Traffic Impact Analysis

Tree Farm
Mixed-Use Planned Unit Development (MPUD) Amendment

Collier County, FL
07/30/2019

Prepared for:

Q. Grady Minor and Associates, PA
3800 Via Del Rey
Bonita Springs, FL 34134

Prepared by:

Trebilcock Consulting Solutions, PA
2800 Davis Boulevard, Suite 200
Naples, FL 34104
Phone: 239-566-9551
Email: ntrebilcock@trebilcock.biz

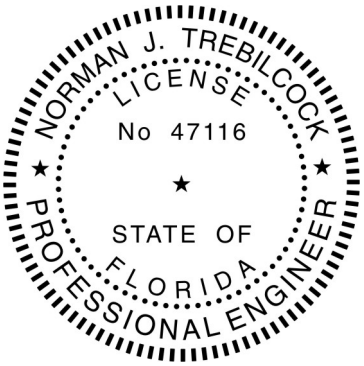
Collier County Transportation Methodology Fee* – $500.00 Fee

Collier County Transportation Review Fee* – Small Scale Study – No Fee

Note – *to be collected at time of first submittal

Statement of Certification

I certify that this Traffic Impact Analysis has been prepared by me or under my immediate supervision and that I have experience and training in the field of Traffic and Transportation Engineering.



Norman J. Trebilcock, AICP, P.E., 47116 State of Florida

Digitally signed by Norman J. Trebilcock, AICP, P.E., 47116 State of Florida
DN: cn=Norman J. Trebilcock, AICP, P.E., 47116 State of Florida, o=This item has been electronically signed and sealed using a SHA-1 authentication code., ou=Printed copies of this document are not considered signed and sealed, and the SHA-1 authentication code must be verified on any electronic copies., email=ntrebilcock@trebilcock.biz, c=US
Date: 2019.07.30 16:30:17 -04'00'

Norman J. Trebilcock, AICP, P.E.
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Table of Contents

Project Description

The Tree Farm project is an existing approved Mixed-Use Planned Unit Development (MPUD) – Collier County Ordinance No. 07-54, as may be amended (HEX 2015-42 & HEX 2018-12), and has a total site gross area of approximately 58.85 acres.

The project site is located in north Naples, on the north-west quadrant of Immokalee Road (CR 846) and Collier Boulevard (CR 951) intersection, in Section 22, Township 48 South, Range 26 East, in Collier County, Florida.

Refer to **Fig. 1 – Project Location Map**, which follows and **Appendix A: MPUD Master Plan**.

Fig. 1 – Project Location Map

The Collier County approved ordinance currently allows the site to be developed with up to 281 residential dwelling units and a maximum of 120,000 sf of commercial/office uses (of which a maximum of 100,000 sf may be retail and the balance is limited to office use).

The existing approved mixed-use development scenario and various proposed scenarios under this MPUD amendment are illustrated in **Table 1 – Proposed Development Program**, below.

Table 1
Existing/Potential Development Program

Development	Land Use [SIC Code in Brackets]	ITE Land Use Code	Total Size
MPUD Existing Approved Trip Cap****	Residential [N/A]	220 – Multifamily Housing (Low-Rise)**	281 du**
	Office [80, 8071, 8072]	720 – Medical-Dental Office Bldg.	11,000 sf
	Retail[all PUD principal uses possible—typical for a shopping center—as an inline/outparcel use—refer to PUD permitted commercial uses for applicable SIC Codes]	820 – Shopping Center	94,000 sf
	Services [5411, 5541]	945 – Gasoline Station*	12 pumps*
MPUD Proposed	Retail [all PUD principal uses possible—typical for a shopping center—as an inline/outparcel use—refer to PUD permitted commercial uses for applicable SIC Codes]	820—Shopping Center	80,000
	Mini-Warehouse [4225]	151—Mini-Warehouse	105,000 sf
	Residential[N/A]	220— Multifamily Housing (Low-Rise) ***	460 du***

Note(s): *Gasoline/Service Station with Convenience Market – 6,000 sf.
**Up to 138 Single-Family dwelling units (LUC 210) or up to 281 Multi-Family dwelling units (LUC 220).
*** Includes apartments, townhouses and condominiums. Up to 226 Single-Family dwelling units (LUC 210).
****Per Hex 2015-42, MPUD Document Section VI.6.3.J"…the Project's estimated trip generation will not exceed a maximum of 580 pm peak hour two-way external trips to adjacent streets."

As illustrated in **Table 1**, proposed Tree Farm MPUD amendment will continue to be developed as a mixed-use project.

A methodology meeting was held with the Collier County Transportation Planning staff on April 5, 2019 – refer to **Appendix B: Initial Meeting Checklist (Methodology Meeting).**

Trip Generation

The project provides the highest and best use scenario with respect to the project's trip generation. The project's site trip generation is based on the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition and the software program OTISS – Online Traffic Impact Study

Software (most current version). The ITE rates and equations are used for the trip generation calculations, as applicable. The ITE – OTISS trip generation calculation worksheets are provided in **Appendix B: Trip Generation Calculations ITE 10th Edition**.

The **internal capture** accounts for a reduction in external traffic because of the interaction between the multiple land uses in a site. Per Collier County TIS Guidelines and Procedures, the internal capture trips should be reasonable and should not exceed 20% of the total project trips.

For this project, the software program OTISS is used to generate the internal capture trips. The OTISS process follows the trip balancing approach as recommended in the ITE Trip Generation Handbook, 3rd Edition. The resulting internal capture rates are below the county limits.

Consistent with a conservative approach, the applicable internal capture ITE PM peak hour rates were reduced 50%.

The **pass-by trips** account for traffic that is already on the external roadway network and stops at the project on the way to a primary trip destination.

Per Collier County TIS Guidelines and Procedures, the pass-by capture rate for peak hour should not exceed 25% for shopping centers (LUC 820) and 50% for gas stations (LUC 945). The daily pass-by rate is assumed to be 10% lower than the peak hour rate.

The existing approved Tree Farm MPUD trip generation is illustrated in **Table 2A**. The proposed Tree Farm MPUD amendment development trip generation is illustrated in **Table 2B**.

Table 2A
Trip Generation (MPUD Existing Approved per Trip cap/Use Limits) – Average Weekday

		24 Hour Two-Way Volume	PM Peak Hour		
ITE Land Use	**Size**		**Enter**	**Exit**	**Total**
Multifamily Housing (Low-Rise)**	281 du	2,083	93	55	148
Medical-Dental Office Bldg.	11,000 sf	335	11	28	39
Shopping Center	94,000 sf	5,764	249	270	519
Gasoline Station*	12 pumps*	2,464	86	82	168
Total Traffic		**10,646**	**439**	**435**	**874**
Internal Capture***		822	48	48	96
Total External		9,824	**391**	**387**	**778**
Pass-By Trips******		1,665	100	99	199
Total to Adjacent Streets		**8,159**	**291**	**288**	**579**

Note(s): * Gasoline/Service Station with Convenience Market – 6,000 sf.
** Includes apartments, townhouses and condominiums.
*** Internal Capture – not to exceed 20% of total traffic - ITE PM peak hour internal capture rates were reduced 50%.—Daily value = 10%
**** Pass-By Rates – PM Peak Hour 25%; Daily 15%.

Table 2B
Trip Generation (MPUD Amendment – Proposed) – Average Weekday

		24 Hour Two-Way Volume	PM Peak Hour		
ITE Land Use	**Size**		**Enter**	**Exit**	**Total**
Multifamily Housing (Low-Rise) *	**460 du**	3,437	145	85	230
Shopping Center	**80,000 sf**	5,166	221	240	461
Mini-Warehouse	**105,000 sf**	159	8	10	18
Total Traffic		**8,762**	**374**	**335**	**709**
Internal Capture **		102	42	42	84
Total External		**8,660**	**332**	**293**	**625**
Pass-By Trips ***		767	52	53	105
Total to Adjacent Streets		**7,893**	**280**	**240**	**520**

Note(s): *Includes apartments, townhouses and condominiums.
**Internal Capture – not to exceed 20% of total traffic - ITE PM peak hour internal capture rates were reduced 50%.
***Pass-By Rates – PM Peak Hour 25%; Daily 15%.

The project estimated net new volume traffic shown in **Table 2C** reflects the highest impact PM peak hour traffic under proposed MPUD amendment conditions (**Table 2B)**, versus the existing approved MPUD trip cap conditions – **Table 2A**.

Table 2C
Trip Generation (Proposed Net New Traffic) – Average Weekday

	24 Hour Two-Way Volume	PM Peak Hour		
Land Use		**Enter**	**Exit**	**Total**
MPUD Proposed Amendment (Total to Adjacent Streets)	**7,893**	**280**	**240**	**520**
Maximum Allowed MPUD Existing Approved (Total to Adjacent Streets)	**8,159**	**291**	**288**	**579**
Net Increase (Net Decrease)	**(266)**	**(11)**	**(48)**	**(59)**

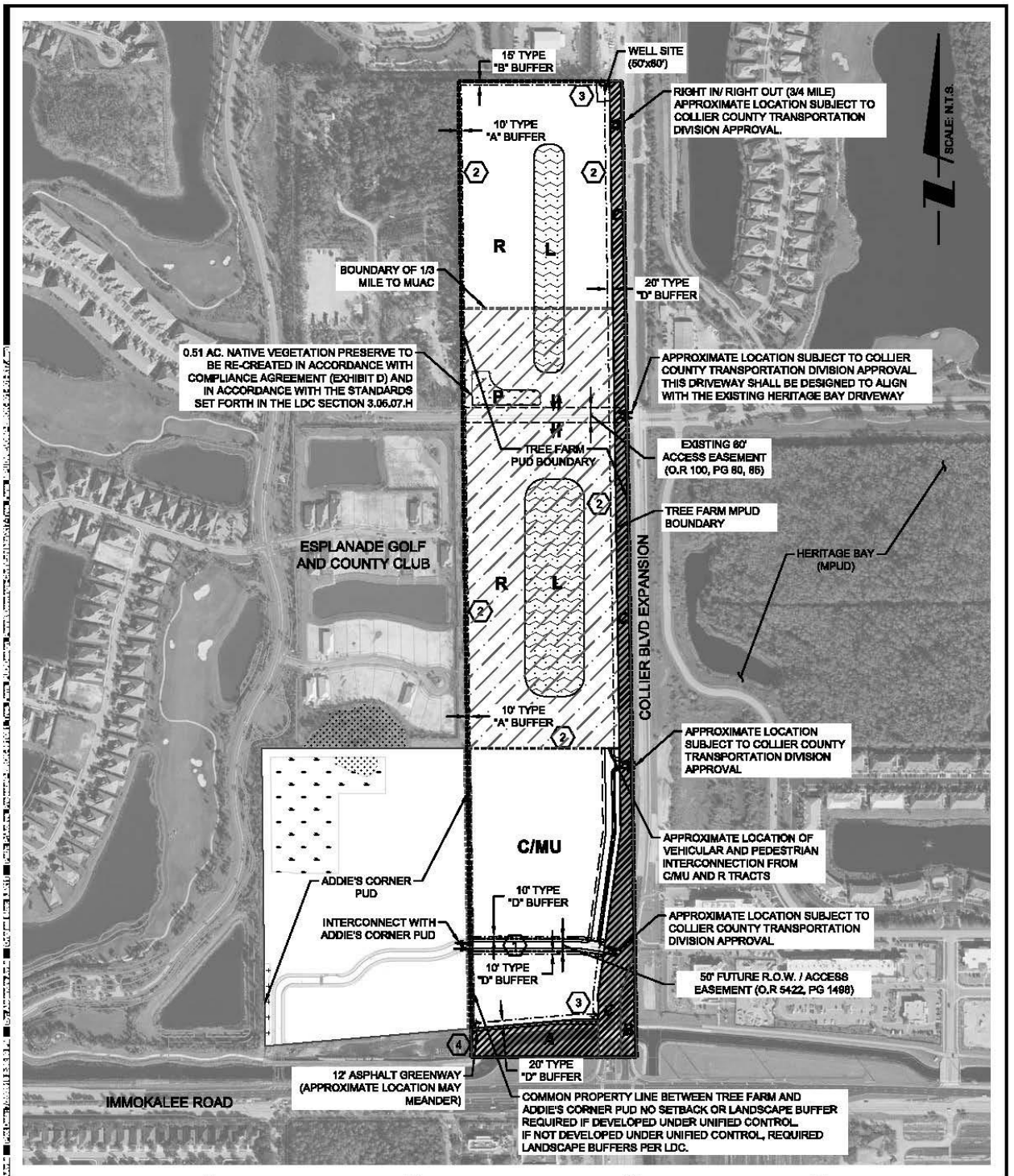
Conclusion

As illustrated in **Table 2C**, from a traffic stand point, the proposed Tree Farm MPUD amendment is less intensive compared to what was most recently approved.

The maximum total daily trip generation for the proposed development shall not exceed 520 two-way PM peak hour net new trips based on the land use codes in the ITE Trip Generation Manual in effect at the time of application for SDP/SDPA or subdivision plat approval.

Appendix A

MPUD Master Plan


15' TYPE "B" BUFFER
WELL SITE (50'x80')
RIGHT IN/ RIGHT OUT (3/4 MILE) APPROXIMATE LOCATION SUBJECT TO COLLIER COUNTY TRANSPORTATION DIVISION APPROVAL.
SCALE: N.T.S.
10' TYPE "A" BUFFER
R
L
BOUNDARY OF 1/3 MILE TO MUAC
20' TYPE "D" BUFFER
0.51 AC. NATIVE VEGETATION PRESERVE TO BE RE-CREATED IN ACCORDANCE WITH COMPLIANCE AGREEMENT (EXHIBIT D) AND IN ACCORDANCE WITH THE STANDARDS SET FORTH IN THE LDC SECTION 3.05.07.H
APPROXIMATE LOCATION SUBJECT TO COLLIER COUNTY TRANSPORTATION DIVISION APPROVAL. THIS DRIVEWAY SHALL BE DESIGNED TO ALIGN WITH THE EXISTING HERITAGE BAY DRIVEWAY
TREE FARM PUD BOUNDARY
EXISTING 60' ACCESS EASEMENT (O.R 100, PG 80, 85)
TREE FARM MPUD BOUNDARY
ESPLANADE GOLF AND COUNTY CLUB
HERITAGE BAY (MPUD)
COLLIER BLVD EXPANSION
10' TYPE "A" BUFFER
APPROXIMATE LOCATION SUBJECT TO COLLIER COUNTY TRANSPORTATION DIVISION APPROVAL
C/MU
APPROXIMATE LOCATION OF VEHICULAR AND PEDESTRIAN INTERCONNECTION FROM C/MU AND R TRACTS
ADDIE'S CORNER PUD
10' TYPE "D" BUFFER
INTERCONNECT WITH ADDIE'S CORNER PUD
APPROXIMATE LOCATION SUBJECT TO COLLIER COUNTY TRANSPORTATION DIVISION APPROVAL
10' TYPE "D" BUFFER
50' FUTURE R.O.W. / ACCESS EASEMENT (O.R 5422, PG 1498)
20' TYPE "D" BUFFER
12' ASPHALT GREENWAY (APPROXIMATE LOCATION MAY MEANDER)
COMMON PROPERTY LINE BETWEEN TREE FARM AND ADDIE'S CORNER PUD NO SETBACK OR LANDSCAPE BUFFER REQUIRED IF DEVELOPED UNDER UNIFIED CONTROL. IF NOT DEVELOPED UNDER UNIFIED CONTROL, REQUIRED LANDSCAPE BUFFERS PER LDC.
IMMOKALEE ROAD
PENINSULA ENGINEERING
CIVIL ENGINEERING · LANDSCAPE ARCHITECTURE · ENVIRONMENTAL CONSULTING · LAND PLANNING · SITE PLANNING · CONSTRUCTION MANAGEMENT · OWNER REPRESENTATIVE
2600 Golden Gate Parkway
Naples, Florida 34105
Phone: 239.403.6700 Fax: 239.261.1797
Email: info@pen-eng.com Website: www.pen-eng.com
Florida Certificate of Authorization #28275
PROJECT:
TREE FARM MPUD
TITLE:
MPUD MASTER CONCEPT PLAN (EXHIBIT "A")
OWNER/CLIENT/CONSULTANT:
TBC TREE FARM 1, LLC & TBC TREE FARM 2, LLC
SEC: 22 TWP: 48 RGE: 26
Designed by: ALEJANDRO AVILA
Drawn by: ALEJANDRO AVILA
Date: JUNE 2018
Drawing Scale: N.T.S.
Project Number: P-BROK-001
File Number: P-BROK-001-001-X17
C-X17
Sheet Number: 01 of 02

SCHEDULE OF PREVIOUSLY APPROVED DEVIATIONS

APPROVED DEVIATION 1:
AT THE DISCRETION OF THE DEVELOPER, THE MINIMUM RIGHT-OF-WAY WIDTH TO BE UTILIZED FOR ALL INTERNAL PROJECT STREETS MAY BE FIFTY FEET (50').
DEVIATION #1 FROM SECTION 6.06.01(O) OF THE LDC. UTILIZATION OF LANDS WITHIN ALL PROJECT RIGHT-OF-WAY FOR LANDSCAPING.
DECORATIVE ENTRANCEWAY, AND SIGNAGE MAY BE ALLOWED SUBJECT TO REVIEW AND ADMINISTRATIVE APPROVAL BY THE COMMUNITY DEVELOPMENT AND ENVIRONMENTAL SERVICES ADMINISTRATOR, OR HIS DESIGNEE, FOR ENGINEERING AND SAFETY CONSIDERATIONS PRIOR TO INSTALLATION.

APPROVED DEVIATION 2:
DEVIATION #2 SEEKS RELIEF FROM LDC SECTION 5.03.02.C, WHICH PERMITS A MAXIMUM WALL HEIGHT OF 6' IN RESIDENTIAL ZONING DISTRICTS AND RESIDENTIAL COMPONENTS OF A PUD, TO ALLOW A MAXIMUM WALL HEIGHT OF 8' ALONG THE PERIMETER OF THE PUD, AND ALLOW A 12' WALL/BERM COMBINATION WITHIN RESIDENTIAL PORTIONS OF THE PUD ALONG COLLIER BOULEVARD. THE BERM PORTION OF THE 12' WALL/BERM SHALL BE MINIMUM OF 3' IN HEIGHT.

APPROVED DEVIATION 3:
BOUNDARY MARKER MONUMENTS CONTAINING PROJECT IDENTIFICATION SIGNS DESIGNED TO IDENTIFY THE PROJECT, OR ANY MAJOR USE WITHIN THE PROJECT, SHALL BE PERMITTED IN LOCATION DEPICTED ON THE MPUD MASTER PLAN (EXHIBIT "A"). SAID BOUNDARY MARKER MONUMENT SHALL NOT EXCEED 6 FEET IN HEIGHT AS MEASURED FROM FINISHED GRADE AT THE LOCATION OF THE BOUNDARY MARKER MONUMENT. THE SIGN FACE AREA FOR SUCH BOUNDARY MARKERS SHALL NOT EXCEED 64 SQUARE FEET IN AREA AND SHALL NOT EXCEED THE HEIGHT OR LENGTH OF THE MONUMENT WHICH IT IS LOCATED. IF THE SIGN IS TWO-SIDED, EACH SIGH SHALL NOT EXCEED 64 SQUARE FEET IN AREA. EACH SIGN SHALL ONLY CONTAIN THE MAIN PROJECT NAME, INSIGNIA OR MOTTO OF THE ENTIRE DEVELOPMENT, AND THE DEVELOPER'S NAME AND LOGO. BOUNDARY MARKER MONUMENTS SHALL BE SETBACK A MINIMUM OF 10 FEET FROM ANY MPUD PERIMETER PROPERTY LINE.

APPROVED DEVIATION 4:
ONE OFF-PREMISES SIGN MAY BE LOCATED TO WEST OF THE TREE FARM MPUD GENERALLY LOCATED NEAR THE ACCESS TO COLLIER BOULEVARD FROM THE PROPERTY IMMEDIATELY ADJACENT TO THE WEST OF TREE FARM MPUD. THE OFF-PREMISE SIGN MAY DEVIATE FROM THE MAXIMUM 12 SQUARE FOOT SIZE SET FORTH IN SECTION 5.06.04.~~G.15.B.1.~~G.2.A., BUT MAY NOT EXCEED 16 SQUARE FEET IN SIZE, AND MAY ALSO DEVIATE FROM SECTION 5.06.04.~~G.15.B.VG.2.E.~~, WHICH REQUIRES SUCH OFF-SITE SIGNS TO BE LOCATED WITH IN 1,000 FEET OF THE INTERSECTION OF THE ARTERIAL ROADWAY SERVING THE BUILDING, STRUCTURE OR USE.

MPUD MASTER PLAN NOTES

1. THE AMOUNT OF REQUIRED OPEN SPACE IS 30%.
2. WITHIN THE MPUD BOUNDARIES THERE WILL BE A MINIMUM OF 15.43 AC OPEN SPACE [30% OF 51.43 (58.84 - 7.42 ROW CONVEYANCE.)]
3. THE FACILITIES AND IMPROVEMENTS SHOWN ON THIS PUD MASTER PLAN SHALL BE CONSIDERED CONCEPTUAL IN NATURE.
4. THE DESIGN, LOCATION, AND CONFIGURATION OF THE LAND IMPROVEMENTS SHALL BE DEFINED AT EITHER SITE DEVELOPMENT PLAN APPROVAL, OR CONSTRUCTION PLANS AND PLAT APPROVAL.
5. THE PROJECT SHALL BE DESIGNED TO PROVIDE VEHICULAR, PEDESTRIAN AND BICYCLE CONNECTIVITY BETWEEN RESIDENTIAL AND MIXED USED/COMMERCIAL AND TO ADJACENT PROPERTY TO THE WEST.
6. BOUNDARY MARKER MONUMENTS SHALL BE SETBACK A MINIMUM OF 10 FEET FROM ANY PERIMETER MPUD PROPERTY LINE.

LAND USE SUMMARY

TRACT	LAND USE	ACREAGE
TRACT "R"	RESIDENTIAL	*39.64 ± ACRES
TRACT "P"	PRESERVE	0.51 ± ACRES
TRACT "C/MU"	COMMERCIAL / MIXED USE	*18.69 ± ACRES
TOTAL		58.84 ± ACRES

* INCLUDES ROW CONVEYANCE

LEGEND

R	RESIDENTIAL
C/MU	COMMERCIAL / MIXED USE
P	PRESERVE
	PUD INGRESS / EGRESS
#	DEVIATIONS
	WATER MANAGEMENT LAKE
	PRESERVE AREA
	ROW CONVEYANCE TO COLLIER COUNTY LABELED AS TRACTS A, B AND C. (SEE SECTION 6.3.C)
	BOUNDARY MARKER MONUMENTS

PRESERVE

A MINIMUM OF 0.51 ACRES (25% OF THE 2.02 ACRES OF NATIVE VEGETATION ON SITE) IS REQUIRED TO BE RETAINED OR REPLANTED. THE TRACTS IDENTIFIED AS "P" CONTAINS 0.51 ± ACRES, AND FULLY SATISFIES THE NATIVE VEGETATION REQUIREMENTS.

MAXIMUM DENSITY AND INTENSITY

460 MULTI-FAMILY / SINGLE FAMILY ATTACHED / TOWNHOUSE AND / OR SINGLE FAMILY DETACHED RESIDENTIAL DWELLING UNITS.
PLUS 250 HOTEL UNITS, 150 ALF UNITS, 105,000 SF OF INDOOR SELF STORAGE AND 80,000 SF COMMERCIAL USES. ALL SUBJECT TO SECTION 6.3.K

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Email: info@pen-eng.com Website: www.pen-eng.com
Florida Certificate of Authorization #28275

PROJECT: TREE FARM MPUD

TITLE: MPUD MASTER CONCEPT PLAN NOTES

OWNER/CLIENT/CONSULTANT: TBC TREE FARM 1, LLC & TBC TREE FARM 2, LLC

SEC:	TWP: RGE:
Designed by:	ALEJANDRO AVILA
Drawn by:	ALEJANDRO AVILA
Date:	JUNE 2018
Drawing Scale:	N.T.S.
Project Number:	P-BROK-001
File Number:	P-BROK-001-001-X17
Sheet Number:	C-X17 02 of 02

Appendix B

Initial Meeting Checklist (Methodology Meeting)

INITIAL MEETING CHECKLIST

Suggestion: Use this Appendix as a worksheet to ensure that no important elements are overlooked. Cross out the items that do not apply, or N/A (not applicable).

Date: April 5, 2019 Time: N/A

Location: N/A – Via Email

People Attending:
Name, Organization, and Telephone Numbers

1) Michael Sawyer, Collier County Growth Management Division
2) Norman Trebilcock, TCS
3) Ciprian Malaescu, TCS

Study Preparer:
Preparer's Name and Title: Norman Trebilcock, AICP, PE
Organization: Trebilcock Consulting Solutions, PA
Address & Telephone Number: 2800 Davis Boulevard, Suite 200, Naples, FL 34104; ph 239-566-9551

Reviewer(s):
Reviewer's Name & Title: Michael Sawyer, Project Manager
Collier County Transportation Planning Department
Organization & Telephone Number: 239-252-2926

Applicant:
Applicant's Name: Q. Grady Minor and Associates, PA
Address: 3800 Via Del Rey, Bonita Springs, Fl 34134
Telephone Number: 239-947-1144

Proposed Development:
Name: Tree Farm MPUD Amendment
Location: North-west quadrant of Immokalee Rd (CR 846) and Collier Blvd (CR 951) intersection, in Collier County (refer to **Figure 1**)
Land Use Type: Residential and Commercial
ITE Code #: LUC 151, LUC 220, LUC 710, LUC 820, LUC 945
Description: The Tree Farm project is an existing approved Mixed-Use Planned Unit Development (MPUD) – Collier County Ordinance No. 07-54, as may be amended (HEX 2015-42 & HEX 2018-12). The site is currently allowed to be developed with up to 281 residential dwelling units and a maximum of 120,000 sf of commercial/office uses (of which a maximum of 100,000 sf may be retail and the balance is limited to office use). The proposed amendment would allow for an additional development scenario to consist of 460 Multifamily dwelling units, 105,000sf Self-Storage and 80,000sf Retail facility.

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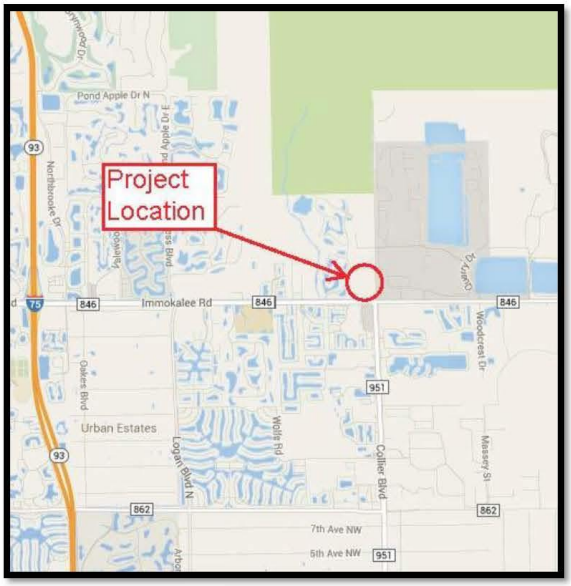
Based on the information contained within the Traffic Impact Analysis dated 7-22-2015 (submitted for the 2015 Tree Farm PUDA), the Tree Farm development trip generation will not exceed a maximum of 580 PM peak hour two-way net external trips (consistent with Hex 2015-42, MPUD Document Section VI.6.3.J).

Figure 1 – Project Location Map



Zoning
Existing: Approved MPUD
Comprehensive plan recommendation: N/A
Requested: approval for new development

Findings of the Preliminary Study:
Study type: Since projected net new external AM or PM project traffic is less than 50 two-way peak hour trips, this study qualifies for a Small Scale TIS – no significant roadway and/or operational impacts.
TIS will provide a trip generation comparison between the proposed development scenario and the allowed trip cap.

Study Type: (if not net increase, operational study)

Small Scale TIS	☒	Minor TIS	☐
Major TIS	☐		

Study Area:
Boundaries: Adjacent street –Immokalee Road
Additional intersections to be analyzed: N/A
Build Out Year: N/A
Planning Horizon Year: N/A
Analysis Time Period(s): PM Peak Hour
Future Off-Site Developments: N/A
Source of Trip Generation Rates: ITE Trip Generation Manual, 10th Edition

Reductions in Trip Generation Rates:
None: N/A
Pass-by trips: per ITE and CC TIS Guidelines
Internal trips: per ITE and CC TIS Guidelines
Transit use: N/A
Other: N/A

Horizon Year Roadway Network Improvements: N/A

Methodology & Assumptions:
Non-site traffic estimates: Collier County traffic counts and 2018 AUIR
Site-trip generation: OTISS – ITE 10th Edition
Trip distribution method: N/A
Traffic assignment method: N/A
Traffic growth rate: N/A
Turning movements: N/A

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Special Features: (from preliminary study or prior experience)
Accidents locations: N/A
Sight distance: N/A
Queuing: N/A
Access location & configuration: N/A
Traffic control: MUTCD
Signal system location & progression needs: N/A
On-site parking needs: N/A
Data Sources: CC 2018 AUIR; CC Traffic Counts
Base maps: N/A
Prior study reports: N/A
Access policy and jurisdiction: N/A
Review process: N/A
Requirements: N/A
Miscellaneous: N/A

Small Scale Study – No Fee	X
Minor Study - $750.00	
Major Study - $1,500.00	
Methodology Fee $500	X
Includes 0 intersections	
Additional Intersections - $500.00 each	

All fees will be agreed to during the Methodology meeting and must be paid to Transportation prior to our sign-off on the application.

SIGNATURES

Norman Trebilcock
Study Preparer—Norman Trebilcock

Reviewer(s)

Applicant

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Collier County
Traffic Impact Study Review Fee Schedule

Fees will be paid incrementally as the development proceeds: Methodology Review, Analysis Review, and Sufficiency Reviews. Fees for additional meetings or other optional services are also provided below.

Methodology Review - $500 Fee
Methodology Review includes review of a submitted methodology statement, including review of submitted trip generation estimate(s), distribution, assignment, and review of a "Small Scale Study" determination, written approval/comments on a proposed methodology statement, and written confirmation of a re-submitted, amended methodology statement, and one meeting in Collier County, if needed.

"Small Scale Study" Review - No Additional Fee (Includes one sufficiency review)
Upon approval of the methodology review, the applicant may submit the study. The review includes: a concurrency determination, site access inspection and confirmation of the study compliance with trip generation, distribution and maximum threshold compliance.

"Minor Study Review" - $750 Fee (Includes one sufficiency review)
Review of the submitted traffic analysis includes: optional field visit to site, confirmation of trip generation, distribution, and assignment, concurrency determination, confirmation of committed improvements, review of traffic volume data collected/assembled, review of off-site improvements within the right-of-way, review of site access and circulation, and preparation and review of "sufficiency" comments/questions.

"Major Study Review" - $1,500 Fee (Includes two intersection analysis and two sufficiency reviews)
Review of the submitted traffic analysis includes: field visit to site, confirmation of trip generation, special trip generation and/or trip length study, distribution and assignment, concurrency determination, confirmation of committed improvements, review of traffic volume data collected/assembled, review of traffic growth analysis, review of off-site roadway operations and capacity analysis, review of site access and circulation, neighborhood traffic intrusion issues, any necessary improvement proposals and associated cost estimates, and preparation and review of up to two rounds of "sufficiency" comments/questions and/or recommended conditions of approval.

"Additional intersection Review" - $500 Fee
The review of additional intersections shall include the same parameters as outlined in the "Major Study Review" and shall apply to each intersection above the first two intersections included in the "Major Study Review"

"Additional Sufficiency Reviews" - $500 Fee
Additional sufficiency reviews beyond those initially included in the appropriate study shall require the additional Fee prior to the completion of the review.

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Appendix C

Trip Generation Calculations ITE 10th Edition

ITE Trip Generation Manual 10th Edition – LUC Descriptions

Land Use: 151
Mini-Warehouse

Description

A mini-warehouse is a building in which a number of storage units or vaults are rented for the storage of goods. They are typically referred to as "self-storage" facilities. Each unit is physically separated from other units, and access is usually provided through an overhead door or other common access point.

Additional Data

Time-of-day distribution data for this land use are presented in Appendix A. For the 10 general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 10:30 and 11:30 a.m. and 1:15 and 2:15 p.m., respectively.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, Colorado, Massachusetts, Minnesota, New Jersey, Texas, and Utah.

Source Numbers

212, 403, 551, 568, 642, 708, 724, 850, 868, 876

Land Use: 220
Multifamily Housing (Low-Rise)

Description

Low-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have one or two levels (floors). Multifamily housing (mid-rise) (Land Use 221), multifamily housing (high-rise) (Land Use 222), and off-campus student apartment (Land Use 225) are related land uses.

Additional Data

In prior editions of *Trip Generation Manual*, the low-rise multifamily housing sites were further divided into rental and condominium categories. An investigation of vehicle trip data found no clear differences in trip making patterns between the rental and condominium sites within the ITE database. As more data are compiled for future editions, this land use classification can be reinvestigated.

For the three sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 2.72 residents per occupied dwelling unit.

For the two sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 96.2 percent of the total dwelling units were occupied.

This land use included data from a wide variety of units with different sizes, price ranges, locations, and ages. Consequently, there was a wide variation in trips generated within this category. Other factors, such as geographic location and type of adjacent and nearby development, may also have had an effect on the site trip generation.

Time-of-day distribution data for this land use are presented in Appendix A. For the 10 general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:15 and 8:15 a.m. and 4:45 and 5:45 p.m., respectively. For the one site with Saturday data, the overall highest vehicle volume was counted between 9:45 and 10:45 a.m. For the one site with Sunday data, the overall highest vehicle volume was counted between 11:45 a.m. and 12:45 p.m.

For the one dense multi-use urban site with 24-hour count data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:00 and 8:00 a.m. and 6:15 and 7:15 p.m., respectively.

For the three sites for which data were provided for both occupied dwelling units and residents, there was an average of 2.72 residents per occupied dwelling unit.

The average numbers of person trips per vehicle trip at the five general urban/suburban sites at which both person trip and vehicle trip data were collected were as follows:

- 1.13 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.21 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in British Columbia (CAN), California, District of Columbia, Florida, Georgia, Illinois, Indiana, Maine, Maryland, Minnesota, New Jersey, New York, Ontario, Oregon, Pennsylvania, South Dakota, Tennessee, Texas, Utah, Virginia, and Washington.

It is expected that the number of bedrooms and number of residents are likely correlated to the number of trips generated by a residential site. Many of the studies included in this land use did not indicate the total number of bedrooms. To assist in the future analysis of this land use, it is important that this information be collected and included in trip generation data submissions.

Source Numbers

168, 187, 188, 204, 211, 300, 305, 306, 319, 320, 321, 357, 390, 412, 418, 525, 530, 571, 579, 583, 864, 868, 869, 870, 896, 903, 918, 946, 947, 948, 951

Land Use: 720
Medical-Dental Office Building

Description

A medical-dental office building is a facility that provides diagnoses and outpatient care on a routine basis but is unable to provide prolonged in-house medical and surgical care. One or more private physicians or dentists generally operate this type of facility. Clinic (Land Use 630) is a related use.

Additional Data

Time-of-day distribution data for this land use for a weekday, Saturday, and Sunday are presented in Appendix A. For the 19 general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 9:30 and 10:30 a.m. and 2:15 and 3:15 p.m., respectively.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Connecticut, Kentucky, Maryland, Minnesota, New Jersey, New York, Ohio, Oregon, Pennsylvania, South Dakota, Texas, Virginia, Washington, and Wisconsin.

Source Numbers

104, 109, 120, 157, 184, 209, 211, 253, 287, 294, 295, 304, 357, 384, 404, 407, 423, 444, 509, 601, 715, 867, 879, 901, 902, 908, 959, 972

Land Use: 820
Shopping Center

Description

A shopping center is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. A shopping center's composition is related to its market area in terms of size, location, and type of store. A shopping center also provides on-site parking facilities sufficient to serve its own parking demands. Factory outlet center (Land Use 823) is a related use.

Additional Data

Shopping centers, including neighborhood centers, community centers, regional centers, and super regional centers, were surveyed for this land use. Some of these centers contained non-merchandising facilities, such as office buildings, movie theaters, restaurants, post offices, banks, health clubs, and recreational facilities (for example, ice skating rinks or indoor miniature golf courses).

Many shopping centers, in addition to the integrated unit of shops in one building or enclosed around a mall, include outparcels (peripheral buildings or pads located on the perimeter of the center adjacent to the streets and major access points). These buildings are typically drive-in banks, retail stores, restaurants, or small offices. Although the data herein do not indicate which of the centers studied included peripheral buildings, it can be assumed that some of the data show their effect.

The vehicle trips generated at a shopping center are based upon the total GLA of the center. In cases of smaller centers without an enclosed mall or peripheral buildings, the GLA could be the same as the gross floor area of the building.

Time-of-day distribution data for this land use are presented in Appendix A. For the 10 general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 11:45 a.m. and 12:45 p.m. and 12:15 and 1:15 p.m., respectively.

The average numbers of person trips per vehicle trip at the 27 general urban/suburban sites at which both person trip and vehicle trip data were collected were as follows:

- 1.31 during Weekday, AM Peak Hour of Generator
- 1.43 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 1.46 during Weekday, PM Peak Hour of Generator

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), British Columbia (CAN), California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Nevada, New Jersey, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, South Dakota, Tennessee, Texas, Vermont, Virginia, Washington, West Virginia, and Wisconsin.

Source Numbers

105, 110, 154, 156, 159, 186, 190, 198, 199, 202, 204, 211, 213, 239, 251, 259, 260, 269, 294, 295, 299, 300, 301, 304, 305, 307, 308, 309, 310, 311, 314, 315, 316, 317, 319, 358, 365, 376, 385, 390, 400, 404, 414, 420, 423, 428, 437, 440, 442, 444, 446, 507, 562, 580, 598, 629, 658, 702, 715, 728, 868, 870, 871, 880, 899, 908, 912, 915, 926, 936, 944, 946, 960, 961, 962, 973, 974, 978

Land Use: 945
Gasoline/Service Station with Convenience Market

Description

This land use includes gasoline/service stations with convenience markets where the primary business is the fueling of motor vehicles. These service stations may also have ancillary facilities for servicing and repairing motor vehicles and may have a car wash. Some commonly sold convenience items are newspapers, coffee or other beverages, and snack items that are usually consumed in the car. The sites included in this land use category have the following two specific characteristics:

- The gross floor area of the convenience market is between 2,000 and 3,000 gross square feet
- The number of vehicle fueling positions is at least 10

Convenience market (Land Use 851), convenience market with gasoline pumps (Land Use 853), gasoline/service station (Land Use 944), truck stop (Land Use 950), and super convenience market/ gas station (Land Use 960) are related uses.

Additional Data

The independent variable, vehicle fueling positions, is defined as the maximum number of vehicles that can be fueled simultaneously.

Gasoline/service stations in this land use include "pay-at-the-pump" and traditional fueling stations.

Time-of-day distribution data for this land use are presented in Appendix A. For the five general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:30 and 8:30 a.m. and 3:45 and 4:45 p.m., respectively.

A multi-variable regression analysis based on both the convenience market gross floor area (GFA) and the number of vehicle fueling positions (VFP) produced a series of fitted curve equations. The equations are in the form of:

Vehicle Trips = [(VFP Factor) x (Number of VFP)] + [(GFA Factor) x (GFA)] + (Constant)

The values for the VFP factor, GFA factor, and constant are presented in the following table for each time period for which a fitted curve equation could produce an R^2 value of at least 0.50.

Time Period	VFP Factor	GFA Factor	Constant	R^2
Weekday, AM Peak Hour of Generator	15.6	108	-295	0.62
Weekday, PM Peak Hour of Generator	Not Available			
Weekday, AM Peak Hour of Adjacent Street	15.7	97.3	-284	0.59
Weekday, PM Peak Hour of Adjacent Street	Not Available			

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CA), California, Connecticut, Florida, Indiana, Iowa, Kentucky, Minnesota, New Hampshire, New Jersey, Texas, and Wisconsin.

Source Numbers

245, 340, 350, 385, 440, 617, 813, 864, 865, 883, 888, 954, 960, 977

MPUD Existing Approved per Trip Cap – ITE Site Trip Generation

Project Information	
Project Name:	Tree Farm - 2015 Trip Cap - 10th Edition Copy
No:	
Date:	2/8/2019
City:	
State/Province:	
Zip/Postal Code:	
Country:	
Client Name:	
Analyst's Name:	
Edition:	ITE-TGM 10th Edition

Land Use	Size	Weekday		PM Peak	
		Entry	Exit	Entry	Exit
820 - Shopping Center (General Urban/Suburban)	94 1000 Sq. Ft. GLA	2882	2882	249	270
Reduction		288	288	0	0
Internal		0	0	12	21
Pass-by		389	389	59	63
Non-pass-by		2205	2205	178	186
945 - Gasoline/Service Station With Convenience Market (General Urban/Suburban)	12 Vehicle Fueling Positions	1232	1232	86	82
Reduction		123	123	0	0
Internal		0	0	4	11
Pass-by		444	443	41	36
Non-pass-by		665	666	41	35
220 - Multifamily Housing (Low-Rise) (General Urban/Suburban)	281 Dwelling Units	1042	1041	93	55
Reduction		0	0	0	0
Internal		0	0	32	16
Pass-by		0	0	0	0
Non-pass-by		1042	1041	61	39
720 - Medical-Dental Office Building (General Urban/Suburban)	11 1000 Sq. Ft. GFA	168	167	11	28
Reduction		0	0	0	0
Internal		0	0	0	0
Pass-by		0	0	0	0
Non-pass-by		168	167	11	28
Total		5324	5322	439	435
Total Reduction		411	411	0	0
Total Internal		0	0	48	48
Total Pass-by		833	832	100	99
Total Non-pass-by		4080	4079	291	288

PERIOD SETTING

Analysis Name : Weekday
Project Name : Tree Farm - 2015 Trip Cap - 10th Edition Copy **No :**
Date: 2/8/2019 **City:**
State/Province: **Zip/Postal Code:**
Country: **Client Name:**
Analyst's Name: **Edition:** ITE-TGM 10th Edition

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
820 - Shopping Center (General Urban/Suburban)	1000 Sq. Ft. GLA	94	Weekday	Best Fit (LOG) Ln(T) = 0.68Ln(X) +5.57	2882 50%	2882 50%	5764
945 - Gasoline/Service Station With Convenience Market (General Urban/Suburban)	Vehicle Fueling Positions	12	Weekday	Average 205.36	1232(0) 50%	1232(0) 50%	2464(0)
220 - Multifamily Housing (Low-Rise) (General Urban/Suburban)	Dwelling Units	281	Weekday	Best Fit (LIN) T = 7.56 (X)+-40.86	1042 50%	1041 50%	2083
720 - Medical-Dental Office Building (General Urban/Suburban)	1000 Sq. Ft. GFA	11	Weekday	Best Fit (LIN) T = 38.42 (X)+-87.62	168 50%	167 50%	335

(0) indicates small sample size, use carefully.

TRAFFIC REDUCTIONS

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
820 - Shopping Center	10 %	2594	10 %	2594
945 - Gasoline/Service Station With Convenience Market	10 %	1109	10 %	1109
220 - Multifamily Housing (Low-Rise)	0 %	1042	0 %	1041
720 - Medical-Dental Office Building	0 %	168	0 %	167

INTERNAL TRIPS

820 - Shopping Center

Exit 2594 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 1109

Entry 2594 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 1109

945 - Gasoline/Service Station With Convenience Market

820 - Shopping Center **220 - Multifamily Housing (Low-Rise)**

Exit	2594	Demand Exit:	0 % (0)	Balanced: 0	Demand Entry:	0 % (0)	**Entry** 1042
Entry	2594	Demand Entry:	0 % (0)	Balanced: 0	Demand Exit:	0 % (0)	**Exit** 1041

820 - Shopping Center **720 - Medical-Dental Office Building**

Exit	2594	Demand Exit:	0 % (0)	Balanced: 0	Demand Entry:	0 % (0)	**Entry** 168
Entry	2594	Demand Entry:	0 % (0)	Balanced: 0	Demand Exit:	0 % (0)	**Exit** 167

945 - Gasoline/Service Station With Convenience Market **220 - Multifamily Housing (Low-Rise)**

Exit	1109	Demand Exit:	0 % (0)	Balanced: 0	Demand Entry:	0 % (0)	**Entry** 1042
Entry	1109	Demand Entry:	0 % (0)	Balanced: 0	Demand Exit:	0 % (0)	**Exit** 1041

945 - Gasoline/Service Station With Convenience Market **720 - Medical-Dental Office Building**

Exit	1109	Demand Exit:	0 % (0)	Balanced: 0	Demand Entry:	0 % (0)	**Entry** 168
Entry	1109	Demand Entry:	0 % (0)	Balanced: 0	Demand Exit:	0 % (0)	**Exit** 167

220 - Multifamily Housing (Low-Rise) **720 - Medical-Dental Office Building**

Exit	1041	Demand Exit:	0 % (0)	Balanced: 0	Demand Entry:	0 % (0)	**Entry** 168
Entry	1042	Demand Entry:	0 % (0)	Balanced: 0	Demand Exit:	0 % (0)	**Exit** 167

820 - Shopping Center

	Total Trips	Internal Trips				External Trips
		945 - Gasoline/Service Station With Convenience Market	220 - Multifamily Housing (Low-Rise)	720 - Medical-Dental Office Building	Total	
Entry	2594 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2594 (100%)
Exit	2594 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2594 (100%)
Total	5188 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	5188 (100%)

945 - Gasoline/Service Station With Convenience Market

	Total Trips	Internal Trips				External Trips
		820 - Shopping Center	220 - Multifamily Housing (Low-Rise)	720 - Medical-Dental Office Building	Total	
Entry	1109 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1109 (100%)
Exit	1109 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1109 (100%)
Total	2218 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2218 (100%)

220 - Multifamily Housing (Low-Rise)

	Total Trips	Internal Trips				External Trips
		820 - Shopping Center	945 - Gasoline/Service Station With Convenience Market	720 - Medical-Dental Office Building	Total	
Entry	1042 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1042 (100%)
Exit	1041 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1041 (100%)

Total	2083 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2083 (100%)

720 - Medical-Dental Office Building

	Total Trips	Internal Trips				External Trips
		820 - Shopping Center	945 - Gasoline/Service Station With Convenience Market	220 - Multifamily Housing (Low-Rise)	Total	
Entry	168 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	168 (100%)
Exit	167 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	167 (100%)
Total	335 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	335 (100%)

EXTERNAL TRIPS

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
820 - Shopping Center	5188	15	778	4410
945 - Gasoline/Service Station With Convenience Market	2218	40	887	1331
220 - Multifamily Housing (Low-Rise)	2083	0	0	2083
720 - Medical-Dental Office Building	335	0	0	335

ITE DEVIATION DETAILS

Weekday

Landuse — No deviations from ITE.

Methods — No deviations from ITE.

External Trips — 820 - Shopping Center (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

945 - Gasoline/Service Station With Convenience Market (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

220 - Multifamily Housing (Low-Rise) (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

720 - Medical-Dental Office Building (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

SUMMARY

Total Entering	5324
Total Exiting	5322

Total Entering Reduction	411
Total Exiting Reduction	411
Total Entering Internal Capture Reduction	0
Total Exiting Internal Capture Reduction	0
Total Entering Pass-by Reduction	833
Total Exiting Pass-by Reduction	832
Total Entering Non-Pass-by Trips	4080
Total Exiting Non-Pass-by Trips	4079

PERIOD SETTING

Analysis Name :	PM Peak Hour		
Project Name :	Tree Farm - 2015 Trip Cap - 10th Edition Copy	**No :**	
Date:	2/8/2019	**City:**	
State/Province:		**Zip/Postal Code:**	
Country:		**Client Name:**	
Analyst's Name:		**Edition:**	ITE-TGM 10th Edition

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
820 - Shopping Center (General Urban/Suburban)	1000 Sq. Ft. GLA	94	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LOG) Ln(T) = 0.74Ln(X) +2.89	249 48%	270 52%	519
945 - Gasoline/Service Station With Convenience Market (General Urban/Suburban)	Vehicle Fueling Positions	12	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 13.99	86 51%	82 49%	168
220 - Multifamily Housing (Low-Rise) (General Urban/Suburban)	Dwelling Units	281	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LOG) Ln(T) = 0.89Ln(X) +-0.02	93 63%	55 37%	148
720 - Medical-Dental Office Building (General Urban/Suburban)	1000 Sq. Ft. GFA	11	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LIN) T = 3.39 (X)+2.02	11 28%	28 72%	39

TRAFFIC REDUCTIONS

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
820 - Shopping Center	0 %	249	0 %	270
945 - Gasoline/Service Station With Convenience Market	0 %	86	0 %	82
220 - Multifamily Housing (Low-Rise)	0 %	93	0 %	55
720 - Medical-Dental Office Building	0 %	11	0 %	28

INTERNAL TRIPS

820 - Shopping Center

945 - Gasoline/Service Station With Convenience Market

Exit	270	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	86
Entry	249	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	82

820 - Shopping Center — **220 - Multifamily Housing (Low-Rise)**

Exit	270	Demand Exit: 13 % (35)	Balanced: 21	Demand Entry: 23 % (21)	**Entry**	93
Entry	249	Demand Entry: 5 % (12)	Balanced: 12	Demand Exit: 21 % (12)	**Exit**	55

820 - Shopping Center — **720 - Medical-Dental Office Building**

Exit	270	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	11
Entry	249	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	28

945 - Gasoline/Service Station With Convenience Market — **220 - Multifamily Housing (Low-Rise)**

Exit	82	Demand Exit: 13 % (11)	Balanced: 11	Demand Entry: 23 % (21)	**Entry**	93
Entry	86	Demand Entry: 5 % (4)	Balanced: 4	Demand Exit: 21 % (12)	**Exit**	55

945 - Gasoline/Service Station With Convenience Market — **720 - Medical-Dental Office Building**

Exit	82	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	11
Entry	86	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	28

220 - Multifamily Housing (Low-Rise) — **720 - Medical-Dental Office Building**

Exit	55	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	11
Entry	93	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	28

820 - Shopping Center

	Total Trips	Internal Trips				External Trips
		945 - Gasoline/Service Station With Convenience Market	220 - Multifamily Housing (Low-Rise)	720 - Medical-Dental Office Building	Total	
Entry	249 (100%)	0 (0%)	12 (5%)	0 (0%)	12 (5%)	237 (95%)
Exit	270 (100%)	0 (0%)	21 (8%)	0 (0%)	21 (8%)	249 (92%)
Total	519 (100%)	0 (0%)	33 (6%)	0 (0%)	33 (6%)	486 (94%)

945 - Gasoline/Service Station With Convenience Market

	Total Trips	Internal Trips				External Trips
		820 - Shopping Center	220 - Multifamily Housing (Low-Rise)	720 - Medical-Dental Office Building	Total	
Entry	86 (100%)	0 (0%)	4 (5%)	0 (0%)	4 (5%)	82 (95%)
Exit	82 (100%)	0 (0%)	11 (13%)	0 (0%)	11 (13%)	71 (87%)
Total	168 (100%)	0 (0%)	15 (9%)	0 (0%)	15 (9%)	153 (91%)

220 - Multifamily Housing (Low-Rise)

	Total Trips	Internal Trips				External Trips
		820 - Shopping	945 -	720 - Medical-	Total	

		Center	Gasoline/Service Station With Convenience Market	Dental Office Building		
Entry	93 (100%)	21 (23%)	11 (12%)	0 (0%)	32 (34%)	61 (66%)
Exit	55 (100%)	12 (22%)	4 (7%)	0 (0%)	16 (29%)	39 (71%)
Total	148 (100%)	33 (22%)	15 (10%)	0 (0%)	48 (32%)	100 (68%)

720 - Medical-Dental Office Building

	Total Trips	Internal Trips				External Trips
		820 - Shopping Center	945 - Gasoline/Service Station With Convenience Market	220 - Multifamily Housing (Low-Rise)	Total	
Entry	11 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	11 (100%)
Exit	28 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	28 (100%)
Total	39 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	39 (100%)

EXTERNAL TRIPS

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
820 - Shopping Center	486	25	122	364
945 - Gasoline/Service Station With Convenience Market	153	50	77	76
220 - Multifamily Housing (Low-Rise)	100	0	0	100
720 - Medical-Dental Office Building	39	0	0	39

ITE DEVIATION DETAILS

Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

Landuse — No deviations from ITE.

Methods — No deviations from ITE.

External Trips — 820 - Shopping Center (General Urban/Suburban)
The chosen pass-by% (25) is not provided by ITE. ITE recommends 34.

945 - Gasoline/Service Station With Convenience Market (General Urban/Suburban)
The chosen pass-by% (50) is not provided by ITE. ITE recommends 66.

220 - Multifamily Housing (Low-Rise) (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

720 - Medical-Dental Office Building (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

SUMMARY

Total Entering	439
Total Exiting	435
Total Entering Reduction	0
Total Exiting Reduction	0
Total Entering Internal Capture Reduction	48
Total Exiting Internal Capture Reduction	48
Total Entering Pass-by Reduction	100
Total Exiting Pass-by Reduction	99
Total Entering Non-Pass-by Trips	291
Total Exiting Non-Pass-by Trips	288

MPUD Proposed Scenario – ITE Site Trip Generation

Project Information	
Project Name:	Tree Farm - Scenario J - 10th Edition
No:	
Date:	1/27/2019
City:	
State/Province:	
Zip/Postal Code:	
Country:	
Client Name:	
Analyst's Name:	
Edition:	Trip Generation Manual, 10th Ed

Land Use	Size	Weekday		PM Peak	
		Entry	Exit	Entry	Exit
820 - Shopping Center (General Urban/Suburban)	80 1000 Sq. Ft. GLA	2583	2583	221	240
Reduction		0	0	0	0
Internal		17	34	11	31
Pass-by		385	382	52	53
Non-pass-by		2181	2167	158	156
151 - Mini-Warehouse (General Urban/Suburban)	105 1000 Sq. Ft. GFA	80	79	8	10
Reduction		0	0	0	0
Internal		0	0	0	0
Pass-by		0	0	0	0
Non-pass-by		80	79	8	10
220 - Multifamily Housing (Low-Rise) (General Urban/Suburban)	460 Dwelling Units	1719	1718	145	85
Reduction		0	0	0	0
Internal		34	17	31	11
Pass-by		0	0	0	0
Non-pass-by		1685	1701	114	74
Total		4382	4380	374	335
Total Reduction		0	0	0	0
Total Internal		51	51	42	42
Total Pass-by		385	382	52	53
Total Non-pass-by		3946	3947	280	240

PERIOD SETTING

Analysis Name : Weekday
Project Name : Tree Farm - Scenario J - 10th Edition **No :**
Date: 1/27/2019 **City:**
State/Province: **Zip/Postal Code:**
Country: **Client Name:**
Analyst's Name: **Edition:** Trip Generation Manual, 10th Ed

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
820 - Shopping Center (General Urban/Suburban)	1000 Sq. Ft. GLA	80	Weekday	Best Fit (LOG) Ln(T) = 0.68Ln(X) +5.57	2583 50%	2583 50%	5166
151 - Mini-Warehouse (General Urban/Suburban)	1000 Sq. Ft. GFA	105(0)	Weekday	Average 1.51	80 50%	79 50%	159
220 - Multifamily Housing (Low-Rise) (General Urban/Suburban)	Dwelling Units	460	Weekday	Best Fit (LIN) T = 7.56 (X)+-40.86	1719 50%	1718 50%	3437

(0) indicates size out of range.

TRAFFIC REDUCTIONS

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
820 - Shopping Center	0 %	2583	0 %	2583
151 - Mini-Warehouse	0 %	80	0 %	79
220 - Multifamily Housing (Low-Rise)	0 %	1719	0 %	1718

INTERNAL TRIPS

820 - Shopping Center **151 - Mini-Warehouse**

Exit	2583	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	80
Entry	2583	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	79

820 - Shopping Center **220 - Multifamily Housing (Low-Rise)**

Exit	2583	Demand Exit: 14 % (362)	Balanced: 34	Demand Entry: 2 % (34)	**Entry**	1719
Entry	2583	Demand Entry: 17 % (439)	Balanced: 17	Demand Exit: 1 % (17)	**Exit**	1718

151 - Mini-Warehouse

Exit	79	Demand Exit:	0 % (0)	Balanced: 0	Demand Entry:	0 % (0)	**Entry** 1719
Entry	80	Demand Entry:	0 % (0)	Balanced: 0	Demand Exit:	0 % (0)	**Exit** 1718

220 - Multifamily Housing (Low-Rise)

820 - Shopping Center

	Total Trips	Internal Trips			External Trips
		151 - Mini-Warehouse	220 - Multifamily Housing (Low-Rise)	Total	
Entry	2583 (100%)	0 (0%)	17 (1%)	17 (1%)	2566 (99%)
Exit	2583 (100%)	0 (0%)	34 (1%)	34 (1%)	2549 (99%)
Total	5166 (100%)	0 (0%)	51 (1%)	51 (1%)	5115 (99%)

151 - Mini-Warehouse

	Total Trips	Internal Trips			External Trips
		820 - Shopping Center	220 - Multifamily Housing (Low-Rise)	Total	
Entry	80 (100%)	0 (0%)	0 (0%)	0 (0%)	80 (100%)
Exit	79 (100%)	0 (0%)	0 (0%)	0 (0%)	79 (100%)
Total	159 (100%)	0 (0%)	0 (0%)	0 (0%)	159 (100%)

220 - Multifamily Housing (Low-Rise)

	Total Trips	Internal Trips			External Trips
		820 - Shopping Center	151 - Mini-Warehouse	Total	
Entry	1719 (100%)	34 (2%)	0 (0%)	34 (2%)	1685 (98%)
Exit	1718 (100%)	17 (1%)	0 (0%)	17 (1%)	1701 (99%)
Total	3437 (100%)	51 (1%)	0 (0%)	51 (1%)	3386 (99%)

EXTERNAL TRIPS

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
820 - Shopping Center	5115	15	767	4348
151 - Mini-Warehouse	159	0	0	159
220 - Multifamily Housing (Low-Rise)	3386	0	0	3386

ITE DEVIATION DETAILS

Weekday

Landuse No deviations from ITE.

Methods No deviations from ITE.

Weekday

External Trips

820 - Shopping Center (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

151 - Mini-Warehouse (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

220 - Multifamily Housing (Low-Rise) (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

SUMMARY

Total Entering	4382
Total Exiting	4380
Total Entering Reduction	0
Total Exiting Reduction	0
Total Entering Internal Capture Reduction	51
Total Exiting Internal Capture Reduction	51
Total Entering Pass-by Reduction	385
Total Exiting Pass-by Reduction	382
Total Entering Non-Pass-by Trips	3946
Total Exiting Non-Pass-by Trips	3947

PERIOD SETTING

Analysis Name : PM Peak Hour
Project Name : Tree Farm - Scenario J - 10th Edition **No :**
Date: 1/27/2019 **City:**
State/Province: **Zip/Postal Code:**
Country: **Client Name:**
Analyst's Name: **Edition:** Trip Generation Manual, 10th Ed

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
820 - Shopping Center (General Urban/Suburban)	1000 Sq. Ft. GLA	80	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LOG) Ln(T) = 0.74Ln(X) +2.89	221 48%	240 52%	461
151 - Mini-Warehouse (General Urban/Suburban)	1000 Sq. Ft. GFA	105(0)	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 0.17	8 44%	10 56%	18
220 - Multifamily Housing (Low-Rise) (General Urban/Suburban)	Dwelling Units	460	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LOG) Ln(T) = 0.89Ln(X) +-0.02	145 63%	85 37%	230

(0) indicates size out of range.

TRAFFIC REDUCTIONS

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
820 - Shopping Center	0 %	221	0 %	240
151 - Mini-Warehouse	0 %	8	0 %	10
220 - Multifamily Housing (Low-Rise)	0 %	145	0 %	85

INTERNAL TRIPS

820 - Shopping Center **151 - Mini-Warehouse**

Exit 240 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 8

Entry 221 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 10

820 - Shopping Center

Exit	240	Demand Exit:	13 % (31)	Balanced: 31	Demand Entry: 23 % (33)	**Entry**	145
Entry	221	Demand Entry:	5 % (11)	Balanced: 11	Demand Exit: 21 % (18)	**Exit**	85

151 - Mini-Warehouse

Exit	10	Demand Exit:	0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	145
Entry	8	Demand Entry:	0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	85

220 - Multifamily Housing (Low-Rise)

820 - Shopping Center

	Total Trips	Internal Trips			External Trips
		151 - Mini-Warehouse	220 - Multifamily Housing (Low-Rise)	Total	
Entry	221 (100%)	0 (0%)	11 (5%)	11 (5%)	210 (95%)
Exit	240 (100%)	0 (0%)	31 (13%)	31 (13%)	209 (87%)
Total	461 (100%)	0 (0%)	42 (9%)	42 (9%)	419 (91%)

151 - Mini-Warehouse

	Total Trips	Internal Trips			External Trips
		820 - Shopping Center	220 - Multifamily Housing (Low-Rise)	Total	
Entry	8 (100%)	0 (0%)	0 (0%)	0 (0%)	8 (100%)
Exit	10 (100%)	0 (0%)	0 (0%)	0 (0%)	10 (100%)
Total	18 (100%)	0 (0%)	0 (0%)	0 (0%)	18 (100%)

220 - Multifamily Housing (Low-Rise)

	Total Trips	Internal Trips			External Trips
		820 - Shopping Center	151 - Mini-Warehouse	Total	
Entry	145 (100%)	31 (21%)	0 (0%)	31 (21%)	114 (79%)
Exit	85 (100%)	11 (13%)	0 (0%)	11 (13%)	74 (87%)
Total	230 (100%)	42 (18%)	0 (0%)	42 (18%)	188 (82%)

EXTERNAL TRIPS

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
820 - Shopping Center	419	25	105	314
151 - Mini-Warehouse	18	0	0	18
220 - Multifamily Housing (Low-Rise)	188	0	0	188

ITE DEVIATION DETAILS

Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

Landuse	No deviations from ITE.
Methods	No deviations from ITE.
External Trips	820 - Shopping Center (General Urban/Suburban) The chosen pass-by% (25) is not provided by ITE. ITE recommends 34. 151 - Mini-Warehouse (General Urban/Suburban) ITE does not recommend a particular pass-by% for this case. 220 - Multifamily Housing (Low-Rise) (General Urban/Suburban) ITE does not recommend a particular pass-by% for this case.

SUMMARY

Total Entering	374
Total Exiting	335
Total Entering Reduction	0
Total Exiting Reduction	0
Total Entering Internal Capture Reduction	42
Total Exiting Internal Capture Reduction	42
Total Entering Pass-by Reduction	52
Total Exiting Pass-by Reduction	53
Total Entering Non-Pass-by Trips	280
Total Exiting Non-Pass-by Trips	240