

July 31, 2017

City of Fort Pierce  
100 North US 1  
Fort Pierce, Florida 34950

**Attention: Staff**

**Project Name: Site Plan & Design Review**  
**Dollar Tree**  
**4008 Okeechobee Road**

Dear Staff,

The following is a response to staff comments dated: July 18, 2017 below are the comments along with our responses in bold:

1. Pursuant to City Code Section 22-58 (d) Application for site plan review. The Site Plan application shall be accompanied by the following information:

(3) A (signed & sealed) survey prepared by a Florida registered land surveyor certifying the gross acreage within the property, excluding aquatic areas.

**Response: These are included with Re-Submittal.**

(8) A lighting plan which shows illumination of all interior and immediately adjoining streets (Additionally meeting the requirements of 22-60 (j). (Please identify the provision of site and adjacent roadway lighting)

**Response: A Lighting Plan is now included with the Re-Submittal.**

(9) A design review plan which meets the requirements of Section 22-59. (The design shall meet the requirements of 22-59, (See notes regarding 22-59 below)

**Response: The Design Review application is included with this Re-Submittal.**

2. Pursuant to City Code Section 22-59 (c) Submission requirements, please provide the following:

c. A draft written narrative describing the design intent of the project, its goals and objectives and how it reflects the site analysis study results.

**Response: This narrative is included with the Design Review application.**

d. context photographs of neighboring uses and architectural styles.

**Response: Photographs are included with the Design Review Application**

e. Photographs and/or drawings of architectural buildings or objects that serve as a precedent for the proposed building design. Models should be taken from local exemplary buildings, either existing or demolished. Documentation of such buildings is available in the city's planning department.

**Response:**

3. Pursuant to City Code Section 22-59 - Design Review, the following standards should be integrated into the design proposed:

**g. Design guidelines:**

**(2) Entrances**

b. -To provide for consistent spatial order of streets, and to accommodate a human scale and pedestrian activity, **the inside line of the front yard (setback) shall be considered a frontage line.** Exceptions to this requirement may be granted for development in the following zoning districts: OS-1 (Open Space Recreation), OS-2 (Open Space Conservation), I-1 (Light industrial), CP-1 (Commercial Parkway), C-6 (Marine Commercial), and C-3 (General Commercial) on properties backing onto a highway and fronting an internal access road.

**Response: We believe the site layout is appropriate for the property shape, location and retail use to maximize convenience of customers access to the store both in vehicle and on foot.**

**(3) Windows.**

e. **Large expanses of wall without windows or detail that face the public right-of-way are prohibited (Hartman Road Elevation).** Retail buildings shall have fenestration that reveals interior activity and encourages interest in the products or services provided. The west elevation of the structure is not consistent with our design review guidelines. Further, as the applicant has selected Hartman Road as the "main street" for the frontage line, further articulation of this façade is required.

**Response: This façade has been revised to incorporate embellishments to enhance the view from the street.**

**(4) Elevations.**

k. Blank walls are discouraged. Walls shall be punctuated with windows, doors or architectural elements. New construction that includes long dimensions of continuous wall shall employ the use of site breaks to punctuate the streetscape.

**Response: Walls have been broken up with pilasters, recessed areas, raised sections with parapets and change in building materials / color.**

**(5) Streetscape improvement guidelines.** Streetscape improvements include those architectural or functional facilities or structures which occur on site but are not part of the building and which contribute to the overall appearance of the development and encourage and facilitate human interaction with the environment. Examples include, but are not limited to **decorative light fixtures**, fountains, sculpture and other civic art, **benches** and tables, **planters**, retaining walls, pedestrian and bicycle paths, bicycle parking structures, trash receptacles and enclosures, vendor areas, **bollards** and fences. These improvements shall be designed to be consistent with all guidelines of this section, and shall be reviewed for aesthetic functionality and compatibility with the city's design expectations.

**-The applicant should integrate various streetscape components to enhance the site development. A few noted components are easily integrated to contribute to the design proposed.**

**Response: The configuration of the right-of-way along Okeechobee Road provides an opportunity to enhance the streetscape by replacement of the existing sidewalk with a meandering sidewalk with benches and shade trees which we believe exceeds the expectations of this requirement.**

**(6) Lighting.**

b. Exterior architectural, display and decorative lighting visible from all public rights-of-way shall be generated from concealed light source, low-level light fixtures. - **Please provide lighting fixture detail.**

**Response: A Lighting Plan and fixture cut-sheets are now included with this Re-Submittal.**

**(9) Signs.**

b. Signage shall be considered as an external architectural feature consistent with and in proportion to the overall design scheme for new construction and renovation.

**- Please provide preliminary exhibits of proposed signs for the façade(s), ground, and/or directional signs.**

**Response: A Signage Plan is included with Re-Submittal.**

**4) Pursuant to City Code Section 22-i.94. - Tree protection and mitigation. (b)** Any native tree at least fourteen (14) inches in diameter at breast height (DBH), except for palms which have a minimum clear trunk of ten (10) feet, **shall be preserved and protected in accordance with this article**, unless the tree is determined to be a safety hazard, **prevents the reasonable development of a site**, is causing damage to structures or more desirable trees around it, is infected with disease or is infested with insects. A land clearing applicant shall demonstrate why the tree should not be protected or why it is not feasible to develop without removing the tree.

- **The 34 inch oak tree located within the proposed right-of-way area shall be preserved via design of the Pedestrian sidewalk to accommodate its retention, and provide the applicable easement for this small section of sidewalk if the sidewalk routes to the east.**

**Response:** There is ample room for this sidewalk to shift west and maintain proper distance from the roadway. Shifting east involves conflicts with utility guy wires.

**5. Tree Preservation / Disposition Plan Proposed: "83 inches to Remain 157 Inches to be Removed"**

- The development site includes two parcels of land previously cleared, with "Parcel 1" previously developed with two single family homes which places the property as previously disturbed or developed, therefore the trees remaining may have previously been utilized for tree credits.

**Response: Acknowledged; While trees to remain may have previously been utilized for tree credits, only Existing Tree #3 is being utilized as part of this new development's landscape calculations for minimum tree requirements, while other existing trees to remain on site are utilized towards mitigation requirements, or are not counted at all towards on-site requirements at this time (as in the case of tree cluster to East of driveway off of Okeechobee Road).**

- Further, the plan seeks to utilize a cluster of oak trees with DBH ranges from 2-4 inches, however the trees are located in a tight cluster therefore several of the sought for preservation do not meet the requirement of City Code Section 22-194 (d) (3), as the eight (8) trees as there's not the capacity to appropriately grow and develop due to their close proximity to each other, pursuant to City Code *Section 22-194 (3) The replanting design shall provide adequate space for root and crown development;*. There's currently no considerations to attempt to relocate or replant these oaks elsewhere on site.

**Response: Tree cluster East of driveway off of Okeechobee Road is not being affected by construction, & there is no current plan for development at the East outparcel, therefore said tree cluster shall remain preserved & protected. Since the future disposition of this tree cluster is yet to be determined (as they may be removed at a later time for second Outparcel development), none of trees in cluster are counted towards the minimum landscape requirements for this site at this time.**

- The plans call to remove a 23" live oak which exists along the proposed driveway. Staff encourages further review to determine if feasible to construct along or around this oak. without significant damage to the tree, while allowing for pruning to provide appropriate vehicle entry/clearance into the site.

**Response: Upon further review, it has been determined by the Landscape Architect that 23" dbh Live Oak Tree # 12 cannot be preserved due to its location along proposed parcel lines that impedes the construction of a central drive aisle which is critical to the development of this dual-parcel site. An oak this size possesses a 23' Critical Root Zone radius from the center of the trunk, in which any construction within this area could potentially jeopardize the survival & structure of this tree. To ensure functional use of this property, Tree #12 is to be removed & mitigated accordingly. See sheet L-1 Disposition Plan.**

- Based upon review of proposed removal/preservation of trees on-site, it appears that the plan calls to remove 57 inches (and 1 palm) and preserve 53 inches.

**Response: Current Disposition Plan, sheet L-1, proposes the removal of 23" of Live Oak dbh & preserves 117" of dbh, including Tree#3 counted towards on-site landscape requirements. No palms are proposed for removal at this time. 99" of Preserved Tree dbh on-site exceed code minimum & count towards the mitigation requirement for this submittal.**

**6) Pursuant to City Code Section 22-187. - General landscaping requirements. (6) a. & b., in the absence of a formal subdivision of the "outparcel", a 10 ft. Landscape strip is required along much of the eastern property line, between the retention area & vehicular use area, and the adjacent property as follows:**

(6) Vehicular use, building, retention/detention areas adjacent to other property. Landscape standards for these areas are as follows:

- a. **Where a vehicular use area does not abut a street right-of-way but abuts other property, there will be a landscaped strip of land which is at least ten (10) feet wide.** When a property line abuts a building, another structure, a joint driveway or joint parking area, such landscaped strip shall not be required

**Response: This Landscape Buffer has been added to the Site Plan.**

- b. **The landscaping strip required by the immediately foregoing subsection shall include an average of at least one tree for each two hundred (200) square feet of the required landscape area.** The remainder of the required landscape area shall be landscaped with grass, ground cover or other landscape treatment.

**Response: Landscape buffer for eastern perimeter of East outparcel shown on sheet L-2 for reference/informational purposes only at this time; We request the ability to install this buffer in the future with the development of the eastern parcel. Planting now will create difficulty with irrigation sourcing and maintenance. Until the eastern parcel is developed, the property further west enjoys an effective buffer of the full width of the eastern parcel.**

**7) Please review the proposed landscape plan, particularly tree species selection to ensure compliance with the following requirements:**

**Sec. 22-187. - General landscaping requirements. (1) Trees:** b. Trees used to meet the requirements of this section shall also be species which in the county normally grow in a manner such that **at maturity they will have a minimum crown spread of fifteen (15) feet and a minimum height of fifteen (15) feet.** Trees which can meet the height requirement at maturity but not the crown requirements may be grouped to form a wider crown, but will be counted as one tree. Three palms may be substituted for one tree provided that fifty (50) per cent of requirement shall be trees.

**Response: Acknowledged; Tree species revised accordingly. See sheet L-3 landscape Schedules & Details for revised species selection.**

- **The plan incorporates 11 Bahama Cassias, which typically grow no taller than 10-12 feet, and do not meet the spread requirement. If/where the tree is sought as a "supplement" or for incorporation as a non-required tree, please disregard this comment.**

**Response: Acknowledged; Bahama Cassia changed to White Geiger. See sheet L-3 landscape Schedules & Details for revised species selection.**

**8) Concurrency/Traffic impact Analysis:** Hartman Road, between Okeechobee Road and Peterson Road currently operates at a Level of Service D. The submitted application provides basic traffic generation data for this new development project. The applicant shall provide a traffic analysis or statement consistent with the St. Lucie County/Fort Pierce adopted traffic methodology in order to complete review impacts of the project to adjacent roadways and intersections. (Attached Documents for Completing & Filing)  
Further consideration of turn lanes on Hartman Road will be explored upon receipt.

**Response: Traffic Study will be provided.**

**General Advisory Notes:**

Please ensure the backflow preventer is screened with landscaping. Additionally, the applicant is encouraged to screen the pad mounted transformer, where possible without interference, or consider placement of public art or camouflage of this device.

Please indicate the adjacent zoning districts upon the site plan or location map, pursuant to City Code Section 22-59 (d) (2).

**Response: Adjacent zoning has been added to the Site Plan. Landscape screening around utility equipment is proposed as applicable. Also, a note on sheet L-2 Landscape Plan states that "ALL MECHANICAL EQUIPMENT, BACKFLOW PREVENTERS, DUMPSTER ENCLOSURES, A/C UNITS, ETC., SHALL BE SCREENED IN ADDITION TO THE MINIMUM LANDSCAPE REQUIREMENTS" should any appurtenances not shown require further screening.**

- a. Site Plan and Design Review - Dollar Tree - 4008 Okeechobee Road (Kori Benton)
  - WWW Engineering: Approved as noted. A sanitary transition manhole is required for all commercial properties. The sanitary sewer service in the northern easement will need to be abandoned at the main. If you have any questions, please contact James Carnes, P.E. with Fort Pierce Utilities Authority Water /Wastewater Department at (772) 466- 1600 x 3472.
  - Electric and Gas Engineering: Approved

**Response: A transition manhole has been added to the Water and Sewer Plan. Also, a note has been added indicating the existing sanitary lateral shall be capped at main.**

**SURVEY:**

1. Please provide a signed and sealed copy of the survey.

**Response: These are included with Re-Submittal. (3 sets)**

2. Please identify the POC and POB for Parcel 2.

**Response: Survey has been revised accordingly.**

3. Please indicate line work and all bearings and distances for Parcel 2.

**Response: There are no bearings for Parcel 2, just general direction – see survey for calculated bearings.**

4. Please identify and label RW for Hartman Road per ORB 40 Page 560.

**Response: Survey has been revised accordingly.**

5. Please identify the first dashed line located south of the north property line. It is not labeled.

**Response: Line has been removed from the survey.**

6. Please identify the monumentation used for the bearing base.

**Response: Shown as found 3" brass disk at section corner and rail road spike at west quarter corner.**

7. Please identify the originating benchmark used for the establishment of the elevations.

**Response: See surveyor's note 5.**

8. Please add a space in note 7 between "1 38,008.45 square feet."

**Response: See surveyor's note 7.**

9. Please add to the notes. "The expected use of the survey and map" and "All measurements are in accordance with the United States standard, in feet."

**Response: See surveyor's note 13.**

**NETWORK RIGHT-OF WAY PROTECTION PLAN:** Hartman Road is identified on the Network Right of Way Protection Plan as a four lane arterial/collector roadway. The total right of way width required for a four lane arterial/collector roadway is 160'. An additional 35' will need to be dedicated for Parcel 1 and an additional 15' will need to be dedicated for Parcel 2 to St. Lucie County. A phase 2 audit will need to be performed and a sketch of legal description of the additional right of way will need to be prepared by a surveyor licensed in the State of Florida. Please contact Ms. JoAnn Riley in property acquisitions for detailed information that will be required. (772) 462-2825. Also, the County prefers that the dedication be as a separate document and not part of a plat.

**Response: We will submit donation documents to Ms. Riley upon receipt.**

**ROAD-IMPROVEMENT AGREEMENT:** Prior to the issuance of a St. Lucie County right of way permit, the applicant shall execute a Road improvement Agreement with St. Lucie County for the public improvements to be constructed within County road right of way. The applicant is required to submit a surety for the proposed public improvements. The amount of survey shall be 115% of the engineer's estimate of probable cost. The amount of surety shall be approved by the County Engineer and the form of surety shall be approved by the County Attorney. This agreement can be approved at the administration level, therefore it does not have to go before the Board of County Commissioners. No construction will be allowed to commence until this agreement is in place. Please contact Rod Reed, County Surveyor at 462-1721 for additional information.

**Response: Noted.**

**RIGHT OF WAY PERMIT:** Please be advised that a right of way permit shall be required for the construction activities within the County road right of way. A right of way permit will not be issued until the

Road improvement Agreement is in place. Please contact Selena Griffett, P.E. at 462-2153 for additional information.

**Response: Noted.**

**URBAN SERVICE BOUNDARY:** The site is located within the Urban Service Boundary. All residential developments required to obtain site plan approval located within the Urban Service Boundary and all non-residential development above 6,000 square feet located within the unincorporated area of St. Lucie County and within the Urban Service Boundary are required to design and construct sidewalks 6' wide within the right-of-way of all streets and roadways that abut or lie within the perimeter of the property.

**Response: Noted, sidewalks are proposed, 6 feet in width.**

**Engineering Comments:**

1. Provide a signed and sealed Boundary and Topographic Survey as executed by a Florida Licensed Land Surveyor and Mapper.

**Response: These are included with Re-Submittal. (3 sets)**

2. The project is currently comprised of two separate lots that will be required to be combined prior to issuance of a certificate of occupancy. The final plan does show that the project proposes the creation of an out-parcel; will this be accomplished by a plat? If so, the combination of the land can be handled under the platting of the land.

**Response: Platting will occur to create these lots.**

3. Okeechobee Road is a designated Saint Lucie County roadway. However, there is a valid Interlocal Agreement between the County and the City for this section of roadway which delegates permitting of utilities and driveways through the City. Therefore, the driveway access proposed for Okeechobee Road shall be constructed of concrete as per the requirements set forth in Section 17-8(b) of the City of Fort Pierce Code of Ordinances; please revise the plans accordingly.

**Response: This driveway is now indicated as concrete.**

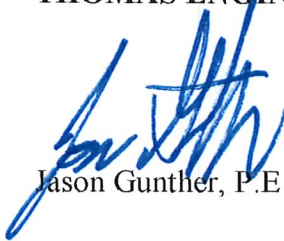
**Code Enforcement**

1. This property is routinely cited for failure to maintain landscaping / lot clearing notice. Please maintain this property on a regular basis so code enforcement action is not needed. The list of recent activity is attached for your review.

**Response: Maintaining this property will now be prioritized as this expectation is shared by the city, Dollar Tree and any other future tenant.**

Should you have any questions or require any additional information please do not hesitate to contact me at (561)-203-7503. Thank you for your time and kind consideration with regards to this matter.

Sincerely,  
**THOMAS ENGINEERING GROUP, LLC**



Jason Gunther, P.E



**To : Kori Benton, Senior Planner**

**FROM : <sup>JA</sup>John R. Andrews, P.E., City Engineer <sup>JA</sup>**

**RE : Dollar Tree Site Plan – 4008 Okeechobee Road  
TRC No. 17-07000003**

**DATE : July 7, 2017**



This is to advise you that we have completed the review of the following documents as received by this office on July 6, 2017:

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Site Plan   | <input type="checkbox"/> P/D Drawings  |
| <input type="checkbox"/> Test Reports & Related Documents                                 | <input type="checkbox"/> Certificate of Completion                               |
| <input type="checkbox"/> Record Drawings  | <input type="checkbox"/> Permits from applicable Local, State & Federal Agencies |
| <input type="checkbox"/> Clearances from all applicable Local, State and Federal Agencies |  |

Based on our reviews and appropriate site final inspection, we

- |   |  |                              |
|---|--|------------------------------|
| <input type="checkbox"/> Recommend                        | <input checked="" type="checkbox"/> Do Not Recommend |                              |
| <input checked="" type="checkbox"/> Approval of Site Plan | <input type="checkbox"/> Building Permit             | <input type="checkbox"/> C/O |

Developer, Owner, Engineer, Contractor and other members of the Development Team must be aware, the above recommendation is based only on the construction requirements of the engineering plans and other engineering documentation approved by this department. The Development Team shall be responsible for the compliance with other City department requirements and all approved documents, as well as Local, State and Federal regulations. The development requirements for this project may necessitate additional construction requirements that are not subject to this department's review for approval.

- See attached for engineering comments

ENGINEERING COMMENTS:

1. Provide a signed and sealed Boundary and Topographic Survey as executed by a Florida Licensed Land Surveyor and Mapper.
2. The project is currently comprised of two separate lots that will be required to be combined prior to issuance of a certificate of occupancy. The final plan does show that the project proposes the creation of an out-parcel; will this be accomplished by a plat? If so, the combination of the land can be handled under the platting of the land.
3. Okeechobee Road is a designated Saint Lucie County roadway. However, there is a valid Interlocal Agreement between the County and the City for this section of roadway which delegates permitting of utilities and driveways through the City. Therefore, the driveway access proposed for Okeechobee Road shall be constructed of concrete as per the requirements set forth in Section 17-8(b) of the City of Fort Pierce Code of Ordinances; please revise the plans accordingly.

JRA/TST/tst



THE SUNRISE CITY  
**FORT PIERCE**  
CODE ENFORCEMENT  
*Florida*



**TO** : Kori Benton, Senior Planner  
**FROM** : Peggy Arraiz, Code Compliance Manager  
**SUBJECT** : TRC # 17-07000003 – 4008 Okeechobee Rd  
**DATE** : July 13, 2017

Code Enforcement has the following comments:

This property is routinely cited for failure to maintain landscaping / lot clearing notice. Please maintain this property on a regular basis so code enforcement action is not needed. The list of recent activity is attached for your review.

Jul 13, 2017 3:21:25 PM EDT  
 File Edit List Commands Help  
**SUNGARD PUBLIC SECTOR**  
 NavLine

**Related Cases And Inspection Selection**

Property address, location ID: 4000 OKEECHOBEE RD  
 TAX ID #: 2417-332-0009-000/9  
 Alternate ID description:

Number	Status	Date	Insp	Description
16 00002655	IN COMPLIANC	11/18/16	AA	LOT CLEARING
16 00000131	IN COMPLIANC	1/14/16	AA	LOT CLEARING
15 00001453	IN COMPLIANC	9/01/15	AA	LOT CLEARING
15 00000894	IN COMPLIANC	6/12/15	AA	LOT CLEARING
15 00000281	IN COMPLIANC	2/12/15	AA	LOT CLEARING
14 00000514	IN COMPLIANC	3/06/14	SC	LOT CLEARING
13 00000684	IN COMPLIANC	5/06/13	AA	LOT CLEARING
12 00000930	IN COMPLIANC	6/14/12	AA	LOT CLEARING
12 00000419	IN COMPLIANC	3/22/12	AA	LOT CLEARING
11 00001720	IN COMPLIANC	11/14/11	AA	LOT CLEARING
11 00001318	IN COMPLIANC	8/19/11	AA	LOT CLEARING
11 00000556	IN COMPLIANC	4/12/11	AA	LOT CLEARING
10 00001200	IN COMPLIANC	9/15/10	AA	LOT CLEARING
09 00002821	IN COMPLIANC	11/17/09	AA	LOT CLEARING
09 00001430	IN COMPLIANC	6/08/09	BD	LOT CLEARING
08 00003673	IN COMPLIANC	11/18/08	JS	CODE ENFORCEMENT VIOLATION



**JULY 18, 2017**

Jason Gunther  
THOMAS ENGINEERING GROUP  
125 West Indiantown Road, Suite 206  
Jupiter, FL 33458

**SUBJECT: Site Plan & Design Review  
Dollar Tree  
4008 Okeechobee Road**

Dear Mr. Gunther, PE,

The following are advisory comments from the Planning Department's review of the application for **Site Plan & Design Review** to construct a retail store at 4008 Okeechobee Road.

**1) Pursuant to City Code Section 22-58 (d) Application for site plan review. The Site Plan application shall be accompanied by the following information:**

(3) A **(signed & sealed)** survey prepared by a Florida registered land surveyor certifying the gross acreage within the property, excluding aquatic areas.

(8) A lighting plan which shows illumination of all interior and immediately adjoining streets (Additionally meeting the requirements of 22-60 (j) ). **(Please identify the provision of site and adjacent roadway lighting)**

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d. Context photographs of neighboring uses and architectural styles.

e. Photographs and/or drawings of architectural buildings or objects that serve as a precedent for the proposed building design. Models should be taken from local exemplary buildings, either existing or demolished. Documentation of such buildings is available in the city's planning department.

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this requirement may be granted for development in the following zoning districts: OS-1 (Open Space Recreation), OS-2 (Open Space Conservation), I-1 (Light Industrial), CP-1 (Commercial Parkway), C-6 (Marine Commercial), and C-3 (General Commercial) on properties backing onto a highway and fronting an internal access road.

### **(3) Windows.**

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The west elevation of the structure is not consistent with our design review guidelines. Further, as the applicant has selected Hartman Road as the "main street" for the frontage line, further articulation of this façade is required.

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**5) Tree Preservation / Disposition Plan Proposed: "83 Inches to Remain / 57 Inches to be Removed"**

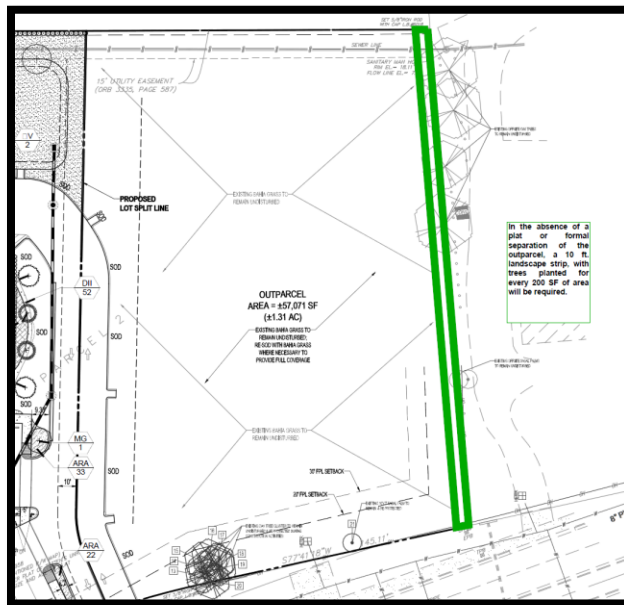
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**Sec. 22-187. - General landscaping requirements.** (1) *Trees:* b. Trees used to meet the requirements of this section shall also be species which in the county normally grow in a manner such that **at maturity they will have a minimum crown spread of fifteen (15) feet and a minimum height of fifteen (15) feet.** Trees which can meet the height requirement at maturity but not the crown requirements may be grouped to form a wider crown, but will be counted as one tree. Three palms may be substituted for one tree provided that fifty (50) per cent of requirement shall be trees.

- The plan incorporates 11 Bahama Cassias, which typically grow no taller than 10-12 feet, and do not meet the spread requirement. **If/where the tree is sought as a "supplement" or for incorporation as a non-required tree, please disregard this comment.**

8) **Concurrency/Traffic Impact Analysis:** Hartman Road, between Okeechobee Road and Peterson Road currently operates at a Level of Service D. The submitted application provides basic traffic generation data for this new development project. The applicant shall provide a traffic analysis or statement consistent with the St. Lucie County/Fort Pierce adopted traffic methodology in order to complete review impacts of

the project to adjacent roadways and intersections. (Attached Documents for Completion & Filing). Further consideration of turn lanes on Hartman Road will be explored upon receipt.

**General Advisory Notes:**

Please ensure the backflow preventer is screened with landscaping. Additionally, the applicant is encouraged to screen the pad mounted transformer, where possible without interference, or consider placement of public art or camouflage of this device.

Please indicate the adjacent zoning districts upon the site plan or location map, pursuant to City Code Section 22-59 (d)(2).

The presented review is specific to Planning Department's review of the proposed site plan and design review. Please contact me should you have any questions regarding the project at (772) 467-3729 or by e-mail: kbenton@city-ftpierce.com.

Sincerely,



Kori Benton  
Senior Planner

### Traffic Counts and Level of Service Report Fall 2016

Roadway Name	Location	AADT	Pk Hr Service Capacity	AM Pk Hr Pk Dir			PM Pk Hr Pk Dir		
				Volume	LOS	V/C	Volume	LOS	V/C
GEORGIA AVE	13TH ST to 7TH ST	1,979	600	129	C	0.430	137	C	0.457
GEORGIA AVE	7TH ST to US 1	1,896	600	137	C	0.457	127	C	0.423
GILSON RD	MARTIN C.L. to BECKER RD	10,289	710	902	F	1.187	880	F	1.158
GLADES CUT-OFF RD	RANGE LINE RD to RESERVE BLVD	2,300	1,070	193	B	0.508	214	B	0.563
GLADES CUT-OFF RD	RESERVE BLVD to COMMERCE CENTER DR	4,500	1,070	416	C	0.547	416	C	0.547
GLADES CUT-OFF RD	COMMERCE CENTER DR to MIDWAY RD	2,600	920	197	C	0.226	180	C	0.207
GLADES CUT-OFF RD	MIDWAY RD to JENKINS RD	10,500	790	655	D	0.829	629	D	0.796
GLADES CUT-OFF RD	JENKINS RD to SELVITZ RD	7,700	830	489	C	0.627	470	C	0.603
GRAHAM RD	KINGS HWY to JENKINS RD	3,967	630	274	C	0.457	238	C	0.397
<del>GREEN RIVER PKWY</del>	<del>MELALEUCA BLVD to WALTON RD</del>	<del>4,145</del>	<del>1,070</del>	<del>313</del>	<del>B</del>	<del>0.824</del>	<del>313</del>	<del>B</del>	<del>0.824</del>
HARTMAN RD	OKEECHOBEE RD to PETERSON RD	6,633	750	486	D	0.648	420	D	0.560
HEADER CANAL RD	OKEECHOBEE RD to ORANGE AVE	478	670	28	B	0.127	27	B	0.123
HILLMOOR DR	US 1 to LENNARD RD	7,200	790	410	D	0.519	351	C	0.900
I-95	GATLIN BLVD to ST LUCIE WEST BLVD	73,287	4,580	3,753	C	0.819	3,390	C	0.740
I-95	ST LUCIE WEST BLVD to MIDWAY RD	57,884	4,580	3,255	B	0.969	2,807	B	0.835
I-95	MIDWAY RD to OKEECHOBEE RD	68,954	4,580	4,162	C	0.909	3,380	C	0.738
I-95	OKEECHOBEE RD to ORANGE AVE	45,500	7,320	1,822	B	0.405	1,894	B	0.421
I-95	ORANGE AVE to INDRIIO RD	42,768	7,320	2,057	B	0.457	1,893	B	0.421
INDIAN RIVER DR	CITRUS AVE to ORANGE AVE	4,826	750	287	C	0.776	328	C	0.886
INDIAN RIVER DR	ORANGE AVE to AVENUE A	5,515	750	322	C	0.870	314	C	0.849
INDIAN RIVER DR	AVENUE D to SEAWAY DR	5,622	790	328	C	0.841	387	C	0.992
INDRIIO RD	PRIVATE RD to I-95 W RAMP	905	1,080	66	B	0.161	71	B	0.173
INDRIIO RD	I-95 E RAMP to KOBLEGARD RD	9,712	3,240	555	B	0.307	584	B	0.323
INDRIIO RD	SEMINOLE RD to KINGS HWY	9,567	790	576	D	0.729	485	D	0.614

\* Volumes shown were adjusted using FDOT Seasonal Factors

\* AADT = Annual Average Daily Traffic

### Traffic Counts and Level of Service Report Fall 2016

Roadway Name	Location	AADT	Pk Hr Service Capacity	AM Pk Hr Pk Dir			PM Pk Hr Pk Dir		
				Volume	LOS	V/C	Volume	LOS	V/C
OKEECHOBEE RD	VIRGINIA AVE to HARTMAN RD	12,500	2,100	686	C	0.341	686	C	0.341
OKEECHOBEE RD	35TH ST to 33RD ST	14,500	1,630	802	D	0.492	806	D	0.494
OKEECHOBEE RD	25TH ST to GEORGIA AVE	12,500	1,630	743	D	0.456	698	C	0.956
OLD DIXIE HWY	US 1 to SR A1A NORTH	4,433	790	332	C	0.851	335	C	0.859
OLD DIXIE HWY	SR A1A NORTH to ST LUCIE BLVD	1,850	750	0	B	0.000	0	B	0.000
OLD DIXIE HWY	ST LUCIE BLVD to INDRIO RD	2,300	790	169	C	0.433	131	C	0.336
OLD DIXIE HWY	INDRIO RD to INDIAN RIVER C.L.	1,175	870	0	B	0.000	0	B	0.000
OLEANDER AVE	BEACH AVE to KITTERMAN RD	2,533	540	131	C	0.485	163	C	0.604
OLEANDER AVE	KITTEMAN RD to MIDWAY RD	6,701	750	488	D	0.651	439	D	0.585
OLEANDER AVE	MIDWAY RD to WEATHERBEE RD	8,200	750	466	D	0.621	462	D	0.616
OLEANDER AVE	FARMER'S MARKET RD to EDWARDS RD	12,500	750	653	D	0.871	623	D	0.831
OLEANDER AVE	GARDENIA AVE to VIRGINIA AVE	10,500	790	681	D	0.862	626	D	0.792
OLEANDER AVE	VIRGINIA AVE to SUNRISE BLVD	4,257	600	243	C	0.810	241	C	0.803
ORANGE AVE	SHINN RD to CAMPBELL RD	2,411	380	0	B	0.000	0	B	0.000
ORANGE AVE	KINGS HWY to I-95	17,189	0	740	C	0.368	746	C	0.371
ORANGE AVE	I-95 to JENKINS RD	13,277	0	912	C	0.454	858	C	0.427
ORANGE AVE	JENKINS RD to HARTMAN RD	13,327	0	717	C	0.357	667	C	0.332
ORANGE AVE	ANGLE RD to 25TH ST	11,651	1,710	918	D	0.537	1,068	D	0.625
ORANGE AVE	17TH ST to 13TH ST	12,960	1,710	678	C	0.881	743	C	0.965
ORANGE AVE	10TH ST to 7TH ST	7,829	300	396	D	0.660	455	D	0.758
ORANGE AVE	7TH ST to US 1	6,721	300	429	D	0.715	381	D	0.635
ORANGE AVE	US 1 to 2ND ST	3,274	300	208	C	0.693	204	C	0.680
PARR DR	PORT ST LUCIE BLVD to DARWIN BLVD	2,600	700	191	C	0.289	168	C	0.255
PARR DR	PORT ST LUCIE BLVD to DARWIN BLVD	2,600	700	191	C	0.289	168	C	0.255

\* Volumes shown were adjusted using FDOT Seasonal Factors

\* AADT = Annual Average Daily Traffic



**St. Lucie**

**Transportation  
Planning  
Organization**

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St. Lucie TPO Standardized

# **TRAFFIC IMPACT STUDIES (TIS) METHODOLOGY AND PROCEDURES**

- **ST. LUCIE COUNTY**
- **CITY OF FORT PIERCE**
- **CITY OF PORT SAINT LUCIE**

January 23, 2014

# **TRAFFIC IMPACT STUDIES METHODOLOGY AND PROCEDURES**

## **(DRAFT)**

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## 1. PURPOSE AND APPLICABILITY

The purpose is to provide a generally uniform methodology for identifying potential traffic impacts of new development and redevelopment on the transportation system and developing mitigation strategies to offset those impacts. However, the need to perform a Traffic Impact Study (TIS) will be determined in accordance with the applicable local government requirements and provisions.

The TIS is to be signed and sealed by a registered professional engineer licensed to practice in Florida.

Any reference to the "Local Government" in these guidelines shall mean the City of Ft. Pierce, City of Port St. Lucie, St. Lucie County, their consultants, sub-consultants, contractors, or employees, as applicable. Any reference to the "Applicant" in these guidelines shall mean the person or party making application to the Local Government, to include the Applicant's consultants, sub-consultants, and contractors.

Unless otherwise agreed to in an approved Methodology Statement, the procedures of this unified methodology document will be followed.

## 2. METHODOLOGY STATEMENT

Prior to conducting any study, a Methodology Statement shall be prepared by the Applicant and submitted to the Local Government for review and approval. The purpose of the Methodology Statement is to establish agreed upon methodologies and assumptions prior to the start of the study. The methodology shall address the following minimum elements:

- Description of land uses, site location, build-out schedule, and phasing
- Preliminary site plan
- Trip Generation
- Internal Capture
- Background Traffic Growth Procedure
- Distribution and Assignment
- Committed Network

It shall be the Applicant's responsibility to ensure that a traffic study is not prepared or submitted without an approved Methodology Statement signed by the Local Government.

## 3. IMPACTED ROADWAYS/INTERSECTIONS

At a minimum, the following impacted roadway segments and intersections shall be analyzed in the TIS:

- a. Any Road Segment to which development traffic makes its first connection to the Major Road Network, provided the development traffic consumes one percent or more of the existing or committed two-way peak-hour service capacity,

- b. Major Road Segment on which the two-way peak-hour project traffic consumes 5 (five) percent or more of the existing or committed two-way peak-hour service capacity,
- c. Site driveway connections to public roads. In addition, if the development has no direct connection to the Major Road Network, the intersections of the local/non-major roads (that provides access to the development) with the Major Road Network shall be analyzed, and
- d. Major Intersections that are part of the impacted roadways.

To determine whether peak-hour development traffic consumes one percent or five percent or more of the existing service capacity of a road, the generalized roadway service volumes from the latest version of the Generalized Service Volumes tables of the Florida Department of Transportation (FDOT) shall be used. Roadway functional classification shall be based on the St. Lucie TPO's Federal Functional Classification Map and, for roads that are not contained on the map, it shall be based on the Local Government's Comprehensive Plan.

An alternative study network identification methodology can be followed by the Applicant; this methodology is described in Appendix B. Agreement on the use of the alternative study network methodology shall be reached during the methodology phase and its use acceptance is at the Local Government's discretion.

#### 4. ANALYSIS SCENARIOS

The Applicant shall be required to provide an analysis of the following scenarios:

- e. **Existing scenario** is defined as the analysis of existing traffic on the Existing Network.
- f. **Background scenario** is defined as the analysis of existing traffic plus background traffic on the committed network.
- g. **Background scenario with mitigation** is defined as the analysis of existing traffic plus background traffic on the committed network with the inclusion of any other improvements that are required to restore a facility to its adopted level of service standard.
- h. **Future scenario** is defined as analysis of existing traffic, plus background traffic, plus project traffic on the committed network.
- i. **Future Scenario with mitigation** is defined as analysis of existing traffic, plus background traffic, plus project traffic on the committed network with the inclusion of any other improvements (if needed) that are required to restore a facility to its adopted level of service standard.

A detailed definition of the analysis scenarios is included in Appendix A.

## 5. GENERAL ANALYSIS REQUIREMENTS

A Level of Service (LOS) analysis shall be undertaken for all impacted roadways and intersections (as listed in Section 3 of this document) in accordance with the procedures below:

- a. For the facility on the Major Road Network to which the development has direct access:
  - Detailed capacity and turn-lane length analyses shall be undertaken for site driveway connections to that facility and/or of the local street providing site traffic access to that Major Road facility.
  - Turn-lane length analysis shall only be required for the first impacted signalized or major unsignalized intersections along the directly accessed facility.
- b. For analysis of roadways outside of the area as described in Sub-section 5.a above, the latest version of FDOT's generalized tables shall be used as an initial screening tool. If failure is estimated, more detailed analysis is required using the procedures described below.
  - i. Road segment limits shall be as defined in the Annual Level of Service Report prepared by the St. Lucie TPO. Adjustments, if appropriate, shall be proposed in the Methodology Statement and be developed based on acceptable engineering and planning practices as set forth in the *Highway Capacity Manual*.
  - ii. All analyses undertaken shall be adjusted to the average of the peak season using FDOT's Peak Season Conversion Factors (PSCF). Other time periods or a.m. analysis may be required if requested during the methodology meeting or during the first review round.
- c. All signalized intersections and major unsignalized intersections within the study area shall be analyzed.
- d. When the FDOT generalized roadway service volume tables are used, the following information shall be provided for each facility in a separate table:
  - Class of roadway (interrupted or uninterrupted)
  - Maintenance jurisdiction (city, county, or state-maintained)
  - Area type
  - Posted speed
  - LOS standard
- e. Other parameters that govern the roadway/intersection capacity analysis shall be based on the parameters described in the latest version of the *Highway Capacity Manual*.
- f. Where driveway movements are restricted (e.g. right-in/right-out driveways), the necessary U-turn movements and project traffic added at the upstream and

downstream median openings or intersections should be identified and analyzed.

In addition to the requirements of Sub-sections (a) through (f) above, the Local Government may require the inclusion of proposed or anticipated traffic signals in the future year condition that may not exist in the "existing condition", including signals at development entrances.

## **6. SOFTWARE**

Use of analysis software shall be discussed and agreed to during the Methodology phase. The Applicant shall provide an electronic copy of the analysis files as well as a hard copy of the summary sheets, unless an electronic from is requested by the Local Government. Preferred analysis softwares are listed below:

- a. For unsignalized intersections, the Highway Capacity Software (HCS) is the preferred software for analyzing delay and LOS.
- b. For signalized intersections, the use of the Highway Capacity Software is considered acceptable; however, the latest version of Synchro software using the latest HCM methodology is preferred.
- c. For interrupted flow road segment (i.e. signalized roadways) analysis, the preferred software is the latest version of Synchro.
- d. For uninterrupted flow roads (those with more than two-mile signal spacing) the latest version of the FDOT's HighPlan software is recommended.
- e. Other analysis software may be required by the Local Government to address situations not addressed by the above provisions, or if requested by the Applicant and approved by the Local Government during the Methodology Statement in Section 2 of this guideline.

For additional information regarding analysis requirements and software please refer to Appendix C.

## **7. TRIP GENERATION**

Trips from/to the site shall be estimated using the latest Institute of Transportation Engineers (ITE) *Trip Generation Manual*, including separate trip generation estimates for interim traffic-generating uses. Other trip rates may be required by the Local Government or may be used if requested by the Applicant and approved by the Local Government during the Methodology Statement process (Section 2 of this document).

To encourage redevelopment of previously developed sites, a credit for any previously existing land uses may be given for the replacement of any traffic-generating building or structure that previously existed on the site. The applicability and/or magnitude of the credit shall be discussed with the Local Government during the Methodology Statement process. If the site was dormant during the time when collection of the traffic count data was conducted, then the "prior vested" portion of the development traffic must be added as "background" traffic. For purposes of access management

analysis, the total trips (prior vested plus additional, new trips) should be analyzed at site access and connection points to the Major Road network.

## **8. INTERNAL CAPTURE**

Internal capture estimates shall be based on acceptable methodologies contained in the most current *ITE Handbook*, or, where the ITE data is not applicable, professional judgment should be applied.

## **9. PASSER-BY CAPTURE**

The total gross external trips of the project traffic may be reduced by a passer-by factor to account for traffic that is already traveling on the adjacent roadway and once the project is constructed it will stop by the project on their way from an origin to a primary destination. Such factor shall be based on ITE acceptable methodologies and percentages.

In no event shall the total number of passer-by trips (i.e. entering plus exiting the site) exceed 10 percent of the total background traffic on the adjacent roadway. In analysis of the site-access intersections with major roads, the passer-by trips shall be included and separately identified.

In cases where median controls limit left-in/left-out access to the site, traffic on the "far side" of the road can be considered in assessing the upper limit of captured trips; however, the effects of that traffic in the associated necessary U-turns and added flow at the upstream and downstream median openings or intersections should be identified as development traffic at those locations.

In accordance with the Florida Traffic Impact Handbook, the passer-by capture percentage shall be computed as the total number of trips entering and exiting the site that is claimed as captured divided by the number of background trips passing by the site on major roads directly abutting or passing through the site. An example of this computation is provided in Appendix D.

## **10. DISTRIBUTION AND ASSIGNMENT**

Manual trip distribution and assignment is acceptable for use as long as they are reviewed and accepted by the Local Government and logically replicates the existing and future travel patterns.

The latest adopted Greater Treasure Coast Regional Planning Model (GTCRPM) is also acceptable in determining the trip distribution percentages and trip assignments, especially when TIS is being performed for sizable developments and for multi-land use developments. The results of the model will be reviewed by the Local Government for reasonableness and to ensure that existing and future travel patterns are correctly simulated.

## **11. TRAFFIC COUNTS**

All counts shall be conducted based on acceptable professional engineering standards. Raw-turning movement counts (minimum 2 hours) and daily tube counts (minimum 48 hours) shall be provided for all the intersections and road segments that are being analyzed. The raw counts shall be adjusted to the average of the peak season using FDOT's Peak Season Conversion Factors. The Local Government may request other peak-season adjustment factors or adjustment methodologies that may result in different peak-season adjustment factors; however, this request shall be evaluated during the development of the Methodology Statement. Please refer to Appendix E for additional information regarding traffic counts requirements.

**12. BACKGROUND TRAFFIC GROWTH/FUTURE TRAFFIC**

Existing traffic counts shall be increased by a growth factor up to the project's build-out date, which shall be reasonably specified, to account for increases in existing traffic due to other approved or Pending Developments. The development build-out date shall be no less than three years and no more than ten years from the date of the initial transportation methodology submittal.

For acceptable techniques to estimate annual traffic growth rates please refer to Appendix F.

**13. LEVEL OF SERVICE STANDARDS**

- a. The adopted LOS standards for all major road segments shall be consistent with the standards per the Local Government's latest adopted Comprehensive Plan.
- b. The overall intersection LOS standard shall be the same standard as that of the segment (facility) within which the intersection is located. Where different LOS standards apply to different legs of an intersection, the overall intersection LOS standard will be the same as the leg with the least restrictive LOS (e.g. one road LOS Standard "D" and the other road LOS Standard "E", then intersection LOS Standard is "E").
- c. The delay for individual turning-movements and through-movements may exceed the segment standard by one letter grade provided that the volume/capacity (V/C) ratio for the subject movement remains less than or equal to one. Average delays of up to 100 seconds are acceptable for individual turning movements where the V/C ratio is less than 0.8.
- d. For site access driveways and local street connections serving site access traffic, delays of up to 100 seconds will be considered acceptable.

**14. INVENTORY OF EXISTING AND FUTURE CONDITIONS**

At minimum, the following additional information shall be provided:

- a. The geometry, speed limit, and the adopted LOS standard of all the existing roadways and intersections, based on the Local Government's adopted

Comprehensive Plan, and committed intersection and roadway improvement projects within the impacted area,

- b. Existing vehicle counts and data supporting heavy vehicle factors for capacity analysis,
- c. Graphic representation (stick diagrams) of the project's proposed access locations, types, and internal roads with connections to public roadways. The graphic shall also cover the area immediately adjacent to the project and this graphic should include:
  - All external, major roadways,
  - Existing or future access points, and
  - Types of developments surrounding the project,
- d. Pavement marking plans/concept plans of roadways that provide direct access to the project and that have been completed or are undergoing design or route study phase, if available,
- e. Graphic representation of project traffic (volume and percent distribution), existing traffic volumes, future background volumes, and future total volumes, and
- f. Inventory of existing or committed traffic-control devices (i.e. traffic signals and stop signs).

## **15. SITE ACCESS**

Driveway location(s) shall meet the Local Government's and/or FDOT's minimum standards regarding location, corner clearance, minimum distance between driveways, number of driveways serving a site, minimum sight distances, median openings, and U-turn restrictions, as or where applicable. Appendix G documents the procedures to determine the need for turn lanes and corresponding turn lane lengths.

## **16. MULTIMODAL CONSIDERATIONS**

When designing the site, the following multimodal recommendations should be taken into consideration, and their applicability should be discussed with the Local Government during the Methodology Statement process in Section 2 of this document.

### **a. For pedestrians:**

- 1) Provide connectivity from the building structures to existing sidewalks adjacent to the site,
- 2) Internal circulation and connections to existing sidewalks should be provided so that pedestrians do not need to walk significantly "out of the way". In other words, pedestrian connections should be direct and reasonable, minimizing the

- distance that pedestrians need to walk to go from one place to another,
- 3) New external and internal crosswalks and any associated traffic control devices (if required),
  - 4) To the extent possible, minimize pedestrian-vehicle conflicts,
  - 5) Specify minimum cross-walk widths, and
  - 6) Depending on the hours of operation of the site, consideration should be given to the need for illuminated sidewalks and crosswalks.

**b. For transit vehicles/users:**

- 1) If there is a transit stop adjacent to the site or within walking distance of the site, adequate pedestrian connections need to be provided not only between the site and the bus stop but also between the main entrance of the building and the bus stop,
- 2) Relocation of an existing bus stop or creation of a new stop, in coordination with the Local Government Transit Manager and/or Community Transit, as applicable, to provide for safe or better access to the building and site, and
- 3) Appropriate design of relocated or a new bus stop to address amenities (bench, shelter, etc.).

**c. For bicycles:**

- 1) If internal bike facilities are proposed, adequate connections to existing bike lanes should be provided, and
- 2) Provision of bike racks.

## **17. MITIGATION OF IMPACTS**

Acceptable mitigation options are:

- 1) **Restore to adopted standard**
- 2) **Proportionate Share Mitigation**

For general guidance about mitigation and further detail about identification of adequate mitigation, please refer to Appendix H.

## **APPENDICES**

## **APPENDIX A**

### **DEFINITIONS**

For purposes of this document, the following definitions shall apply:

- a. **Committed Network** – Existing Network plus transportation system improvements included in the adopted work programs of the County, the FDOT, or other agencies with authority and responsibility for providing transportation system capacity, or other improvements that are guaranteed by a security instrument acceptable to the Local Government that ensures construction will begin in the current fiscal year of such work programs.
- b. **Background Traffic:** Existing traffic plus growth in existing traffic between the existing conditions and the future conditions. Please refer to Appendix F for acceptable techniques to estimate future background traffic volumes.
- c. **Existing Network** – Major Roads which are currently in use by the public.
- d. **Existing Scenario** - Analysis of existing traffic on the Existing Network.
- e. **Background Scenario** – Analysis of existing traffic, plus background traffic on the committed network.
- f. **Background Scenario with Mitigation** – Analysis of existing traffic, plus background traffic on the committed network. For locations which are estimated to fail under background conditions, the Applicant shall identify improvements need to restore the adopted level of service standard.
- g. **Future Scenario** – Analysis of existing traffic, plus background traffic, plus the project's traffic on the committed network. For locations which are estimated to fail, the Applicant shall identify when each failure is expected to occur as a fraction of the development trips, associated on-site land use quantities, and estimated year. These parameters may be estimated by interpolating between the "Existing Scenario" analysis and the "Future Scenario" (without mitigation) analysis. If new corridors that shift travel patterns are proposed as the solution, the interpolation should be based on an analysis that does not consider the new corridor. In the case of large Mixed Use Planned Unit Developments (MPUDs), the Local Government reserves the right to modify timing of failure estimates to reflect or incorporate other pending or approved developments that are presented or become effective between the time the methodology is approved and the time when the list of improvements to cure identified deficiencies at build-out are finalized by the Local Government.
- h. **Future Scenario with Mitigation** – Analysis of existing traffic, plus background traffic, plus project traffic on the committed network with the inclusion of any other improvements that are required to restore the adopted level of service standard. This analysis scenario will be required only if mitigation is required as the result of the future scenario analysis. For purposes of analyzing site access requirements

only, the Local Government may allow consideration of improvements scheduled in the first five years of the Capital Improvement Program. For large MPUDs, the Local Government may require an additional five, ten, and/or fifteen year analysis of the financial feasibility of the improvements that are required to restore the adopted level of service standard.

- i. **Heavy Vehicle** – Vehicles that have more than four tires touching the pavement, including trucks, buses, and recreational vehicles (RVs). Trucks cover a wide range of vehicles, from lightly loaded vans and panel trucks to the most heavily loaded coal, timber and gravel haulers. RVs also include a broad range, including campers, both self-propelled and towed; motor homes; and passenger cars or small trucks towing a variety of recreational equipment, such as boats, snowmobiles, and motorcycle trailers.
- j. **Major Intersections** - All signalized intersections and/or unsignalized intersections with other major roadways.
- k. **Major Roadway, Major Road Network, or Regulated Road** – Shall include all collector and above-classified roadways per the latest St. Lucie TPO’s Federal Functional Classification Map.
- l. **Pending Development** – Is a development for which a complete application has been filed for (a) a Traffic Impact Study, (b) an Initial or Final Certificate of Capacity, or (c) an Initial or Final Certificate of Capacity Development Order.
- m. **Road Segment** – In an interrupted flow facility, a road segment is the piece of road from one traffic signal to the next traffic signal and is usually considered to include the traffic signal at the “downstream” end of the segment. “Road Facilities” are usually composed of several contiguous road segments.

**APPENDIX B**  
**ALTERNATIVE STUDY NETWORK IDENTIFICATION**  
**METHODOLOGY**

**Area of Influence Based**

- a. The area to be studied will be based on the New External Trip Generation of the proposed development. The table below shall determine the development's area of influence.

<b>New External Daily Trip Generation</b>	<b>Radius of Area of Influence</b>
0 - 200	Only segments directly accessed by the proposed development
201 - 500	0.5 miles
501 - 1,000	1.0 miles
1,001 - 5,000	2.0 miles
5,001 - 10,000	3.0 miles
10,001 - 20,000	4.0 miles
Over 20,000	5.0 miles

- b. The radius of influence shall be measured from each connection of the project to the Major Road Network.
- c. All major signalized and unsignalized intersections on the roadway segments within the area of influence shall be studied.
- d. If the study radius ends between intersections identified in c above, the study area shall extend to the next major intersection.

## **APPENDIX C**

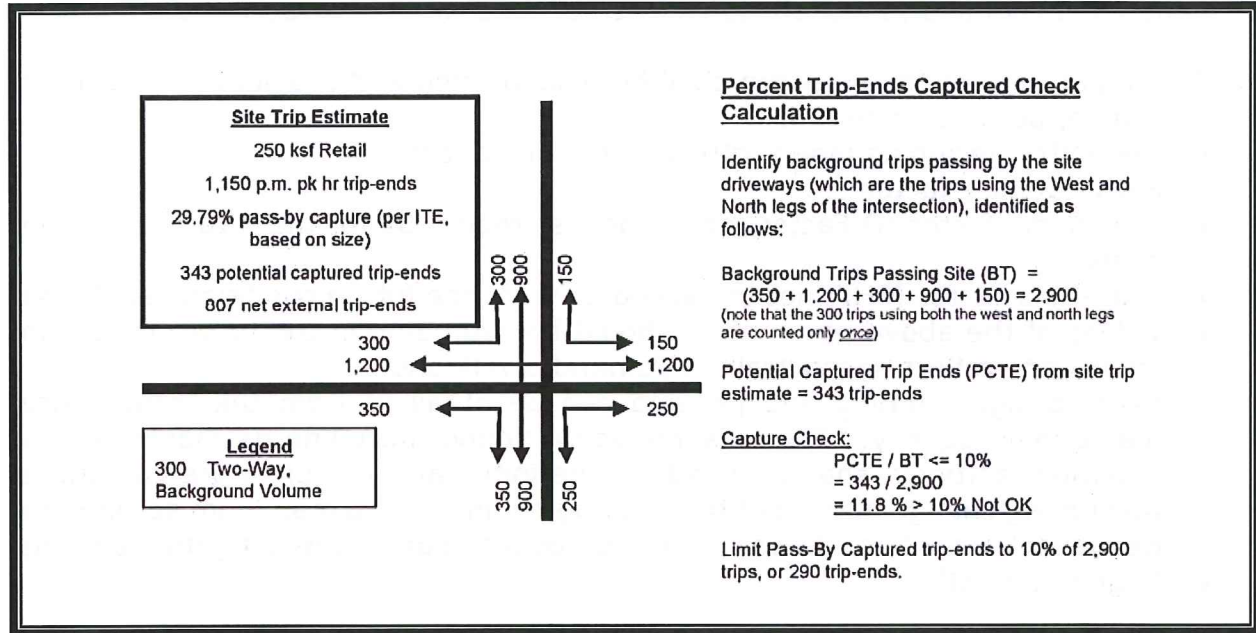
### **ANALYSIS REQUIREMENTS**

- (1) If any analysis software is used as an alternative to the FDOT's generalized tables, a detailed LOS analysis of all Major Intersections within the facility is required.
- (2) The input data to the software shall be field verified and provided in the report including, but not limited to:
  - Geometry, including lane widths and turn-lane lengths
  - Heavy vehicle factor
  - Directional factor (D Factor, not to be less than 0.52 for the future conditions analysis)
  - Peak-hour factor (PHF, not to exceed 0.95 for the future conditions analysis)
  - Values of the above parameters should be estimated in the future conditions analysis to reflect unconstrained demand conditions
  - Existing signal timing and phasing can be obtained from the traffic signal maintaining agency. The existing signal timing, including its maximum and minimum settings, shall be used for the initial analysis of future conditions. Any timing change outside of the existing minimum and maximum setting may be presented for Local Government approval as part of the mitigation strategy
  - Segment lengths
- (3) If the FDOT generalized roadway service volume tables are used, the following information shall be provided in a separate table:
  - Class of roadway (interrupted or uninterrupted)
  - Maintenance jurisdiction (city, county, or state-maintained)
  - Area type
  - Posted speed
  - LOS standard
- (4) Other parameters that govern the roadway/intersection capacity analysis shall be based on the parameters described in the latest version of the Highway Capacity Manual.
- (5) The Local Government may require the inclusion of proposed or anticipated traffic signals in the future year condition that may not exist in the "existing condition", including signals at development entrances.

## APPENDIX D

### EXAMPLE OF PASSER-BY CAPTURE

The graphic below depicts an example of how passer-by capture may be computed.



## **APPENDIX E**

### **TRAFFIC COUNTS**

- a. Weekday traffic counts shall be collected during typical weekdays (Tuesdays, Wednesdays, or Thursdays) and not immediately before, during, or immediately after a holiday or special event.
- b. For saturated intersections, the FDOT methodology shall be followed to estimate the turning movement counts by multiplying the average annual daily traffic (AADT) tube count at appropriate locations by field verified "D" and minimum K100 factors and by applying the percentage turns obtained from the field turning-movement counts.
- c. In no event, however, shall the estimated, turning-movement counts be less than the existing field counts.
- d. Tube counts at appropriate locations shall be provided for segment analysis using the FDOT procedures. The segment tube counts at mid-block locations shall be checked against turning-movement counts at near intersections. In general, the mid-block counts and turning-movement counts shall not be significantly different unless the difference can logically be explained.
- e. Approved FDOT or St. Lucie TPO maintained counts may be used if they are less than two years old. However, new counts may be requested if there are recent impacts or improvements to the transportation system that cause significant changes in traffic patterns. Counts more than two years old will not be acceptable unless otherwise approved by the Local Government during the Methodology Statement.

## **APPENDIX F**

### **ANNUAL TRAFFIC GROWTH RATE DETERMINATION**

Background traffic growth rates and background traffic volume estimates to be used in the TIS shall be based on techniques approved in the Methodology Statement (Section 2 of this document). Any combination of the following techniques is considered acceptable:

- a. Historical growth rates (minimum of the past three years) may be used in areas where the expected growth is representative of the past growth.
- b. Traffic from approved and pending developments may be required in areas where the historical trend is determined by the Local Government to be inappropriate. This may be accomplished through application of the latest adopted GTCRPM.
- c. To determine future traffic on roads that currently do not exist, the use of the GTCRPM (the latest, adopted model) is recommended.

The socioeconomic data shall reasonably represent, if appropriate, the approved or pending developments in the vicinity of the project as approved in the Methodology Statement. Minimum annual growth rates in all cases shall be one percent, unless otherwise approved in the Methodology Statement.

The assumed growth rate for each impacted roadway segment analyzed shall be presented in tabular form. The background traffic growth estimates will be reviewed by the Local Government to ensure growth reasonably reflects recent and expected growth trends. The connections of surrounding traffic analysis zones in the model should be reviewed to reflect other approved and pending developments and to ensure appropriate network loading.

## APPENDIX G

### TURN LANE NEED AND LENGTH DETERMINATION

#### **a. Right Turn Lanes**

The potential need for right-turn lanes at the site access connections shall be evaluated based on guidelines provided in the Florida Department of Transportation's Driveway Handbook (March 2005). These guidelines are essentially based on roadway speed and type.

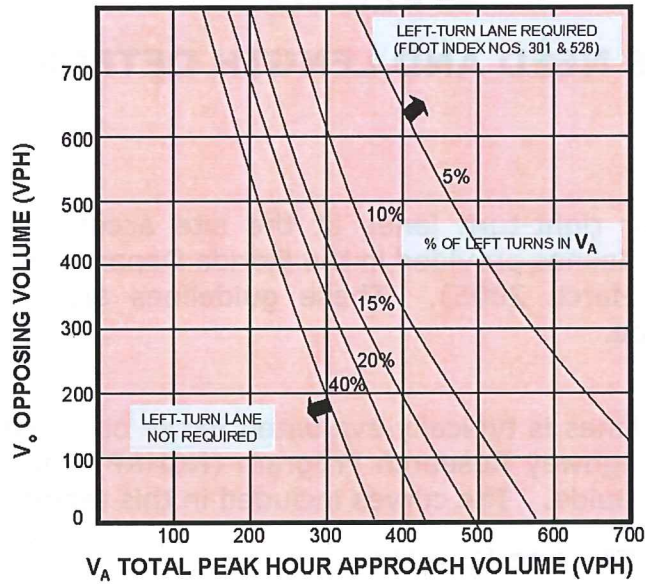
#### **b. Left Turn Lanes**

The need for left-turn lanes is typically evaluated based on research documented in National Cooperative Highway Research Program (NCHRP) Report 279 Intersection Channelization Design Guide. The curves included in this report are included below.

#### **c. Deceleration and Storage Lengths**

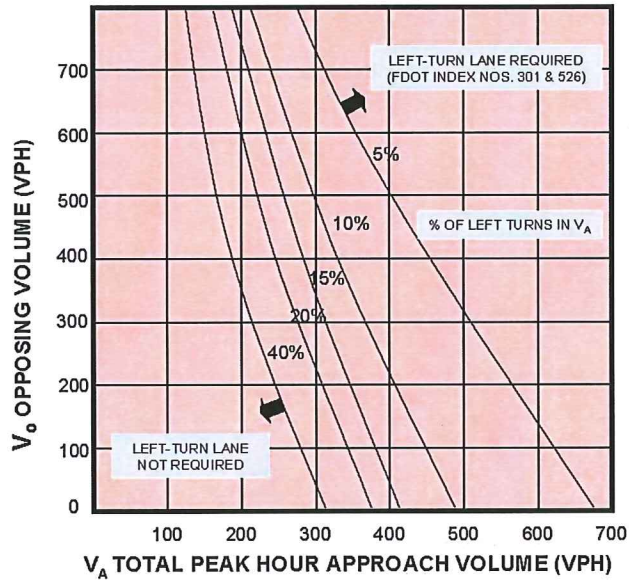
- 1) Deceleration length shall be based on Index 301 of FDOT's *Design Standards*.
- 2) Storage Length shall be based on 95<sup>th</sup> percentile queue estimates provided by the software used in the level of service computation.
- 3) The provision of deceleration and storage lengths may be modified or waived by the Local Government's Engineer or his/her designee if it is determined that due to site specific constraints, the implementation will not be feasible or practical.

**GRAPH 2A. LEFT-TURN LANE WARRANTS – TWO-LANE FACILITIES (≤ 40 MPH)**



**Note:** Left-turn lane not required when intersection of  $V_A$  and  $V_O$  is below the curve corresponding to the % of left turns in  $V_A$ .

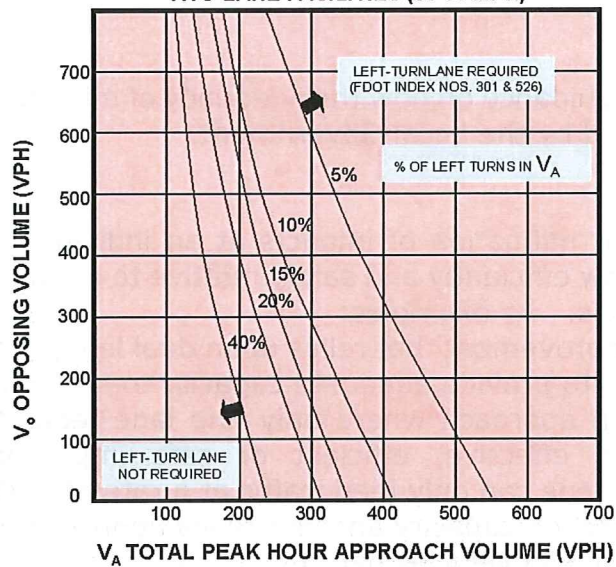
**GRAPH 2B. LEFT-TURN LANE WARRANTS – TWO-LANE FACILITIES (45-50 MPH)**



**Note:** Left-turn lane not required when intersection of  $V_A$  and  $V_O$  is below the curve corresponding to the % of left turns in  $V_A$ .

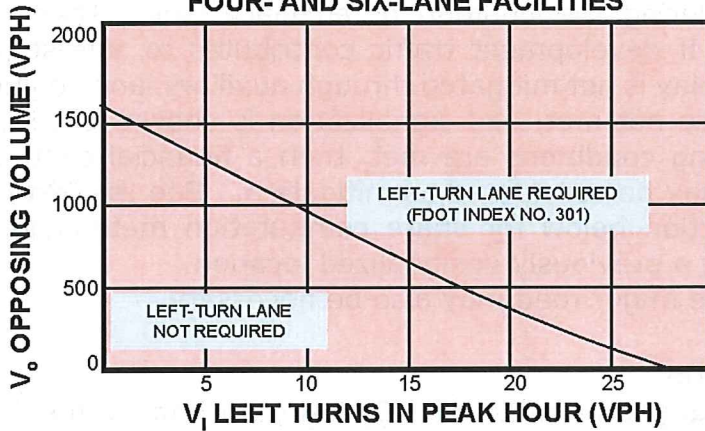
Graph 2A & 2B – Source: Derived from National Cooperative Highway Research Program Report #279.

**GRAPH 2C. LEFT-TURN LANE WARRANTS – TWO-LANE FACILITIES (55-60 MPH)**



**Note:** Left-turn lane not required when intersection of  $V_A$  and  $V_O$  is below the curve corresponding to the % of left turns in  $V_A$ .

**GRAPH 2D. LEFT-TURN LANE WARRANTS – FOUR- AND SIX-LANE FACILITIES**



**Note:** When  $V_O < 400$  VPH, a left-turn lane is not normally warranted unless the advancing volume ( $V_A$ ) in the same direction as left-turning traffic exceeds 400 VPH. ( $V_A > 400$  VPH).

Graph 2C & 2D – Source: Derived from National Cooperative Highway Research Program Report #279.

## APPENDIX H

### MITIGATION OF IMPACTS

This Appendix provides guidance on how the adequacy of mitigation will be technically determined and reviewed by the Local Government.

#### **a. General Guidance**

- 1) Improvements for mitigation of impacts at an individual location must work effectively and flow efficiently and safely relative to upstream and downstream roadway conditions. As examples:
  - A proposed improvement that relies upon dual lefts, three thru lanes, and a right turn lane to provide adequate capacity to serve the traffic demand at an intersection approach where only one lane feeds traffic might not be considered an effective, efficient or safe improvement because (for example) one lane can only feed traffic at a rate of 1,850 vehicles per hour but the intersection capacity analysis relies upon approach lane capacity in excess of the 1,850 vehicles per hour.
  - A proposed improvement that cannot achieve effective lane utilization due to downstream conditions would not be considered an effective improvement. For example, provision of a second through lane with a receiving lane on the far side of an intersection of only 300 feet in length would not be effective
  - Analyses of improvements to closely-spaced intersections should include evaluations of the traffic flow interaction and signal timings of the two intersections to ensure that the proposed improvements will achieve the intended result.
- 2) For unsignalized intersections, below-standard conditions should be mitigated by first considering the addition of auxiliary lanes, then consideration of signalization. If development traffic contributes to side-street volumes but the deficient delay is not mitigated through auxiliary lane addition, warrants for signalization are not met, and signalization is shown to be a viable solution when warranting conditions are met, then a financial contribution to future signalization may be considered as mitigation. See the "Proportionate Share Mitigation" section below for share computation methodology for adding a traffic signal at a previously unsignalized location.
- 3) Widening of the major road may also be necessary.

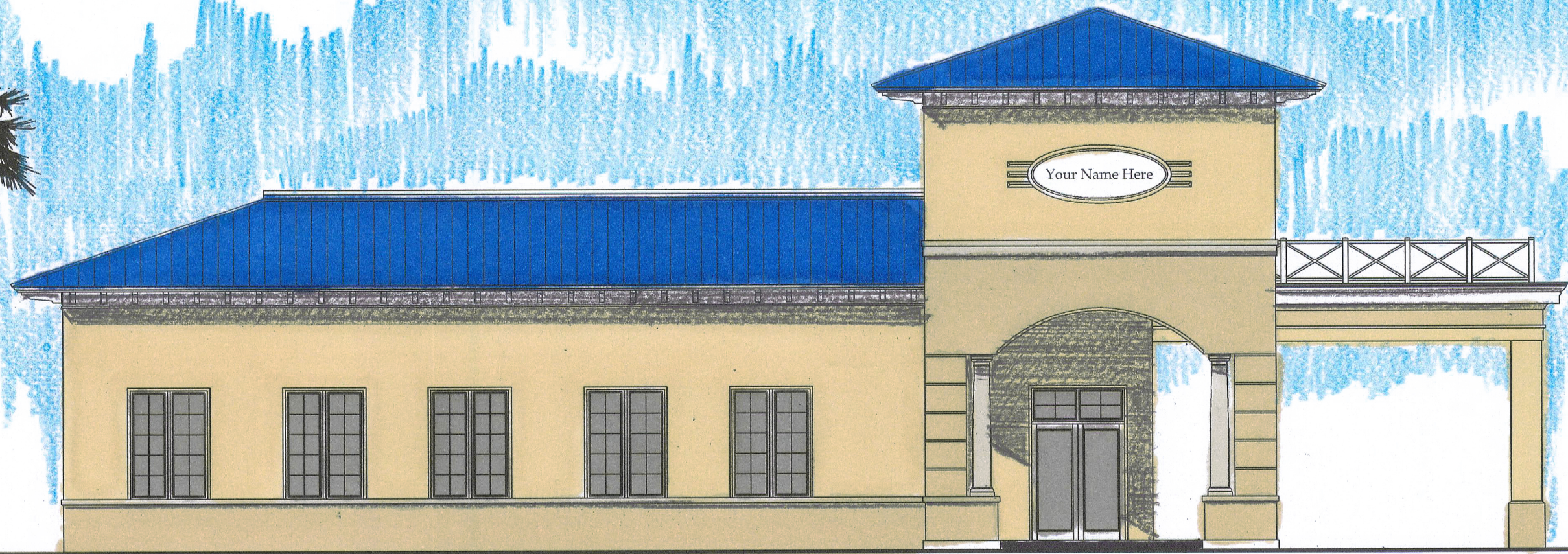
#### **b. Mitigation Options**

- 1. Restore to adopted standard** – Identify an improvement at an impacted location that restores level of service to the adopted standard for the "future year with development traffic" condition, as defined in the Analysis Scenarios section of these Guidelines.
- 2. Proportionate Share Mitigation** – The proportionate share payment shall be calculated as follows:

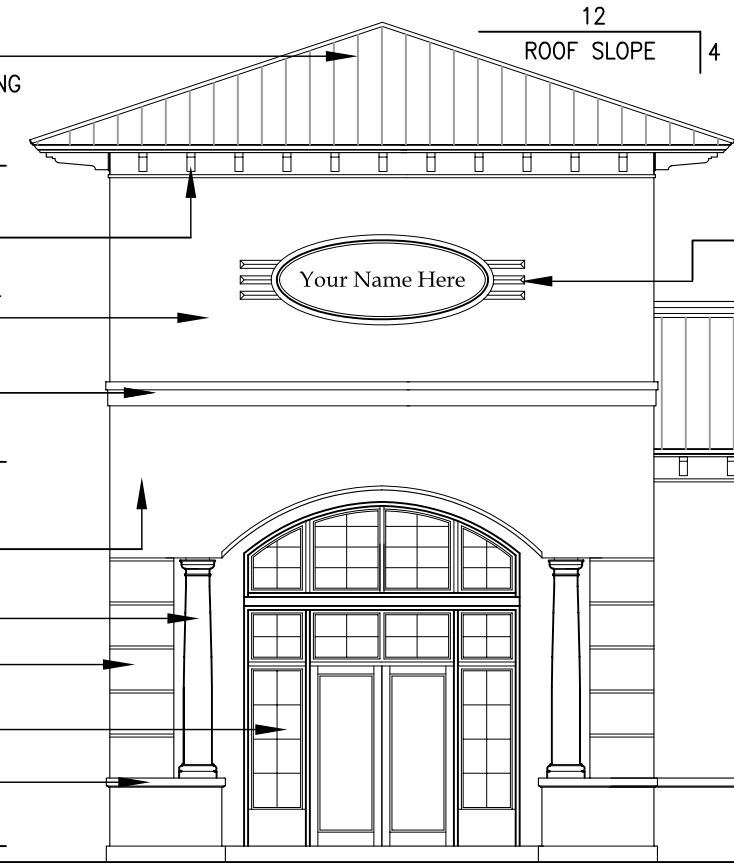
- a. Identify all the needed improvements to bring all deficient locations in the study network back to the adopted LOS standard,
- b. Submit a cost estimate of the required improvements.
- c. Calculate the proportionate-share cost of those improvements per the following formula:
  - i) For road segments:  
**Proportionate share cost** = Total cost of improvement triggered by the project x Project traffic / Increase in capacity created by the improvement. The increase in facility capacity shall be based on the generalized service volume table provided in the "Impacted Roadways/Intersections" section of this document. The above values shall be in units of peak hour, two-way values.
  - ii) For signalized and unsignalized intersections (where signalization is not needed):  
**Proportionate share cost** = Total cost of improvement triggered by the project x Project traffic / Increase in capacity created by the improvement.  
 Where: Project traffic is the development traffic in all movements at the intersection increase in capacity is the sum of the changes in physical capacity of all of the movements at the intersection
  - iii) For installation of signals at unsignalized locations:  
**Proportionate share cost** = Total cost of improvement x Project traffic / Increase in capacity created by the improvement,  
 Where: Project traffic is the development traffic in all movements at the intersection Increase in capacity is the sum of the changes in physical capacity for the minor-street movements only at the intersection

If other unforeseen situations arise, they will be dealt with on a case-by-case basis.
- d. Cost values shall include route study costs, design, right-of-way, construction, construction engineering/inspection costs, and contingency costs.
- e. Where an improvement to an alternate road (which draws background traffic away from an existing road that has been estimated to fail) is identified as a solution to congestion and where development traffic is assigned to both the existing road as well as the alternate road, the proportionate share computation will include the total development traffic on the existing road and the new road.

Adjacent New Construction - Implementing many guidelines within the City's Design Review Code



Hartman Road Elevation



12  
ROOF SLOPE 4

Your Name Here

STANDING SEAM METAL ROOFING ON  
MANSARD TRUSS FRAMING  
SURFACE MTD. BUILDING SIGNAGE – COMPLY WITH  
SEC. 22-55 FORT PIERCE CODE OF ORDINANCES

HEAVY WOOD TIMBER FRAMED  
PERGOLA, PAINTED

CAST STONE TUSCAN COLUMNS