPN 435671-1-38-01.

PASSED AND ADOPTED BY THE CITY COMMISSION OF THE CITY OF DELTONA, FLORIDA THIS _____ DAY OF _____, 2014.

BY: _____
JOHN C. MASIARCZYK, SR., Mayor

ATTEST:

_____
JOYCE RAFTERY, CMC, City Clerk

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

_____
GRETCHEN R. H. VOSE, ESQ. City Attorney

Sprinkle CONSULTING
Active Transportation Planners+Engineers

Lakeshore Shared Use Path Feasibility Study

from Thornby Park to Green Springs Park

VOLUSIA TPO
TRANSPORTATION PLANNING ORGANIZATION
VISION - PLAN - IMPLEMENT

Figure 1

Recommended Conceptual Alignment

0' 200'
SCALE: 1" = 200'

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

LOCAL AGENCY PROGRAM AGREEMENT

FPN: 435671-1-38-01	Fund: SU	FLAIR Approp: 088849
Federal No: 4224-079-C	Org Code: 55053010541	FLAIR Obj: 790089
FPN: 435671-1-38-01	Fund: LF	FLAIR Approp:
Federal No:	Org Code:	FLAIR Obj:
FPN:	Fund:	FLAIR Approp:
Federal No:	Org Code:	FLAIR Obj:
FPN:	Fund:	FLAIR Approp:
Federal No:	Org Code:	FLAIR Obj:
County No:79	Contract No:	Vendor No:

Data Universal Number System (DUNS) No: 80-939-7102 Local Agency DUNS No: 93-266-1747

Catalog of Federal Domestic Assistance (CFDA): 20.205 Highway Planning and Construction

THIS AGREEMENT, made and entered into this _____ day of _____ , 2014 by and between the STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION, an agency of the State of Florida, hereinafter called the Department, and the CITY OF DELTONA, 2345 Providence Boulevard, Deltona, Florida 32725-1806, hereinafter called the Agency.

W I T N E S S E T H:

WHEREAS, the Agency has the authority to enter into this Agreement and to undertake the project hereinafter described, and the Department has been granted the authority to function adequately in all areas of appropriate jurisdiction including the implementation of an integrated and balanced transportation system and is authorized under Section 339.12, Florida Statutes, to enter into this Agreement;

NOW, THEREFORE, in consideration of the mutual covenants, promises and representations herein, the parties agree as follows:

1.00 Purpose of Agreement: The purpose of this Agreement is to provide for the Department's participation in the design services for the Lakeshore Shared-Use Path, which includes a twelve (12) foot wide, approximately 3,600 feet long bike/pedestrian asphalt trail, and as further described in Exhibit "A" attached hereto and by this reference made a part hereof, hereinafter called the "Project," and to provide Department financial assistance to the Agency and state the terms and conditions upon which such assistance will be provided and the understandings as to the manner in which the Project will be undertaken and completed.

1.01 Attachments: Exhibit(s) "A," "B," and "1" are attached and made a part hereof.

2.01 General Requirements: The Agency shall complete the Project as described in Exhibit "A" with all practical dispatch, in a sound, economical, and efficient manner, and in accordance with the provisions herein, and all applicable laws. The Project will be performed in accordance with all applicable Department procedures, guidelines, manuals, standards, and directives as described in the Department's Local Agency Program Manual, which by this reference is made a part hereof as if fully set forth herein. Time is of the essence as to each and every obligation under this Agreement.

A full time employee of the Agency, qualified to ensure that the work being pursued is complete, accurate, and consistent with the terms, conditions, and specifications of this Agreement shall be in charge of the Project.

Inactivity and Removal of Any Unbilled Funds

Once the Department issues a Notice to Proceed (NTP) for the Project, the Agency shall be obligated to submit an invoice or other request for reimbursement to the Department for all work completed for the Project no less frequently than on a quarterly basis, beginning from the day the NTP is issued. If the Agency fails to submit quarterly (or more frequently than quarterly) invoices to the Department as required herein and in the event said failure to timely submit invoices to the Department results in FHWA removing any unbilled funding or in the loss of State appropriation authority (which may include the loss of state and Federal funds, if there are state funds programmed to the Project), then the Agency will be solely responsible to provide all funds necessary to complete the Project and the Department will not be obligated to provide any additional funding for the Project. The Agency waives the right to contest such removal of funds by the

Department, if the removal is related to FHWA's withdrawal of funds or if the removal is related to the loss of State appropriation authority. In addition to the loss of funding for the Project, the Department will also consider the de-certification of the Agency for future LAP Projects.

Removal of All Funds

If all funds are removed from the Project, including amounts previously billed to the Department and reimbursed to the Agency, and the Project is off the state highway system, then the department will have to request repayment for the previously billed amounts from the Agency. No state funds can be used on off-system projects.

2.02 Expiration of Agreement: The Agency agrees to complete the Project on or before twenty-five (25) months from the Agreement's execution date. If the Agency does not complete the Project within this time period, this Agreement will expire on the last day of the scheduled completion as provided in this paragraph unless an extension of the time period is requested by the Agency and granted in writing by the Department prior to the expiration of this Agreement. Expiration of this Agreement will be considered termination of the Project. The cost of any work performed after the expiration date of this Agreement will not be reimbursed by the Department.

2.03 Pursuant to Federal, State, and Local Laws: In the event that any election, referendum, approval, permit, notice or other proceeding or authorization is requisite under applicable law to enable the Agency to enter into this Agreement or to undertake the Project hereunder or to observe, assume or carry out any of the provisions of the Agreement, the Agency will initiate and consummate, as provided by law, all actions necessary with respect to any such matters so requisite.

2.04 Agency Funds: The Agency shall initiate and prosecute to completion all proceedings necessary, including federal-aid requirements, to enable the Agency to provide the necessary funds for completion of the Project.

2.05 Submission of Proceedings, Contracts, and Other Documents: The Agency shall submit to the Department such data, reports, records, contracts, and other documents relating to the Project as the Department and the Federal Highway Administration (FHWA) may require. The Agency shall use the Department's Local Agency Program Information Tool and applicable information systems as required.

3.00 Project Cost:

3.01 Total Cost: The total cost of the Project is $ 44,832.00. This amount is based upon the schedule of funding in Exhibit "B." The Agency agrees to bear all expenses in excess of the total cost of the Project and any deficits involved. The schedule of funding may be modified by mutual agreement as provided for in paragraph 4.00.

3.02 Department Participation: The Department agrees to participate in the Project cost to the extent provided in Exhibit "B." This amount includes federal-aid funds which are limited to the actual amount of federal-aid participation.

3.03 Limits on Department Funds: Project costs eligible for Department participation will be allowed only from the date of this Agreement. It is understood that Department participation in eligible Project costs is subject to:

a) Legislative approval of the Department's appropriation request in the work program year that the Project is scheduled to be committed;

b) Availability of funds as stated in paragraphs 3.04 and 3.05 of this Agreement;

c) Approval of all plans, specifications, contracts or other obligating documents and all other terms of this Agreement; and

d) Department approval of the Project scope and budget at the time appropriation authority becomes available.

3.04 Appropriation of Funds: The Department's performance and obligation to pay under this Agreement is contingent upon an annual appropriation by the Legislature. If the Department's funding for this Project is in multiple fiscal years, funds approval from the Department's Comptroller must be received each fiscal year prior to costs being incurred. See Exhibit "B" for funding levels by fiscal year. Project costs utilizing these fiscal year funds are not eligible for reimbursement if incurred prior to funds approval being received. The Department will notify the Agency, in writing, when funds are available.

3.05 Multi-Year Commitment: In the event this Agreement is in excess of $25,000 and has a term for a period of more than one year, the provisions of Section 339.135(6)(a), Florida Statutes, are hereby incorporated:

> "(a) The Department, during any fiscal year, shall not expend money, incur any liability, or enter into any contract which, by its terms, involves the expenditure of money in excess of the amounts budgeted as available for expenditure during such fiscal year. Any contract, verbal or written, made in violation of this subsection is null and void, and no money may be paid on such contract. The Department shall require a statement from the comptroller of the Department that funds are available prior to entering into any such contract or other binding commitment of funds. Nothing herein contained shall prevent the making of contracts for periods exceeding 1 year, but any contract so made shall be executory only for the value of the services to be rendered or agreed to be paid for in succeeding fiscal years, and this paragraph shall be incorporated verbatim in all contracts of the Department which are for an amount in excess of $25,000 and which have a term for a period of more than 1 year."

3.06 Notice-to-Proceed: No cost may be incurred under this Agreement until the Agency has received a written Notice-to-Proceed (NTP) from the Department. The Agency agrees to advertise or put the Project out to bid thirty (30) days from the date the Department issues the NTP to advertise the Project. If the Agency is not able to meet the scheduled advertisement, the District LAP Administrator should be notified as soon as possible.

3.07 Limits on Federal Participation: Federal-aid funds shall not participate in any cost which is not incurred in conformity with applicable Federal and State laws, the regulations in 23 Code of Federal Regulations (C.F.R.) and 49 C.F.R., and policies and procedures prescribed by the Division Administrator of FHWA. Federal funds shall not be paid on account of any cost incurred prior to authorization by the FHWA to the Department to proceed with the Project or part thereof involving such cost (23 C.F.R. 1.9 (a)). If FHWA or the Department determines that any amount claimed is not eligible, federal participation may be approved in the amount determined to be adequately supported and the Department shall notify the Agency in writing citing the reasons why items and amounts are not eligible for federal participation. Where correctable non-compliance with provisions of law or FHWA requirements exists, Federal funds may be withheld until compliance is obtained. Where non-compliance is not correctable, FHWA or the Department may deny participation in parcel or Project costs in part or in total.

For any amounts determined to be ineligible for federal reimbursement for which the Department has advanced payment, the Agency shall promptly reimburse the Department for all such amounts within 90 days of written notice.

4.00 Project Estimate and Disbursement Schedule: Prior to the execution of this Agreement, a Project schedule of funding shall be prepared by the Agency and approved by the Department. The Agency shall maintain said schedule of funding, carry out the Project, and shall incur obligations against and make disbursements of Project funds only in conformity with the latest approved schedule of funding for the Project. The schedule of funding may be revised by mutual written agreement between the Department and the Agency. If revised, a copy of the revision should be forwarded to the Department's Comptroller and to the Department's Federal-aid Program Office. No increase or decrease shall be effective unless it complies with fund participation requirements of this Agreement and is approved by the Department’s Comptroller.

5.00 Records:

5.01 Establishment and Maintenance of Accounting Records: Records of costs incurred under the terms of this Agreement shall be maintained and made available upon request to the Department at all times during the period of this Agreement and for 5 years after the final payment is made. Copies of these documents and records shall be furnished to the Department upon request. Records of costs incurred include the Agency's general accounting records and the Project records, together with supporting documents and records of the Agency and all subcontractors performing work on the Project and all other records of the Agency and subcontractors considered necessary by the Department for a proper audit of costs. If any litigation, claim or audit is started before the expiration of the 5-year period, the records shall be retained until all litigation, claims or audit findings involving the records have been resolved.

5.02 Costs Incurred for Project: The Agency shall charge to the Project account all eligible costs of the Project except costs agreed to be borne by the Agency or its contractors and subcontractors. Costs in excess of the programmed funding or attributable to actions which have not received the required approval of the Department shall not be considered eligible costs.

5.03 Documentation of Project Costs: All costs charged to the Project, including any approved services contributed by the Agency or others, shall be supported by properly executed payrolls, time records, invoices, contracts or vouchers evidencing in proper detail the nature and propriety of the charges.

5.04 Audit Reports: Recipients of federal and state funds are to have audits done annually using the following criteria:

The administration of resources awarded by the Department to the Agency may be subject to audits and/or monitoring by the Department, as described in this section.

Monitoring: In addition to reviews of audits conducted in accordance with OMB Circular A-133 and Section 215.97, Florida Statutes, as revised (see "Audits" below), monitoring procedures may include, but not be limited to, on-site visits by Department staff, limited scope audits as defined by OMB Circular A-133, as revised, and/or other procedures. By entering into this Agreement, the recipient agrees to comply and cooperate fully with any monitoring procedures/processes deemed appropriate by the Department. In the event the Department determines that a limited scope audit of the recipient is appropriate, the recipient agrees to comply with any additional instructions provided by the Department staff to the Agency regarding such audit. The Agency further agrees to comply and cooperate with any inspections, reviews, investigations or audits deemed necessary by the Department's Office of Inspector General (OIG), and the Chief Financial Officer (CFO) or Auditor General.

Audits

Part I - Federally Funded: Recipients of federal funds (i.e., state, local government or non-profit organizations as defined in OMB Circular A-133, as revised) are to have audits done annually using the following criteria:

1. In the event that the recipient expends $500,000 or more in federal awards in its fiscal year, the recipient must have a single or program-specific audit conducted in accordance with the provisions of OMB Circular A-133, as revised. Exhibit "1" of this Agreement indicates federal resources awarded through the Department by this Agreement. In determining the federal awards expended in its fiscal year, the recipient shall consider all sources of federal awards, including federal resources received from the Department. The determination of amounts of federal awards expended should be in accordance with the guidelines established by OMB Circular A-133, as revised. An audit of the recipient conducted by the Auditor General in accordance with the provisions OMB Circular A-133, as revised, will meet the requirements of this part.

2. In connection with the audit requirements addressed in Part I, paragraph 1 the recipient shall fulfill the requirements relative to auditee responsibilities as provided in Subpart C of OMB Circular A-133, as revised.

3. If the recipient expends less than $500,000 in federal awards in its fiscal year, an audit conducted in accordance with the provisions of OMB Circular A-133, as revised, is not required. However, if the recipient elects to have an audit conducted in accordance with the provisions of OMB Circular A-133, as revised, the cost of the audit must be paid from non-federal resources (i.e., the cost of such an audit must be paid from recipient resources obtained from other than federal entities).

4. Federal awards are to be identified using the Catalog of Federal Domestic Assistance (CFDA) title and number, award number and year, and name of the awarding federal agency.

Part II - State Funded: Recipients of state funds (i.e., a non-state entity as defined by Section 215.97(2) (l), Florida Statutes) are to have audits done annually using the following criteria:

1. In the event that the recipient expends a total amount of state financial assistance equal to or in excess of $500,000 in any fiscal year of such recipient, the recipient must have a state single or project-specific audit for such fiscal year in accordance with Section 215.97, Florida Statutes, applicable rules of the Executive Office of the Governor and the CFO, and Chapters 10.550 (local governmental entities) or 10.650 (nonprofit and for-profit organizations), Rules of the Auditor General. Exhibit "1" to this Agreement indicates state financial assistance awarded through the Department by this Agreement. In determining the state financial assistance expended in its fiscal year, the recipient shall consider all sources of state financial assistance, including state financial assistance received from the Department, other state agencies, and other non-state entities. State financial assistance does

not include federal direct or pass-through awards and resources received by a non-state entity for federal program matching requirements.

2. In connection with the audit requirements addressed in Part II, paragraph 1, the recipient shall ensure that the audit complies with the requirements of Section 215.97(7), Florida Statutes. This includes submission of a financial reporting package as defined by Section 215.97(2) (d), Florida Statutes, and Chapters 10.550 (local governmental entities) or 10.650 (nonprofit and for-profit organizations), Rules of the Auditor General.

3. If the recipient expends less than $500,000 in state financial assistance in its fiscal year, an audit conducted in accordance with the provisions of Section 215.97, Florida Statutes, is not required. However, if the recipient elects to have audit conducted in accordance with the provisions of Section 215.97, Florida Statutes, the cost of the audit must be paid from the non-state entity's resources (i.e., the cost of such an audit must be paid from the recipient's resources obtained from other than State entities).

4. State awards are to be identified using the Catalog of State Financial Assistance (CSFA) title and number, award number and year, and name of the state agency awarding it.

Part III - Other Audit Requirements: The recipient shall follow up and take corrective action on audit findings. Preparation of a Summary Schedule of Prior Year Audit Findings, including corrective action and current status of the audit findings is required. Current year audit findings require corrective action and status of findings.

Records related to unresolved audit findings, appeals or litigation shall be retained until the action is completed or the dispute is resolved. Access to Project records and audit work papers shall be given to the Department, the Department of Financial Services, and the Auditor General. This section does not limit the authority of the Department to conduct or arrange for the conduct of additional audits or evaluations of state financial assistance or limit the authority of any other state official.

Part IV - Report Submission:

1. Copies of financial reporting packages for audits conducted in accordance with OMB Circular A-133, as revised, and required by Part I of this Agreement shall be submitted, when required by Section .320 (d), OMB Circular A-133, as revised, by or on behalf of the recipient directly to each of the following:

   a) The Department at each of the following address(es):

      Florida Department of Transportation
      Office of Comptroller, MS 24
      605 Suwannee Street
      Tallahassee, Florida 32399-0405
      Email: FDOTSingleAudit@dot.state.fl.us

   b) The Federal Audit Clearinghouse designated in OMB Circular A-133, as revised (the number of copies required by Sections .320 (d)(1) and (2), OMB Circular A-133, as revised), at the following address:

      Federal Audit Clearinghouse
      Bureau of the Census
      1201 East 10th Street
      Jeffersonville, IN 47132

   c) Other federal agencies and pass-through entities in accordance with Sections .320 (e) and (f), OMB Circular A-133, as revised.

2. In the event that a copy of the financial reporting package required by Part I of this Agreement and conducted in accordance with OMB Circular A-133, as revised, is not required to be submitted to the Department for reasons pursuant to Section .320 (e)(2), OMB Circular A-133, as revised, the recipient shall submit the required written notification pursuant to Section .320 (e)(2) and a copy of the recipient's audited Schedule of Expenditures of Federal Awards directly to each of the following:

   Florida Department of Transportation

Office of Comptroller, MS 24
605 Suwannee Street
Tallahassee, Florida 32399-0405
Email: FDOTSingleAudit@dot.state.fl.us

In addition, pursuant to Section .320 (f), OMB Circular A-133, as revised, the recipient shall submit a copy of the financial reporting package described in Section .320 (c), OMB Circular A-133, as revised, and any Management Letters issued by the auditor, to the Department at each of the following addresses:

Florida Department of Transportation
Office of Comptroller, MS 24
605 Suwannee Street
Tallahassee, Florida 32399-0405
Email: FDOTSingleAudit@dot.state.fl.us

3. Copies of the financial reporting package required by Part II of this Agreement shall be submitted by or on behalf of the recipient directly to each of the following:

a) The Department at each of the following address(es):

Florida Department of Transportation
Office of Comptroller, MS 24
605 Suwannee Street
Tallahassee, Florida 32399-0405
Email: FDOTSingleAudit@dot.state.fl.us

b) The Auditor General's Office at the following address:

Auditor General's Office
Room 401, Pepper Building
111 West Madison Street
Tallahassee, Florida 32399-1450

4. Copies of reports or the Management Letter required by Part III of this Agreement shall be submitted by or on behalf of the recipient directly to:

a) The Department at each of the following address(es):

Florida Department of Transportation
Office of Comptroller, MS 24
605 Suwannee Street
Tallahassee, Florida 32399-0405
Email: FDOTSingleAudit@dot.state.fl.us

5. Any reports, Management Letters, or other information required to be submitted to the Department pursuant to this Agreement shall be submitted in a timely manner in accordance with OMB Circular A-133, as revised, Florida Statutes, and Chapters 10.550 (local governmental entities) or 10.650 (nonprofit and for-profit organizations), Rules of the Auditor General, as applicable.

6. Recipients, when submitting financial reporting packages to the Department for audits done in accordance with OMB Circular A-133, as revised, or Chapters 10.550 (local governmental entities) or 10.650 (nonprofit and for-profit organizations), Rules of the Auditor General, should indicate the date that the financial reporting package was delivered to the recipient in correspondence accompanying the financial reporting package.

Part V - Record Retention: The recipient shall retain sufficient records demonstrating its compliance with the terms of this Agreement for a period of at least 5 years from the date the audit report is issued and shall allow the Department or its designee, the state CFO or Auditor General access to such records upon request. The recipient shall ensure that the

independent audit documentation is made available to the Department, or its designee, the state CFO or Auditor General upon request for a period of at least 5 years from the date the audit report is issued, unless extended in writing by the Department.

5.05 Inspection: The Agency shall permit, and shall require its contractors to permit, the Department's authorized representatives and authorized agents of FHWA to inspect all work, workmanship, materials, payrolls, and records and to audit the books, records, and accounts pertaining to the financing and development of the Project.

The Department reserves the right to unilaterally cancel this Agreement for refusal by the Agency or any contractor, sub-contractor or materials vendor to allow public access to all documents, papers, letters or other material subject to the provisions of Chapter 119, Florida Statutes, and made or received in conjunction with this Agreement (Section 287.058(1)(c), Florida Statutes).

5.06 Uniform Relocation Assistance and Real Property Statistical Report: For any project requiring additional right-of-way, the Agency must submit to the Department an annual report of its real property acquisition and relocation assistance activities on the project. Activities shall be reported on a federal fiscal year basis, from October 1 through September 30. The report must be prepared using the format prescribed in 49 C.F.R. Part 24, Appendix B, and be submitted to the Department no later than October 15 of each year.

6.00 Requisitions and Payments: Requests for reimbursement for fees or other compensation for services or expenses incurred shall be submitted in detail sufficient for a proper pre-audit and post-audit thereof (Section 287.058(1)(a), Florida Statutes).

All recipients of funds from this Agreement, including those contracted by the Agency, must submit bills for any travel expenses, when authorized by the terms of this Agreement, in accordance with Section 112.061, Florida Statutes, and Chapter 3-"Travel" of the Department's Disbursement Operations Manual, Topic 350-030-400 (Section 287.058(1)(b), Florida Statutes).

If, after Project completion, any claim is made by the Department resulting from an audit or for work or services performed pursuant to this Agreement, the Department may offset such amount from payments due for work or services done under any agreement which it has with the Agency owing such amount if, upon demand, payment of the amount is not made within 60 days to the Department. Offsetting any amount pursuant to this paragraph shall not be considered a breach of contract by the Department.

7.00 Department Obligations: Subject to other provisions hereof, the Department will honor requests for reimbursement to the Agency in amounts and at times deemed by the Department to be proper to ensure the carrying out of the Project and payment of the eligible costs. However, notwithstanding any other provision of this Agreement, the Department may elect by notice in writing not to make a payment if:

7.01 Misrepresentation: The Agency shall have made misrepresentation of a material nature in its application, or any supplement thereto or amendment thereof or in or with respect to any document of data furnished therewith or pursuant hereto;

7.02 Litigation: There is then pending litigation with respect to the performance by the Agency of any of its duties or obligations which may jeopardize or adversely affect the Project, the Agreement or payments to the Project;

7.03 Approval by Department: The Agency shall have taken any action pertaining to the Project which, under this Agreement, requires the approval of the Department or has made related expenditure or incurred related obligations without having been advised by the Department that same are approved;

7.04 Conflict of Interests: There has been any violation of the conflict of interest provisions contained here in paragraph 12.07.

7.05 Default: The Agency has been determined by the Department to be in default under any of the provisions of the Agreement.

7.06 Federal Participation: The Department may suspend or terminate payment for that portion of the Project which the FHWA, or the Department acting in lieu of FHWA, may designate as ineligible for federal-aid.

7.07 Disallowed Costs: In determining the amount of the payment, the Department will exclude all Projects costs incurred by the Agency prior to the effective date of this Agreement or the date of authorization, costs incurred after the expiration of the Agreement, costs which are not provided for in the latest approved schedule of funding in Exhibit "B" for the Project, costs agreed to be borne by the Agency or its contractors and subcontractors for not meeting the Project commencement and final invoice time lines, and costs attributable to goods or services received under a contract or other arrangements which have not been approved in writing by the Department.

7.08 Final Invoices: The Agency must submit the final invoice on the Project to the Department within 120 days after the completion of the Project. Invoices submitted after the 120-day time period may not be paid.

8.00 Termination or Suspension of Project:

8.01 Termination or Suspension Generally: The Department may, by written notice to the Agency, suspend any or all of its obligations under this Agreement until such time as the event or condition resulting in such suspension has ceased or been corrected or the Department may terminate this Agreement in whole or in part at any time the interest of the Department requires such termination.

(a) If the Department determines that the performance of the Agency is not satisfactory, the Department shall notify the Agency of the deficiency in writing with a requirement that the deficiency be corrected within thirty (30) days of such notice. Such notice shall provide reasonable specificity to the Agency of the deficiency that requires correction. If the deficiency is not corrected within such time period, the Department may either (1) immediately terminate the Agreement as set forth in paragraph 8.(b) below, or (2) take whatever action is deemed appropriate by the Department to correct the deficiency. In the event the Department chooses to take action and not terminate the Agreement, the Agency shall, upon demand, promptly reimburse the Department for any and all costs and expenses incurred by the Department in correcting the deficiency.

(b) If the Department terminates the Agreement, the Department shall notify the Agency of such termination in writing, with instructions to the effective date of termination or specify the stage of work at which the Agreement is to be terminated.

(c) If the Agreement is terminated before the Project is completed, the Agency shall be paid only for the percentage of the Project satisfactorily performed for which costs can be substantiated. Such payment, however, shall not exceed the equivalent percentage of the contract price. All work in progress will become the property of the Department and will be turned over promptly by the Agency.

8.02 Action Subsequent to Notice-of-Termination or Suspension: Upon receipt of any final termination or suspension notice under this paragraph, the Agency shall proceed promptly to carry out the actions required therein which may include any or all of the following: (a) necessary action to terminate or suspend, as the case may be, Project activities and contracts and such other action as may be required or desirable to keep to a minimum the costs upon the basis of which the financing is to be computed; (b) furnish a statement of the Project activities and contracts and other undertakings the cost of which are otherwise includable as Project costs. The termination or suspension shall be carried out in conformity with the latest schedule, plan, and cost as approved by the Department or upon the basis of terms and conditions imposed by the Department upon the failure of the Agency to furnish the schedule, plan, and estimate within a reasonable time. The closing out of federal financial participation in the Project shall not constitute a waiver of any claim which the Department may otherwise have arising out of this Agreement.

9.00 Contracts of Agency:

9.01 Third Party Agreements: Except as otherwise authorized in writing by the Department, the Agency shall not execute any contract or obligate itself in any manner requiring the disbursement of Department funds, including consultant or construction contracts or amendments thereto, with any third party with respect to the Project without the written approval of the Department. Failure to obtain such approval shall be sufficient cause for nonpayment by the Department. The Department specifically reserves unto itself the right to review the qualifications of any consultant or contractor and to approve or disapprove the employment of the same.

9.02 Compliance with Consultants' Competitive Negotiation Act: It is understood and agreed by the parties hereto that participation by the Department in a project with the Agency, where said project involves a consultant contract for

engineering, architecture or surveying services, is contingent on the Agency's complying in full with provisions of Section 287.055, Florida Statutes, Consultants' Competitive Negotiation Act. At the discretion of the Department, the Agency will involve the Department in the consultant selection process for all projects. In all cases, the Agency's attorney shall certify to the Department that selection has been accomplished in compliance with the Consultants' Competitive Negotiation Act.

10.00 Disadvantaged Business Enterprise (DBE) Policy and Obligation: It is the policy of the Department that DBE's, as defined in 49 C.F.R. Part 26, as amended, shall have the opportunity to participate in the performance of contracts financed in whole or in part with Department funds under this Agreement. The DBE requirements of applicable federal and state laws and regulations apply to this Agreement.

The Agency and its contractors agree to ensure that DBE's have the opportunity to participate in the performance of this Agreement. In this regard, all recipients and contractors shall take all necessary and reasonable steps in accordance with applicable federal and state laws and regulations to ensure that the DBE's have the opportunity to compete for and perform contracts. The Agency and its contractors and subcontractors shall not discriminate on the basis of race, color, national origin or sex in the award and performance of contracts, entered pursuant to this Agreement. Furthermore, the Agency agrees that:

(a) Each financial assistance agreement signed with a US-DOT operating administration (or a primary recipient) must include the following assurance:

> "The recipient shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of any DOT-assisted contract or in the administration of its DBE program or the requirements of 49 C.F.R. Part 26. The recipient shall take all necessary and reasonable steps under 49 C.F.R. Part 26 to ensure nondiscrimination in the award and administration of DOT-assisted contracts. The recipient's DBE program, as required by 49 C.F.R. Part 26 and as approved by Department, is incorporated by reference in this Agreement. Implementation of this program is a legal obligation and failure to carry out its terms shall be treated as a violation of this Agreement. Upon notification to the recipient of its failure to carry out its approved program, the Department may impose sanctions as provided for under 49 C.F.R. Part 26 and may, in appropriate cases, refer the matter for enforcement under 18 U.S.C. 1001 and/or the Program Fraud Civil Remedies Act of 1986 (31 U.S.C. 3801 et seq.)."

(b) Each contract signed with a contractor (and each subcontract the prime contractor signs with a subcontractor) must include the following assurance:

> "The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 C.F.R. Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate."

11.00 Compliance with Conditions and Laws: The Agency shall comply and require its contractors and subcontractors to comply with all terms and conditions of this Agreement and all federal, state, and local laws and regulations applicable to this Project. Execution of this Agreement constitutes a certification that the Agency is in compliance with, and will require its contractors and subcontractors to comply with, all requirements imposed by applicable federal, state, and local laws and regulations, including the "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – Lower Tier Covered Transactions," in 49 C.F.R. Part 29, when applicable.

11.01 Performance Evaluation: Agencies are evaluated on a project-by-project basis. The evaluations provide information about oversight needs and provide input for the recertification process. Evaluations are submitted to the Agency's Responsible Charge or designee as part of the Project closeout process. The Department provides the evaluation to the Agency no more than 30 days after final acceptance.

11.02 Performance Evaluation Ratings: Each evaluation will result in one of three ratings. A rating of Unsatisfactory Performance means the Agency failed to develop the Project in accordance with applicable federal and state regulations, standards and procedures, required excessive District involvement/oversight, or the Project was brought in-house by the Department. A rating of Satisfactory Performance means the Agency developed the Project in accordance with applicable federal and state regulations, standards and procedures, with minimal District involvement/oversight. A rating of Above Satisfactory Performance means the Agency developed the Project in accordance with applicable federal and state

regulations, standards and procedures, without District involvement/oversight.

11.03 Delegation of Authority: The District will determine which functions can be further delegated to Agencies that continuously earn Satisfactory and Above Satisfactory evaluations.

12.00 Restrictions, Prohibitions, Controls, and Labor Provisions:

12.01 Equal Employment Opportunity: In connection with the carrying out of any project, the Agency shall not discriminate against any employee or applicant for employment because of race, age, religion, color, sex, national origin, disability or marital status. The Agency will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, age, religion, color, gender, national origin, disability or marital status. Such action shall include, but not be limited to, the following: employment upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Agency shall insert the foregoing provision modified only to show the particular contractual relationship in all its contracts in connection with the development of operation of the Project, except contracts for the standard commercial supplies or raw materials, and shall require all such contractors to insert a similar provision in all subcontracts, except subcontracts for standard commercial supplies or raw materials. When the project involves installation, construction, demolition, removal, site improvement or similar work, the Agency shall post, in conspicuous places available to employees and applicants for employment for project work, notices to be provided by the Department setting forth the provisions of the nondiscrimination clause.

12.02 Title VI – Civil Rights Act of 1964: The Agency will comply with all the requirements imposed by Title VI of the Civil Rights Act of 1964, the regulations of the U.S. Department of Transportation issued thereunder, and the assurance by the Agency pursuant thereto.

The Agency shall include provisions in all contracts with third parties that ensure compliance with Title VI of the Civil Rights Act of 1964, 49 C.F.R. Part 21, and related statutes and regulations.

12.03 Americans with Disabilities Act of 1990 (ADA): The Agency will comply with all the requirements as imposed by the ADA, the regulations of the Federal government issued thereunder, and assurance by the Agency pursuant thereto.

12.04 Public Entity Crime: A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity; may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.

12.05 Discrimination: In accordance with Section 287.134, Florida Statutes, an entity or affiliate who has been placed on the Discriminatory Vendor List, kept by the Florida Department of Management Services, may not submit a bid on a contract to provide goods or services to a public entity; may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor or consultant under a contract with any public entity; and may not transact business with any public entity.

12.06 Suspension, Revocation, Denial of Qualification or Determination of Contractor Non-Responsibility: An entity or affiliate who has had its Certificate of Qualification suspended, revoked, denied or have further been determined by the Department to be a non-responsible contractor may not submit a bid or perform work for the construction or repair of a public building or public work on a contract with the Agency.

12.07 Prohibited Interests: Neither the Agency nor any of its contractors or their subcontractors shall enter into any contract, subcontract or arrangement in connection with the Project or any property included or planned to be included in the Project in which any member, officer or employee of the Agency or the locality during tenure or for 2 years thereafter has any interest, direct or indirect. If any such present or former member, officer or employee involuntarily acquires or had acquired prior to the beginning of tenure any such interest, and if such interest is immediately disclosed to the Agency, the Agency, with prior approval of the Department, may waive the prohibition contained in this paragraph provided that any

such present member, officer or employee shall not participate in any action by the Agency or the locality relating to such contract, subcontract or arrangement.

The Agency shall insert in all contracts entered into in connection with the Project or any property included or planned to be included in any Project, and shall require its contractors to insert in each of their subcontracts, the following provision:

> "No member, officer or employee of the Agency or of the locality during his tenure or for 2 years thereafter shall have any interest, direct or indirect, in this contract or the proceeds thereof."

The provisions of this paragraph shall not be applicable to any agreement between the Agency and its fiscal depositories or to any agreement for utility services the rates for which are fixed or controlled by a governmental agency.

12.08 Interest of Members of, or Delegates to, Congress: No member or delegate to the Congress of the United States shall be admitted to any share or part of this Agreement or any benefit arising therefrom.

13.00 Miscellaneous Provisions:

13.01 Environmental Regulations: The Agency will be solely responsible for compliance with all the applicable environmental regulations, for any liability arising from non-compliance with these regulations, and will reimburse the Department for any loss incurred in connection therewith. The Agency will be responsible for securing any applicable permits.

13.02 Department Not Obligated to Third Parties: The Department shall not be obligated or liable hereunder to any individual or entity not a party to this Agreement.

13.03 When Rights and Remedies Not Waived: In no event shall the making by the Department of any payment to the Agency constitute or be construed as a waiver by the Department of any breach of covenant or any default which may then exist on the part of the Agency and the making of such payment by the Department, while any such breach or default shall exist, shall in no way impair or prejudice any right or remedy available to the Department with respect to such breach or default.

13.04 How Agreement Is Affected by Provisions Being Held Invalid: If any provision of this Agreement is held invalid, the remainder of this Agreement shall not be affected. In such an instance, the remainder would then continue to conform to the terms and requirements of applicable law.

13.05 Bonus or Commission: By execution of the Agreement, the Agency represents that it has not paid and, also agrees not to pay, any bonus or commission for the purpose of obtaining an approval of its application for the financing hereunder.

13.06 State Law: Nothing in the Agreement shall require the Agency to observe or enforce compliance with any provision or perform any act or do any other thing in contravention of any applicable state law. If any of the provisions of the Agreement violate any applicable state law, the Agency will at once notify the Department in writing in order that appropriate changes and modifications may be made by the Department and the Agency to the end that the Agency may proceed as soon as possible with the Project.

13.07 Plans and Specifications: In the event that this Agreement involves constructing and equipping of facilities, the Agency shall submit to the Department for approval all appropriate plans and specifications covering the Project. The Department will review all plans and specifications and will issue to the Agency a written approval with any approved portions of the Project and comments or recommendations covering any remainder of the Project deemed appropriate. After resolution of these comments and recommendations to the Department's satisfaction, the Department will issue to the Agency a written approval with said remainder of the Project. Failure to obtain this written approval shall be sufficient cause of nonpayment by the Department. The Agency will physically include Form FHWA-1273 in all its contracts and subcontracts.

13.08 Right-of-Way Certification: Upon completion of right-of-way activities on the Project, the Agency must certify compliance with all applicable federal and state requirements. Certification is required prior to advertisement for or solicitation of bids for construction of the Project, including if no right-of-way is required.

13.09 Agency Certification: The Agency will certify in writing, prior to Project closeout that the Project was completed in accordance with applicable plans and specifications, is in place on the Agency's facility, adequate title is in the Agency's name, and the Project is accepted by the Agency as suitable for the intended purpose.

13.10 Agreement Format: All words used herein in the singular form shall extend to and include the plural. All words used in the plural form shall extend to and include the singular. All words used in any gender shall extend to and include all genders.

13.11 Execution of Agreement: This Agreement may be simultaneously executed in a minimum of two counterparts, each of which so executed shall be deemed to be an original and such counterparts together shall constitute one and the same instrument.

13.12 Restrictions on Lobbying:

Federal: The Agency agrees that no federally-appropriated funds have been paid, or will be paid by or on behalf of the Agency, to any person for influencing or attempting to influence any officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any federal contract, grant, loan or cooperative agreement.

If any funds other than federally-appropriated funds have been paid by the Agency to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress in connection with this Agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

The Agency shall require that the language of this paragraph be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

State: No funds received pursuant to this contract may be expended for lobbying the Legislature, the judicial branch or a state agency.

13.13 Maintenance: The Agency agrees to maintain any project not on the State Highway System constructed under this Agreement. If the Agency constructs any improvement on Department right-of-way, the Agency ☒ will ☐ will not maintain the improvements made for their useful life.

13.14 Vendors Rights: Vendors (in this document identified as the Agency) providing goods and services to the Department should be aware of the following time frames. Upon receipt, the Department has 30 working days to inspect and approve the goods and services unless the bid specifications, purchase order or contract specifies otherwise. The Department has 20 days to deliver a request for payment (voucher) to the Department of Financial Services. The 20 days are measured from the latter of the date the invoice is received or the goods or services are received, inspected, and approved.

If a payment is not available within 40 days after receipt of the invoice and the receipt, inspection, and approval of goods and services, a separate interest penalty in accordance with Section 215.422(3) (b), Florida Statutes, will be due and payable in addition to the invoice amount to the Agency. Interest penalties of less than one $1 will not be enforced unless the Agency requests payment. Invoices which have to be returned to the Agency because of Agency preparation errors will result in a delay in the payment. The invoice payment requirements do not start until a properly completed invoice is provided to the Department.

A Vendor Ombudsman has been established within the Department of Financial Services. The duties of this individual include acting as an advocate for Agencies who may be experiencing problems in obtaining timely payment(s) from the Department. The Vendor Ombudsman may be contacted at 850-413-5516.

13.15 Reimbursement of Federal Funds:

The Agency shall comply with all applicable federal guidelines, procedures, and regulations. If at any time a review conducted by Department and or FHWA reveals that the applicable federal guidelines, procedures, and regulations were not followed by the Agency and FHWA requires reimbursement of the funds, the Agency will be responsible for repayment to the Department of all funds awarded under the terms of this Agreement.

13.16 E- VERIFY

The Agency:

1. shall utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by Agency during the term of the contract; and

2. shall expressly require any subcontractors performing work or providing services pursuant to the state contract to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term.

IN WITNESS WHEREOF, the parties have caused these presents to be executed the day and year first above written.

AGENCY CITY OF DELTONA

By: _____
Name:
Title:

Attest: _____
Title:

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

By: _____
Name: Frank J. O'Dea, P.E.
Title: Director of Transportation Development

Attest: _____
Title:

Legal Review:

_____ _____

See attached Encumbrance Form for date of funding approval by Comptroller.

EXHIBIT "A"

PROJECT DESCRIPTION AND RESPONSIBILITIES

FPN: 435671-1-38-01

This exhibit forms an integral part of the Agreement between the State of Florida, Department of Transportation and the

City of Deltona, 2345 Providence Boulevard, Deltona, Florida 32725-1806

Dated_____

PROJECT LOCATION:

The project ____ is _X__ is not on the National Highway System.

The project ____ is _X__ is not on the State Highway System.

PROJECT DESCRIPTION:

The design project includes a twelve (12) foot wide, approximately 3,600 foot long bike/pedestrian asphalt trail with sections narrowing due to constrictions. The trail will connect from the Thornby Park driveway to Green Springs Park by running parallel along Providence Boulevard, Lakeshore Drive, and Green Springs Road. The project will begin at the connection to the existing sidewalk completed adjacent to the driveway entrance to Thornby Park. At certain locations, the trail will tie into existing sidewalk. For certain sections, boardwalks will be required for passage over storm water retention areas, small streams and man-made ditches. Additional services include designing curb ramps and possible vertical barriers or walls between the roadway and the trail. The trail, crosswalks, and ramps are to adhere to the current ADA standards. Utility relocation was preferred to be avoided; however, it may be required. Coordination with Utility stakeholders is required. Additional right of way is not required. Permitting to be acquired during design and is to be coordinated with the US Fish and Wildlife Service. Other permitting may have the possibility of exemption by following St. Johns River Water Management District criteria; however, final permitting determination will be part of the design process.

The project funding shall be reduced to an amount equal to the award amount and/or the actual contract costs.

SPECIAL CONSIDERATIONS BY AGENCY:

Invoices shall be submitted on a monthly basis and progress reports shall be submitted as requested to:

David Cooke, Project Management, Supervisor
Florida Department of Transportation
719 South Woodland Boulevard, MS 2-542
DeLand, Florida 32720

The audit report(s) required in the Agreement shall include a Schedule of Project Assistance that will reflect the Department's contract number, the Financial Project Number (FPN), the Federal Authorization Number (FAN), where applicable, the amount of state funding action (receipt and disbursement of funds), any federal or local funding action, and the funding action from any other source with respect to the project.

The Agency is required to provide a copy of the design plans for the Department's review and approval to coordinate permitting with the Department, and notify the Department prior to commencement of any right-of-way activities.

EXHIBIT "A"

PROJECT DESCRIPTION AND RESPONSIBILITIES

The Agency shall commence the project's activities subsequent to the execution of this Agreement and shall perform in accordance with the following schedule:

a) ____N/A_____ Study to be completed by ____N/A____.

b) Design to be completed by ___3/31/2016___.

c) Right-of-Way requirements identified and provided to the Department by____N/A____.

d) Right-of-Way to be certified by _____N/A___.

e) Construction contract to be let by ___N/A___.

f) Construction to be completed by ____N/A___.

If this schedule cannot be met, the Agency will notify the Department in writing with a revised schedule or the project is subject to the withdrawal of federal funding.

SPECIAL CONSIDERATIONS BY DEPARTMENT:

N/A

EXHIBIT "B"

SCHEDULE OF FUNDING

AGENCY NAME & BILLING ADDRESS	FPN:
City of Deltona 2345 Providence Boulevard Deltona, Florida 32725-1806	435671-1-38-01

PROJECT DESCRIPTION

Name: Design services for the Lakeshore Shared-Use Path Length: approximately 3,600 feet

Termini: from Thornby Park driveway to Green Springs Park, running parallel along Providence Boulevard, Lakeshore Drive, and Green Springs Road

TYPE OF WORK By Fiscal Year		FUNDING (1) TOTAL PROJECT FUNDS	(2) AGENCY FUNDS	(3) STATE & FEDERAL FUNDS
Planning	FY:			
	FY:			
	FY:			
	Total Planning Cost			
Project Development & Environment (PD&E)				
	FY:			
	FY:			
	FY:			
	Total PD&E Cost			
Design	FY: 2013/2014	$44,832.00	$4,483.00	$40,349.00
	FY:			
	FY:			
	Total Design Cost	$44,832.00	$4,483.00	$40,349.00
Right-of-Way	FY:			
	FY:			
	FY:			
	Total Right-of-Way Cost			
Construction	FY:			
	FY:			
	FY:			
	FY:			
	Total Construction Cost			
Construction Engineering and Inspection (CEI)				
	FY:			
	FY:			
	FY:			
	Total CEI Cost			
	Total Construction and CEI Costs			
	TOTAL COST OF THE PROJECT	**$44,832.00**	**$4,483.00**	**$40,349.00**

EXHIBIT "1"

SINGLE AUDIT ACT

Federal Resources Awarded to the Recipient Pursuant to This Agreement Consist of the Following:

Federal Agency: Federal Highway Administration

CFDA #: 20.205 Highway Planning and Construction

Amount: $ 40,349.00

Compliance Requirement:

Allowable Activities: To be eligible, most projects must be located on public roads that are not functionally classified as local. The major exceptions are the Highway Bridge Replacement and Rehabilitation Program, which provides assistance for bridges on and off the federal-aid highways, highway safety activities, bicycle and pedestrian projects, transportation enhancement activities, the recreational trails program, and planning, research, development, and technology transfer. Proposed projects meeting these and other planning, design, environmental, safety, etc., requirements can be approved on the basis of state and local priorities within the limit of the funds apportioned or allocated to each state.

Allowable Costs: Eligible activities and allowable costs will be determined in accordance with Title 23 and Title 49 C.F.R. and the OMB cost principles applicable to the recipient/sub-recipient.

Eligibility: By law, the federal-aid highway program is a federally assisted state program that requires each state to have a suitably equipped and organized transportation department. Therefore, most projects are administered by or through State Departments of Transportation (State DOTs). Projects to be funded under the federal-aid highway program are generally selected by state DOTs or Metropolitan Planning Organizations (MPOs), in cooperation with appropriate local officials, as specified in 23 U.S.C. and implementing regulations. Territorial highway projects are funded in the same manner as other federal-aid highway projects, with the territorial transportation agency functioning in a manner similar to a state DOT. Most Federal Land Highway Program (FLHP) projects are administered by the Federal Highway Administration (FHWA) Office of Federal Lands Highway and its Divisions or by the various Florida Land Management Agencies (FLMAs). Under the FLHP, projects in the Indian Reservation Road (IRR) Program are selected by Tribal Governments and are approved by the Bureau of Indian Affairs (BIA) and the FHWA. Due to recent legislation, Tribal Governments meeting certain requirements may now administer various IRR projects on behalf of the BIA and FHWA. The Fish and Wildlife Service (FWS) and the National Park Service (NPS) select projects in the Refuge Road and Park Roads and Parkways Programs, respectively. For the Forest Highway Program, the Forest Service, the States and the FHWA jointly select projects.

Compliance Requirements Applicable to the Federal Resources Awarded Pursuant to This Agreement Are As Follows: The recipient of Local Agency Program (LAP) funding must comply with the statutory requirements in Sections 112.061, 215.422, 339.12, and 339.135, Florida Statutes, and Title 23 and Title 49, C.F.R.

12/13/2013 03:31 PM
Doc stamps .70
(Transfer Amt $ 10)
Instrument# 2013-238708 # 1
Book: 6939
Page: 3068

Prepared by and returned to:
City of Deltona, City Clerk
2345 Providence Blvd.
Deltona, FL 32725

This Instrument Prepared By:
City of Deltona
2345 Providence Boulevard
Deltona, FL 32725-1806

PUBLIC RIGHT-OF-WAY EASEMENT AGREEMENT

THIS PUBLIC RIGHT-OF-WAY EASEMENT ("Agreement") is made and entered into this 3rd day of December, 2013, by and between Edgewater Condominium Apartments of Deltona, Florida, Inc., a Florida not-for-profit corporation, whose post office address is 175 Palmetto Woods Court, Deltona, Florida 32725 ("Grantor"), and the CITY OF DELTONA, a Florida municipal corporation, whose post office address is 2345 Providence Boulevard, Deltona, Florida 32725-1806 ("Grantee").

RECITALS:

WHEREAS, Grantor owns in fee simple and is in possession of the real property located in Volusia County, Florida, more specifically described in Exhibit "A" attached hereto and incorporated herein; and

WHEREAS, Grantor is willing to grant a public right-of-way easement as to the property described on Exhibit "A" to Grantee for the purpose of constructing a non-lighted walkway from Thornby Park along Lakeside Drive to Green Springs Park, on the terms and conditions set forth hereinbelow.

WHEREAS, the parties have agreed, in consideration of the sum of Ten and 00/100 Dollars ($10.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, that Grantor shall convey a non-exclusive, perpetual 17' easement for right-of-way over, across and under the land described in Exhibit "A" attached hereto and incorporated herein for the purposes and in the manner expressed below.

NOW, THEREFORE, the parties agree as follows:

1. **INGRESS/EGRESS EASEMENT.** Grantor hereby grants to Grantee a non-exclusive, perpetual 17 foot wide right-of-way easement for ingress and egress across and through the subject parcel and described in Exhibit "A" attached hereto, for the purpose of constructing a walkway from Thornby Park along Lakeside Drive to Green Springs Park, with the edge of the pavement to be no closer than 27 feet to any building.

2. **UNENCUMBERED TITLE.** Grantor warrants that the Easement Property granted herein is granted free and clear of all liens and encumbrances.

3. **EASEMENTS APPURTENANT.** The easement granted in this Agreement is intended to be an easement appurtenant, and shall run with the land and bind Grantor and Grantee and their successors and assigns.

4. **CAPTIONS, NUMBER AND GENDER.** The captions and headings are for convenience only and are not intended to be used in construing any provision of this Agreement.

Instrument# 2013-238708 # 2
Book: 6939
Page: 3069

Prepared by and returned to:
City of Deltona, City Clerk
2345 Providence Blvd.
Deltona, FL 32725

The singular and plural shall each include the other where appropriate. Words of any gender shall include other genders when the context so permits.

5. **GOVERNING LAW.** The laws of the State of Florida shall govern this Agreement.

6. **INCIDENTAL RIGHTS.** Each of the rights and benefits granted herein shall include all those additional rights and benefits, which are necessary for the full enjoyment thereof and are customarily incidental thereto. The Grantor shall have no duty whatsoever to either insure or maintain the right-of-way easement area, and the Grantee shall be responsible for the maintenance of the right-of-way easement area to the same extent it maintains other city property.

7. **MODIFICATION OR TERMINATION.** There are no other agreements or promises by the parties relating to the subject matter of this Agreement except as are set forth herein. The terms and provisions of this Agreement may be modified, supplemented or terminated only by a written instrument signed by the parties hereto or their successors in interest.

IN WITNESS WHEREOF, the parties have executed this instrument on the date set forth above.

SIGNED, SEALED AND DELIVERED
IN THE PRESENCE OF:

Michael Ruggieri
Witness (signature)
MICHAEL RUGGIERI
Print or Type Name

F. Ray Boyd
Witness (signature)
F. Ray Boyd
Print or Type Name

GRANTOR:

EDGEWATER CONDOMINIUM
APARTMENTS
A Florida not-for-profit corporation

By: Charles W. Kasmer
Charles W. Kasmer, President

Instrument# 2013-238708 # 3
Book: 6939
Page: 3070

Prepared by and returned to:
City of Deltona, City Clerk
2345 Providence Blvd.
Deltona, FL 32725

STATE OF FLORIDA
COUNTY OF VOLUSIA

The foregoing instrument was acknowledged before me on this 3rd day of December A.D., 2013, by Charles W. Kasmer, President of the Board, Edgewater Condominium Apartments, a Florida not-for-profit corporation. He is personally known to me or has produced _____, as identification, and did not take an oath.

RUTHANNE M. SYKES
NOTARY PUBLIC
STATE OF FLORIDA
Comm# EE830120
Expires 8/26/2016

Ruthanne M. Sykes
Notary Public
Ruthanne M. Sykes
Notary's Printed Name

SIGNED, SEALED AND DELIVERED
IN THE PRESENCE OF:

GRANTEE:

CITY OF DELTONA
A Florida Municipal Corporation

By: William D. Denny
WILLIAM D. DENNY
Acting City Manager

Witness (signature)
JULIE LA BORDE
Print or Type Name

Pauline Shattuck
Witness (signature)
PAULINE SHATTUCK
Print or Type Name

STATE OF FLORIDA
COUNTY OF VOLUSIA

The foregoing instrument was acknowledged before me on this 4 day of December, A.D., 2013, by William D. Denny, Acting City Manager of the City of Deltona, a Florida municipal corporation. He is personally known to me or has produced _____, as identification, and did not take an oath.

SHERI M. SALLADE
MY COMMISSION EXPIRES
September 2, 2014
#EE 023323
Bonded thru Notary Public Underwriters
NOTARY PUBLIC, STATE OF FLORIDA

Sheri M. Sallade
Notary Public
SHERI M. SALLADE
Notary's Printed Name

Instrument# 2013-238708 # 4
Book: 6939
Page: 3071
Diane M. Matousek
Volusia County, Clerk of Court

Prepared by and re
City of Deltona, Cit
2345 Providence B
Deltona, FL 3272

Exhibit A

("Easement Property")

A parcel of land, lying in Section 6, Township 19 South, Range 31 East, Volusia County, Florida, said parcel also being a portion of Lot 52, Plat of the Assessor's Subdivision of Enterprise, as recorded in Map Book 3, Page 93 (12/97) of the Public Records of Volusia County, Florida, being more particularly described as follows: Commence at the Southwest corner of the lands described in Official Records Book 4518, Page 3999; Thence, N 38°46'44" E, a distance of 40.00 feet to the POINT OF BEGINNING, also being a point on the Northerly Right of Way line of Lakeshore Drive (an 80.00 foot wide Right of Way at this point); Thence, run N 51°13'51" W along said Northerly Right of Way line, a distance of 17.73 feet to the point of curvature of a curve, concave Southwesterly, having a radius of 1040.00 feet, a chord distance of 170.54 feet and a chord bearing of N 55°56'01" W; Thence, run Northwesterly along the arc of said curve, through a central angle of 09°24'22" for an arc distance of 170.73 feet; Thence, N 60°38'12" W along said Northerly Right of Way line, a distance of 719.94 feet to the point of curvature of a non-tangent curve, concave Southwesterly, having a radius of 1540.00 feet, a chord distance of 104.61 feet and a chord bearing of N 62°34'59" W; Thence, run Northwesterly along the arc of said curve, through a central angle of 03°53'35" for an arc distance of 104.63 feet to the point of reverse curvature of a curve, concave Northeasterly, having a radius of 25.00 feet, a chord distance of 29.00 feet and a chord bearing of N 29°04'36" W; Thence, run Northerly along the arc of said curve, through a central angle of 70°54'01" for an arc distance of 30.94 feet to a point on a curve, concave Southwesterly, having a radius of 1557.00 feet, a chord distance of 129.37 feet and a chord bearing of S 63°01'04" E; Thence, run Southeasterly through a central angle of 04°45'44" for an arc distance of 129.41 feet; Thence, S 60°38'12" E along a line that is 17.00 feet North of and parallel with the said Northerly Right of Way line of Lakeshore Drive, a distance of 719.94 feet to the point of curvature of a curve, concave Southwesterly, having a radius of 1057.00 feet, a chord distance of 173.33 and a chord bearing of S 55°56'01" E; Thence, run Southeasterly along the arc of said curve, through a central angle of 09°24'22" for an arc length of 173.52 feet; Thence, S 51°13'51" E, a distance of 17.73 feet; Thence, S 38°46'44" W, a distance of 17.00 feet to the POINT OF BEGINNING. Containing 17,548 square feet or 0.40 acres.
Owner: Edgewater Condominium Apartments per O.R. 2276, Page 243.