Radiance
Flagler County, Florida

Traffic Impact Analysis

Prepared for: Kolter Land Partners
By: LTG, Inc.
May 2022

LTG Engineering & Planning

PROFESSIONAL ENGINEERING CERTIFICATION

I hereby certify that I am a Professional Engineer properly registered in the State of Florida practicing with LTG, Inc., a corporation authorized to operate as an engineering business, EB 0009227, by the State of Florida Department of Professional Regulation, Board of Professional Engineers, and that I have prepared or approved the evaluations, findings, opinions, conclusions, or technical advice attached hereto for:

PROJECT: Radiance – Traffic Impact Analysis
LOCATION: Flagler County, Florida
CLIENT: Kolter Land Partners
JOB #: 5364.07

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

Prepared by:
LTG, Inc.
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386/257-2571

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INTRODUCTION

LTG, Inc. (LTG) has been retained by Kolter Land Partners to prepare a Traffic Impact Analysis (TIA) for the proposed Radiance residential development. The proposed development is located on the west side of Old Kings Road, approximately 2 miles north of Old Dixie Highway in Flagler County, Florida. Figure 1 shows the location of the project relative to the surrounding road network and preliminary site plans are attached as Appendix A.

Access to the development will be provided via two driveways along Old Kings Road. Build-out of the proposed development is anticipated by 2029.

Study Area

The following intersections and roadway segments are included in the analysis:

Intersections:

1. Old Kings Road at Steeplechase Trail (Flagler County)
2. Old Kings Road at Audubon Way (Flagler County)
3. Old Dixie Highway at Old Kings Road (Volusia County)
4. Old Dixie Highway at Roscommon Drive (Volusia County)

Roadway Segments:

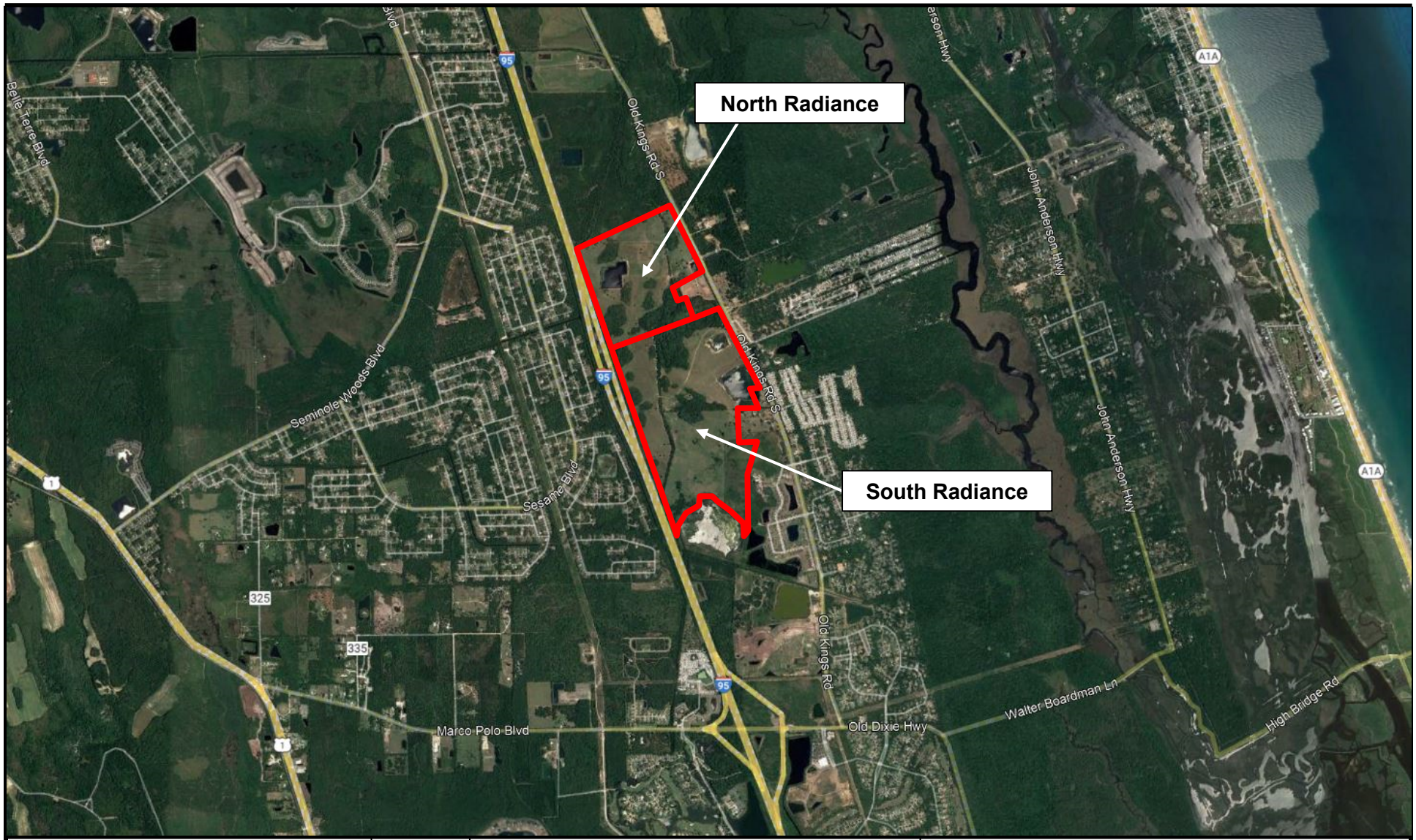
- Old Kings Road from SR 100 to Old Dixie Highway (Flagler/Volusia County)
- Old Dixie Highway from Walter Boardman Lane to I-95 (Volusia County)

Study Procedures

Standard engineering and planning procedures were used to determine the impacts of the proposed project. Reference data was obtained from the Florida Department of Transportation (FDOT), Flagler County, Volusia County Traffic Engineering Department, the Institute of Transportation Engineers (ITE), and the River to Sea Transportation Planning Organization (R2CTPO).

Planned Roadway Improvements

Information on programmed or planned roadway improvements in the area of interest were obtained from FDOT's Five-Year Work Program, Flagler County, Volusia County, the R2CTPO Long Range Transportation Plan, and previously approved projects. These previously approved projects are considered to be in place by this development's future build-out year of 2029. Currently, there are no programmed or planned roadway improvements in the area of interest.



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Location Map

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Figure 1

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EXISTING ROADWAY ANALYSIS

Turning movement counts (TMCs) were conducted during the AM and PM peak hours on April 19th, 2022, at the study area intersections (see Appendix B). FDOT's Seasonal Factor (SF) for the corresponding date was applied to the existing counts. Please note that if the FDOT SF is less than 1.00, then the SF was not applied to the data. The spreadsheet used to develop the existing, background, and build-out conditions traffic volumes is also located in Appendix B. The existing AM and PM peak hour traffic volumes used in the analysis are depicted in Figure 2.

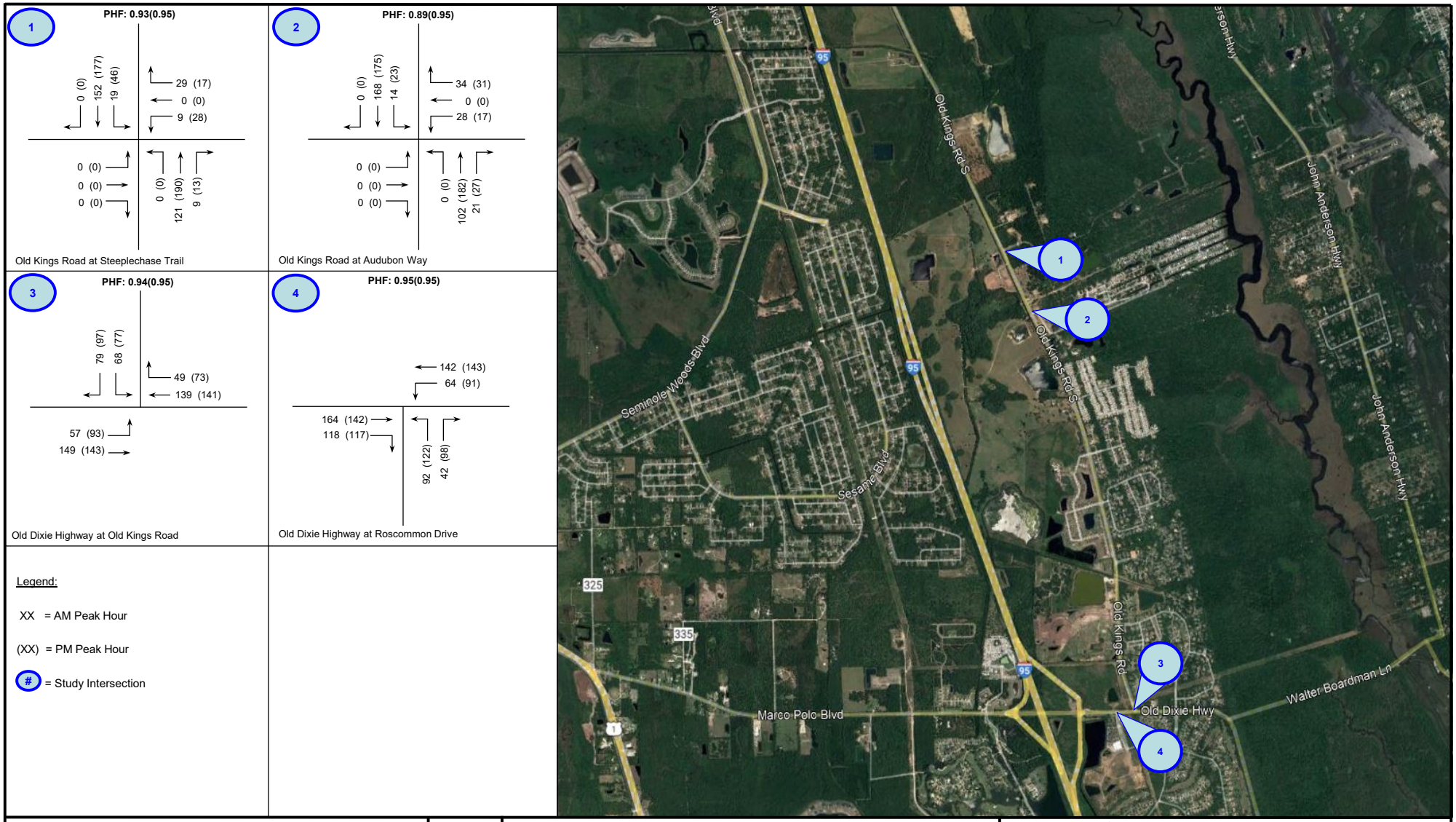
Unsignalized Intersection Analysis

The existing operating conditions at the unsignalized intersections were analyzed using the *Highway Capacity Software (HCS) 7, Version 7.9.5*. This software utilizes the procedures outlined in Chapter 20 of the Highway Capacity Manual (6th Edition) titled, "Two-Way Stop-Controlled Intersections". Table 1 shows the existing AM and PM peak hour LOS at the study area intersections. The HCS summary sheets are provided in Appendix C.

Table 1
Existing AM and PM Peak Hour LOS – Unsignalized Intersections
Radiance

Intersection	Adopted LOS	AM Peak Hour			PM Peak Hour		
		Critical Approach	Delay	LOS	Critical Approach	Delay	LOS
Old Kings Road at Steeplechase Trail	D	WB	9.5	A	WB	10.7	B
Old Kings Road at Audubon Way	D	WB	10.1	B	WB	10.2	B
Old Dixie Highway at Old Kings Road	E	SB	11.3	B	SB	11.9	B
Old Dixie Highway at Roscommon Drive	E	NB	11.3	B	NB	11.7	B

As indicated in the table, the unsignalized intersections are currently operating within the adopted LOS.



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2022 Existing AM & PM Turning Movement Counts

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Figure 2

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Roadway Segment Analysis

Roadway LOS describes the operating condition determined from the number of vehicles passing over a given section of roadway during a specified time period. It is a qualitative measure of several factors which include speed, travel time, traffic interruptions, freedom to maneuver, driver comfort, convenience, safety and vehicle operating costs. Six LOS categories have been established as standards by which to gauge roadway performance, designated by the letters A through F. The LOS categories are defined as follows:

Level of Service A:	*Free flow, individual users virtually unaffected by the presence of others*
Level of Service B:	*Stable flow with a high degree of freedom to select operating conditions*
Level of Service C:	*Flow remains stable, but with significant interactions with others*
Level of Service D:	*High-density stable flow in which the freedom to maneuver is severely restricted*
Level of Service E:	*This condition represents the capacity level of the road*
Level of Service F:	*Forced flow in which the traffic exceeds the amount that can be served*

The Average Annual Daily Traffic (AADT) for the study roadway segments was obtained from the City of Palm Coast 2019 AADT spreadsheet and the Volusia County 2021 AADT & Historical Counts spreadsheet. The existing LOS for the study area roadway segments during the PM peak hour are provided in Table 2. As indicated, all study area roadway segments currently operate within their adopted LOS during the PM peak hour.

Table 2
Existing PM Peak Hour LOS – Roadway Segments
Radiance

Roadway	Segment		No. of Lanes	Adopted LOS	Peak Hour Two-Way Capacity at Adopted LOS	Estimated 2021 AADT	Existing PM Peak Hour Two-Way Volume	Existing PM Volume Exceed Adopted LOS?
Old Kings Road	SR 100	Steeplechase Trail	2	D	2,180[1]	5,096[3]	459[5]	No
	Steeplechase Trail	Audubon Way	2	D	2,180[1]	5,096[3]	459[5]	No
	Audubon Way	Flagler/Volusia County Limit	2	D	2,180[1]	5,096[3]	459[5]	No
	Flagler/Volusia County Limit	Old Dixie Highway	2	E	2,930[2]	4,130[4]	350[4]	No
Old Dixie Highway	Walter Boardman Lane	Old Kings Road	2	E	2,930[2]	5,220[4]	450[4]	No
	Old Kings Road	I-95	2	E	2,930[2]	9,990[4]	830[4]	No

(1) Peak Hour Two-Way Capacity at Adopted LOS obtained from FDOT QLOS Table 4 for Uninterrupted Flow Highways 2 lane undivided at LOS D.
(2) Peak Hour Two-Way Capacity at Adopted LOS obtained from FDOT QLOS Table 4 for Uninterrupted Flow Highways 2 land undivided at LOS E.
(3) Estimated 2021 AADT was calculated by applying a minimum 2.00% growth rate to the 2019 AADT obtained from the City of Palm Coast AADT spreadsheet.
(4) Estimated 2021 AADT and Existing PM Peak Hour Two-Way Volume were obtained from the Volusia County 2021 AADT & Historical Counts spreadsheet.
(5) Existing PM Peak Hour Two-Way Volume was determined by multiplying Estimated 2021 AADT by a K factor of 0.09

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FUTURE TRAFFIC CONDITIONS

Traffic in the area is expected to grow due to local government approvals. The following section documents the methods used to project future 2029 traffic conditions by using either historical growth rates and/or vested trip information and anticipated project traffic.

2029 Background Traffic

FDOT *Traffic Trends* software will be used to calculate Flagler County historical growth rates using the past five years of data obtained from the *City of Palm Coast Average Annual Daily Traffic 2019 AADT* spreadsheet. When existing growth rates fall below the 2% threshold, a minimum growth rate of 2% will be applied to the existing traffic volumes.

The growth rates for each study area roadway segment residing in Volusia County will be determined using the following method:

- Historic growth trends calculated based upon the last five years of historic count data to determine a roadway segment's applicable trend growth rate using the best fitted regression analysis.
- If the R^2 value is less than 0.70, then ten (10) years of historical traffic data will be used to determine the trends growth rate using the best fitted regressions analysis.
- If the R^2 is still less than 0.70, the R^2 for the adjoining northbound and southbound segments will be analyzed to determine the average growth rate of adjoining segments can be utilized.
- Then the growth rate shall be determined by the trend fitted curve. If the overall trend fitted curve is positive, 2% shall be used. If the overall trend fitted curve is negative, then a 1% growth rate will be applied.
- In no case shall the growth rate be negative.
- Vested trips will be applied in addition to growth rates where applicable.
- If the R^2 value is greater than 70%, and the growth rate is greater than 3%, the background growth will be determined using either vested trips or the growth rate, whichever is more conservative.
- If the R^2 value is greater than 70%, and the growth rate is greater than 3%, and there is a high number of vested trips to be applied by multiple vested projects with various land uses, a request may be made to reduce vested traffic by 30% if the vested traffic is 30% of the total background growth.

The historical and applied growth rates used in the analysis for Flagler County roadway segments are provided in Table 3. The growth comparison and applied growth rates used in the analysis for Volusia County roadway segments are provided in Table 4. The FDOT *Traffic Trends* analysis worksheets are attached as Appendix D. Vested trip information for all study area roadway segments residing in Flagler County was obtained from the City of Palm Coast vested trips spreadsheet, dated February 1, 2022. Vested trip information for all study area roadway segments residing in Volusia County was obtained from the Volusia County vested trips spreadsheet, dated April 21, 2022. Please note that the Eagle Lakes PUD vested trips were assigned based on the trip generation and distribution for 634 single family detached dwelling units with a network connection at Old Kings Road at Audubon Way. Therefore, the number of vested trips supplied by the Volusia County vested trips spreadsheet for the Eagle Lakes PUD was omitted. The vested trip information for the study area intersections was obtained from the Wexford Reserve Intersection Analysis Technical Memorandum and the Tribute at Palm Coast Traffic Statement. Vested trips for Halifax Plantation, Plantation Bay, and Plantation Oaks were assigned using a directional distribution that was derived from the existing PM peak hour TMCs. Please note that Halifax Plantation, Plantation Bay, and Plantation Oaks vested trips were only applied to the study area intersections in the PM peak hour. The vested traffic information is attached as Appendix E.

Table 3
2029 Flagler County Historical Growth Rates
Radiance

Roadway	Segment		Average Annual Growth Rate	Applied Growth Rate
Old Kings Road	SR 100	Steeplechase Trail	-16.98%	2.00%
	Steeplechase Trail	Audubon Way	-16.98%	2.00%
	Audubon Way	Flagler/Volusia County Limit	-16.98%	2.00%

Table 4
2029 Volusia County Historical Growth Rates and Vested Traffic
Radiance

Roadway	Limits		5-Year			10-Year			Applied Growth Rate	Applied Growth If Using Adjacent Segment	High Growth? Y/N	Vested Trips	Existing Peak-Hour Volume	Existing AADT Year	Build-Out Year	Growth (# of Trips)	Use Greater of Vested vs Growth	Total Growth Applied (# of Trips)	Total Background Traffic
	From	To	Best Fit Regression	R^2 Value	Historical Growth Rate	Best Fit Regression	R^2 Value	Historical Growth Rate											
Old Kings Road	Flagler/Volusia County Limit	Old Dixie Highway	Linear	57.1%	0.91%	Linear	85.3%	2.98%	2.98%	-	N	501	350	2021	2029	83	N/A	584	934
Old Dixie Highway	Walter Boardman Lane	Old Kings Road	Linear	93.5%	5.39%	-	-	-	5.39%	-	Y	299	450	2021	2029	194	Vested	299	749
	Old Kings Road	I-95	Decaying Expo.	46.5%	0.50%	Linear	82.1%	3.16%	3.16%	-	Y	623	830	2021	2029	210	Vested	623	1,453

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2029 BACKGROUND ROADWAY ANALYSIS

The study area intersections and roadway segments were analyzed based on the future roadway conditions to determine potential impacts and to investigate mitigation requirements. The results of the analysis are presented below. The 2029 background AM and PM peak hour traffic volumes used in the analysis are depicted in Figures 3a-3b.

2029 Background – Unsignalized Intersection Analysis

The unsignalized intersections were analyzed to determine the operating conditions under 2029 background conditions and the results are presented in Table 5. Please note that Old Kings Road at Audubon Way was alternatively analyzed as a single lane roundabout using *HCS 7, Version 7.9.5* which utilizes the procedures outlined in Chapter 22 of the Highway Capacity Manual (6th Edition) titled, "Roundabouts". The HCS summary sheets are provided in Appendix F.

Table 5
2029 Background AM and PM Peak Hour LOS – Unsignalized Intersections
Radiance

Intersection	Adopted LOS	AM Peak Hour			PM Peak Hour		
		Critical Approach	Delay	LOS	Critical Approach	Delay	LOS
Old Kings Road at Steeplechase Trail	D	WB	10.8	B	WB	13.6	B
Old Kings Road at Audubon Way	D	EB	17.9	C	EB	26.7	D
Old Kings Road at Audubon Way*	D	EB	7.1	A	SB	8.8	A
Old Dixie Highway at Old Kings Road	E	SB	17.0	C	SB	74.5	F
Old Dixie Highway at Roscommon Drive	E	NB	13.0	B	NB	21.3	C

**Alternatively analyzed as a single lane roundabout*

As indicated in the table above, under background conditions, the unsignalized study area intersections are anticipated to operate within the adopted LOS with the exception of Old Dixie Highway at Old Kings Road during the PM peak hour. The following improvement is recommended to achieve an acceptable LOS:

Old Dixie Highway at Old Kings Road

- Add a dedicated southbound right turn lane

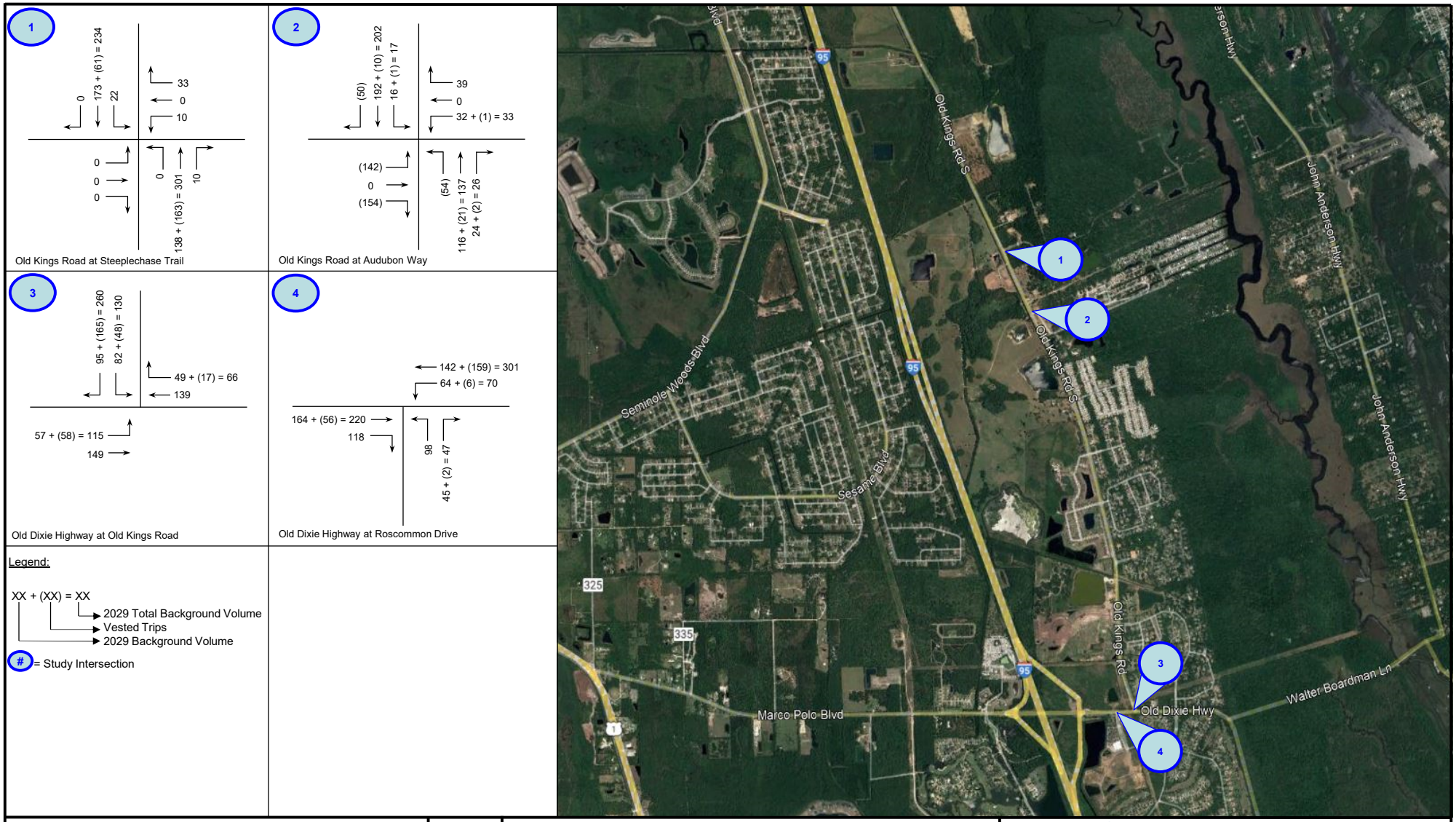
The analysis of the intersection with the proposed improvement is provided in Table 6. The HCS summary sheets are included in Appendix G.

Table 6
2029 Background AM and PM Peak Hour LOS – Unsignalized Intersection Improved
Radiance

Intersection	Adopted LOS	AM Peak Hour			PM Peak Hour		
		Critical Approach	Delay	LOS	Critical Approach	Delay	LOS
Old Dixie Highway at Old Kings Road	E	SB	12.2	B	SB	23.8	C

2029 Background – Roadway Segment Analysis

The study area roadway segments were analyzed under 2029 background conditions to determine the anticipated two-way peak-hour LOS. The results are provided in Table 7 on page 13. As indicated, all study area roadway segments are anticipated to operate within their adopted LOS during the PM peak hour.



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2029 Background AM Peak Hour Volumes

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Figure 3a

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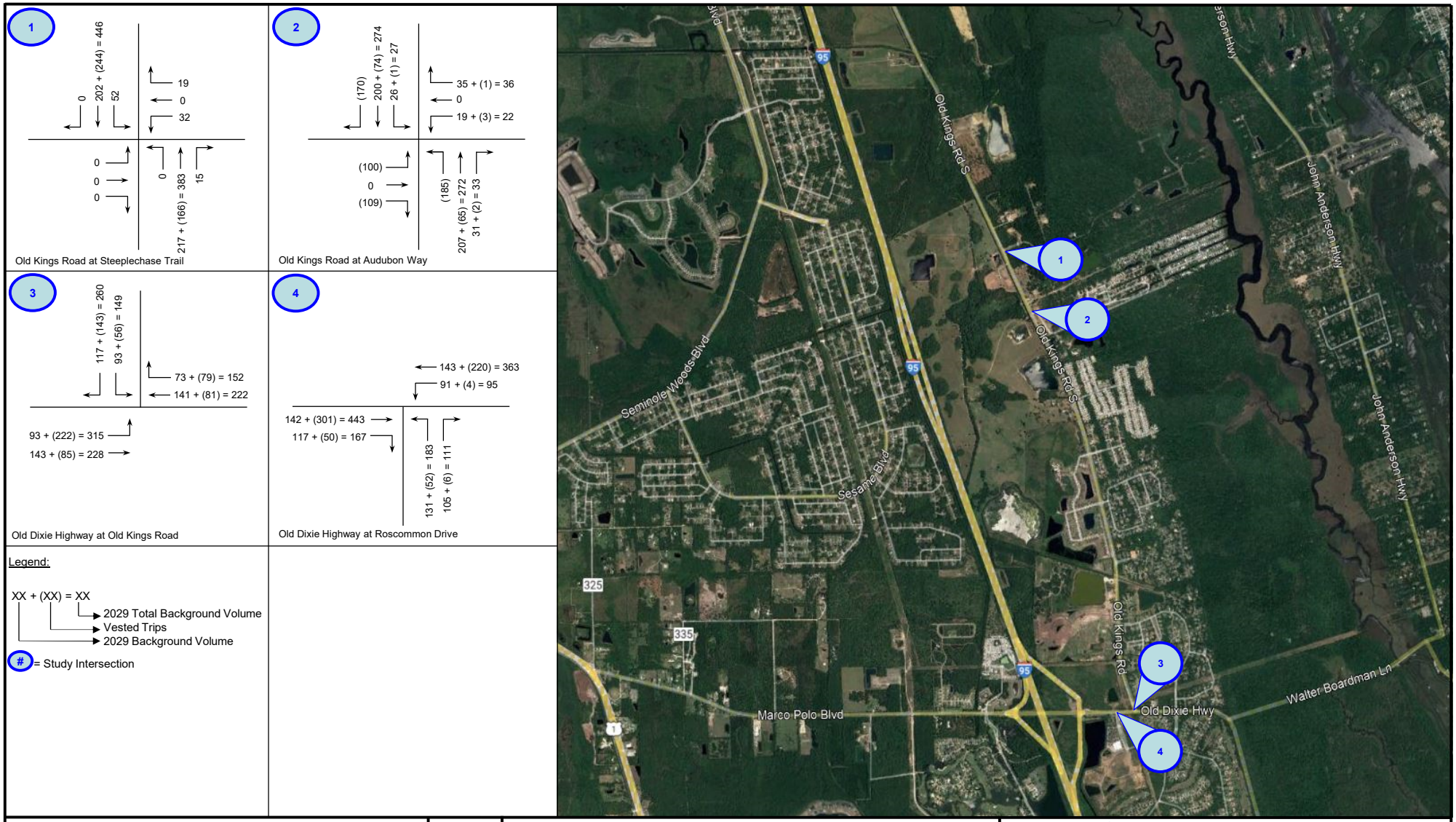

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2029 Background PM Peak Hour Volumes

Project Number: 5364.07

Figure 3b

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Table 7
2029 Background PM Peak Hour LOS – Roadway Segments
Radiance

Roadway	Segment		No. of Lanes	Adopted LOS	Peak Hour Two-Way Capacity at Adopted LOS	Existing PM Peak Hour Two-Way Volume	Applied Growth Rate	2029 Growth Factor	2029 Growth Traffic	Palm Coast Vested Trips	Volusia County Vested Trips	Eagle Lakes PUD Vested Trips	2029 Background Traffic	Background PM Volume Exceed Adopted LOS?
Old Kings Road	SR 100	Steeplechase Trail	2	D	2,180	459	2.00%	1.16	73	88	-	271	891	No
	Steeplechase Trail	Audubon Way	2	D	2,180	459	2.00%	1.16	73	88	-	271	891	No
	Audubon Way	Flagler/Volusia County Limit	2	D	2,180	459	2.00%	1.16	73	88	-	293	913	No
	Flagler/Volusia County Limit	Old Dixie Highway	2	E	2,930	350	2.98%	1.24	83	-	218	283	934	No
Old Dixie Highway	Walter Boardman Lane	Old Kings Road	2	E	2,930	450	Vested Only	-	-	-	235	64	749	No
	Old Kings Road	I-95	2	E	2,930	830	Vested Only	-	-	-	407	216	1,453	No

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2029 BUILD-OUT – FUTURE ROADWAY ANALYSIS

The study area intersections and roadway segments were analyzed based on the roadway conditions at the time of project build-out to determine potential impacts of project-generated trips and identify mitigation requirements. The improvements recommended under background conditions have been included in the 2029 build-out analysis for the applicable intersections and roadway segments.

Trip Generation

The development will consist of 42 Single Family dwelling units. The daily, AM peak hour, and PM peak hour trip generation for the build-out condition was determined using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th* Edition. The trip generation for the development is summarized in Table 8.

Table 8
Trip Generation
Radiance

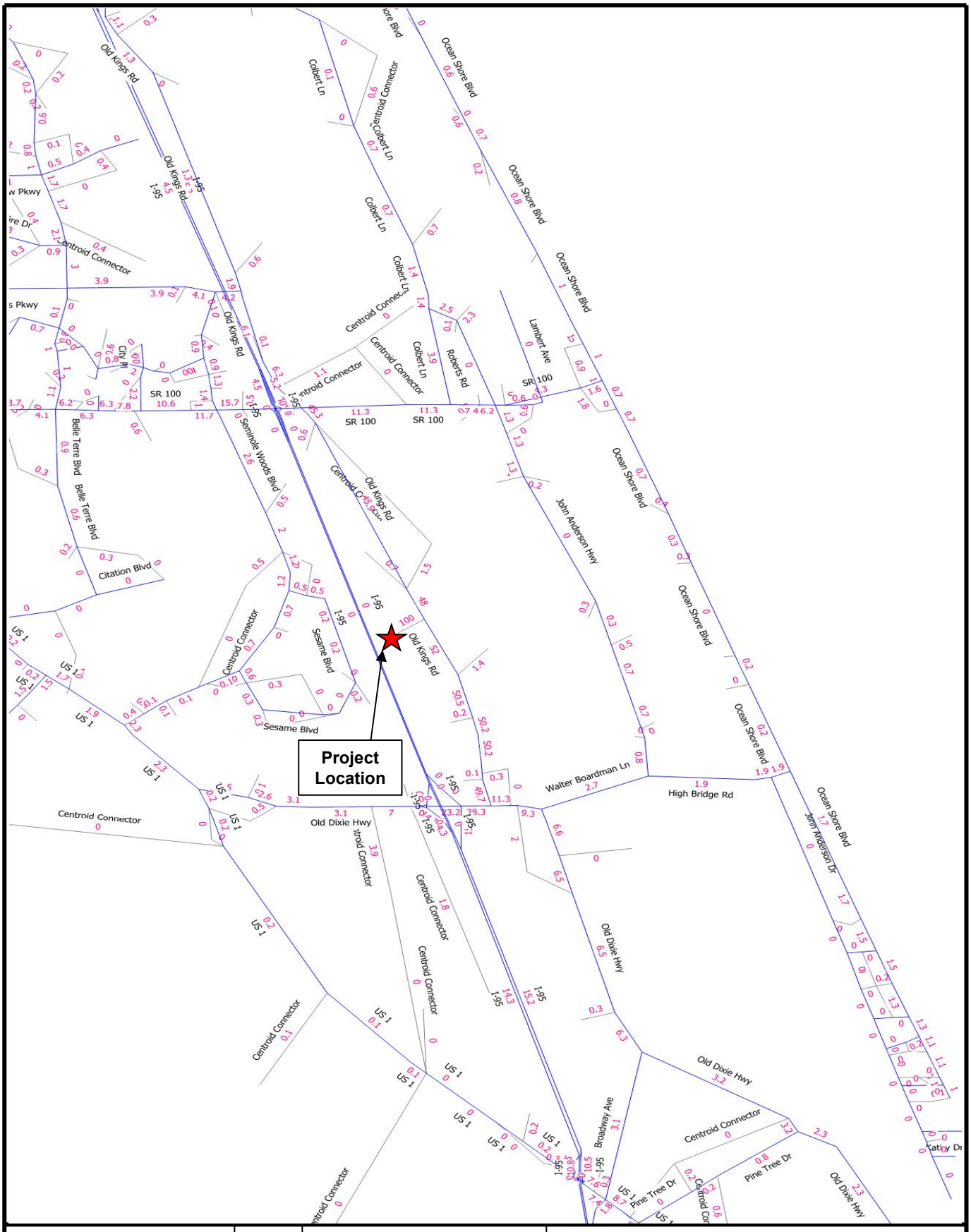
Time Period	Land Use	Land Use Code	Trip Rate Equation	Size	Units	Percent Entering	Percent Exiting	Trips Entering	Trips Exiting	Total Trips
Daily	Single-Family Detached Housing	210	Ln(T)=0.92Ln(X)+2.68	42	DU	50%	50%	227	227	454
AM Peak Hour			Ln(T)=0.91Ln(X)+0.12			26%	74%	9	25	34
PM Peak Hour			Ln(T)=0.94Ln(X)+0.27			63%	37%	28	16	44

Trip Distribution

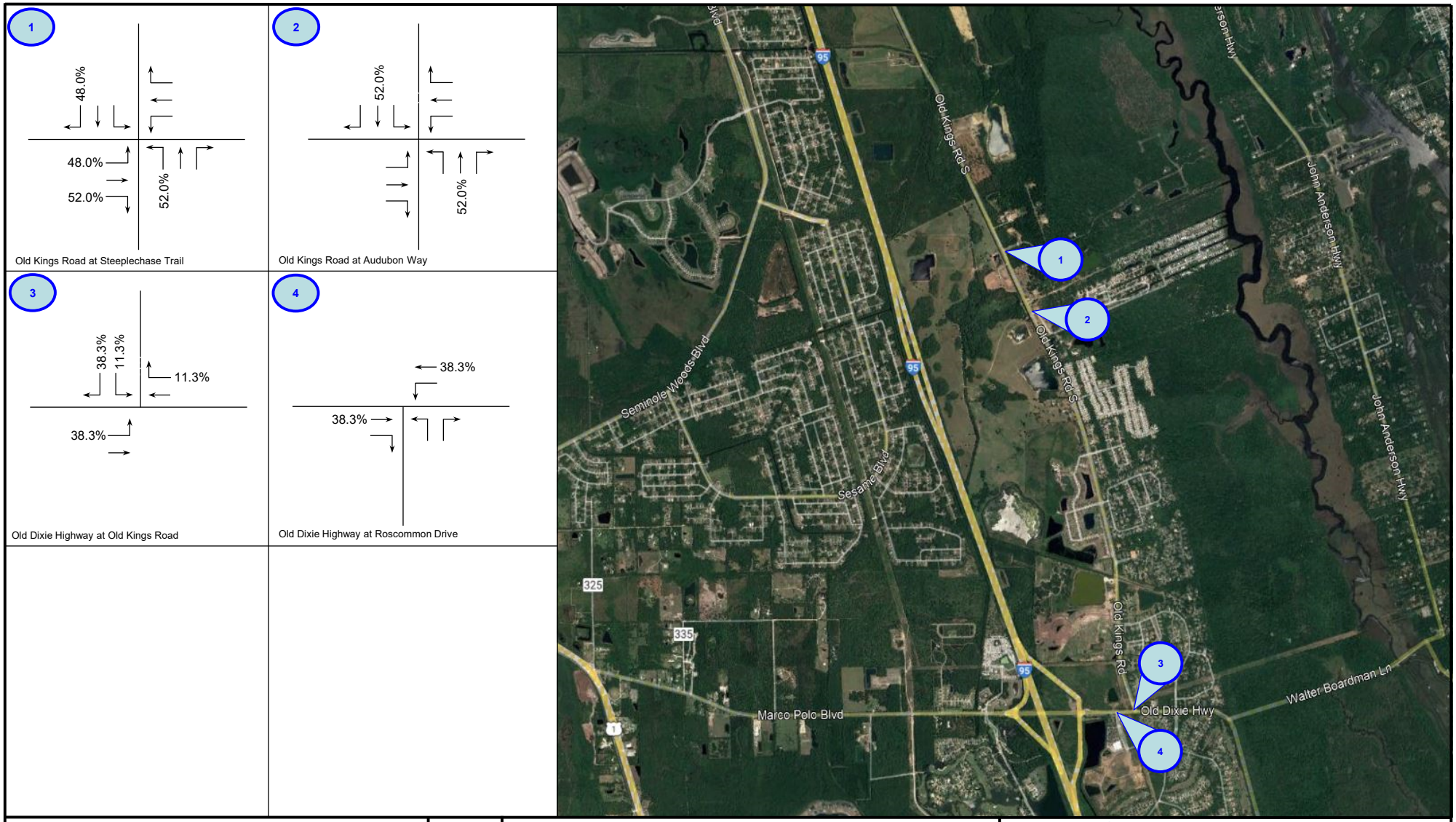
The process of determining the directional flow of traffic associated with a new development is called trip distribution. The Central Florida Regional Planning Model (CFRPM), version 7 was used to obtain project trip distribution which is illustrated in Figures 4a-4b.

Trip Assignment

The final step in the analysis was to assign the project trips to the surrounding roadway network. Figures 5a-5b graphically depict the 2029 build-out AM and PM peak hour traffic volumes used in the analysis.



Radiance	N NTS	**Project Trip Distribution**		LTG Engineering & Planning
		Project No.: 5364.07	Figure: 4a	1450 W. Granada Blvd, Suite 2, Ormond Beach, Florida 32174 Telephone: 386.257.2571 Fax: 386.257.6996



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Project Trip Distribution – Intersections

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Figure 4b

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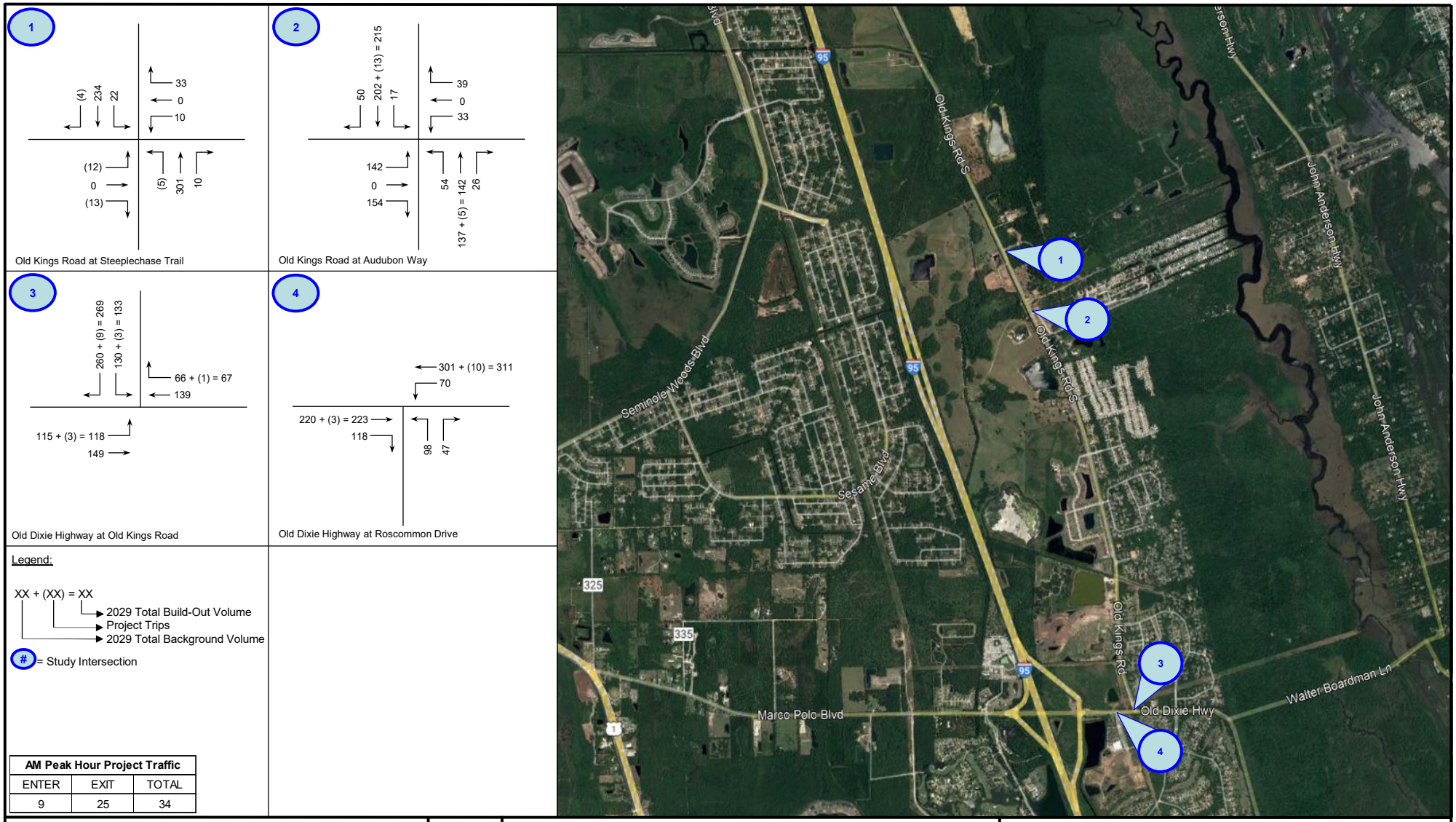

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2029 Build-Out
AM Peak Hour Volumes

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Figure 5a

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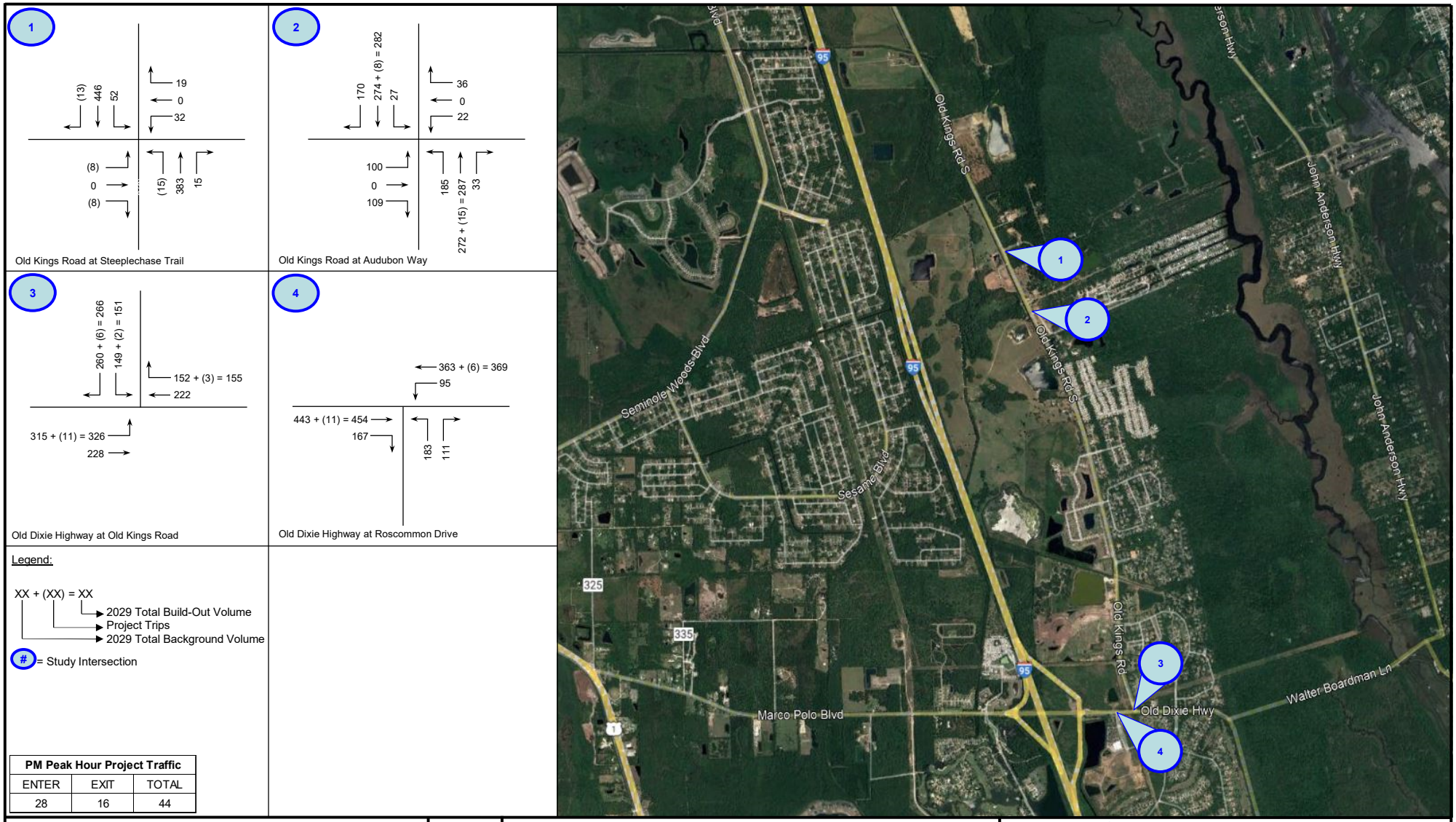

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2029 Build-Out
PM Peak Hour Volumes

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Figure 5b

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2029 Build-Out – Unsignalized Intersections Analysis

The unsignalized intersections were analyzed, with the proposed improvement under background conditions, to determine the operating conditions under 2029 build-out conditions and the results are presented in Table 9. The HCS summary sheets are included in Appendix H.

Table 9
2029 Build-Out AM and PM Peak Hour LOS – Unsignalized Intersections
Radiance

Intersection	Adopted LOS	AM Peak Hour			PM Peak Hour		
		Critical Approach	Delay	LOS	Critical Approach	Delay	LOS
Old Kings Road at Steeplechase Trail	D	EB	11.5	B	WB	15.1	C
Old Kings Road at Audubon Way	D	EB	18.4	C	EB	27.7	D
Old Kings Road at Audubon Way*	D	EB	7.3	A	SB	9.0	A
Old Dixie Highway at Old Kings Road	E	SB	12.3	B	SB	25.5	D
Old Dixie Highway at Roscommon Drive	E	NB	13.1	B	NB	21.8	C

**Alternatively analyzed as a single lane roundabout*

As indicated in the table above, under build-out conditions, all unsignalized intersections are anticipated to operate within the adopted LOS.

2029 Build-Out Roadway Segment Analysis

The study area roadway segments were analyzed under 2029 build-out conditions to determine the anticipated two-way peak-hour LOS. The results are provided in Table 10. As indicated, all study area roadway segments are anticipated to operate within their adopted LOS during the PM peak hour.

Table 10
2029 Build-Out PM Peak Hour LOS – Roadway Segments
Radiance

Roadway	Segment		No. of Lanes	Adopted LOS	Peak-Hour Two-Way Capacity at Adopted LOS	Existing PM Peak-Hour Two-Way Volume	2029 Background Volume	Project Distribution	Project Trips	2029 Total Build-Out Volume	2029 Build-Out Volume Exceed Adopted LOS?
Old Kings Road	SR 100	Steeplechase Trail	2	D	2,180	459	891	48.0%	21	912	No
	Steeplechase Trail	Audubon Way	2	D	2,180	459	891	52.0%	23	914	No
	Audubon Way	Flagler/Volusia County Limit	2	D	2,180	459	913	52.0%	23	936	No
	Flagler/Volusia County Limit	Old Dixie Highway	4	E	2,930	350	934	50.2%	22	956	No
Old Dixie Highway	Walter Boardman Lane	Old Kings Road	2	E	2,930	450	749	11.3%	5	754	No
	Old Kings Road	I-95	2	E	2,930	830	1,453	38.3%	17	1,470	No

Queue Length and Turn Lane Analysis

A queue length analysis was conducted to determine recommended storage lengths for existing turn lanes at the study area intersections that are impacted by project traffic. The only existing turn lanes that are impacted by project traffic occur at Old Dixie Highway at Old Kings Road. The HCS results were used to obtain the 95th percentile queue lengths expected for each exclusive turn lane during the AM and PM peak hours. Turn lane requirements were evaluated using the Volusia County LDC Section 72-619, Table VI and FDOT Index 301. The resulting recommended turn lane lengths for the intersections are provided in Table 11 on page 22. As indicated in the table, all turn lanes that do not meet the required standard lengths do so in existing conditions or due to background conditions in the AM and/or PM peak hours and not due to project trips.

Site Access Analysis

Access to the development will be provided via the proposed fourth leg (west leg) of the existing Old Kings Road at Steeplechase Trail T-intersection. The need for turn lanes was evaluated according to the *National Cooperative Highway Research Program (NCHRP), Report 457*, and FDOT Design Manual Exhibit 212-1. The NCHRP reports have been included as Appendix I. The following turn lane recommendations are based on the results of the NCHRP 457 reports and a design speed limit of 55 miles per hour (MPH) along Old Kings Road:

- Old Kings Road at Steeplechase Trail
    - A northbound left-turn lane is not required under build-out conditions.
    - A southbound right-turn lane is not required under build-out conditions.

Table 11
2029 Build-Out AM and PM Peak Hour – Queue Length and Turn Lane Recommendations
Radiance

Intersection	Turn Lane	Posted Speed Limit (mph)	Existing Lane Length (ft)	Required Deceleration (ft)*	Existing				Background				Build-Out					
					# of Lanes	95th Percentile Queue Length (veh x 25 ft)	Total Required Turn Lane Length (ft)	Lane Length Deficiency (ft)	# of Lanes	95th Percentile Queue Length (veh x 25 ft)	Total Required Turn Lane Length (ft)	Lane Length Deficiency (ft)	# of Lanes	95th Percentile Queue Length (veh x 25 ft)	Total Required Turn Lane Length (ft)	Lane Length Deficiency (ft)	Lane Length Deficiency Difference from Background to Build-Out (ft)	Project Trips
AM																		
Old Dixie Highway at Old Kings Road	EBL	45	215	240	1	25	265	50	1	25	265	50	1	25	265	50	0	3
	WBR	45	125	240	1	0	240	115	1	0	240	115	1	0	240	115	0	1
PM																		
Old Dixie Highway at Old Kings Road	EBL	45	215	240	1	25	265	50	1	50	290	75	1	50	290	75	0	11
	WBR	45	125	240	1	0	240	115	1	0	240	115	1	0	240	115	0	3

**Based upon Volusia County LDC Section 72-619 Table VI and FDOT Index 301*

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CONCLUSION AND RECOMMENDATIONS

This study was conducted to evaluate the impact the proposed Radiance residential development would have on the surrounding roadway network in Flagler County, Florida. The development will generate 34 AM and 44 PM peak hour trips. The results of the study are summarized below.

2022 Existing Conditions

- The study area unsignalized intersections are currently operating within the adopted LOS.
- The study area roadway segments are currently operating within the adopted LOS.

2029 Background Conditions

- The study area unsignalized intersections are anticipated to operate within the adopted LOS with the exception of Old Dixie Highway at Old Kings Road. The following improvement is recommended due to background conditions without the addition of project trips:
    - Add a dedicated southbound right turn lane
- The study area roadway segments are anticipated to operate within the adopted LOS.

2029 Build-Out Conditions

- The study area unsignalized intersections are anticipated to operate within the adopted LOS.
- The study area roadway segments are anticipated to operate within the adopted LOS.

Queue Length and Turn Lane Analysis

Under existing and background conditions, the following turn lanes are deficient in length:

Old Dixie Highway at Old Kings Road
- Extend eastbound left-turn lane by 75 feet
- Extend westbound right-turn lane by 115 feet

No turn lanes are deficient in length due to the addition of project trips.

Site Access Analysis

Access to the development will be provided via the proposed fourth leg (west leg) of the existing Old Kings Road at Steeplechase Trail T-intersection. The need for turn lanes was evaluated according to the *National Cooperative Highway Research Program (NCHRP), Report 457*, and FDOT Design Manual Exhibit 212-1. Based on the results of the NCHRP Report 457 analyses, no additional turn lanes are required.

Based on the results of the TIA and recommendations provided above, the proposed Radiance residential development is recommended for approval.