

TRAFFIC IMPACT STATEMENT

For

Cleary RPUD
(Immokalee Road, Collier County, Florida)

October 19, 2016
Revised January 16, 2017

County TIS Review Fees

TIS Methodology Review Fee = \$500.00

TIS (Minor Study) Review Fee = \$750.00

Prepared by:

JMB TRANSPORTATION ENGINEERING, INC.

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CERTIFICATE OF AUTHORIZATION NO. 27830

(PROJECT NO. 161011)

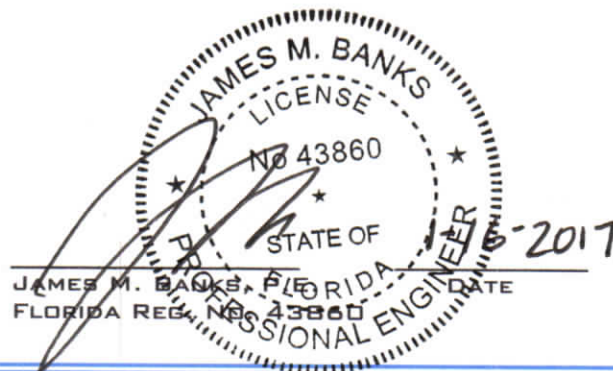


TABLE OF CONTENTS

Conclusions	2
Methodology	2
Scope of Project	2
Table A - Proposed Land Use	2
Figure 1	2.1
Site Plan	2.2
Project Generated Traffic	3
Table B - Net New Site-Generated Trips	3
Table 1 - Trip Generation Computations	3.1
Existing + Committed Road Network	4
Project Traffic Distribution	4
Area of Significant Impact	4
Figure 2 - Project Traffic Distribution	4.1
Table 2A - Area of Impact/Road Classification	4.2
2016 thru 2021 Project Build-out Traffic Conditions	5
Table 2B - 2016 & 2021 Link Volumes	5.1
Table 2C - 2021 Link Volumes/Capacity Analysis	5.2
Appendix	6

Conclusions

Based upon the findings of this report, it was determined that the proposed development of Cleary RPUD will not have a negative impact upon the road network. It was verified that all roads, within the project's area of influence, currently have a surplus of capacity and can accommodate the traffic associated with the proposed single-family or multi-family residential community or alternatively an Assisted Living Facility (ALF), or Senior Housing or a Congregate Care Retirement Community (CCRC). As determined, the road network will continue to operate at acceptable levels of service for 2021 project build-out conditions and will not create any off-site transportation deficiencies that need to be mitigated.

Methodology

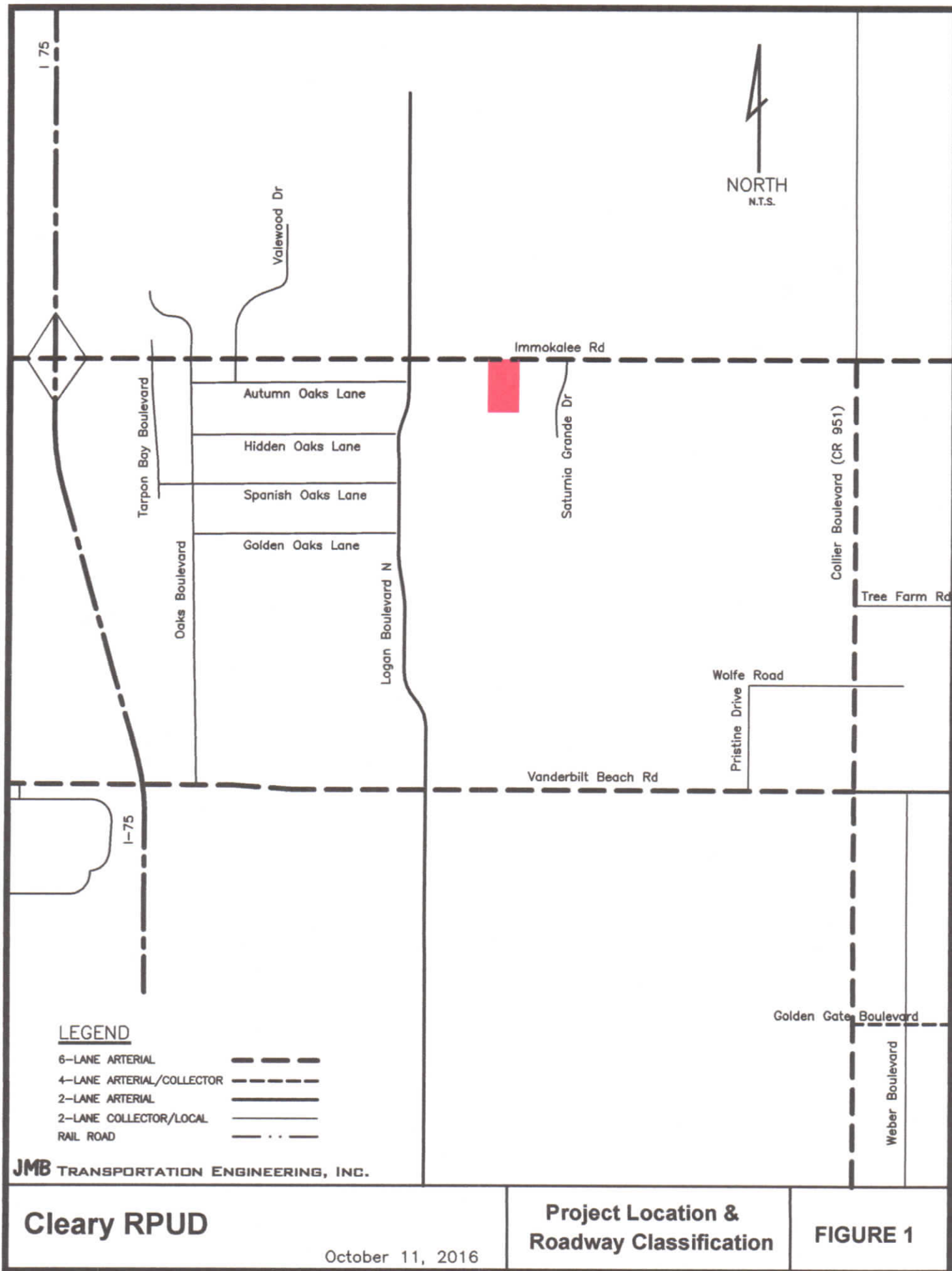
On October 11, 2016, a Traffic Impact Statement (TIS) Methodology Report was submitted to the office of Collier County Transportation Planning Department. *The \$500.00 methodology meeting fee will be paid at the time of submitting the zoning application.* The TIS methodology was reviewed by staff and a copy of the approved methodology is provided in the appendix (refer to pages M1 thru M10).

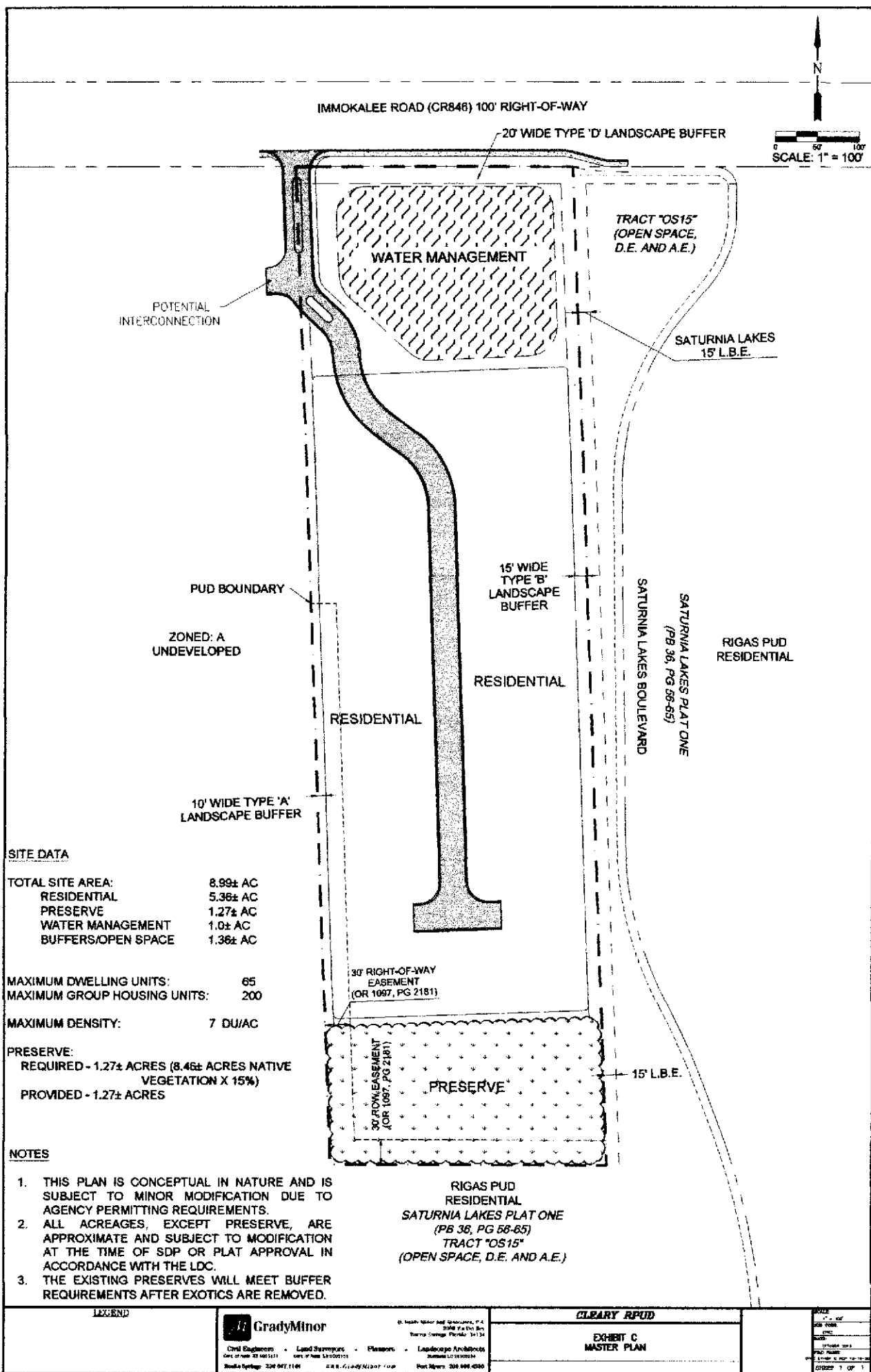
Scope of Project

Cleary RPUD is a proposed single-family or multi-family residential community that will consist of no more than 65 dwelling units. Alternatively, the site may be developed as an ALF, or senior housing or CCRC at no more than 200 units. The 8.9 +/- acre site is located on the south side of Immokalee Road and approximately 1/4 mile east of Logan Boulevard, within Collier County, Florida. Access to the site will be one right-in/out access on Immokalee Road. For additional site details, refer to the MCP prepared by Grady Minor.

Table A
Proposed Land Use

Proposed Land Uses	Number of Units
Single-Family or Multi Family	65 Dwelling Units
ALF or Senior Housing or CCRC	200 Units





Project Generated Traffic

Traffic that can be expected to be generated by Cleary RPUD was estimated based upon the guidelines established by the Institute of Transportation Engineers, Trip Generation Manual, 9th Edition. That is, historical traffic data collected at similar land uses was relied upon in estimating the project's traffic. It was concluded that the potential CCRC will generate more trips than any other of the potential land uses. Therefore, the report evaluates the project's impacts based upon the CCRC.

As determined, the CCRC will generate 500 daily trips and 47 vph & 85 vph new trips during the AM and PM peak hours, respectively. Table 1 depicts the computations performed in determining the project's new trips, as well as for the alternative land uses. Table B provides a summary of the trip generation computation results that are shown in Table 1.

Table B
New Site-Generated Trips
(Summation of Table 1)

	Daily Weekday Trips Generated (ADT)	AM Peak Hour Trips Generated (vph)	PM Peak Hour Trips Generated (vph)
LUC 210 <i>(65 Single-Family Units)</i>	707	55	71
LUC 252 <i>(200 Senior Housing Units)</i>	688	40	50
LUC 254 <i>(200 ALF Units)</i>	548	36	58
LUC 255 <i>(200 CCRC Units)</i>	500	47	85

TABLE 1
TRIP GENERATION COMPUTATIONS
Cleary RPUD

Land Use

<u>Code</u>	<u>Land Use Description</u>	<u>Build Schedule</u>
210	Single-Family Detached Housing	65 Units
252	Senior Adult Housing - Attached	200 Units
254	Assisted Living	200 Units
255	CC Retirement Community	200 Units

	<u>Trip Period</u>	<u>Trip Generation Equation</u>	<u>Total Trips</u>	<u>Trips Enter/Exit</u>
LUC 210	Daily Traffic (ADT) =	$\ln(T) = 0.92\ln(X) + 2.72 =$	707 ADT	
	AM Peak Hour (vph) =	$T = 0.70(X) + 9.74 =$ 25% Enter/ 75% Exit =	55 vph	14 / 41 vph
	PM Peak Hour (vph) =	$\ln(T) = 0.90\ln(X) + 0.51 =$ 63% Enter/ 37% Exit =	71 vph	45 / 26 vph

LUC 252	Daily Traffic (ADT) =	$T = 3.44(X) =$	688 ADT	
	AM Peak Hour (vph) =	$T = 0.20(X) =$ 34% Enter/ 66% Exit =	40 vph	14 / 26 vph
	PM Peak Hour (vph) =	$T = 0.25(X) =$ 54% Enter/ 46% Exit =	50 vph	27 / 23 vph

LUC 254	Daily Traffic (ADT) =	$T = 2.74(X) =$	548 ADT	
	AM Peak Hour (vph) =	$T = 0.18(X) =$ 68% Enter/ 32% Exit =	36 vph	24 / 12 vph
	PM Peak Hour (vph) =	$T = 0.29(X) =$ 50% Enter/ 50% Exit =	58 vph	29 / 29 vph

LUC 255	Daily Traffic (ADT) =	$T = 2.50(X) =$	500 ADT	
	AM Peak Hour (vph) =	$T = 0.13(X) + 21.26 =$ 65% Enter/ 35% Exit =	47 vph	31 / 17 vph
	PM Peak Hour (vph) =	$T = 0.13(X) + 59.19 =$ 40% Enter/ 60% Exit =	85 vph	34 / 51 vph

Existing + Committed Road Network

Table 2A and Figure 1 provide a detail of the surrounding E + C road network. Table 2A also shows the roads' respective minimum level of service performance standards and capacity. As shown, there are no significant 5-year committed roadway improvements within the project's area of impact.

Immokalee Road is classified as a six-lane divided arterial. The road functions as a primary east/west interconnect between the northern Golden Gate Estates Area and northwest Collier County, as well as continues north/south to the Immokalee Community and interconnects with S.R. 29. Within proximity of the site, the posted speed limit of Immokalee Road is 45 MPH.

Logan Boulevard (between Immokalee Road and Vanderbilt Beach Road) is classified as a two-lane arterial. The road functions as a primary north/south corridor that extends from its northern terminus (which is north of Immokalee Road) to Pine Ridge Road and then continues south as Santa Barbara Boulevard to its southern terminus at Rattlesnake Hammock Road.

Project Traffic Distribution

The project's traffic was distributed to the surrounding roadway network based upon logical means of ingress/egress; current and future traffic patterns in the area; location of surrounding businesses and commercial centers. Figure 2 and Table 2A provide a detail of the traffic distributions based on a percentage basis and by volume.

Area of Significant Impact

The area of significant impact was determined based upon Collier County's 2%, 2% and 3% criteria (i.e., if the project's traffic is 2% or more of a roadway's adopted level of service capacity, then the project has a significant impact upon that link). Table 2A describes the project traffic distributions and the level of impact on the surrounding roadways. Roads that were identified as being within the projects area impact are shown in Table 2A.

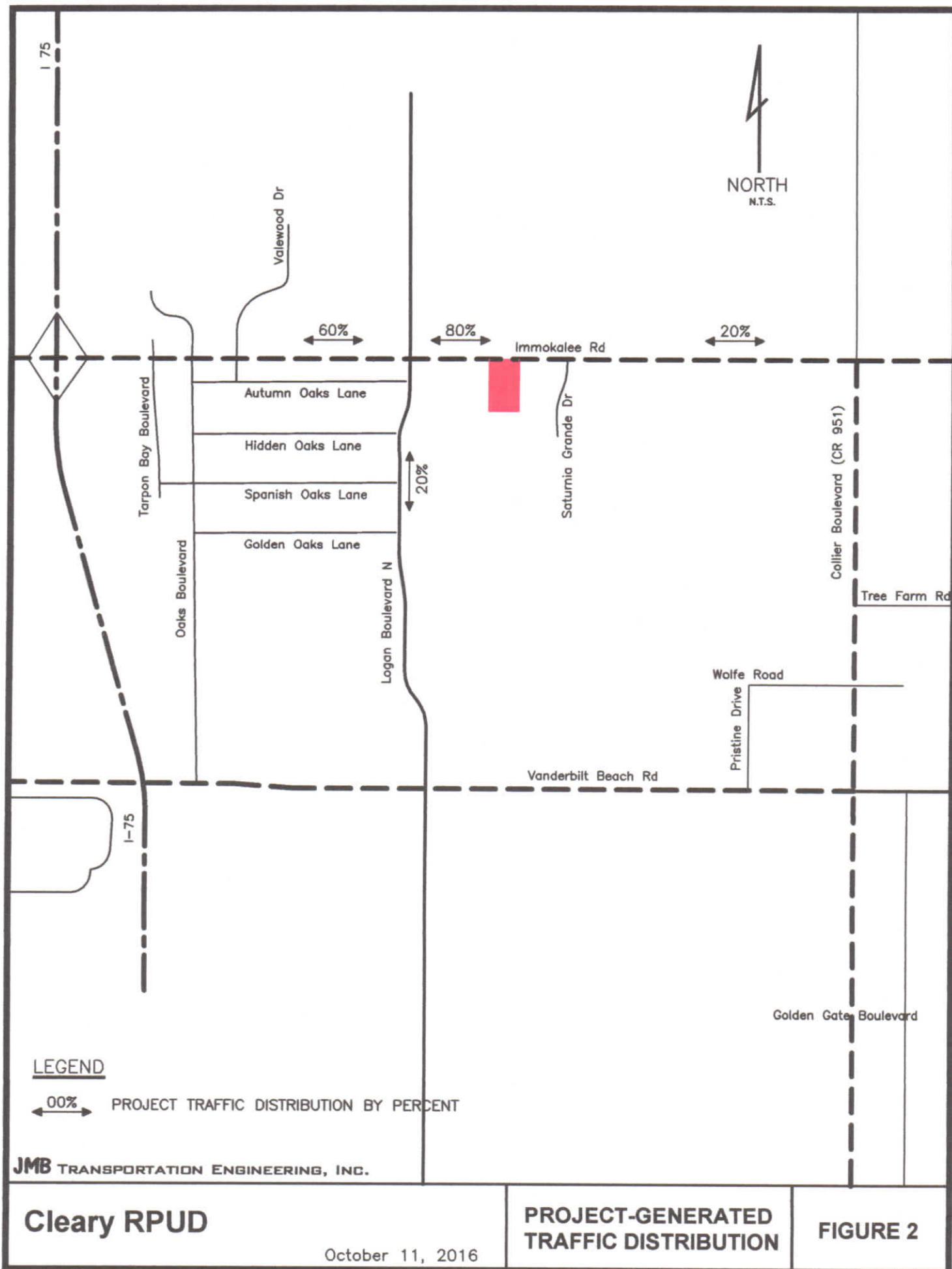


TABLE 2A
PROJECT'S AREA OF IMPACT

Project Traffic Peak Direction (vphpd) = 51 Exiting
 Project Traffic Non-Peak Direction (vph) = 34 Entering

		Road Class	LOS Service		PK Dir.	PK Direction	Project Traffic % Dist.	Project		Project PK Hr	Project		Project PK Hr	Project		Project PK Hr	Project		Project PK Hr	Non-Pk Dir	Project Non-Pk Dir	Impact Standard	Percent Impact	Significant Impact
			PK Dir.	Serv. Vol.	LOS	Volume (vphpd)																		
Immokalee Road	42.1	Airport Road to Livingston Rd			E	3100	30%	15	W	10														
	42.2	Livingston Rd to I-75			E	3500	40%	20	W	14														
	43.1	I-75 to Logan Blvd			E	3500	60%	31	W	20														
	43.2	Logan Blvd to Site			E	3200	80%	41	W	27														
	43.2	Site to C.R. 951			E	3200	20%	10	E	7														
Logan Blvd	48.0	Vanderbilt to Pine Rdige Rd	2U	D	D	1000	15%	8	S	5														
	49.0	Pine Rdige Rd to Green Blvd	4D	D	D	1900	10%	5	S	3														
	50.0	Immokalee Rd to Vanderbilt	2U	D	D	1000	20%	10	S	7														

2016 thru 2021 Project Build-out Traffic Conditions

In order to establish 2016 thru 2021 project build-out traffic conditions, two forecasting methods were used.

The first traffic forecasting method was the County's traffic count data was adjusted for peak season conditions, peak hour conditions, peak direction, and an annual growth rate was then applied. The peak season/peak hour/peak direction factor as shown on Table 2B was derived from the 2016 Collier County AUIR Reports. The annual growth rate was also obtained from the 2016 AUIR Report. Using the annual growth rate, the 2021 background traffic conditions were determined, which are depicted in Table 2B.

The second traffic forecasting method was to add the vested trips (trip bank) identified in the 2016 AUIR report to the adjusted peak season, peak hour and peak direction traffic counts. The 2021 vested trips "+" background traffic volumes are depicted in Table 2B.

The greater of the two values produced by the two forecasting procedures was then considered to reflect the 2021 background traffic. The net new project generated traffic was then added to the background traffic. Table 2C provides a summary of the 2016 thru 2021 traffic conditions and the roadways' level of service and remaining available capacity. As shown, all project impacted roadways will continue to operate at the County's adopted minimum level of service thresholds at project build-out.

TABLE 2B
2016 & 2021 ROADWAY LINK VOLUMES

		Per Growth Rate Method					Per Vested Trips Method			
		2021					2021			
		2016 AUIR Traffic (vphpd)	AUIR Pk Dir	Growth Rate per AUIR	Peak Hour PK Direction Background (vphpd)	Trip Bank (vphpd)	Peak Hour PK Direction Background Per Vested Trips (vphpd)			
Immokalee Road	43.1	I-75 to Logan Blvd	E	3.93%	2971	474	2924			
	43.2	Logan Blvd to Site	E	4.00%	2385	603	2563			
	43.2	Site to C.R. 951	E	4.00%	2385	603	2563			
Logan Blvd	50.0	Immokalee Rd to Vanderbilt	N	4.00%	718	30	620			

TABLE 2C
2021 ROADWAY LINK VOLUME/CAPACITY ANALYSIS

		2016				2021				2021				2021				2021			
		Peak Hour		Peak Hour		Peak Hour		Peak Hour		Peak Hour		Peak Hour		Peak Hour		Peak Hour		Peak Hour		Peak Hour	
		PK Direction		PK Direction		PK Direction		PK Direction		PK Direction		PK Direction		PK Direction		PK Direction		PK Direction		PK Direction	
		<u>(vphpd)</u>	<u>LOS</u>	<u>Background</u>	<u>Dir</u>	<u>Background</u>	<u>PK</u>	<u>LOS</u>	<u>Background</u>	<u>PK Dir</u>	<u>Prjct</u>	<u>Non-PK Dir</u>	<u>Prjct</u>	<u>PK Hr</u>	<u>Project</u>	<u>PK Dir</u>	<u>Prjct</u>	<u>PK Hr</u>	<u>Build-Out</u>	<u>PK Dir</u>	<u>Build-Out</u>
Imмокalee Road	43.1	D	2450	E	2971	D	D	31	W	20	E	2991	3500	0.85	D						
	43.2	D	1960	E	2563	D	D	41	W	27	E	2590	3200	0.81	D						
	43.2	D	1960	E	2563	D	D	10	E	7	W	2573	3200	0.80	D						
Logan Blvd	50.0	C	590	N	718	C	C	8	S	5	N	723	1000	0.72	C						

APPENDIX

Support Documents

TRAFFIC IMPACT STATEMENT METHODOLOGY REPORT

For

Cleary RPUD
(Immokalee Road, Collier County, Florida)

October 11, 2016

County TIS Review Fees

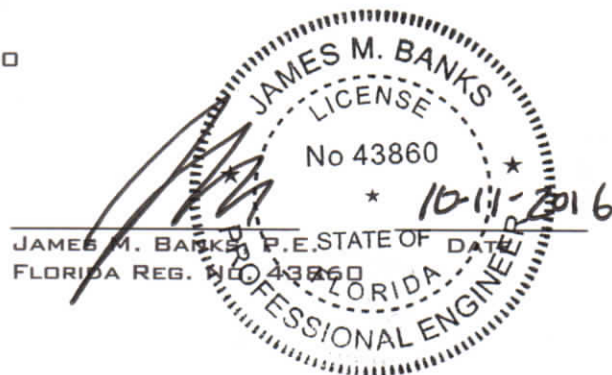
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APPENDIX A

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.

Date: 10-11-2016 Time:

Location: Collier County Government Offices (North Horseshoe Drive)

People Attending:

Name, Organization, and Telephone Numbers

- 1) James M. Banks, JMB Transportation Engineering, Inc., 239-227-2355
- 2) Michael Sawyer, Collier County Government
- 3)
- 4)

Study Preparer:

Preparer's Name and Title: James M. Banks, P.E., President

Organization: JMB Transportation Engineering, Inc.

Address & Telephone Number: 4711 7th Avenue SW Naples, Florida 34119 (239)-227-2355

Reviewer(s):

Reviewer's Name & Title: Michael Sawyer,

Collier County Transportation Planning Division

Applicant:

Applicant's Name:

Address:

Telephone Number:

Proposed Development:

Name: Clearly RPUD Residential or ALF Project

Location: South side of Immokalee Road and approximately 1/4 mile east of Logan Boulevard

Land Use Type: Single-Family, or Multi-Family, or ALF, or Senior Housing or CCRC

ITE Code #: LUC 210, 252, 254 or 255

Proposed number of development units: Total number of 65 Single-Family and/or Multi-Family units or 200 ALF units, 200 Senior Housing or 200 CCRC units

Other:

Description:

Zoning:

Existing: Vacant

Comprehensive plan recommendation:

Requested:

Findings of the Preliminary Study: See the attached

Study Type: Minor TIS

Study Area:

Boundaries: Based upon the County's 2%, 2% & 3% impact rule. See attached

Additional intersections to be analyzed: None

Horizon Year(s): 2021

Analysis Time Period(s): PM Peak

Future Off-Site Developments: None

Source of Trip Generation Rates: ITE Trip Generation Manual, 9th Edition (See Table 1)

Reductions in Trip Generation Rates:

Pass-by trips: None

Internal trips (PUD):

Transmit use:

Other:

Horizon Year Roadway Network Improvements: 2021 per Collier County's 5-year CIE.

Methodology & Assumptions:

Non-site traffic estimates: See Attached

Site-trip generation: See Table 1-most intense is 200 CCRC units

Trip distribution method: Based upon manual assignment (See Table 2A & Figure 2)

Traffic assignment method: Based upon manual assignment (See Table 2A & Figure 2)

Traffic growth rate: Per Collier County Historical & Current AUIR Reports, but not less than 2% or background or vested trips method, whichever is greater.

SITE ACCESS:

Site access will be via one right-in/out access to Immokalee Road

Special Features: (from preliminary study or prior experience)

Accidents locations: _____

Sight distance: _____

Queuing: _____

Access location & configuration: _____

Traffic control: _____

Signal system location & progression needs: _____

On-site parking needs: _____

Data Sources: _____

Base maps: _____

Prior study reports: _____

Access policy and jurisdiction: _____

Review process: _____

Requirements: _____

Miscellaneous: _____

Small Scale Study - No Fee _____

Minor Study - \$750.00 X

Major Study - \$1500.00 _____
Includes 2 intersections

Additional Intersections - \$500.00 each None

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

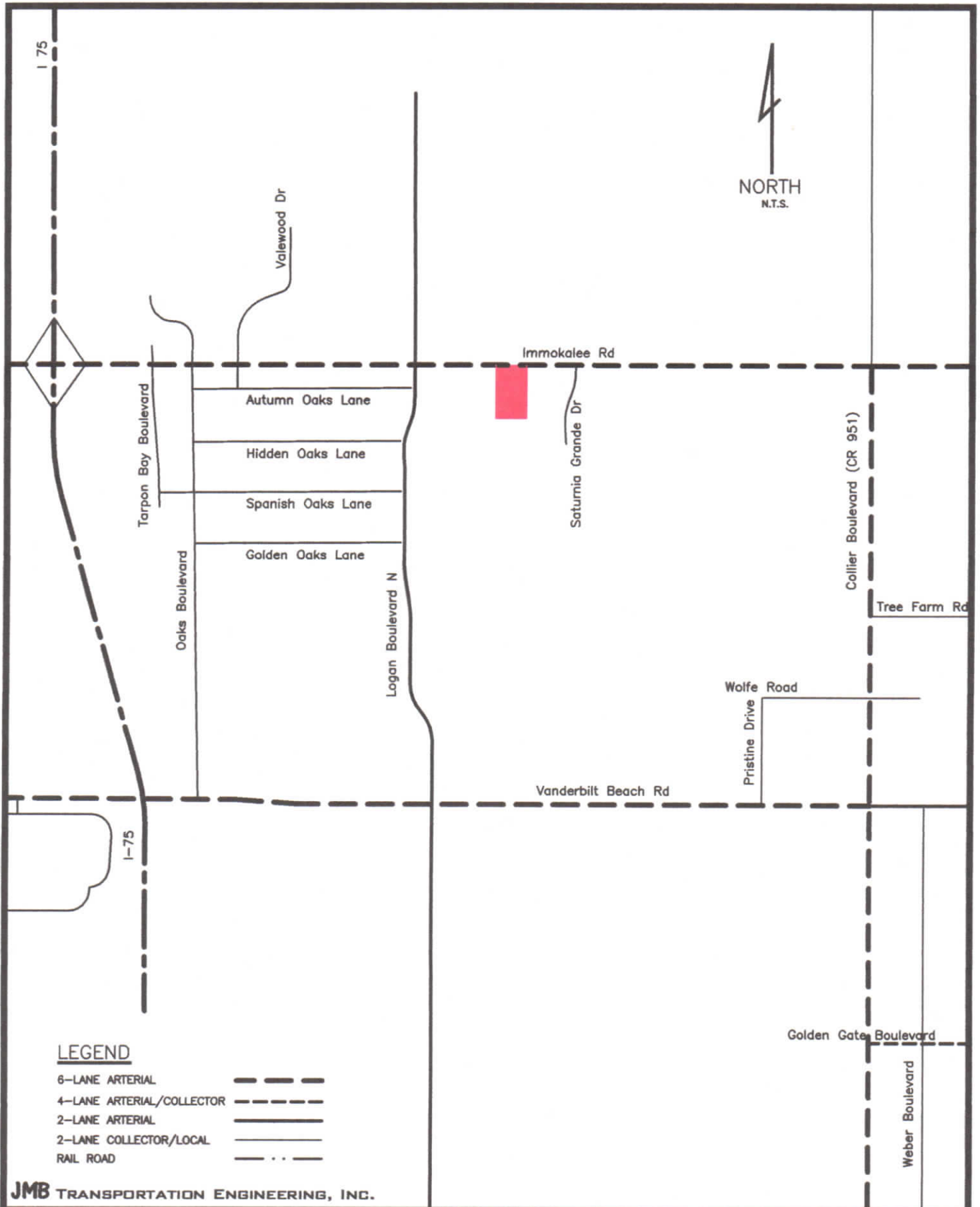
SIGNATURES



Study Preparer

Reviewers

Applicant



Cleary RPUD

October 11, 2016

**Project Location &
Roadway Classification**

FIGURE 1

M5

TABLE 1
TRIP GENERATION COMPUTATIONS
Cleary RPUD

Land Use				
<u>Code</u>	<u>Land Use Description</u>	<u>Build Schedule</u>		
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254	Assisted Living	200 Units		
255	CC Retirement Community	200 Units		

	<u>Trip Period</u>	<u>Trip Generation Equation</u>	<u>Total Trips</u>	<u>Trips Enter/Exit</u>
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	PM Peak Hour (vph) =	$\ln(T) = 0.90\ln(X) + 0.51 =$ 63% Enter/ 37% Exit =	71 vph	45 / 26 vph

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	PM Peak Hour (vph) =	$T = 0.13(X) + 59.19 =$ 40% Enter/ 60% Exit =	85 vph	34 / 51 vph

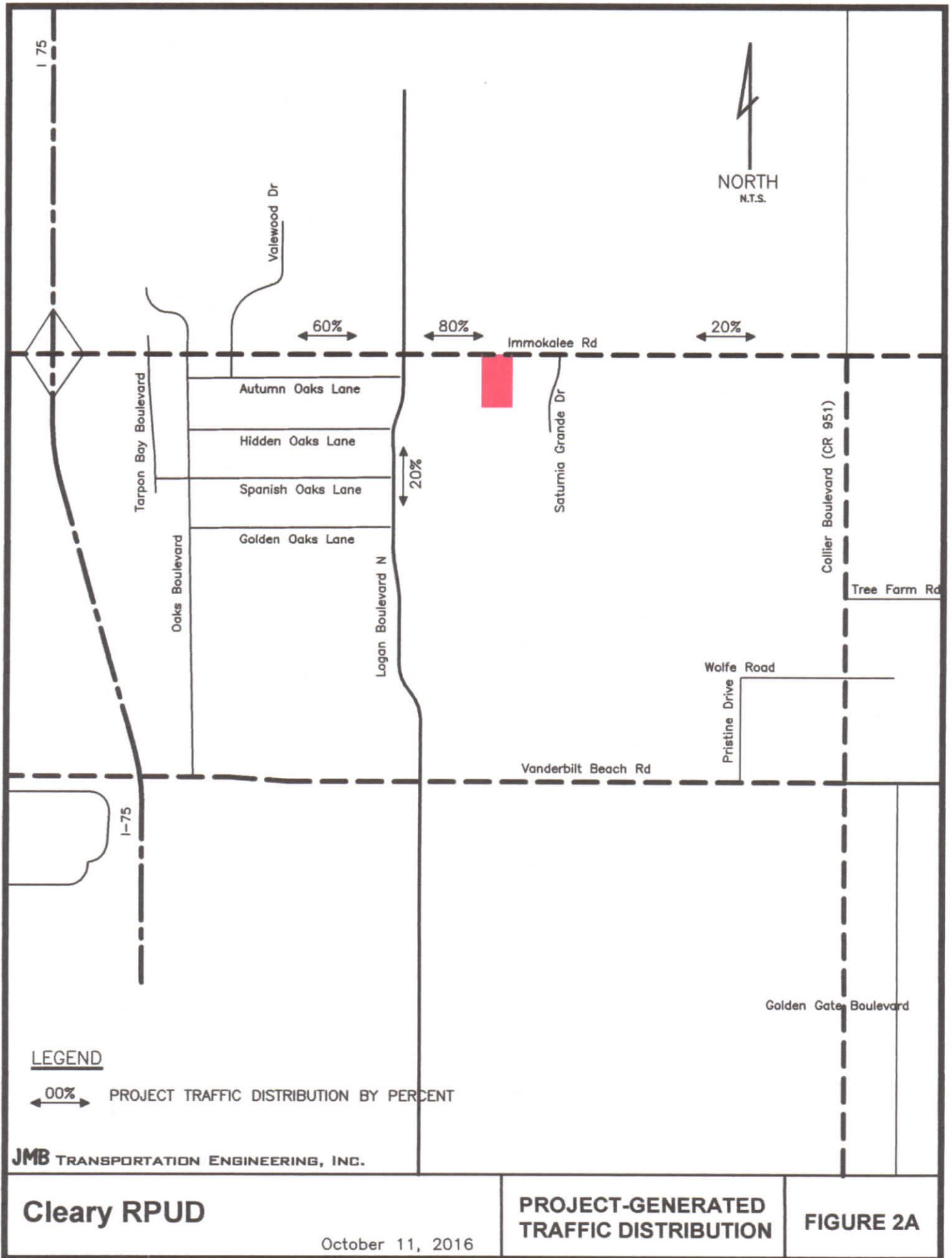


TABLE 2A
PROJECT'S AREA OF IMPACT

Project Traffic Peak Direction (vphpd) = 51 Exiting
 Project Traffic Non-Peak Direction (vph) = 34 Entering

Road Class	PK Dir.	LOS	LOS Service		Project Traffic % Dist.	Project		Project		Project		Non-Pk Dir	Project Dir	Percent Impact	Significant Impact
			PK Dir.	Volume (vphpd)		PK Dir	PK Hr	PK Dir	PK Hr	Non-PK Dir	PK Hr				
Immokalee Road	42.1	6D	E	3100	30%	15	W	15	W	10	10	E	E	0.49%	NO
	42.2	6D/8D	E	3500	40%	20	W	20	W	14	14	E	E	0.58%	NO
	43.1	6D/8D	E	3500	60%	31	W	31	W	20	20	E	E	0.87%	NO
	43.2	6D	E	3200	80%	41	W	41	W	27	27	E	E	1.28%	NO
	43.2	6D	E	3200	20%	10	E	10	E	7	7	W	W	0.32%	NO
Logan Blvd	48.0	2U	D	1000	20%	10	S	10	S	7	7	N	N	1.02%	NO
	49.0	4D	D	1900	10%	5	S	5	S	3	3	N	N	0.27%	NO
	50.0	2U	D	1000	15%	8	S	8	S	5	5	N	N	0.77%	NO

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TABLE 2B
2015 & 2021 ROADWAY LINK VOLUMES

		Per Growth Rate Method					Per Vested Trips Method		
		2021					2021		
		2015 AUIR Traffic (vphod)	AUIR Pk Dir	Growth Rate per AUIR	Peak Hour PK Direction Background (vphod)	Trip Bank (vphod)	Peak Hour PK Direction Background Per Vested Trips (vphod)		
Immokalee Road	43.1	I-75 to Logan Blvd	E	4.00%	3024	381	2771		
	43.2	Logan Blvd to Site	E	4.00%	2480	527	2487		
	43.2	Site to C.R. 951	E	4.00%	2480	527	2487		
Logan Blvd	48.0	Vanderbilt to Pine Ridge Rd	N	2.00%	597	19	549		

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TABLE 2C
2021 ROADWAY LINK VOLUME/CAPACITY ANALYSIS

	2015		2021		2021		2021		2021		2021		2021		2021		2021		2021	
	Peak Hour		Peak Hour		Peak Hour		Project		Project		Build-Out		Serv. Vol.		Build-Out		Build-Out		Build-Out	
	PK Direction	(vphpd)	PK Direction	LOS	Background	Bkgd	PK	Dir	PK Dir	PK Hr	Prjct	PK Hr	Non-PK Dir	Non-PK	Dir	PK Dir	PK Hr	PK Dir	PK Hr	PK Direction
Immokalee Road	43.1	I-75 to Logan Blvd	2390	D	3024	E	E	D	31	W	W	20	E	E	E	3045	3500	3500	0.87	D
	43.2	Logan Blvd to Site	1960	D	2487	E	E	D	41	W	W	27	E	E	E	2514	3200	3200	0.79	D
	43.2	Site to C.R. 951	1960	D	2487	E	E	D	10	E	E	7	W	W	W	2497	3200	3200	0.78	D
Logan Blvd	48.0	Vanderbilt to Pine Rdige Rd	530	C	597	N	N	C	10	S	S	7	N	N	N	604	1000	1000	0.60	C

M10