TRAFFIC ANALYSIS REPORT

Southern Grove SG 3 Commercial Parcel
Port St. Lucie, FL

Prepared for:
Banyan Development Group, LLC

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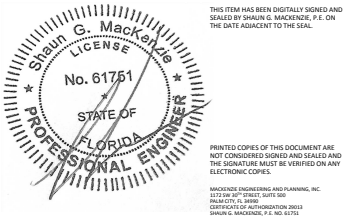

Digitally signed by Shaun MacKenzie
Date: 2022.08.22 15:53:21 -04'00'

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140012
Revised August 2022
Revised January 2022
November 2021
October 2021

CA 29013

EXECUTIVE SUMMARY

MacKenzie Engineering and Planning, Inc. performed an analysis of the traffic impacts resulting from the SG 3 Commercial Parcel within the Southern Grove DRI. The project is located at the south of Discovery Way between Village Parkway and Community Boulevard, Port St. Lucie, Florida. The applicant proposes:

- 57,981 square feet of commercial use
- 9,333 square feet of high-turnover sit-down restaurant use

The analysis was conducted in accordance with the requirements of the City of Port St. Lucie for a project within an approved development of regional impact (Southern Grove DRI).

The proposed project is expected to generate the following net new external trips:

- 2,518 Daily, 164 AM peak hour (99 in/65 out), and 377 PM peak hour (187 in/190 out) trips.

The proposed project is expected to generate the following cumulative driveway trips:

- 6,295 Daily, 276 AM peak hour (167 in/109 out), and 632 PM peak hour (314 in/318 out) trips.

The analysis shows that the roadways are projected to operate acceptably with the addition of the proposed development. Because the project is part of the approved Southern Grove DRI, concurrency is satisfied.

The following improvements are recommended:

- Driveway 1 & Village Parkway
  - Convert the bus stop into a combined bus stop and right-turn lane
- Driveway 3 & Discovery Way (Directional Opening)
  - 205-foot eastbound left-turn lane
  - 205-foot westbound left-turn lane

Intersection improvements at Village Parkway & Discovery Way and Community Boulevard & Discovery Way are not necessary.

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Exhibit 2. Intersection Volume Development Worksheets
Exhibit 3. Intersection Results

INTRODUCTION

MacKenzie Engineering and Planning, Inc. performed an analysis of the traffic impacts resulting from the SG 3 Commercial Parcel. The project is located south of Discovery Way between Village Parkway and Community Boulevard in the Southern Grove DRI in Port St. Lucie, Florida. The site is proposed for a buildout of 2024. In order to provide a conservative analysis, the following trip generating uses are included in the analysis:

- 57,981 SF of Retail
- 9,333 SF of High Turnover Sit-Down Restaurant

The uses on the site are conservative with respect to trip generation purposes. Approval of the traffic study by the city does not constitute approval of the uses.

The analysis was conducted in accordance with the requirements of the use within an approved DRI in the City of Port St. Lucie.

Figure 1A. Site Location Map

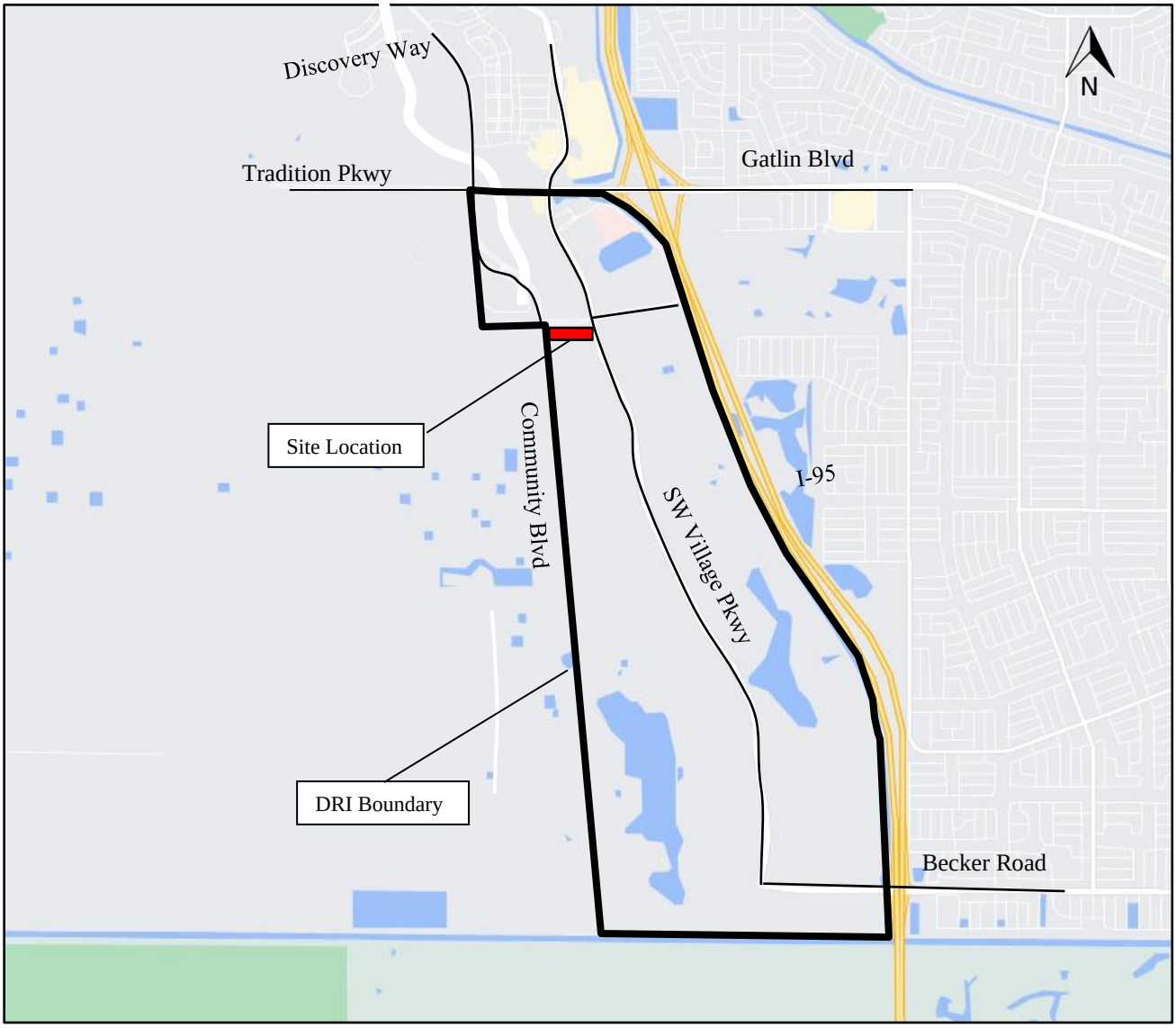
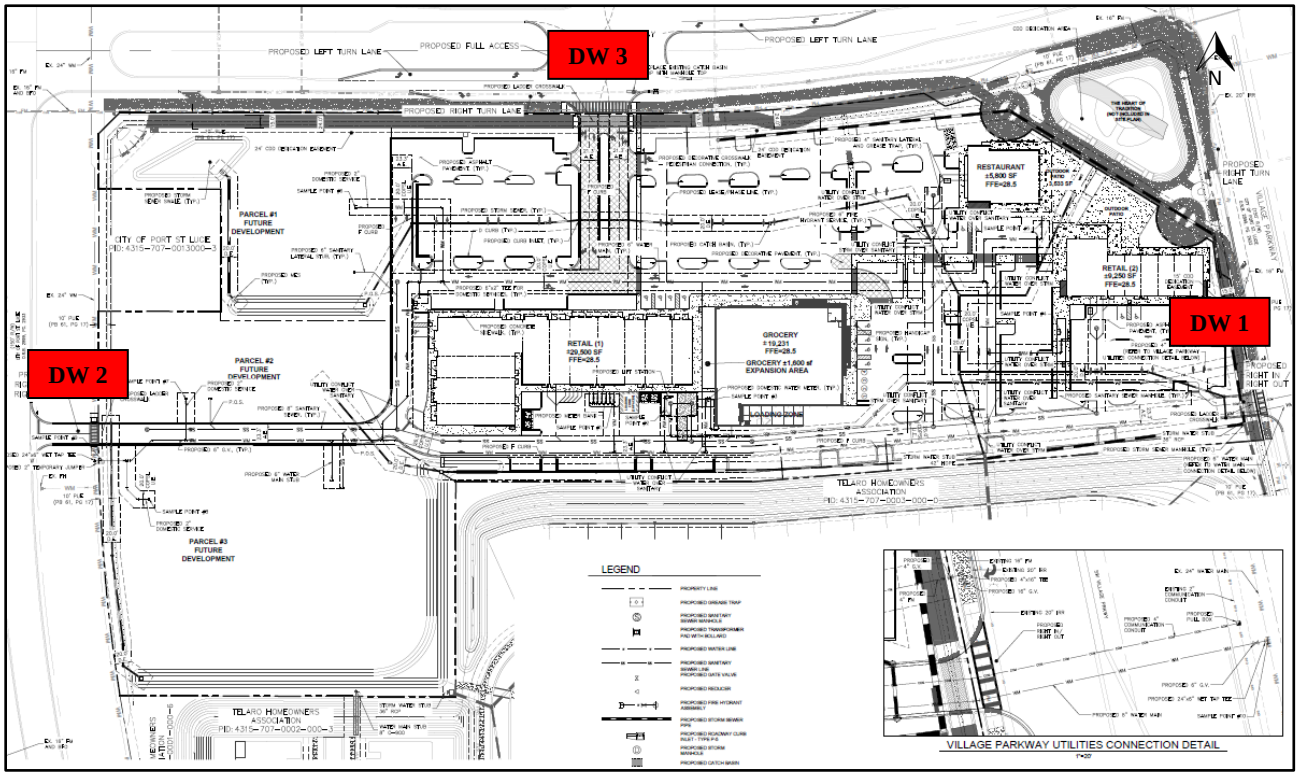


Figure 1B. Site Plan



INVENTORY AND PLANNING DATA

The traffic data used in this analysis includes:

- Roadway geometrics
- Mackenzie Engineering and Planning, Inc. data collection

Lucido and Associates provided site information.

PROJECT TRAFFIC

Trip Generation

The study uses the following trip generation rates published in the Institute of Traffic Engineers' (ITE) report, *Trip Generation (11th Edition)*:

- Shopping Plaza with Supermarket (ITE 821)
- High Turnover Sit-Down Restaurant (ITE 932)

Proposed Site

The proposed project is expected to generate the following net new external trips:

- 2,518 Daily, 164 AM peak hour (99 in/65 out), and 377 PM peak hour (187 in/190 out) trips.

The proposed project is expected to generate the following cumulative driveway trips:

- 6,295 Daily, 276 AM peak hour (167 in/109 out), and 632 PM peak hour (314 in/318 out) trips.

Internal Capture

Internal capture is estimated at 6.5 percent for the AM peak hour and 2.5 percent for the PM peak hour conditions based on ITE internal captures as shown in Exhibit 1. Daily internal capture rates estimated at 9.2 percent and are based on ITE's daily internal capture rates between retail uses in ITE's *Trip Generation Handbook (2nd Edition).*

Pass-by Trip Capture

Peak hour pass-by rates are based on ITE's report, Trip Generation Handbook (3rd Edition). Daily internal capture rates on based on the pass-by rates published in the City of Port St. Lucie's *PHASE ONE MOBILITY PLAN & MOBILITY FEE, TECHNICAL REPORT, August 2021* because ITE does not publish daily pass-by rates.

The project's trip generation is shown in Table 1

Table 1. Trip Generation

Land Use	Intensity			Daily Trips	AM Peak Hour Total	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out
Proposed Site Traffic										
Shopping Plaza (40-150k)	57.981		1000 SF	5,875	205	127	78	564	271	293
High Turnover Sit-Down Rest	9.333		1000 SF	1,000	89	49	40	84	51	33
Subtotal				6,875	294	176	118	648	322	326
Internal Capture	AM	PM	Daily							
Shopping Plaza (40-150k)	4.4%	1.4%	4.9%	290	9	4	5	8	3	5
High Turnover Sit-Down Rest	10.1%	9.5%	29.0%	290	9	5	4	8	5	3
Subtotal	6.5%	2.5%	9.2%	580	18	9	9	16	8	8
Pass-By Traffic										
Shopping Plaza (40-150k)	40.0%	40.0%	60%	3,351	78	49	29	222	107	115
High Turnover Sit-Down Rest	43.0%	43.0%	60%	426	34	19	15	33	20	13
Subtotal				3,777	112	68	44	255	127	128
NET CHANGE IN TRIPS (FOR THE PURPOSES OF CONCURRENCY)				**2,518**	**164**	**99**	**65**	**377**	**187**	**190**
NET CHANGE IN DRIVEWAY VOLUMES				**6,295**	**276**	**167**	**109**	**632**	**314**	**318**

Note: Trip generation was calculated using the following data:

Land Use	ITE Code	Unit	Daily Rate	Pass-by Rate	AM Peak Hour in/out	AM Peak Hour Rate	PM Peak Hour in/out	PM Peak Hour Equation
Shopping Plaza (40-150k)	821	1000 SF	T = 76.96 (X) + 1412.79	40%/40%/60%	62/38	3.53	48/52	T = 7.67 (X) + 118.86
High Turnover Sit-Down Rest	932	1000 SF	107.2	40%/40%/60%	55/45	9.57	61/39	9.05

TRAFFIC DISTRIBUTION

Traffic distribution and assignment was determined using engineering judgment, trip lengths, surrounding uses and review of the roadway network. The overall distribution is summarized by general directions and is depicted below:

NORTH	-	35 percent
SOUTH	-	20 percent
WEST	-	35 percent
EAST	-	10 percent

The following general productions are used as a guide for developing the traffic distribution:

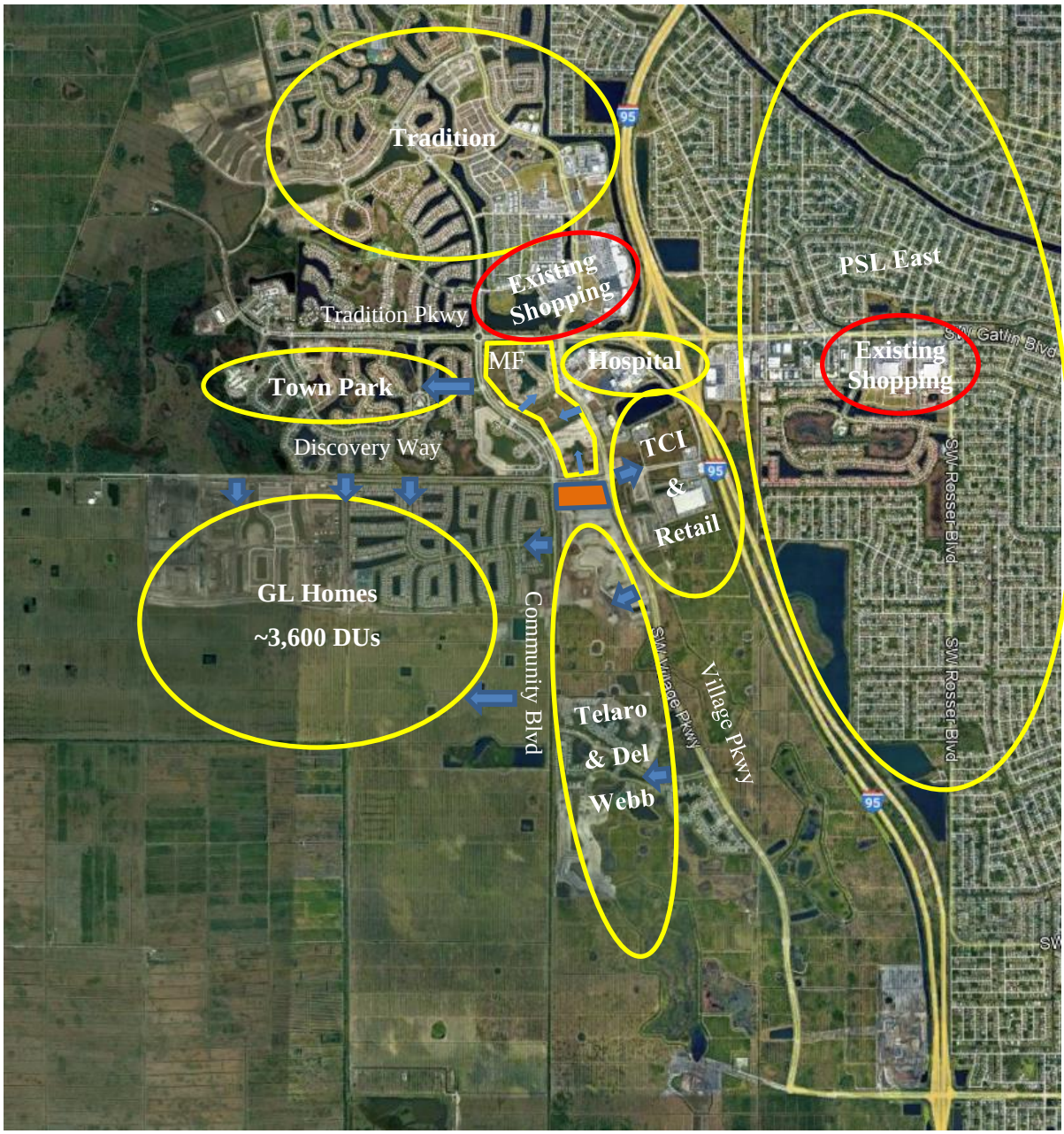
West – GL Homes 3,600 ± Age restricted dwelling units ~ 35%
East – Tradition Center for Innovation, multi-family, hotels, and retail – 10%
South – Telaro & Del Webb ~ 2,000 dwelling units ~ 20%
North – Multi-family – 1,400 dwelling units, Tradition Hospital, Town Park at Tradition, PSL east of I-95, Tradition Area north of Tradition Parkway* - 35%

*Multiple shopping centers exist north of Tradition Parkway and are expected to limit productions north of Tradition Parkway

The location of the productions is shown in Figure 2A.

The traffic distribution and assignment is for the project and is based on existing and approved uses in and around the proposed shopping center and is based on the specific location and type of use of the project relative trip productions.

Figure 2A. Distribution Map



TRAFFIC ASSIGNMENT

The distributed external trips for the project were assigned to the roadway network within the radius of influence based on the existing and planned trip productions. The project assignment is shown in Figure 2B.

Figure 2B. Traffic Assignment

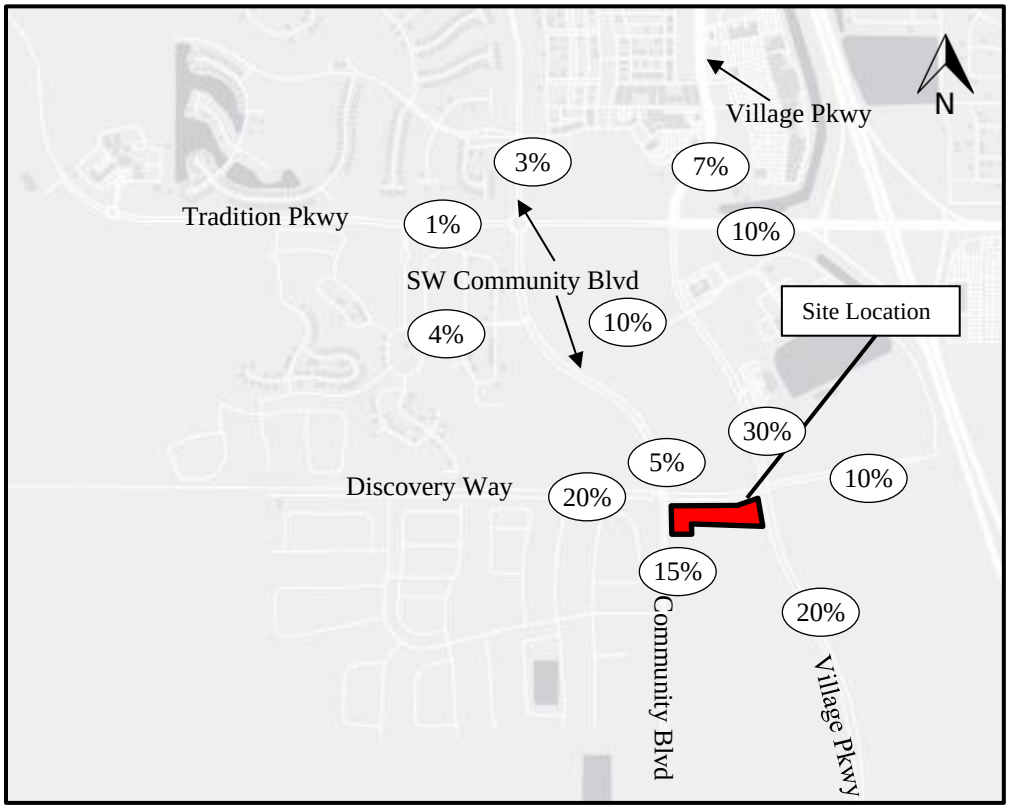
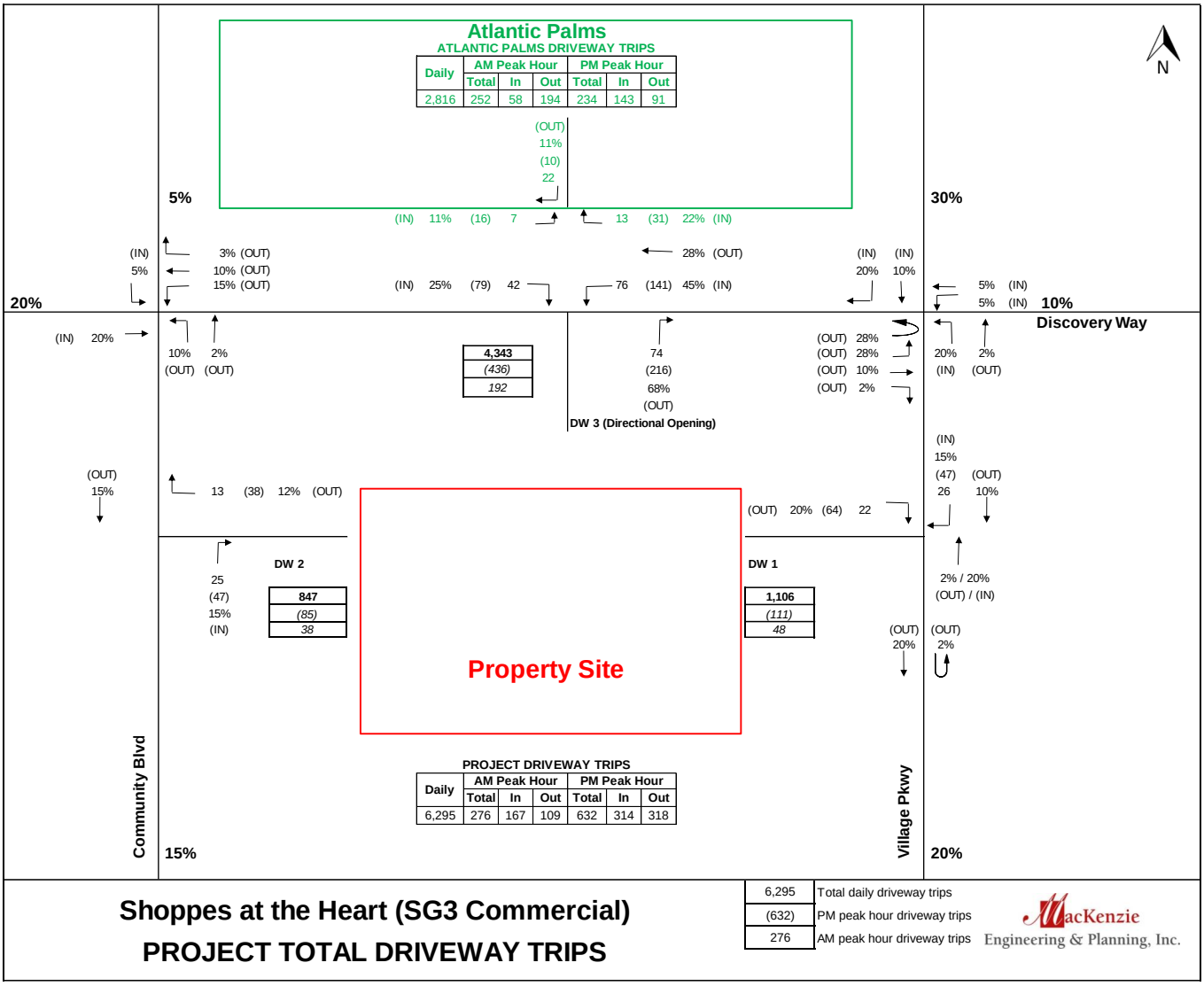


Figure 3. Project Driveway Traffic Distribution Map



HISTORICAL GROWTH

Historic growth rate was determined based on FDOT Traffic Online data as shown in Table 2. The historic annual growth on the surrounding facilities between 2015 and 2019 is 9.7%.

Table 2. Growth Rate Calculation

Road Name	ID #	From	To	2015	2016	2017	2018	2019	Annual Absolute Growth	Growth Rate
Becker Rd	948005	Village Pkwy	I-95		1,550			4,300	917	21.3%
	947067	I-95	PSL Blvd		9,900			13,200	1100	8.3%
Gatlin Blvd	945075	I-95	Savage Blvd	28,500	36,500	34,000	38,000	50,500	4550	9.0%
							Total	68000	6567	
								Weighted Average		9.7%
								Growth Rate Used		**9.7%**

INTERSECTION ANALYSIS

Intersection Volumes

The intersections within the study area were evaluated in 2024 total (existing traffic plus background plus project) traffic conditions. 2024 pre-development PM peak hour volumes are shown in Figure 4.

2024 post-development PM peak hour volumes are shown in Figure 5.

Figure 4. 2024 Pre-Development PM Peak Hour Volumes

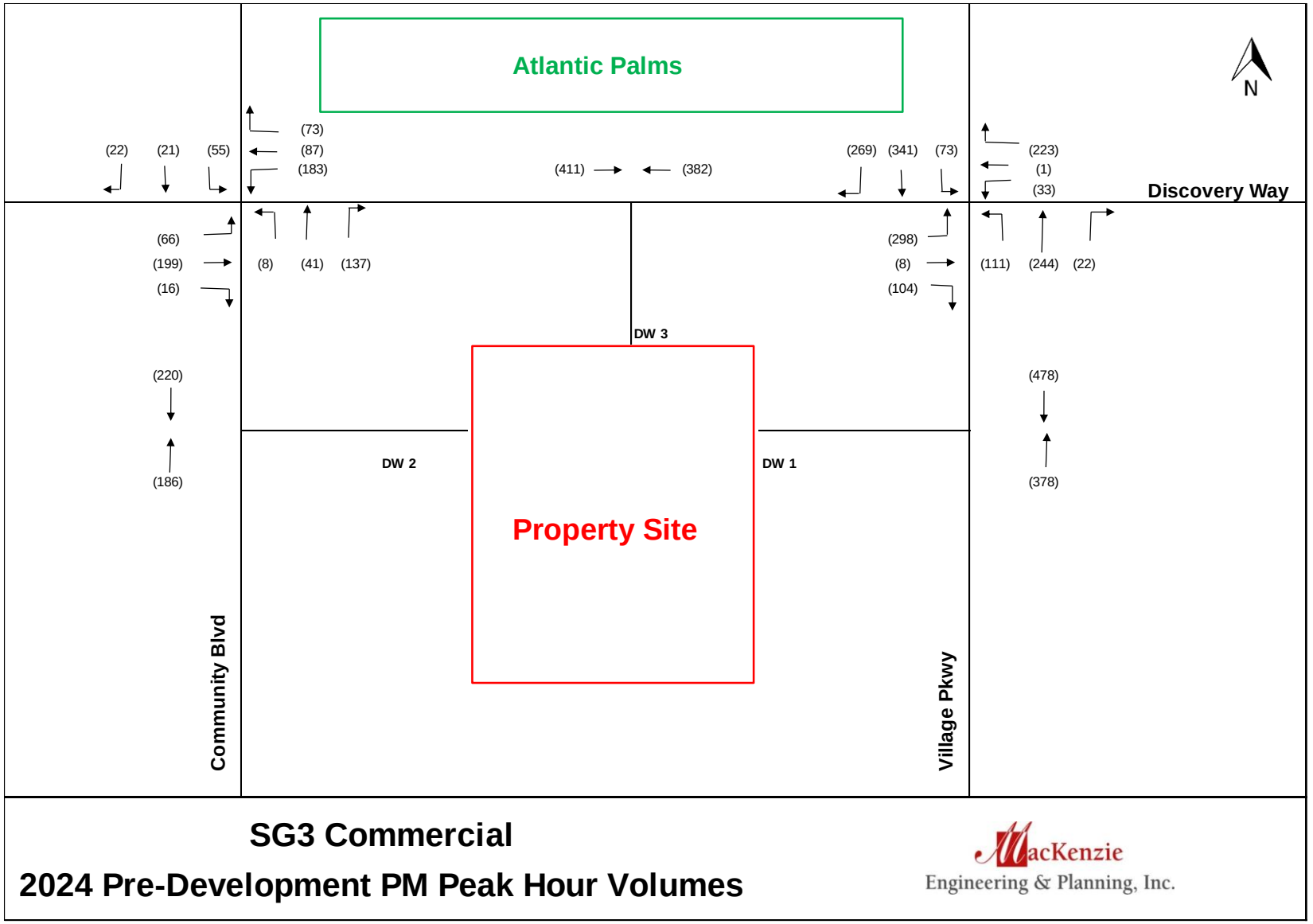
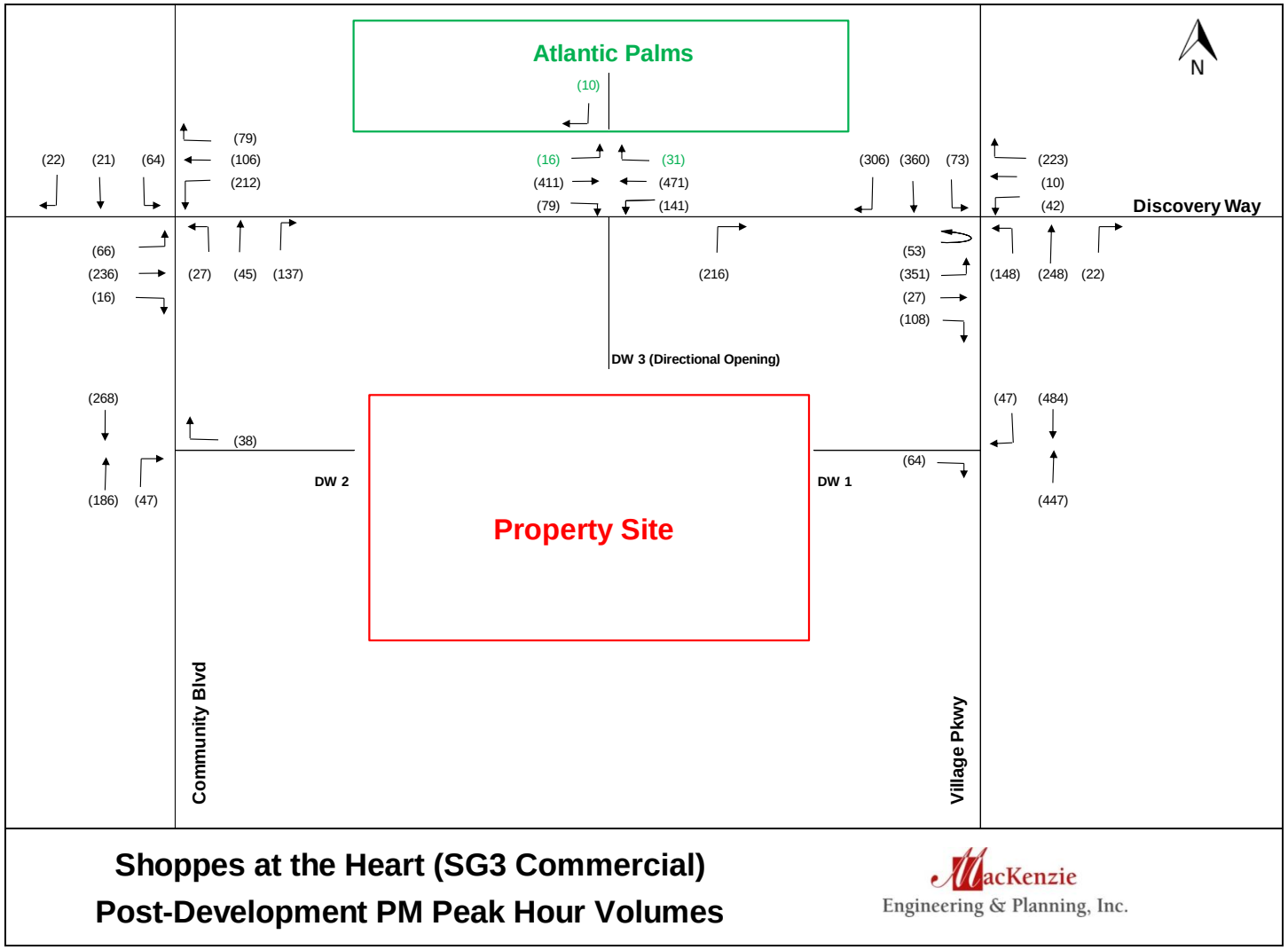


Figure 5. 2024 Post-Development PM Peak Hour Volumes



Discovery Way & Village Parkway

MEP evaluated the intersection of Discovery Way and Village Parkway using HCS 7 software. The intersection is projected to operate acceptably with all movements under capacity in the pre-development and post-development conditions (v/c ratio less than 1.0) as shown in Table 3. Intersection improvements are not necessary.

Table 3. Discovery Way & Village Parkway Intersection V/C Ratio

Approach	PM Pre-Development V/C Ratio	PM Post-Development V/C Ratio	Adequate
EBL	0.87	0.92	YES
WBL	0.48	0.58	YES
NBL	0.77	0.82	YES
SBL	0.70	0.77	YES
Intersection LOS	C	D	YES

Discovery Way & Community Boulevard

MEP evaluated the Discovery Way & Community Boulevard intersection. The intersection is projected to operate acceptably with the project and no improvements are needed at this time. Table 4 shows the intersection level of service for Discovery Way and Community Boulevard.

Table 4. Discovery Way & Community Boulevard Intersection Results

Scenario	Approach	Delay	LOS	Adequate
Pre-development	Eastbound	15.2	C	YES
	Westbound	13.5	B	YES
	Northbound	14.1	B	YES
	Southbound	11.8	B	YES
	Overall	13.9	B	YES
Post-development	Eastbound	19.6	C	YES
	Westbound	15.9	C	YES
	Northbound	15.5	C	YES
	Southbound	12.9	C	YES
	Overall	16.6	C	YES

DRIVEWAYS

Proposed Access

The site proposes three (3) initial points of access; one access each on Community Boulevard, Discovery Way and Village Parkway.

- DW 1 (East) – Right-in/Right-out (45 MPH posted / 45 MPH design speed)
- DW 2 (North-West) – Right-in/Right-out (35 MPH posted / 40 MPH design speed)
- DW 3 (Central) - Directional Opening (40 MPH posted / 40 MPH design speed)

Figure 3 shows the proposed driveway volumes.

Driveway 1 (East) & Village Parkway

Driveway 1 (east) is a right-in/right-out. It is recommended to convert the existing bus stop along southbound Village Parkway to a combined bus stop / right-turn lane into the project to avoid driver confusion. Drivers may inadvertently turn into the bus-bay thinking it is the project right-turn lane then try to merge back into the Village Parkway travel lane. The bus bay and separate right-turn lane has the potential for driver confusion and conflict.

Driveway 2 (North-West) & Community Boulevard

Driveway 2 (north-west) is right-in/right-out. No right turn lanes are required because the projected peak hour volume is 47, which is less than the 80-125 identified in Table 8.5 of the City's Manual, *Engineering Standards for Land Development.*

Driveway 3 (Central) & Discovery Way

Driveway 3 (central) is a directional opening. No right turn lanes are required because the projected peak hour right-turn volume is 79, which does not exceed the 80-125 identified in Table 8.5 of the City's Manual, *Engineering Standards for Land Development.* A 205-foot westbound left-turn lane into the site is required and right-turn lane out of the site is recommended. Because a median opening is present, a 205-foot eastbound left-turn lane into the residential property on the north side of Discovery Way is recommended.

Table 5. Driveway 3 Approach Delay and LOS

Approach	Delay	LOS	Acceptable
EBL	8.6	A	YES
WBL	9.1	A	YES

Driveway Throat

Driveway throat was calculated and then compare to the City of Port Saint Lucie's Engineering Standards. MEP obtained the 95th percentile queue using HCS 7 software and compared the maximum queue to the driveway throat as shown in Table 6.

Table 6. Driveway Throat Analysis

Driveway	Throat Length	95th queue	Standard	Acceptable
1	53	25	-	YES
2	25+	25	-	YES
3	49	53	1	NO

The driveway 3 throat depth is less than the recommended value or the 95th percentile queue. Several safety and operational measures are in place.

1. The applicant proposes to install a median in driveway 3 that divided inbound and outbound traffic so that the driveway is divided for 190 feet. This will prevent left-turns from occurring along the throat and ensure smooth traffic flow while preventing unanticipated stops.
2. The inbound lane allows right-turns into the west side of the plaza and the future outparcel use. Allowing right-turn before off of the main drive will reduce the amount of the drivers and congestion and the main entrance and the main east-west circulation aisle.
3. Few or no drivers are expected to make a right-turn back into the inbound drive aisle.

CONCLUSION

MacKenzie Engineering and Planning, Inc. performed an analysis of the traffic impacts resulting from the SG 3 Commercial Parcel within the Southern Grove DRI. The project is located at the south of Discovery Way between Village Parkway and Community Boulevard, Port St. Lucie, Florida. The applicant proposes:

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The following improvements are recommended:

- Driveway 1 & Village Parkway
  - Convert the bus stop into a combined bus stop and right-turn lane
- Driveway 3 & Discovery Way (Directional Opening)
  - 205-foot eastbound left-turn lane
  - 205-foot westbound left-turn lane

Intersection improvements at Village Parkway & Discovery Way and Community Boulevard & Discovery Way are not necessary.

APPENDICES

Exhibit 1. Trip Generation

Exhibit 2. Intersection Volume Development Worksheets

Exhibit 3. Intersection Results

A- Southern Grove Resolution 15-R95

B- Growth Rate Calculation

C- FDOT Peak Season Correction Factors

D- Institute of Transportation Engineers (ITE) Pass-By Capture Rates

E- Institute of Transportation Engineers (ITE) Trip Generation Rates:

- Shopping Plaza with Supermarket (ITE Use 821)
- High Turnover Sit Down Restaurant (ITE Use 932)

F- Site Plan

G – City of Port St. Lucie Daily Pass-By Rates from the City of Port St. Lucie Mobility Plan

H – ITE 2nd Edition Daily Internal Capture Rates

EXHIBIT 1A
SG 3 Commercial
TRIP GENERATION

Land Use	Intensity			Daily Trips	AM Peak Hour			PM Peak Hour		
					Total	In	Out	Total	In	Out
Proposed Site Traffic										
Shopping Plaza (40-150k)	57.981		1000 SF	5,875	205	127	78	564	271	293
High Turnover Sit-Down Rest	9.333		1000 SF	1,000	89	49	40	84	51	33
Subtotal				6,875	294	176	118	648	322	326
Internal Capture	AM	PM	Daily							
Shopping Plaza (40-150k)	4.4%	1.4%	4.9%	290	9	4	5	8	3	5
High Turnover Sit-Down Rest	10.1%	9.5%	29.0%	290	9	5	4	8	5	3
Subtotal	6.5%	2.5%	9.2%	580	18	9	9	16	8	8
Pass-By Traffic										
Shopping Plaza (40-150k)	40.0%	40.0%	60%	3,351	78	49	29	222	107	115
High Turnover Sit-Down Rest	43.0%	43.0%	60%	426	34	19	15	33	20	13
Subtotal				3,777	112	68	44	255	127	128
NET CHANGE IN TRIPS (FOR THE PURPOSES OF CONCURRENCY)				**2,518**	**164**	**99**	**65**	**377**	**187**	**190**
NET CHANGE IN DRIVEWAY VOLUMES				**6,295**	**276**	**167**	**109**	**632**	**314**	**318**

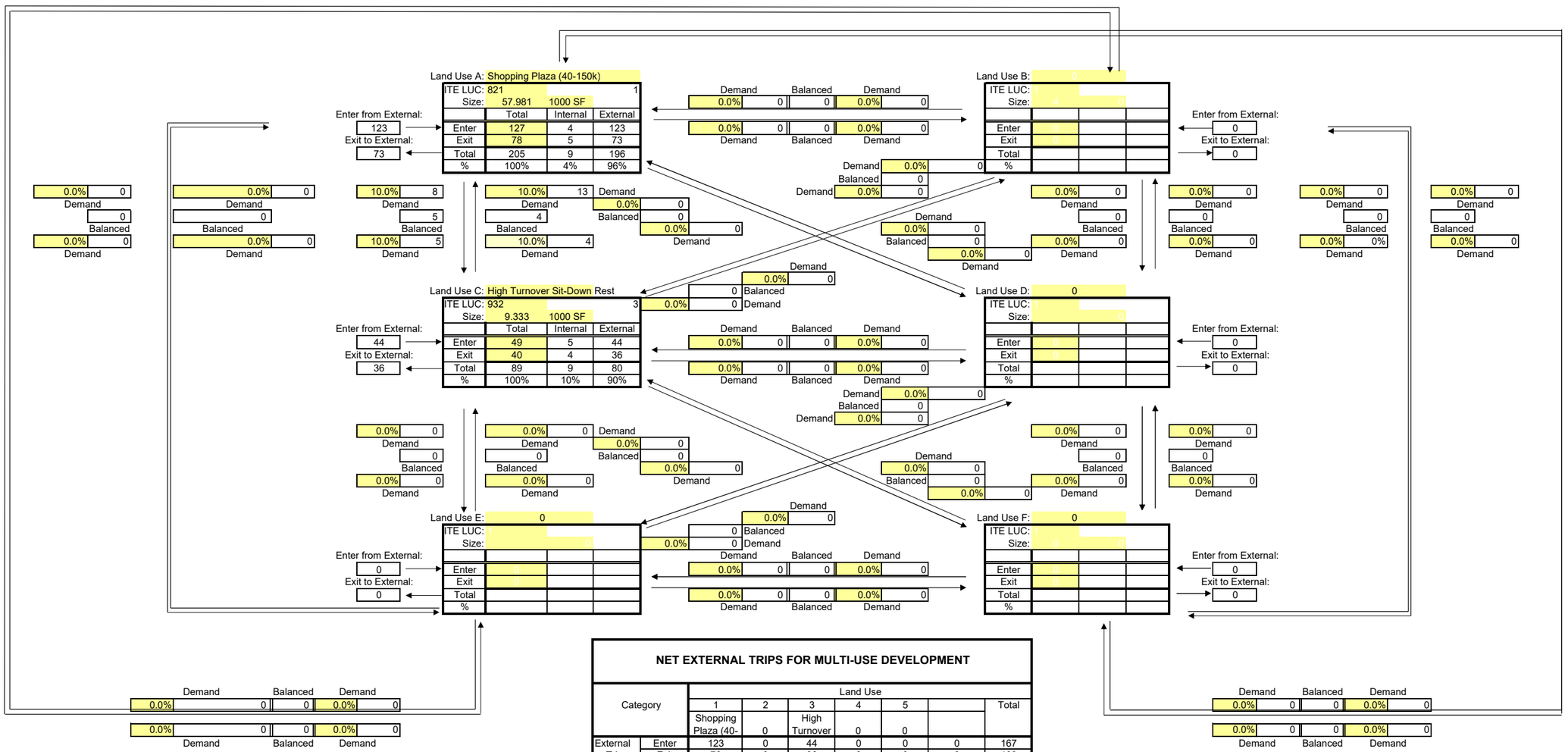
Note: Trip generation was calculated using the following data:

Land Use	ITE Code	Unit	Daily Rate	Pass-by Rate	AM Peak Hour in/out	AM Peak Hour Rate	PM Peak Hour in/out	PM Peak Hour Equation
Shopping Plaza (40-150k)	821	1000 SF	T = 76.96 (X) + 1412.79	40%/40%/60%	62/38	3.53	48/52	T = 7.67 (X) + 118.86
High Turnover Sit-Down Rest	932	1000 SF	107.2	40%/40%/60%	55/45	9.57	61/39	9.05

EXHIBIT 1B

Analysis Period: PM____, Midday____, AM __X__.
Analyst: MEP
Date: 8/9/2022

Project Number: 140012 **Task Number:**
Project Name: SG 3 Commercial
Scenario: AM Peak Hour - Proposed Uses



NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT

Category		Land Use 1 Shopping Plaza (40-	2	3 High Turnover	4	5		Total
External Trips	Enter	123	0	44	0	0	0	167
	Exit	73	0	36	0	0	0	109
	Total	196	0	80	0	0	0	**276**
Internal Trips	Enter	4	0	5	0	0	0	9
	Exit	5	0	4	0	0	0	9
	Total	9	0	9	0	0	0	**18**
Single Use Trip Gen Estimate		187	0	71	0	0	0	**258**
		4.59%	0.00%	11.25%	0.00%	0.00%	0.00%	

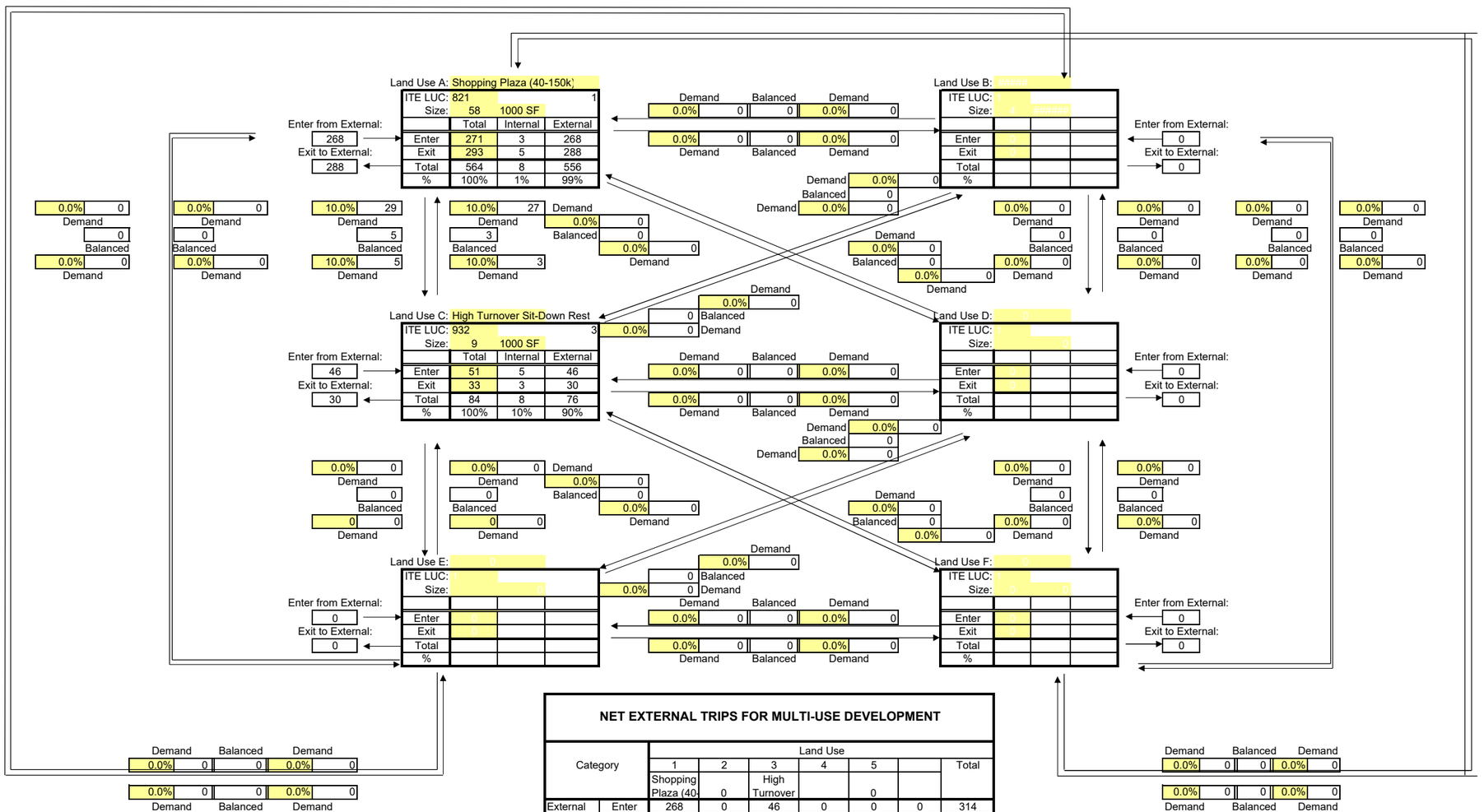
Internal Capture = 6.52%

Print Date = 8/9/2022
File Name =
S:\140 - Mattamy Homes\012 - SG 3 Banyan\Traffic\[SG 3 Commercial - Trip Gen 8-9-22.xlsx]IC_Daily

EXHIBIT 1C

Analysis Period: PM_X___, AM ____.
Analyst: MEP
Date: 8/9/2022

Project Number: 140012 **Task Number**
Project Name: SG 3 Commercial
Scenario: PM Peak Hour - Proposed Uses



NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT

Category		Land Use 1 Shopping Plaza (40-	2	3 High Turnover	4	5		Total
			0			0		
External Trips	Enter	268	0	46	0	0	0	314
	Exit	288	0	30	0	0	0	318
	Total	556	0	76	0	0	0	**632**
Internal Trips	Enter	3	0	5	0	0	0	8
	Exit	5	0	3	0	0	0	8
	Total	8	0	8	0	0	0	**16**
Single Use Trip Gen Estimate		548	0	68	0	0	0	**616**
		1.44%	0.00%	10.53%	0.00%	0.00%	0.00%	

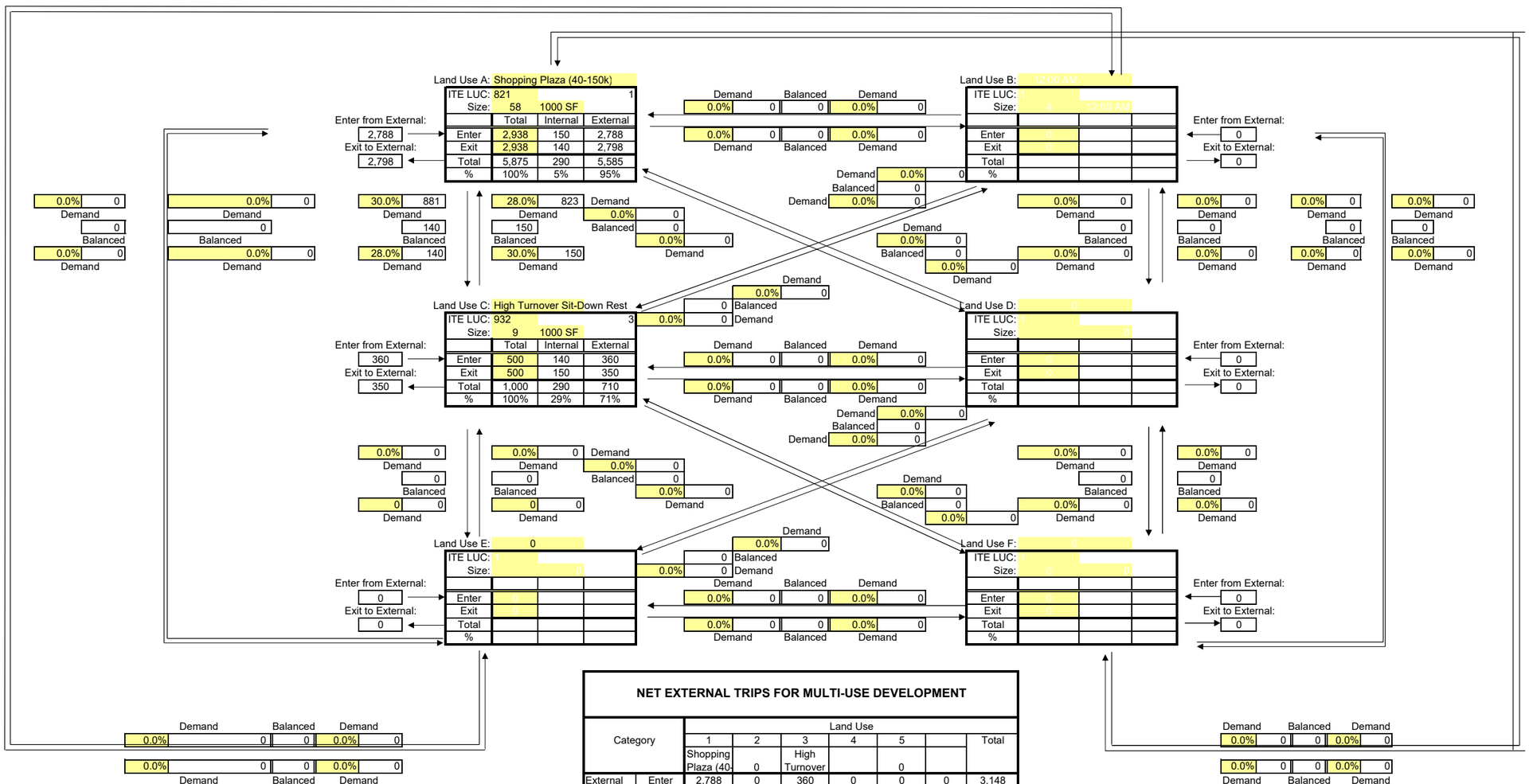
Internal Capture = 2.53%

Print Date = 08/09/22
File Name = S:\140 - Mattamy Homes\012 - SG 3 Banyan\Traffic\[SG 3 Commercial - Trip Gen 8-9-22.xlsx]IC_Daily

EXHIBIT 1D

Analysis Period: PM____, AM ____.
Analyst: MEP
Date: 8/9/2022

Project Number: 140012 **Task Number:**
Project Name: SG 3 Commercial
Scenario: daily - using ITE 2nd Edition



NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT

Category		Land Use 1 Shopping Plaza (40-	2	3 High Turnover	4	5		Total
			0			0		
External Trips	Enter	2,788	0	360	0	0	0	3,148
	Exit	2,798	0	350	0	0	0	3,148
	Total	5,585	0	710	0	0	0	**6,295**
Internal Trips	Enter	150	0	140	0	0	0	290
	Exit	140	0	150	0	0	0	290
	Total	290	0	290	0	0	0	**580**
Single Use Trip Gen Estimate		5,295	0	420	0	0	0	**5,715**
		5.19%	0.00%	40.85%	0.00%	0.00%	0.00%	

Internal Capture = 9.21%

Print Date = 08/09/22
File Name =
S:\140 - Mattamy Homes\012 - SG 3 Banyan\Traffic\[SG 3 Commercial - Trip Gen 8-9-22.xlsx]IC_Daily

EXHIBIT 1E

SG 3 Commercial - Atlantic Palms

DRIVEWAY TRIP GENERATION - PEAK HOUR

Land Use	Intensity	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Proposed Site Traffic								
Multifamily Housing (Mid-Rise)	600 DU	2,816	252	58	194	234	143	91
NET CHANGE IN TRIPS (FOR THE PURPOSES OF CONCURRENCY)		**2,816**	**252**	**58**	**194**	**234**	**143**	**91**
NET CHANGE IN DRIVEWAY VOLUMES		**2,816**	**252**	**58**	**194**	**234**	**143**	**91**

Note: Trip generation was calculated using the following data

Land Use	ITE Code	Unit	Daily Rate	Pass-by Rate	AM Peak Hour		PM Peak Hour	
					in/out	Rate	in/out	Equation
Multifamily Housing (Mid-Rise)	221	DU	T = 4.77 (X) - 46.46	0%	23/77	T = 0.44 (X) - 11.61	61/39	T = 0.39 (X) + 0.34

SG3 Commercial

PM PEAK HOUR TURNING MOVEMENTS

EXHIBIT 2

Discovery & Community

		ebu	ebl	ebt	ebr	wbu	wbl	wbt	wbr	nbu	nbl	nbt	nbr	sbu	sbl	sbt	sbr
4:00 PM	4:15 PM	0	5	29	2	0	28	13	14	0	1	7	18	0	9	2	4
4:15 PM	4:30 PM	0	14	24	0	0	37	12	6	0	2	1	18	0	3	2	3
4:30 PM	4:45 PM	0	6	25	4	0	42	9	10	0	1	4	13	0	6	6	5
4:45 PM	5:00 PM	0	15	42	2	0	33	18	16	0	1	4	17	0	17	2	4
5:00 PM	5:15 PM	0	11	30	0	0	18	15	11	0	3	9	33	0	3	2	1
5:15 PM	5:30 PM	0	10	29	4	0	23	13	9	0	0	9	24	0	9	3	4
5:30 PM	5:45 PM	0	12	28	0	0	28	10	15	0	1	4	11	0	2	2	1
5:45 PM	6:00 PM	0	9	27	0	0	28	11	19	0	0	2	16	0	5	2	5
		0	82	234	12	0	237	101	100	0	9	40	150	0	54	21	27
Peak Hour Traffic Volume																	
4:30 PM	5:30 PM	0	42	126	10	0	116	55	46	0	5	26	87	0	35	13	14

Count Taken: 8/10/2021
Buildout year: 2024
Growth Rate: 9.7%
PSCF 1.20

	ebu	ebl	ebt	ebr	wbu	wbl	wbt	wbr	nbu	nbl	nbt	nbr	sbu	sbl	sbt	sbr
8/10/2021	0	42	126	10	0	116	55	46	0	5	26	87	0	35	13	14
Peak Season Factor	0	8	25	2	0	23	11	9	0	1	5	17	0	7	3	3
Adjusted Volumes		50	151	12		139	66	55		6	31	104		42	16	17
		9.7%	9.7%	9.7%		9.7%	9.7%	9.7%		9.7%	9.7%	9.7%		9.7%	9.7%	9.7%
Growth 9.7%		16	48	4		44	21	18		2	10	33		13	5	5
2024 Volumes		**66**	**199**	**16**		**183**	**87**	**73**		**8**	**41**	**137**		**55**	**21**	**22**
Pre Dev		66	199	16		183	87	73		8	41	137		55	21	22
Project		0	37	0		29	19	6		19	4	0		9	0	0
Post Dev		**66**	**236**	**16**		**212**	**106**	**79**		**27**	**45**	**137**		**64**	**21**	**22**
Project Traffic			In			Out	Out	Out		Out	Out			In		
Assignment	0%	0%	20%	0%	0%	15%	10%	3%	0%	10%	2%	0%	0%	5%	0%	0%

SG3 Commercial

PM PEAK HOUR TURNING MOVEMENTS

EXHIBIT 2

Discovery & Village

		ebu	ebl	ebt	ebr	wbu	wbl	wbt	wbr	nbu	nbl	nbt	nbr	sbu	sbl	sbt	sbr
4:00 PM	4:15 PM	0	38	0	18	0	5	4	19	0	15	48	0	0	7	59	38
4:15 PM	4:30 PM	0	46	2	19	0	5	0	17	0	13	48	2	0	13	52	64
4:30 PM	4:45 PM	0	38	0	12	0	6	1	43	0	13	44	2	0	13	63	42
4:45 PM	5:00 PM	0	42	2	13	0	4	0	27	0	19	32	7	0	9	53	33
5:00 PM	5:15 PM	0	62	1	22	0	6	0	54	0	25	30	3	0	11	47	31
5:15 PM	5:30 PM	0	52	0	20	0	1	0	26	0	17	45	1	0	3	59	47
5:30 PM	5:45 PM	0	35	0	24	0	1	1	37	0	21	50	1	0	6	54	46
5:45 PM	6:00 PM	0	31	0	16	0	1	0	20	0	16	35	3	0	3	33	40
		0	344	5	144	0	29	6	243	0	139	332	19	0	65	420	341
Peak Hour Traffic Volume																	
4:15 PM	5:15 PM	0	188	5	66	0	21	1	141	0	70	154	14	0	46	215	170

Count Taken: 8/11/2021
Buildout year: 2024
Growth Rate: 9.7%
PSCF 1.20

	ebu	ebl	ebt	ebr	wbu	wbl	wbt	wbr	nbu	nbl	nbt	nbr	sbu	sbl	sbt	sbr
8/11/2021	0	188	5	66	0	21	1	141	0	70	154	14	0	46	215	170
Peak Season Factor	0	38	1	13	0	4	0	28	0	14	31	3	0	9	43	34
Adjusted Volumes		226	6	79	0	25	1	169	0	84	185	17	0	55	258	204
		9.7%	9.7%	9.7%		9.7%	9.7%	9.7%		9.7%	9.7%	9.7%		9.7%	9.7%	9.7%
Growth 9.7%		72	2	25		8	0	54		27	59	5		18	83	65
2024 Volumes		**298**	**8**	**104**		**33**	**1**	**223**		**111**	**244**	**22**		**73**	**341**	**269**
Pre Dev		298	8	104		33	1	223		111	244	22		73	341	269
Project	53	53	19	4		9	9	0		37	4	0		0	19	37
Post Dev	**53**	**351**	**27**	**108**		**42**	**10**	**223**		**148**	**248**	**22**		**73**	**360**	**306**
Project Traffic	Out	Out	Out	Out		In	In			In	Out				In	In
Assignment	28%	28%	10%	2%	0%	5%	5%	0%	0%	20%	2%	0%	0%	0%	10%	20%

SG3 Commercial
PM PEAK HOUR TURNING MOVEMENTS
EXHIBIT 2
DW 1 & Village

	ebu	ebl	ebt	ebr	wbu	wbl	wbt	wbr	nbu	nbl	nbt	nbr	sbu	sbl	sbt	sbr
2021 Peak SeasonVolumes		0	0	0		0	0	0		0	286	0	0	0	362	0
		9.7%	9.7%	9.7%		9.7%	9.7%	9.7%		9.7%	9.7%	9.7%		9.7%	9.7%	9.7%
Growth 9.7%		0	0	0		0	0	0		0	92	0		0	116	0
2024 Volumes		**0**	**0**	**0**		**0**	**0**	**0**		**0**	**378**	**0**		**0**	**478**	**0**
Pre Dev		0	0	0		0	0	0		0	378	0		0	478	0
Project		0	0	64		0	0	0		0	69	0		0	6	47
Post Dev		**0**	**0**	**64**		**0**	**0**	**0**		**0**	**447**	**0**		**0**	**484**	**47**

Project Traffic				Out							In				Out	In
Assignment	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	2%	15%

SG3 Commercial
PM PEAK HOUR TURNING MOVEMENTS
EXHIBIT 2
DW 2 & Community

	ebu	ebl	ebt	ebr	wbu	wbl	wbt	wbr	nbu	nbl	nbt	nbr	sbu	sbl	sbt	sbr
2021 Peak SeasonVolumes		0	0	0		0	0	0		0	141	0	0	0	167	0
		9.7%	9.7%	9.7%		9.7%	9.7%	9.7%		9.7%	9.7%	9.7%		9.7%	9.7%	9.7%
Growth 9.7%		0	0	0		0	0	0		0	45	0		0	53	0
2024 Volumes		**0**	**0**	**0**		**0**	**0**	**0**		**0**	**186**	**0**		**0**	**220**	**0**
Pre Dev		0	0	0		0	0	0		0	186	0		0	220	0
Project		0	0	0		0	0	38		0	0	47		0	48	0
Post Dev		**0**	**0**	**0**		**0**	**0**	**38**		**0**	**186**	**47**		**0**	**268**	**0**
Project Traffic								Out				In			Out	
Assignment	0%	0%	0%	0%	0%	0%	0%	12%	0%	0%	0%	15%	0%	0%	15%	0%

SG3 Commercial

PM PEAK HOUR TURNING MOVEMENTS

EXHIBIT 2

Discovery & DW 3

	ebu	ebl	ebt	ebr	wbu	wbl	wbt	wbr	nbu	nbl	nbt	nbr	sbu	sbl	sbt	sbr
2021 Peak SeasonVolumes		0	311	0		0	289	0		0	0	0		0	0	0
		9.7%	9.7%	9.7%		9.7%	9.7%	9.7%		9.7%	9.7%	9.7%		9.7%	9.7%	9.7%
Growth 9.7%		0	100	0		0	93	0		0	0	0		0	0	0
2024 Volumes		**0**	**411**	**0**		**0**	**382**	**0**		**0**	**0**	**0**		**0**	**0**	**0**
Pre Dev		0	411	0		0	382	0		0	0	0		0	0	0
Atlantic Palms Volumes		16	0	0		0	0	31		0	0	0		0	0	10
Project Volumes		0	0	79		141	89	0		0	0	216		0	0	0
Total Project Volumes		16	0	79		141	89	31		0	0	216		0	0	10
Post Dev		**16**	**411**	**79**		**141**	**471**	**31**		**0**	**0**	**216**		**0**	**0**	**10**
Atlantic Palms Traffic		In						In								Out
Assignment	0%	11%	0%	0%	0%	0%	0%	22%	0%	0%	0%	0%	0%	0%	0%	11%
Project Traffic				In		In	Out					Out				
Assignment	0%	0%	0%	25%	0%	45%	28%	0%	0%	0%	0%	68%	0%	0%	0%	0%

EXHIBIT 3

HCS7 All-Way Stop Control Report

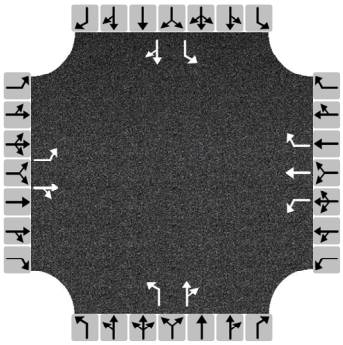
General Information

Analyst	MEP
Agency/Co.	MEP
Date Performed	8/10/2021
Analysis Year	2024
Analysis Time Period (hrs)	0.25
Time Analyzed	PM Pre Development
Project Description	Discovery & Community Pre Development

Site Information

Intersection	Discovery & Community
Jurisdiction	
East/West Street	Discovery Way
North/South Street	Community Boulevard
Peak Hour Factor	0.84

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	66	199	16	183	87	73	8	41	137	55	21	22
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	TR		L	T	R	L	TR		L	TR	
Flow Rate, v (veh/h)	79	256		218	104	87	10	212		65	51	
Percent Heavy Vehicles	2	2		2	2	2	2	2		2	2	

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20		3.20	3.20	3.20	3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x	0.070	0.228		0.194	0.092	0.077	0.008	0.188		0.058	0.046	
Final Departure Headway, hd (s)	7.51	6.95		7.38	6.87	6.16	7.95	6.89		8.26	7.39	
Final Degree of Utilization, x	0.164	0.494		0.447	0.198	0.149	0.021	0.406		0.150	0.105	
Move-Up Time, m (s)	2.3	2.3		2.3	2.3	2.3	2.3	2.3		2.3	2.3	
Service Time, ts (s)	5.21	4.65		5.08	4.57	3.86	5.65	4.59		5.96	5.09	

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	79	256		218	104	87	10	212		65	51	
Capacity	479	518		488	524	584	453	522		436	487	
95% Queue Length, Q_{95} (veh)	0.6	2.7		2.3	0.7	0.5	0.1	2.0		0.5	0.3	
Control Delay (s/veh)	11.7	16.3		15.9	11.3	9.9	10.8	14.2		12.4	11.0	
Level of Service, LOS	B	C		C	B	A	B	B		B	B	
Approach Delay (s/veh)	15.2			13.5			14.1			11.8		
Approach LOS	C			B			B			B		
Intersection Delay, s/veh | LOS	13.9						B					

HCS7 All-Way Stop Control Report

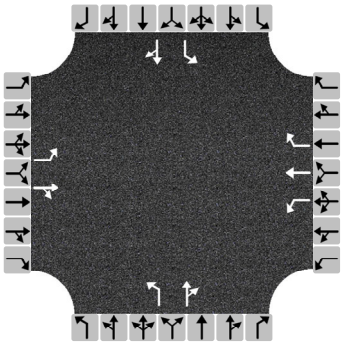
General Information

Analyst	MEP
Agency/Co.	MEP
Date Performed	8-22-2022
Analysis Year	2024
Analysis Time Period (hrs)	0.25
Time Analyzed	PM Post Development
Project Description	Discovery & Community Post Development

Site Information

Intersection	Discovery & Community
Jurisdiction	
East/West Street	Discovery Way
North/South Street	Community Boulevard
Peak Hour Factor	0.84

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	66	236	16	212	106	79	27	45	137	64	21	22
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	TR		L	T	R	L	TR		L	TR	
Flow Rate, v (veh/h)	79	300		252	126	94	32	217		76	51	
Percent Heavy Vehicles	2	2		2	2	2	2	2		2	2	

Departure Headway and Service Time

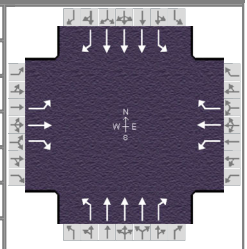
Initial Departure Headway, hd (s)	3.20	3.20		3.20	3.20	3.20	3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x	0.070	0.267		0.224	0.112	0.084	0.029	0.193		0.068	0.046	
Final Departure Headway, hd (s)	7.98	7.43		7.82	7.31	6.60	8.48	7.43		8.88	8.00	
Final Degree of Utilization, x	0.174	0.619		0.548	0.256	0.172	0.076	0.447		0.188	0.114	
Move-Up Time, m (s)	2.3	2.3		2.3	2.3	2.3	2.3	2.3		2.3	2.3	
Service Time, ts (s)	5.68	5.13		5.52	5.01	4.30	6.18	5.13		6.58	5.70	

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	79	300		252	126	94	32	217		76	51	
Capacity	451	485		460	492	546	425	484		405	450	
95% Queue Length, Q_{95} (veh)	0.6	4.1		3.2	1.0	0.6	0.2	2.3		0.7	0.4	
Control Delay (s/veh)	12.4	21.4		19.6	12.5	10.7	11.9	16.0		13.6	11.7	
Level of Service, LOS	B	C		C	B	B	B	C		B	B	
Approach Delay (s/veh)	19.6			15.9			15.5			12.9		
Approach LOS	C			C			C			B		
Intersection Delay, s/veh | LOS	16.6						C					

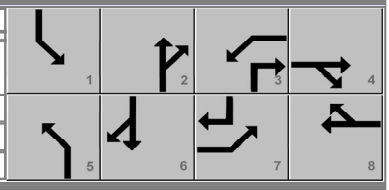
HCS7 Signalized Intersection Input Data

General Information				Intersection Information	
Agency	MEP			Duration, h	0.250
Analyst	MEP	Analysis Date	Dec 10, 2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.93
Urban Street		Analysis Year	2024	Analysis Period	1> 16:00
Intersection	Village & Discovery	File Name	Discovery & Village PM Pre Development.xus		
Project Description	2024 PM Pre Development				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	298	8	104	33	1	223	111	244	22	73	341	269

Signal Information												
Cycle, s	77.6	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On	Green	4.9	1.8	14.7	3.2	6.4	14.1		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.5	0.0	4.5	4.5	4.5	4.5		
				Red	2.0	0.0	2.0	2.0	2.0	2.0		



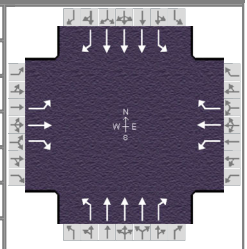
Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	298	8	104	33	1	223	111	244	22	73	341	269
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	2	2	2	2	2	2	2	2	2	2	2	2
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	0	0	0	0
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width (*W*), ft	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Turn Bay Length, ft	260	0	240	260	0	260	450	0	300	465	0	290
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	45	45	45	45	45	45	45	45	45	45	45	45

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	30.0	30.0	20.0	30.0	20.0	50.0	20.0	50.0
Yellow Change Interval (*Y*), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Red Clearance Interval (R_c), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Green (G_{min}), s	6	6	6	6	6	6	6	6
Start-Up Lost Time (*lt*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (*PT*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	Off	Off	Off	Off	Off	Min	Off	Min
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Walk (*Walk*), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time (*PC*), s		0.0		0.0		0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

HCS7 Signalized Intersection Results Summary

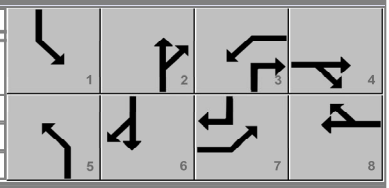
General Information				Intersection Information	
Agency	MEP			Duration, h	0.250
Analyst	MEP	Analysis Date	Dec 10, 2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.93
Urban Street		Analysis Year	2024	Analysis Period	1> 16:00
Intersection	Village & Discovery	File Name	Discovery & Village PM Pre Development.xus		
Project Description	2024 PM Pre Development				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	298	8	104	33	1	223	111	244	22	73	341	269

Signal Information			
Cycle, s	77.6	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	4.9	1.8	14.7	3.2	6.4	14.1	
Yellow	4.5	0.0	4.5	4.5	4.5	4.5	
Red	2.0	0.0	2.0	2.0	2.0	2.0	



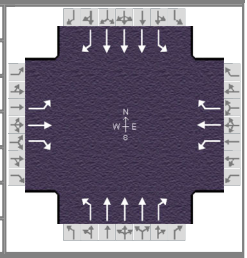
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	22.6	33.4	9.7	20.6	13.2	23.0	11.4	21.2
Change Period, ($Y+R_c$), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Allow Headway (*MAH*), s	3.0	3.3	3.0	3.3	3.0	3.0	3.0	3.0
Queue Clearance Time (g_s), s	15.5	5.9	3.5	13.3	7.1	5.3	5.4	12.5
Green Extension Time (g_e), s	0.5	0.7	0.0	0.7	0.1	2.2	0.1	2.2
Phase Call Probability	1.00	1.00	0.54	1.00	0.92	1.00	0.82	1.00
Max Out Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	320	9	112	35	1	240	119	262	24	78	367	289
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1698	1585	1781	1698	1585
Queue Service Time (g_s), s	13.5	0.2	3.9	1.5	0.0	11.3	5.1	3.3	0.9	3.4	4.9	10.5
Cycle Queue Clearance Time (g_c), s	13.5	0.2	3.9	1.5	0.0	11.3	5.1	3.3	0.9	3.4	4.9	10.5
Green Ratio (*g/C*)	0.21	0.35	0.35	0.04	0.18	0.18	0.09	0.21	0.25	0.06	0.19	0.40
Capacity (*c*), veh/h	370	651	551	74	340	288	155	1086	404	113	965	629
Volume-to-Capacity Ratio (*X*)	0.866	0.013	0.203	0.478	0.003	0.832	0.771	0.242	0.059	0.696	0.380	0.460
Back of Queue (*Q*), ft/ln (95 th percentile)	239	4.2	58.3	30	0.7	191	100.4	56.8	13.8	66.6	84.3	154.7
Back of Queue (*Q*), veh/ln (95 th percentile)	9.4	0.2	2.3	1.2	0.0	7.5	4.0	2.2	0.5	2.6	3.3	6.1
Queue Storage Ratio (*RQ*) (95 th percentile)	0.92	0.00	0.24	0.12	0.00	0.73	0.22	0.00	0.05	0.14	0.00	0.53
Uniform Delay (d_1), s/veh	29.8	16.6	17.8	36.5	26.1	30.7	34.8	25.4	21.9	35.7	27.5	17.3
Incremental Delay (d_2), s/veh	2.4	0.0	0.1	1.8	0.0	2.4	3.1	0.0	0.0	2.9	0.1	0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	32.2	16.6	17.9	38.2	26.1	33.1	37.8	25.4	22.0	38.6	27.6	17.5
Level of Service (LOS)	C	B	B	D	C	C	D	C	C	D	C	B
Approach Delay, s/veh / LOS	28.3	C		33.7	C		28.9	C		24.8	C	
Intersection Delay, s/veh / LOS	27.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.70	C	2.71	C	2.12	B	2.12	B
Bicycle LOS Score / LOS	1.22	A	0.94	A	0.71	A	0.89	A

HCS7 Signalized Intersection Intermediate Values

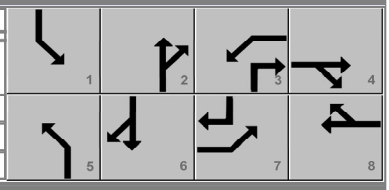
General Information				Intersection Information	
Agency	MEP			Duration, h	0.250
Analyst	MEP	Analysis Date	Dec 10, 2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.93
Urban Street		Analysis Year	2024	Analysis Period	1> 16:00
Intersection	Village & Discovery	File Name	Discovery & Village PM Pre Development.xus		
Project Description	2024 PM Pre Development				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	298	8	104	33	1	223	111	244	22	73	341	269

Signal Information			
Cycle, s	77.6	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	4.9	1.8	14.7	3.2	6.4	14.1
Yellow	4.5	0.0	4.5	4.5	4.5	4.5
Red	2.0	0.0	2.0	2.0	2.0	2.0



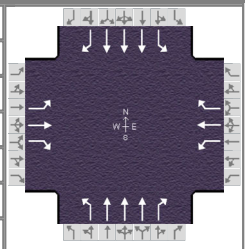
Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor (f_w)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles and Grade Factor (f_{HVg})	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984
Parking Activity Adjustment Factor (f_p)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor (f_{bb})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Area Type Adjustment Factor (f_a)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lane Utilization Adjustment Factor (f_{LU})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.908	1.000	1.000	0.908	1.000
Left-Turn Adjustment Factor (f_{LT})	0.952	0.000		0.952	0.000		0.952	0.000		0.952	0.000	
Right-Turn Adjustment Factor (f_{RT})		0.000	0.847		0.000	0.847		0.000	0.847		0.000	0.847
Left-Turn Pedestrian Adjustment Factor (f_{Lpb})	1.000			1.000			1.000			1.000		
Right-Turn Ped-Bike Adjustment Factor (f_{Rpb})			1.000			1.000			1.000			1.000
Work Zone Adjustment Factor (f_{wz})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DDI Factor (f_{DDI})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Movement Saturation Flow Rate (s), veh/h	1781	1870	1585	1781	1870	1585	1781	5095	1585	1781	5095	1585
Proportion of Vehicles Arriving on Green (P)	0.21	0.35	0.35	0.04	0.18	0.18	0.09	0.21	0.21	0.06	0.19	0.19
Incremental Delay Factor (k)	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04

Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time (t_L)	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Green Ratio (g/C)	0.21	0.35	0.04	0.18	0.09	0.21	0.06	0.19
Permitted Saturation Flow Rate (s_p), veh/h/ln	0	0	0	0	0	0	0	0
Shared Saturation Flow Rate (s_{sh}), veh/h/ln								
Permitted Effective Green Time (g_p), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Permitted Service Time (g_u), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Permitted Queue Service Time (g_{ps}), s								
Time to First Blockage (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Service Time Before Blockage (g_{fs}), s								
Protected Right Saturation Flow (s_R), veh/h/ln		0		0		1585		1585
Protected Right Effective Green Time (g_R), s		0.0		0.0		3.2		16.2

Multimodal	EB		WB		NB		SB	
Pedestrian F_w / F_v	1.983	0.000	1.983	0.000	1.389	0.000	1.389	0.000
Pedestrian F_s / F_{delay}	0.000	0.112	0.000	0.131	0.000	0.128	0.000	0.130
Pedestrian M_{corner} / M_{cw}								
Bicycle c_b / d_b	694.46	16.53	363.18	25.98	425.49	24.04	378.79	25.49
Bicycle F_w / F_v	-3.64	0.73	-3.64	0.46	-3.64	0.22	-3.64	0.40

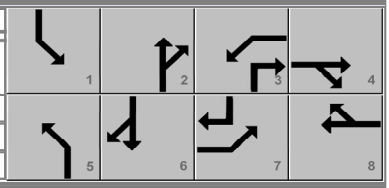
HCS7 Signalized Intersection Results Graphical Summary

General Information				Intersection Information	
Agency	MEP			Duration, h	0.250
Analyst	MEP	Analysis Date	Dec 10, 2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.93
Urban Street		Analysis Year	2024	Analysis Period	1> 16:00
Intersection	Village & Discovery	File Name	Discovery & Village PM Pre Development.xus		
Project Description	2024 PM Pre Development				

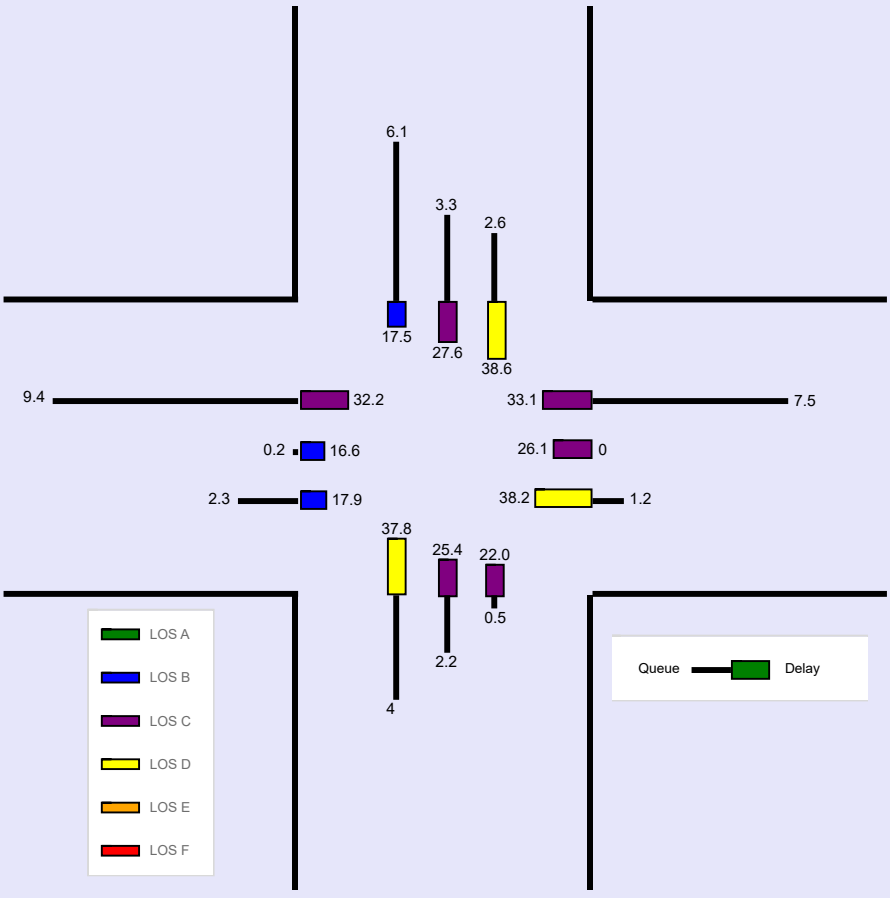


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	298	8	104	33	1	223	111	244	22	73	341	269

Signal Information					EB			WB			NB			SB		
Cycle, s	77.6	Reference Phase	2		L	T	R	L	T	R	L	T	R	L	T	R
Offset, s	0	Reference Point	End	Green	4.9	1.8		14.7	3.2	6.4	14.1					
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.5	0.0		4.5	4.5	4.5	4.5					
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	0.0		2.0	2.0	2.0	2.0					

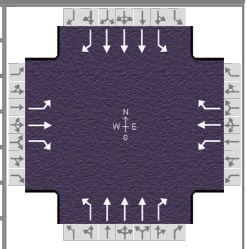


Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Back of Queue (*Q*), ft/ln (95 th percentile)	239	4.2	58.3	30	0.7	191	100.4	56.8	13.8	66.6	84.3	154.7
Back of Queue (*Q*), veh/ln (95 th percentile)	9.4	0.2	2.3	1.2	0.0	7.5	4.0	2.2	0.5	2.6	3.3	6.1
Queue Storage Ratio (*RQ*) (95 th percentile)	0.92	0.00	0.24	0.12	0.00	0.73	0.22	0.00	0.05	0.14	0.00	0.53
Control Delay (*d*), s/veh	32.2	16.6	17.9	38.2	26.1	33.1	37.8	25.4	22.0	38.6	27.6	17.5
Level of Service (LOS)	C	B	B	D	C	C	D	C	C	D	C	B
Approach Delay, s/veh / LOS	28.3	C		33.7	C		28.9	C		24.8	C	
Intersection Delay, s/veh / LOS	27.8						C					



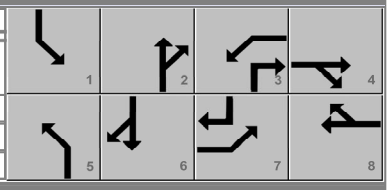
HCS7 Signalized Intersection Input Data

General Information				Intersection Information	
Agency	MEP			Duration, h	0.250
Analyst	MEP	Analysis Date	Jan 27, 2022	Area Type	Other
Jurisdiction		Time Period		PHF	0.93
Urban Street		Analysis Year	2024	Analysis Period	1> 16:00
Intersection	Village & Discovery	File Name	Discovery & Village PM Post Development Scena…		
Project Description	2024 PM Post Development				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	404	27	108	42	10	223	148	248	22	73	360	306

Signal Information												
Cycle, s	97.9	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On	Green	5.6	5.0	18.5	4.3	15.1	17.0		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.5	0.0	4.5	4.5	4.5	4.5		
				Red	2.0	0.0	2.0	2.0	2.0	2.0		



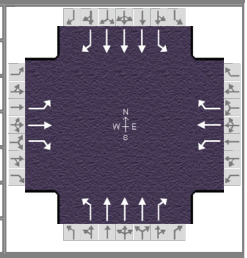
Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	404	27	108	42	10	223	148	248	22	73	360	306
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	2	2	2	2	2	2	2	2	2	2	2	2
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	0	0	0	0
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width (*W*), ft	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Turn Bay Length, ft	260	0	240	260	0	260	450	0	300	465	0	290
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	45	45	45	45	45	45	45	45	45	45	45	45

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	30.0	30.0	20.0	30.0	20.0	50.0	20.0	50.0
Yellow Change Interval (*Y*), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Red Clearance Interval (R_c), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Green (G_{min}), s	6	6	6	6	6	6	6	6
Start-Up Lost Time (*lt*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (*PT*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	Off	Off	Off	Off	Off	Min	Off	Min
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Walk (*Walk*), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time (*PC*), s		0.0		0.0		0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

HCS7 Signalized Intersection Results Summary

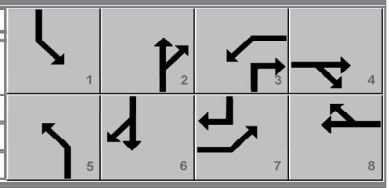
General Information				Intersection Information	
Agency	MEP			Duration, h	0.250
Analyst	MEP	Analysis Date	Jan 27, 2022	Area Type	Other
Jurisdiction		Time Period		PHF	0.93
Urban Street		Analysis Year	2024	Analysis Period	1> 16:00
Intersection	Village & Discovery	File Name	Discovery & Village PM Post Development Scena…		
Project Description	2024 PM Post Development				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	404	27	108	42	10	223	148	248	22	73	360	306

Signal Information			
Cycle, s	97.9	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	5.6	5.0	18.5	4.3	15.1	17.0						
Yellow	4.5	0.0	4.5	4.5	4.5	4.5						
Red	2.0	0.0	2.0	2.0	2.0	2.0						



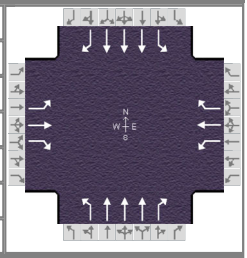
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	32.3	45.0	10.8	23.5	17.2	30.0	12.1	25.0
Change Period, ($Y+R_c$), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Allow Headway (*MAH*), s	3.0	3.2	3.0	3.2	3.0	3.0	3.0	3.0
Queue Clearance Time (g_s), s	25.3	6.7	4.4	16.5	10.6	6.1	6.3	16.1
Green Extension Time (g_e), s	0.4	0.8	0.0	0.4	0.2	2.3	0.1	2.3
Phase Call Probability	1.00	1.00	0.71	1.00	0.99	1.00	0.88	1.00
Max Out Probability	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	434	29	116	45	11	240	159	267	24	78	387	329
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1698	1585	1781	1698	1585
Queue Service Time (g_s), s	23.3	0.9	4.7	2.4	0.5	14.5	8.6	4.1	1.1	4.3	6.6	14.1
Cycle Queue Clearance Time (g_c), s	23.3	0.9	4.7	2.4	0.5	14.5	8.6	4.1	1.1	4.3	6.6	14.1
Green Ratio (*g/C*)	0.26	0.39	0.39	0.04	0.17	0.17	0.11	0.24	0.28	0.06	0.19	0.45
Capacity (*c*), veh/h	470	737	625	77	325	275	194	1223	450	103	961	718
Volume-to-Capacity Ratio (*X*)	0.924	0.039	0.186	0.583	0.033	0.872	0.820	0.218	0.053	0.766	0.403	0.459
Back of Queue (*Q*), ft/ln (95 th percentile)	447.3	17.6	74.6	50.3	9.4	241.4	174	73.9	17.6	88.9	119.1	211.6
Back of Queue (*Q*), veh/ln (95 th percentile)	17.6	0.7	2.9	2.0	0.4	9.5	6.8	2.9	0.7	3.5	4.7	8.3
Queue Storage Ratio (*RQ*) (95 th percentile)	1.72	0.00	0.31	0.19	0.00	0.93	0.39	0.00	0.06	0.19	0.00	0.73
Uniform Delay (d_1), s/veh	35.2	18.3	19.5	46.1	33.7	39.5	42.8	29.9	25.6	45.6	35.0	18.6
Incremental Delay (d_2), s/veh	18.8	0.0	0.1	2.6	0.0	3.4	3.3	0.0	0.0	4.4	0.1	0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	54.0	18.3	19.5	48.7	33.7	42.9	46.1	30.0	25.6	50.0	35.1	18.7
Level of Service (LOS)	D	B	B	D	C	D	D	C	C	D	D	B
Approach Delay, s/veh / LOS	45.3	D		43.4	D		35.4	D		29.8	C	
Intersection Delay, s/veh / LOS	37.1						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.70	C	2.72	C	2.12	B	2.13	B
Bicycle LOS Score / LOS	1.44	A	0.98	A	0.73	A	0.92	A

HCS7 Signalized Intersection Intermediate Values

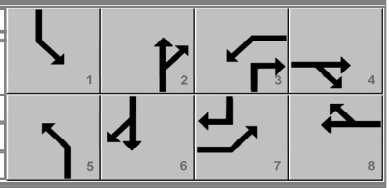
General Information				Intersection Information	
Agency	MEP			Duration, h	0.250
Analyst	MEP	Analysis Date	Jan 27, 2022	Area Type	Other
Jurisdiction		Time Period		PHF	0.93
Urban Street		Analysis Year	2024	Analysis Period	1> 16:00
Intersection	Village & Discovery	File Name	Discovery & Village PM Post Development Scena…		
Project Description	2024 PM Post Development				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	404	27	108	42	10	223	148	248	22	73	360	306

Signal Information			
Cycle, s	97.9	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	5.6	5.0	18.5	4.3	15.1	17.0
Yellow	4.5	0.0	4.5	4.5	4.5	4.5
Red	2.0	0.0	2.0	2.0	2.0	2.0



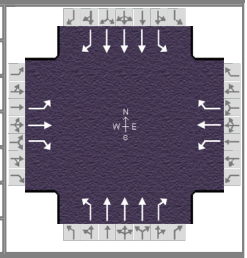
Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor (f_w)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles and Grade Factor (f_{HVg})	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984
Parking Activity Adjustment Factor (f_p)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor (f_{bb})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Area Type Adjustment Factor (f_a)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lane Utilization Adjustment Factor (f_{LU})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.908	1.000	1.000	0.908	1.000
Left-Turn Adjustment Factor (f_{LT})	0.952	0.000		0.952	0.000		0.952	0.000		0.952	0.000	
Right-Turn Adjustment Factor (f_{RT})		0.000	0.847		0.000	0.847		0.000	0.847		0.000	0.847
Left-Turn Pedestrian Adjustment Factor (f_{Lpb})	1.000			1.000			1.000			1.000		
Right-Turn Ped-Bike Adjustment Factor (f_{Rpb})			1.000			1.000			1.000			1.000
Work Zone Adjustment Factor (f_{wz})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DDI Factor (f_{DDI})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Movement Saturation Flow Rate (s), veh/h	1781	1870	1585	1781	1870	1585	1781	5095	1585	1781	5095	1585
Proportion of Vehicles Arriving on Green (P)	0.26	0.39	0.39	0.04	0.17	0.17	0.11	0.24	0.24	0.06	0.19	0.19
Incremental Delay Factor (k)	0.31	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04

Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time (t_L)	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Green Ratio (g/C)	0.26	0.39	0.04	0.17	0.11	0.24	0.06	0.19
Permitted Saturation Flow Rate (s_p), veh/h/ln	0	0	0	0	0	0	0	0
Shared Saturation Flow Rate (s_{sh}), veh/h/ln								
Permitted Effective Green Time (g_p), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Permitted Service Time (g_u), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Permitted Queue Service Time (g_{ps}), s								
Time to First Blockage (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Service Time Before Blockage (g_{fs}), s								
Protected Right Saturation Flow (s_R), veh/h/ln		0		0		1585		1585
Protected Right Effective Green Time (g_R), s		0.0		0.0		4.3		25.9

Multimodal	EB		WB		NB		SB	
Pedestrian F_w / F_v	1.983	0.000	1.983	0.000	1.389	0.000	1.389	0.000
Pedestrian F_s / F_{delay}	0.000	0.116	0.000	0.141	0.000	0.134	0.000	0.139
Pedestrian M_{corner} / M_{cw}								
Bicycle c_b / d_b	787.17	18.01	346.71	33.46	479.98	28.28	377.29	32.23
Bicycle F_w / F_v	-3.64	0.96	-3.64	0.49	-3.64	0.25	-3.64	0.44

HCS7 Signalized Intersection Results Graphical Summary

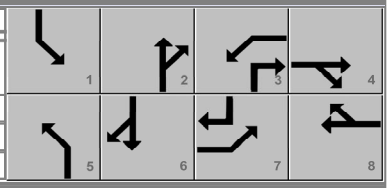
General Information				Intersection Information	
Agency	MEP			Duration, h	0.250
Analyst	MEP	Analysis Date	Jan 27, 2022	Area Type	Other
Jurisdiction		Time Period		PHF	0.93
Urban Street		Analysis Year	2024	Analysis Period	1> 16:00
Intersection	Village & Discovery	File Name	Discovery & Village PM Post Development Scena…		
Project Description	2024 PM Post Development				



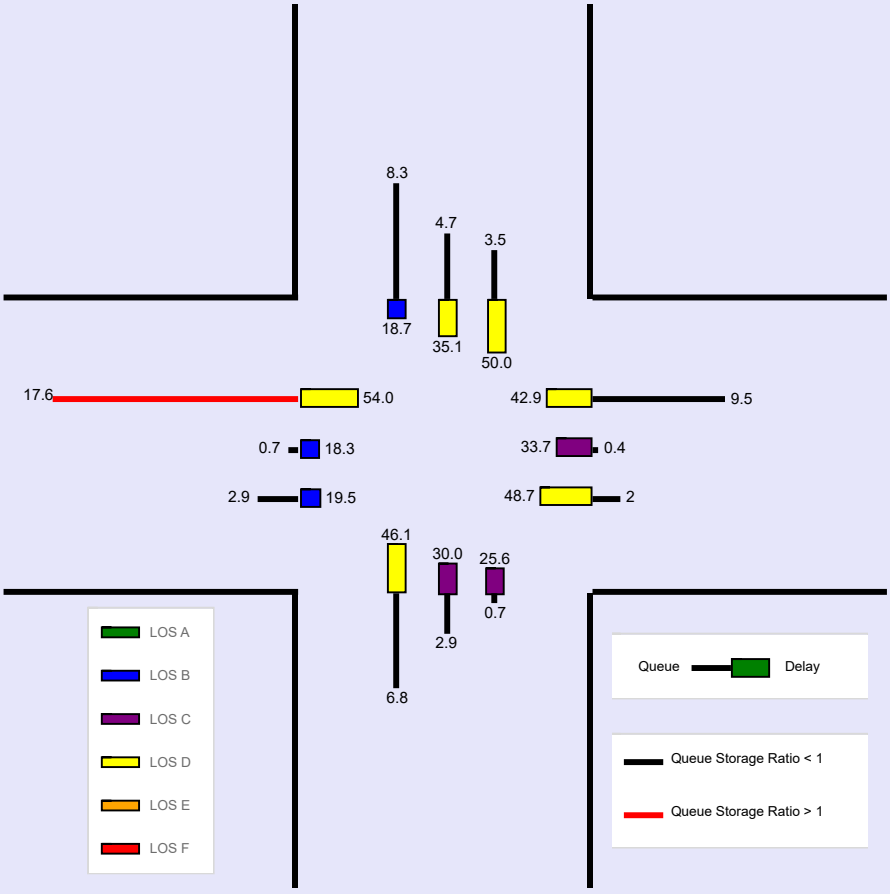
Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	404	27	108	42	10	223	148	248	22	73	360	306

Signal Information			
Cycle, s	97.9	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	5.6	5.0	18.5	4.3	15.1	17.0	
Yellow	4.5	0.0	4.5	4.5	4.5	4.5	
Red	2.0	0.0	2.0	2.0	2.0	2.0	



Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Back of Queue (*Q*), ft/ln (95 th percentile)	447.3	17.6	74.6	50.3	9.4	241.4	174	73.9	17.6	88.9	119.1	211.6
Back of Queue (*Q*), veh/ln (95 th percentile)	17.6	0.7	2.9	2.0	0.4	9.5	6.8	2.9	0.7	3.5	4.7	8.3
Queue Storage Ratio (*RQ*) (95 th percentile)	1.72	0.00	0.31	0.19	0.00	0.93	0.39	0.00	0.06	0.19	0.00	0.73
Control Delay (*d*), s/veh	54.0	18.3	19.5	48.7	33.7	42.9	46.1	30.0	25.6	50.0	35.1	18.7
Level of Service (LOS)	D	B	B	D	C	D	D	C	C	D	D	B
Approach Delay, s/veh / LOS	45.3	D		43.4	D		35.4	D		29.8	C	
Intersection Delay, s/veh / LOS	37.1						D					



HCS7 Two-Way Stop-Control Report

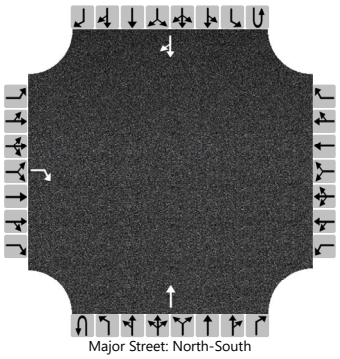
General Information

Analyst	MEP
Agency/Co.	
Date Performed	8-22-2022
Analysis Year	2024
Time Analyzed	2024 PM Post Development
Intersection Orientation	North-South
Project Description	2024 Post Development

Site Information

Intersection	Village & DW 1
Jurisdiction	
East/West Street	DW 4
North/South Street	Village Pkwy
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	1		0	0	0	0	0	1	0	0	0	1	0
Configuration				R							T					TR
Volume (veh/h)				64							447				484	47
Percent Heavy Vehicles (%)				2												
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No														
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)				6.2												
Critical Headway (sec)				6.22												
Base Follow-Up Headway (sec)				3.3												
Follow-Up Headway (sec)				3.32												

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)				71												
Capacity, c (veh/h)				525												
v/c Ratio				0.14												
95% Queue Length, Q_{95} (veh)				0.5												
Control Delay (s/veh)				12.9												
Level of Service (LOS)				B												
Approach Delay (s/veh)		12.9														
Approach LOS		B														

HCS7 Two-Way Stop-Control Report

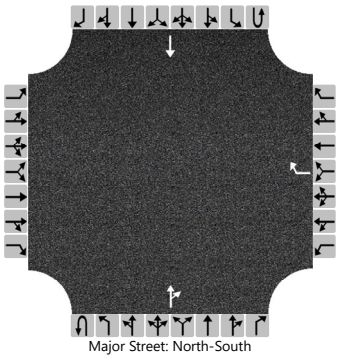
General Information

Analyst	MEP
Agency/Co.	
Date Performed	8-22-2022
Analysis Year	2024
Time Analyzed	2024 PM Post Development
Intersection Orientation	North-South
Project Description	2024 Post Development

Site Information

Intersection	Community & DW 2
Jurisdiction	
East/West Street	DW 2
North/South Street	Community Blvd
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	1	0	0	1	0	0	0	1	0
Configuration								R				TR			T	
Volume (veh/h)								38			186	47			268	
Percent Heavy Vehicles (%)								2								
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized						No										
Median Type | Storage		Left + Thru								1						

Critical and Follow-up Headways

Base Critical Headway (sec)								6.2								
Critical Headway (sec)								6.22								
Base Follow-Up Headway (sec)								3.3								
Follow-Up Headway (sec)								3.32								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)								42								
Capacity, c (veh/h)								806								
v/c Ratio								0.05								
95% Queue Length, Q_{95} (veh)								0.2								
Control Delay (s/veh)								9.7								
Level of Service (LOS)								A								
Approach Delay (s/veh)						9.7										
Approach LOS						A										

HCS7 Two-Way Stop-Control Report

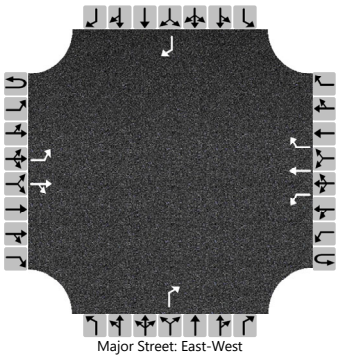
General Information

Analyst	MEP
Agency/Co.	
Date Performed	8-22-2022
Analysis Year	2024
Time Analyzed	2024 PM Post Development
Intersection Orientation	East-West
Project Description	2024 PM Post Development - Scenario 2

Site Information

Intersection	DW 3 & Discovery
Jurisdiction	
East/West Street	Discovery
North/South Street	DW 3
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		0	0	1		0	0	1
Configuration		L		TR		L	T	R				R				R
Volume (veh/h)		16	411	79		141	471	31				216				10
Percent Heavy Vehicles (%)		2				2						2				2
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized						No				No				No		
Median Type | Storage		Left + Thru								1						

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1						6.2				6.2
Critical Headway (sec)		4.12				4.12						6.22				6.22
Base Follow-Up Headway (sec)		2.2				2.2						3.3				3.3
Follow-Up Headway (sec)		2.22				2.22						3.32				3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		18				157						240				11
Capacity, c (veh/h)		1013				1025						570				554
v/c Ratio		0.02				0.15						0.42				0.02
95% Queue Length, Q_{95} (veh)		0.1				0.5						2.1				0.1
Control Delay (s/veh)		8.6				9.1						15.8				11.6
Level of Service (LOS)		A				A						C				B
Approach Delay (s/veh)		0.3				2.0				15.8				11.6		
Approach LOS										C				B		

APPENDIX A

EXHIBIT 1

CONDITIONS OF APPROVAL

Application for Development Approval

1. The Southern Grove Development of Regional Impact Application for Development Approval is incorporated herein by reference. It is relied upon, but not to the exclusion of other available information, by the parties in discharging their statutory duties under Chapter 380, Florida Statutes. Substantial compliance with the representations contained in the Application for Development Approval, as modified by Development Order conditions, is a condition for approval.

   For purposes of this condition, the Application for Development Approval shall include the following items:

   a. Application for Development Approval dated June 1, 2005;

   b. Supplemental information dated December 16, 2005; and April 19, 2006; and

   c. Western Annexation Traffic Study (WATS) Final Report dated January 2006;

   d. Annexation Agreement dated July 19, 2004 and revised May 16, 2005, July 11, 2005, November 16, 2009, December 28, 2009 and April 8, 2010, and as such Annexation Agreement may be subsequently amended by the parties thereto ("Annexation Agreement").

   e. Application for Development Approval for a Substantial Deviation to Approved Development of regional Impact dated September 18, 2009 and supplemental information related thereto dated July 6, 2010; June 29, 2011 and September 22, 2011.

Commencement and Process of Development

2. The Developer has commenced significant physical development.

Plan of Development

3. a) The phasing of the Southern Grove Development of Regional Impact is approved and the Developer is authorized to develop the DRI Property as follows:

Phase	Years	Residential (DU)	Retail (SF)	Office (SF)	Research & Development (SF)	Warehouse/ Industrial (SF)	Hotel (Rooms)	Hospital (Beds)
1	2006-2017	900	465,000	350,000	915,000	450,000	371	300
2	2018-2022	2,000	1,210,075	693,576	527,867	1,411,112	250	0
3	2023-2027	2,018	1,000,000	693,576	527,867	1,361,112	170	0
4	2028-	2,470	1,000,000	693,576	527,868	1,361,112	0	0

EXHIBIT 1

	2032							
Total	2006-2032	7,388[1]	3,675,075	2,430,728	2,498,602	4,583,336	791	300

[1]Residential DUs include 3,314 single-family DUs and 4,074 multi-family DUs, unless increased or decreased in accordance with Exhibit "C".

The development of a use in any phase may commence prior to completion of development in the preceding phase so long as all specific conditions for mitigation of transportation impacts are implemented according to the schedule in the Development Order, as it may be modified from time to time, and all other conditions of this Development Order are satisfied.

In addition to those uses described above, the Developer is authorized to develop ancillary and support uses including but not limited to adult congregate living facilities, wireless communication and cable television towers, digital network facilities, civic buildings, community centers, irrigation treatment plant and pumping facilities, libraries, places of worship, public service facilities, recreational facilities and schools as permitted within the New Community Development District.

b) In order to accommodate changing market demands, at the Developer's request in an application for a specific development permit, and without the Developer filing a notification of proposed change pursuant to Section 380.06 (19), F.S., the City may increase or decrease the amount of an approved land use by applying the Equivalency Matrix attached as Exhibit "C", which is incorporated into this development order by this reference. The use of the Equivalency Matrix does not allow impacts to water, wastewater, solid waste, transportation or affordable housing to exceed the aggregate impacts projected in the ADA. In addition, to ensure the basic character of the Southern Grove DRI is not altered, no land use may exceed the specified maximum in the Equivalency Matrix, and no land use may fall below the specified minimum. Further the Equivalency Matrix may not be used to reduce the aggregate amount of non-residential uses within the Property below the minimum established for the Property by the Annexation Agreement. The mix of uses shall be consistent with that allowed in the Port St. Lucie Comprehensive Plan. The Developer shall report in each biennial report use of the Equivalency Matrix to increase the amount of one land use with a concurrent reduction in one or more land uses.

Buildout Date

4. The Southern Grove Development of Regional Impact shall have a buildout date of April 2, 2035, unless otherwise amended pursuant to the conditions of this Development Order and Section 380.06, Florida Statutes.

Expiration and Termination Date

5. This Development Order shall expire and terminate on May 24, 2041, unless extended as provided in Section 380.06(19)(c), Florida Statutes.

APPENDIX B GROWTH RATE CALCULATION

Road Name	ID #	From	To	2015	2016	2017	2018	2019	Annual Absolute Growth	Growth Rate
Becker Rd	948005	Village Pkwy	I-95		1,550			4,300	917	21.3%
	947067	I-95	PSL Blvd		9,900			13,200	1,100	8.3%
Gatlin Blvd	945075	I-95	Savage Blvd	28,500	36,500	34,000	38,000	50,500	4,550	9.0%
							Total	68,000	6,567	
							68000/6567		=	0.097
					Weighted Average					9.7%
					Growth Rate Used					**9.7%**

2020 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 9402 WEST-W OF I95

MOCF: 0.88

WEEK	DATES	SF	PSCF
* 1	01/01/2020 - 01/04/2020	0.96	1.09
* 2	01/05/2020 - 01/11/2020	0.94	1.07
* 3	01/12/2020 - 01/18/2020	0.92	1.05
* 4	01/19/2020 - 01/25/2020	0.89	1.01
* 5	01/26/2020 - 02/01/2020	0.87	0.99
* 6	02/02/2020 - 02/08/2020	0.84	0.95
* 7	02/09/2020 - 02/15/2020	0.82	0.93
* 8	02/16/2020 - 02/22/2020	0.83	0.94
* 9	02/23/2020 - 02/29/2020	0.84	0.95
*10	03/01/2020 - 03/07/2020	0.86	0.98
*11	03/08/2020 - 03/14/2020	0.87	0.99
*12	03/15/2020 - 03/21/2020	0.88	1.00
*13	03/22/2020 - 03/28/2020	0.97	1.10
14	03/29/2020 - 04/04/2020	1.05	1.19
15	04/05/2020 - 04/11/2020	1.14	1.30
16	04/12/2020 - 04/18/2020	1.22	1.39
17	04/19/2020 - 04/25/2020	1.18	1.34
18	04/26/2020 - 05/02/2020	1.15	1.31
19	05/03/2020 - 05/09/2020	1.11	1.26
20	05/10/2020 - 05/16/2020	1.07	1.22
21	05/17/2020 - 05/23/2020	1.07	1.22
22	05/24/2020 - 05/30/2020	1.07	1.22
23	05/31/2020 - 06/06/2020	1.08	1.23
24	06/07/2020 - 06/13/2020	1.08	1.23
25	06/14/2020 - 06/20/2020	1.08	1.23
26	06/21/2020 - 06/27/2020	1.09	1.24
27	06/28/2020 - 07/04/2020	1.09	1.24
28	07/05/2020 - 07/11/2020	1.10	1.25
29	07/12/2020 - 07/18/2020	1.11	1.26
30	07/19/2020 - 07/25/2020	1.10	1.25
31	07/26/2020 - 08/01/2020	1.08	1.23
32	08/02/2020 - 08/08/2020	1.07	1.22
33	08/09/2020 - 08/15/2020	1.06	1.20
34	08/16/2020 - 08/22/2020	1.06	1.20
35	08/23/2020 - 08/29/2020	1.06	1.20
36	08/30/2020 - 09/05/2020	1.06	1.20
37	09/06/2020 - 09/12/2020	1.05	1.19
38	09/13/2020 - 09/19/2020	1.05	1.19
39	09/20/2020 - 09/26/2020	1.04	1.18
40	09/27/2020 - 10/03/2020	1.03	1.17
41	10/04/2020 - 10/10/2020	1.02	1.16
42	10/11/2020 - 10/17/2020	1.01	1.15
43	10/18/2020 - 10/24/2020	1.01	1.15
44	10/25/2020 - 10/31/2020	1.00	1.14
45	11/01/2020 - 11/07/2020	1.00	1.14
46	11/08/2020 - 11/14/2020	1.00	1.14
47	11/15/2020 - 11/21/2020	1.00	1.14
48	11/22/2020 - 11/28/2020	0.99	1.13
49	11/29/2020 - 12/05/2020	0.98	1.11
50	12/06/2020 - 12/12/2020	0.97	1.10
51	12/13/2020 - 12/19/2020	0.96	1.09
52	12/20/2020 - 12/26/2020	0.94	1.07
53	12/27/2020 - 12/31/2020	0.92	1.05

* PEAK SEASON

Appendix D

Vehicle Pass-By Rates by Land Use

Source: ITE *Trip Generation Manual* , 11th Edition

Land Use Code	821
Land Use	Shopping Plaza (40 - 150k)
Setting	General Urban/Suburban
Time Period	Weekday PM Peak Period
# Data Sites	15
Average Pass-By Rate	40%

Pass-By Characteristics for Individual Sites

GLA (000)	State or Province	Survey Year	# Interviews	Pass-By Trip (%)	Non-Pass-By Trips			Adj Street Peak Hour Volume	Source
					Primary (%)	Diverted (%)	Total (%)		
45	Florida	1992	844	56	24	20	44	—	30
50	Florida	1992	555	41	41	18	59	—	30
52	Florida	1995	665	42	33	25	58	—	30
53	Florida	1993	162	59	—	—	41	—	30
57.23	Kentucky	1993	247	31	53	16	69	2659	34
60	Florida	1995	1583	40	38	22	60	—	30
69.4	Kentucky	1993	109	25	42	33	75	1559	34
77	Florida	1992	365	46	—	—	54	—	30
78	Florida	1991	702	55	23	22	45	—	30
82	Florida	1992	336	34	—	—	66	—	30
92.857	Kentucky	1993	133	22	50	28	78	3555	34
100.888	Kentucky	1993	281	28	50	22	72	2111	34
121.54	Kentucky	1993	210	53	30	17	47	2636	34
144	New Jersey	1990	176	32	44	24	68	—	24
146.8	Kentucky	1993	—	36	39	25	64	—	34

Appendix D

Vehicle Pass-By Rates by Land Use

Source: ITE *Trip Generation Manual* , 11th Edition

Land Use Code	932
Land Use	High-Turnover (Sit-Down) Restaurant
Setting	General Urban/Suburban
Time Period	Weekday PM Peak Period
# Data Sites	12
Average Pass-By Rate	43%

Pass-By Characteristics for Individual Sites

GFA (000)	State or Province	Survey Year	# Interviews	Pass-By Trip (%)	Non-Pass-By Trips			Adj Street Peak Hour Volume	Source
					Primary (%)	Diverted (%)	Total (%)		
2.9	Kentucky	1993	41	37	27	36	63	3935	2
3.1	Kentucky	1993	21	38	29	33	62	2580	2
4.6	Florida	1992	276	63	—	—	37	—	30
5	Florida	1992	65	58	—	—	42	—	30
5.3	Kentucky	1993	24	50	37	13	50	1615	2
5.7	Florida	1994	308	57	—	—	43	—	30
5.8	Florida	1992	150	32	—	—	68	—	30
6.2	Florida	1995	521	46	43	11	54	—	30
7.1	Indiana	1993	—	23	23	54	77	1565	2
8	Florida	1995	664	40	39	21	60	—	30
11	Florida	1996	267	38	43	19	62	—	30
12	Florida	1996	317	29	51	20	71	—	30

Appendix E

Land Use: 221
Multifamily Housing (Mid-Rise)

Description

Mid-rise multifamily housing includes apartments and condominiums located in a building that has between four and 10 floors of living space. Access to individual dwelling units is through an outside building entrance, a lobby, elevator, and a set of hallways.

Multifamily housing (low-rise) (Land Use 220), multifamily housing (high-rise) (Land Use 222), off-campus student apartment (mid-rise) (Land Use 226), and mid-rise residential with ground-floor commercial (Land Use 231) are related land uses.

Land Use Subcategory

Data are presented for two subcategories for this land use: (1) not close to rail transit and (2) close to rail transit. A site is considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station entrance is ½ mile or less.

Additional Data

For the six sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 2.5 residents per occupied dwelling unit.

For the five sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 96 percent of the total dwelling units were occupied.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

It is expected that the number of bedrooms and number of residents are likely correlated to the trips generated by a residential site. To assist in future analysis, trip generation studies of all multifamily housing should attempt to obtain information on occupancy rate and on the mix of residential unit sizes (i.e., number of units by number of bedrooms at the site complex).

The sites were surveyed in the 1990s, the 2000s, the 2010s, and the 2020s in Alberta (CAN), California, District of Columbia, Florida, Georgia, Illinois, Maryland, Massachusetts, Minnesota, Montana, New Jersey, New York, Ontario (CAN), Oregon, Utah, and Virginia.

Source Numbers

168, 188, 204, 305, 306, 321, 818, 857, 862, 866, 901, 904, 910, 949, 951, 959, 963, 964, 966, 967, 969, 970, 1004, 1014, 1022, 1023, 1025, 1031, 1032, 1035, 1047, 1056, 1057, 1058, 1071, 1076

Multifamily Housing (Mid-Rise)
Not Close to Rail Transit (221)

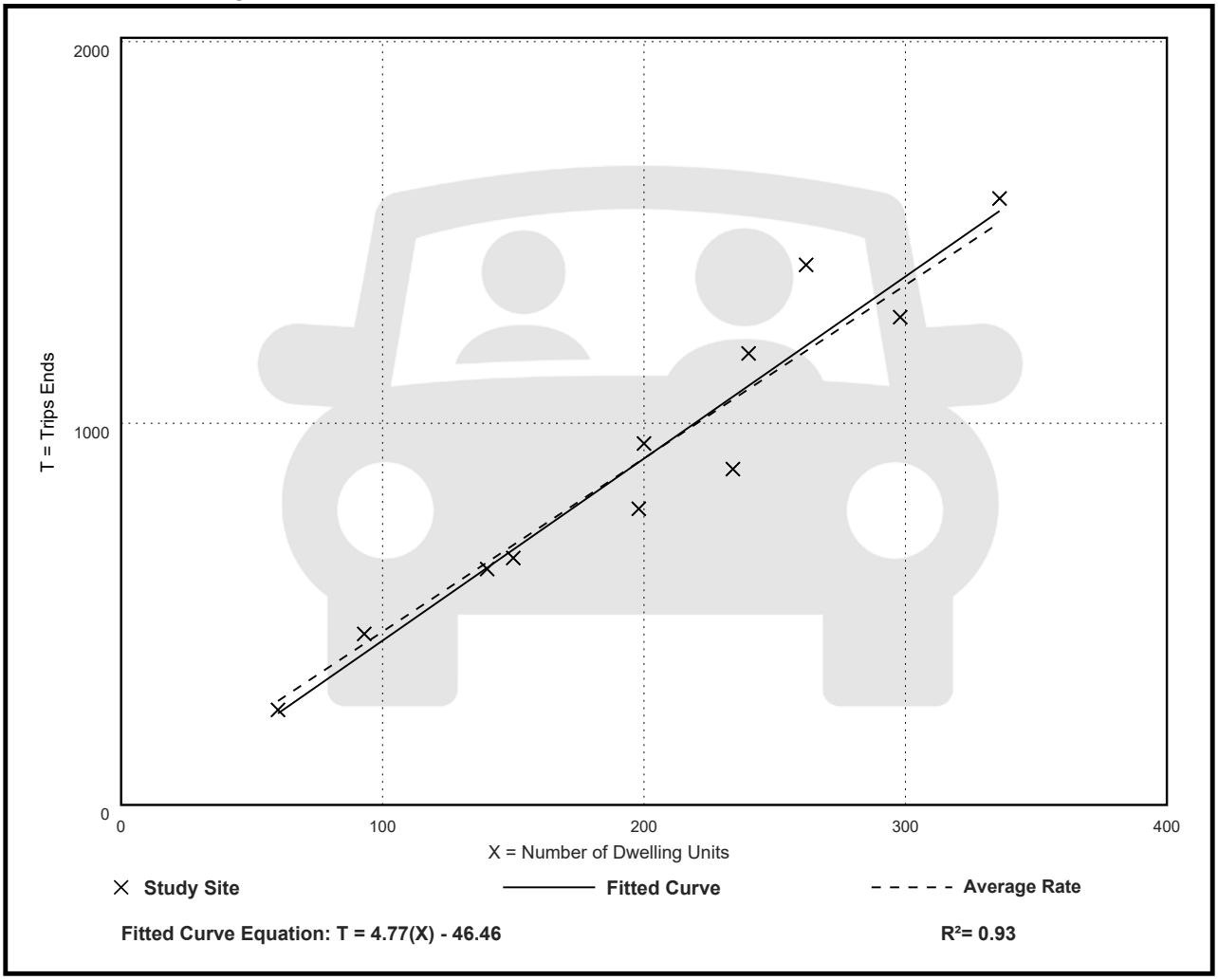
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 11
Avg. Num. of Dwelling Units: 201
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
4.54	3.76 - 5.40	0.51

Data Plot and Equation



Fitted Curve Equation: T = 4.77(X) - 46.46

R^2= 0.93

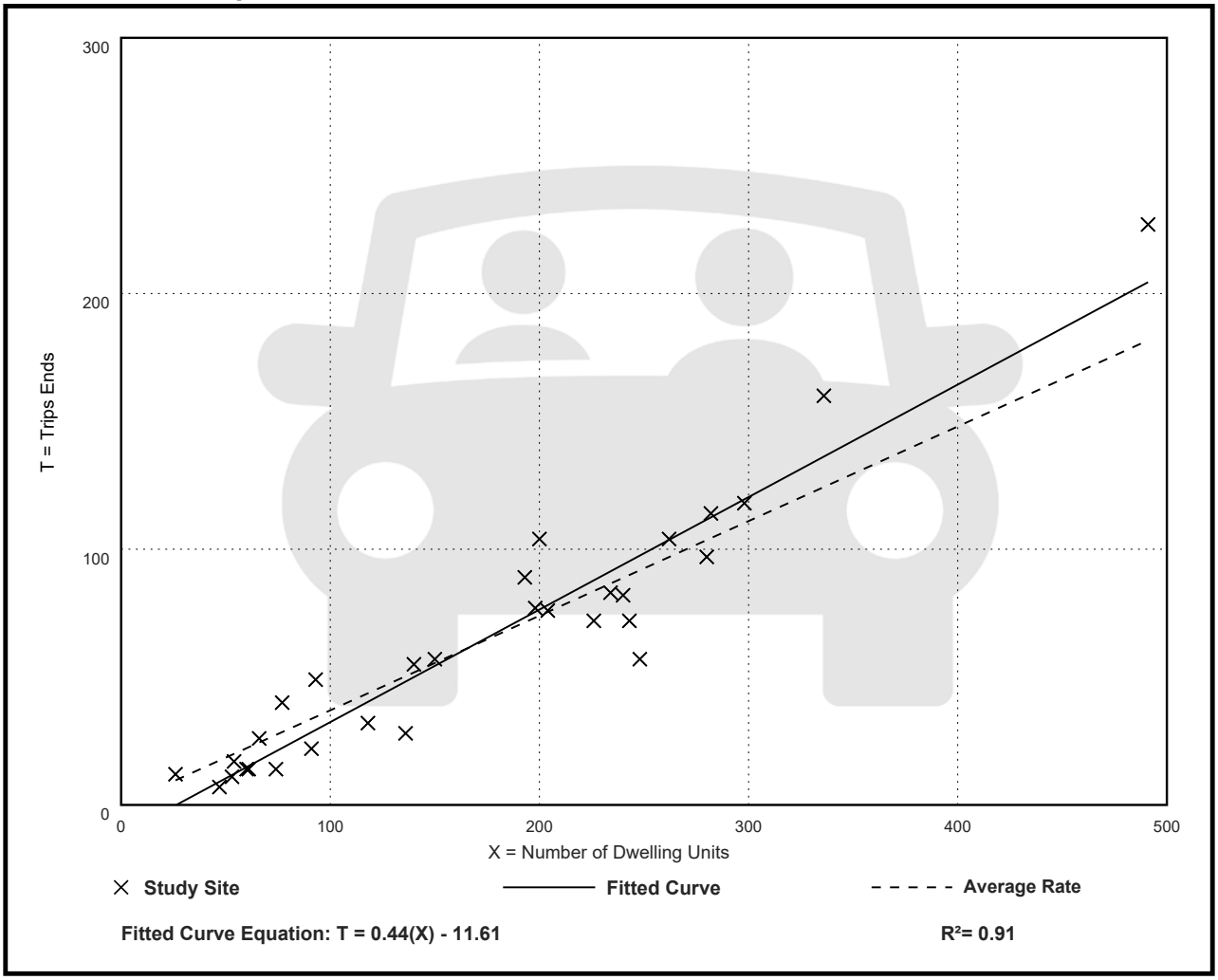
Multifamily Housing (Mid-Rise)
Not Close to Rail Transit (221)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 30
Avg. Num. of Dwelling Units: 173
Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.37	0.15 - 0.53	0.09

Data Plot and Equation



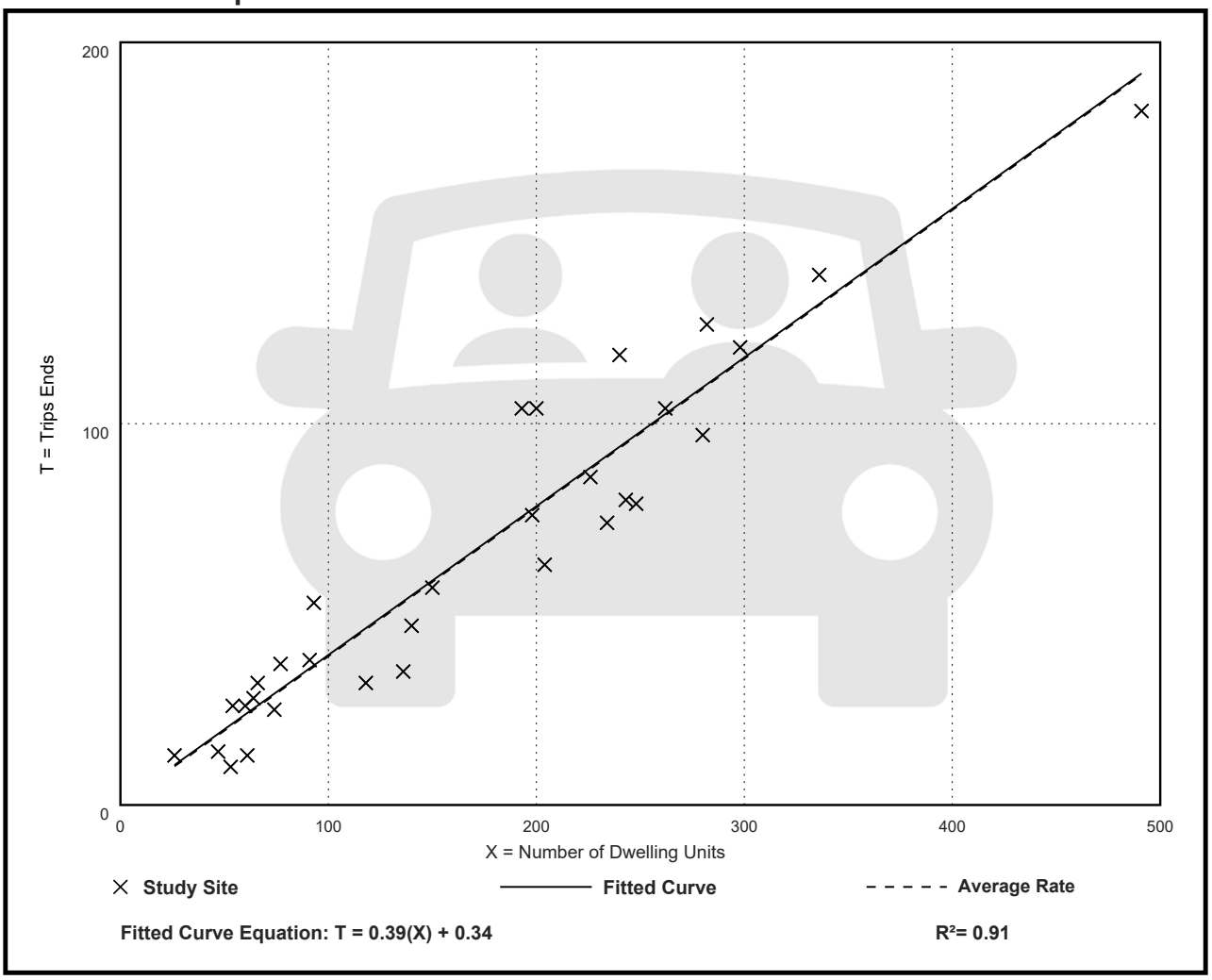
Multifamily Housing (Mid-Rise)
Not Close to Rail Transit (221)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 31
Avg. Num. of Dwelling Units: 169
Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.39	0.19 - 0.57	0.08

Data Plot and Equation



Land Use: 821
Shopping Plaza (40-150k)

Description

A shopping plaza is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Each study site in this land use has between 40,000 and 150,000 square feet of gross leasable area (GLA). The term "plaza" in the land use name rather than "center" is simply a means of distinction between the different shopping center size ranges. Various other names are commonly used to categorize a shopping plaza within this size range, depending on its specific size and tenants, such as neighborhood center, community center, and fashion center.

Its major tenant is often a supermarket but many sites are anchored by home improvement, discount, or other stores. A shopping plaza typically contains more than retail merchandising facilities. Office space, a movie theater, restaurants, a post office, banks, a health club, and recreational facilities are common tenants. A shopping plaza is almost always open-air and the GLA is the same as the gross floor area of the building.

The 150,000 square feet GLA threshold value between shopping plaza and shopping center (Land Use 820) is based on an examination of trip generation data. For a shopping plaza that is smaller than the threshold value, the presence or absence of a supermarket within the plaza has a measurable effect on site trip generation. For a shopping center that is larger than the threshold value, the trips generated by its other major tenants mask any effects of the presence or absence of an on-site supermarket.

The 40,000 square feet GFA threshold between shopping plaza and strip retail plaza (Land Use 822) was selected based on an examination of the overall shopping center/plaza database. No shopping plaza with a supermarket as its anchor is smaller than 40,000 square feet GLA.

Shopping center (>150k) (Land Use 820), strip retail plaza (<40k) (Land Use 822), and factory outlet center (Land Use 823) are related uses.

Land Use Subcategory

The presence or absence of a supermarket in a shopping plaza has been determined to have a measurable effect on site trip generation. Therefore, data are presented for two subcategories for this land use: sites with a supermarket anchor and sites without a supermarket.

Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

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

Source Numbers

105, 110, 156, 159, 186, 198, 204, 211, 213, 239, 259, 260, 295, 301, 304, 305, 307, 317, 319, 358, 376, 390, 400, 404, 437, 444, 446, 507, 580, 598, 658, 728, 908, 926, 944, 946, 960, 973, 974, 1004, 1009, 1025, 1069

Shopping Plaza (40-150k) - Supermarket - Yes (821)

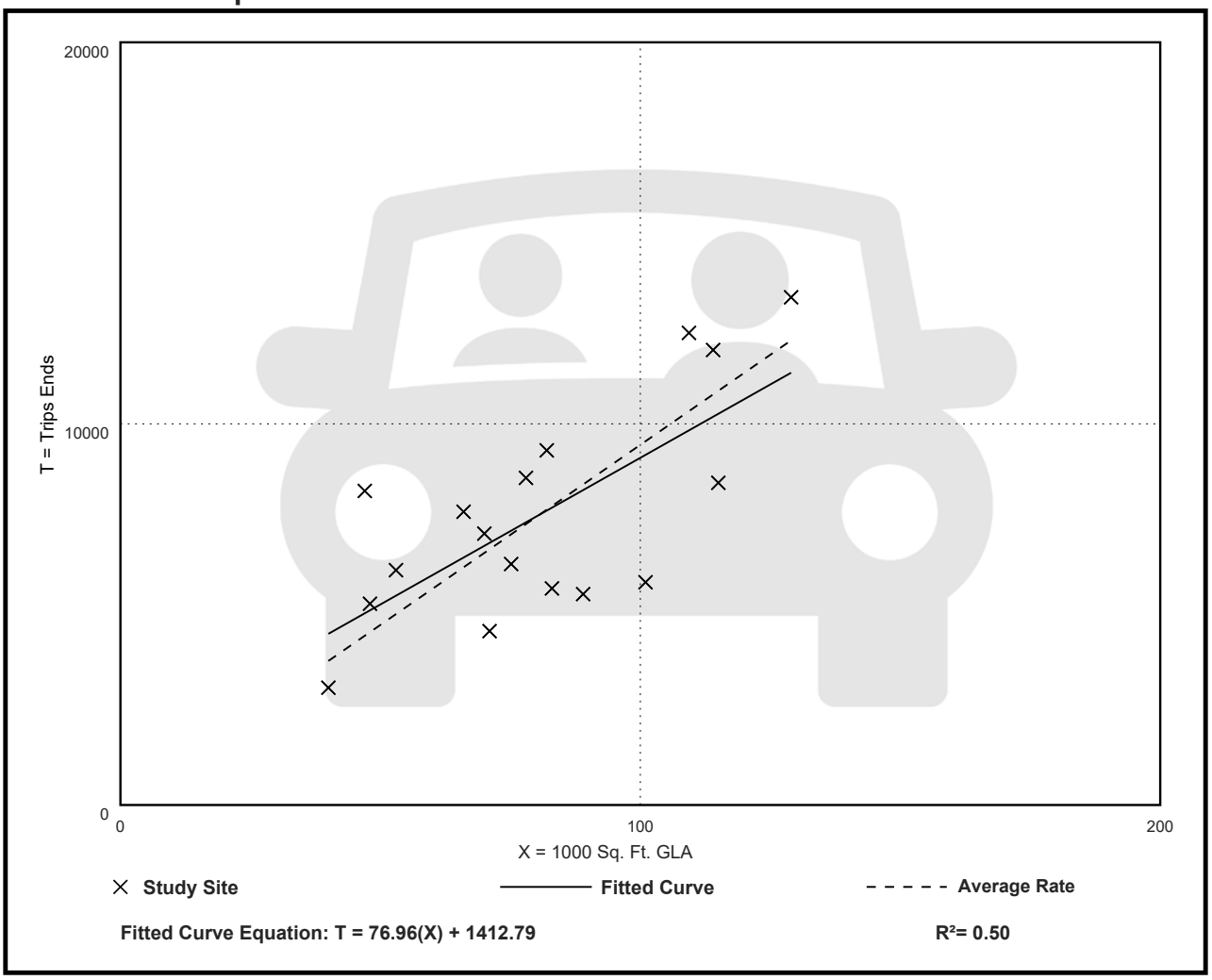
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 17
Avg. 1000 Sq. Ft. GLA: 81
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
94.49	57.86 - 175.32	26.55

Data Plot and Equation



Fitted Curve Equation: T = 76.96(X) + 1412.79

R^2= 0.50

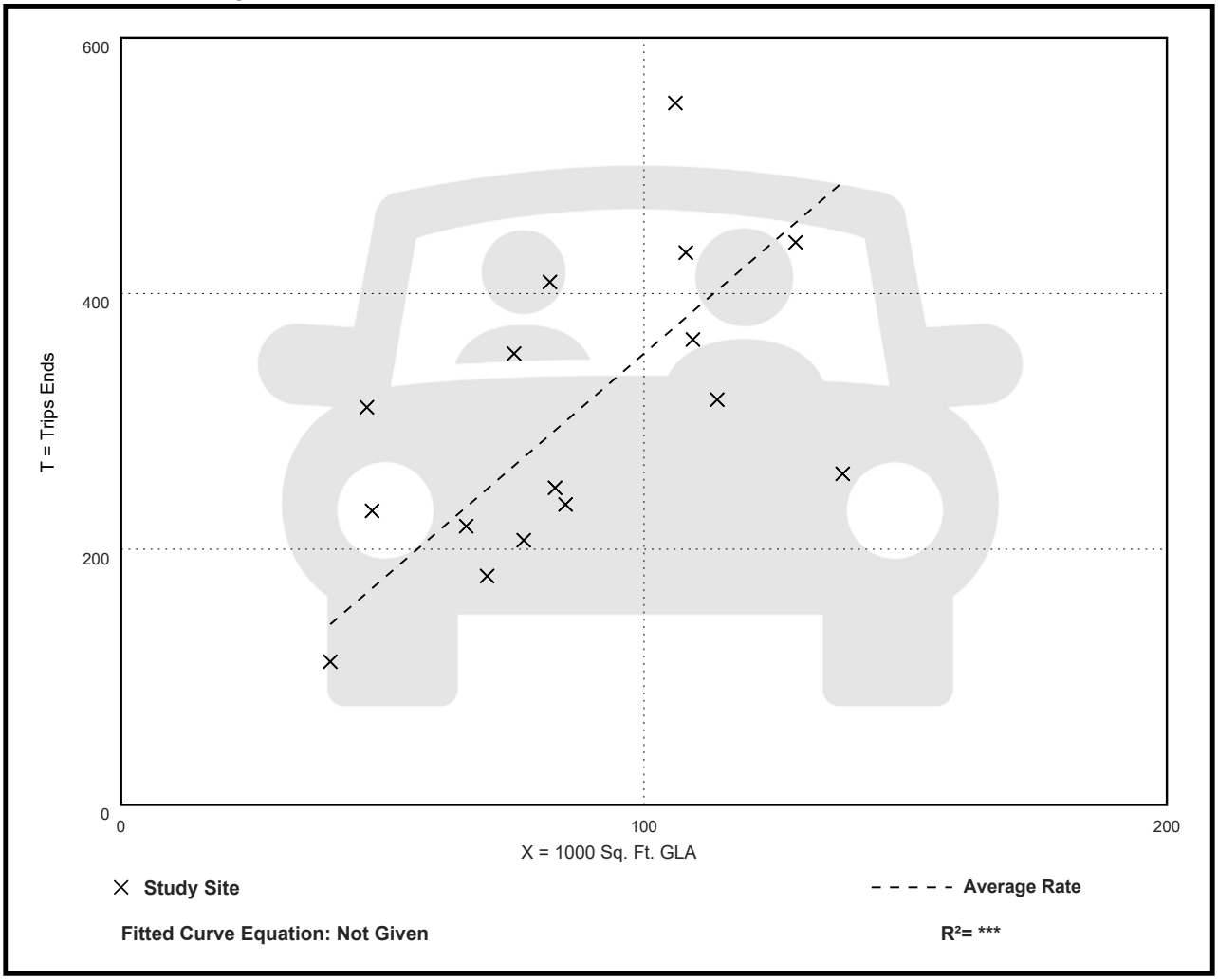
Shopping Plaza (40-150k) - Supermarket - Yes (821)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 16
Avg. 1000 Sq. Ft. GLA: 86
Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.53	1.88 - 6.62	1.17

Data Plot and Equation



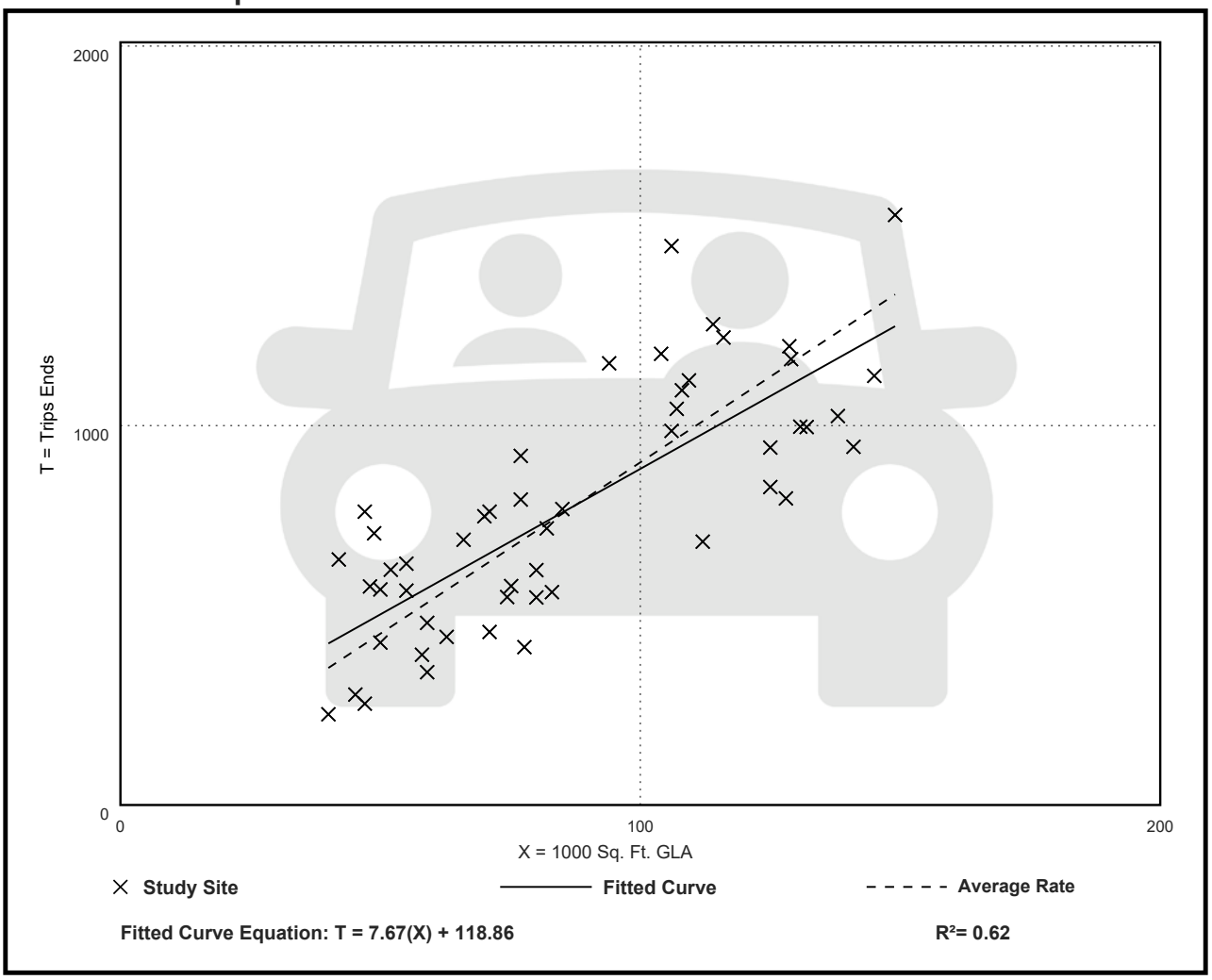
Shopping Plaza (40-150k) - Supermarket - Yes (821)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 51
Avg. 1000 Sq. Ft. GLA: 87
Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
9.03	5.35 - 16.45	2.37

Data Plot and Equation



Fitted Curve Equation: T = 7.67(X) + 118.86

R^2= 0.62

Land Use: 932
High-Turnover (Sit-Down) Restaurant

Description

This land use consists of sit-down, full-service eating establishments with a typical duration of stay of 60 minutes or less. This type of restaurant is usually moderately priced, frequently belongs to a restaurant chain, and is commonly referred to as casual dining. Generally, these restaurants serve lunch and dinner; they may also be open for breakfast and are sometimes open 24 hours a day. These restaurants typically do not accept reservations. A patron commonly waits to be seated, is served by wait staff, orders from a menu, and pays after the meal.

Some facilities offer carry-out for a small proportion of its customers. Some facilities within this land use may also contain a bar area for serving food and alcoholic drinks.

Fast casual restaurant (Land Use 930), fine dining restaurant (Land Use 931), fast-food restaurant without drive-through window (Land Use 933), and fast-food restaurant with drive-through window (Land Use 934) are related uses.

Additional Data

Users should exercise caution when applying statistics during the AM peak periods, as the sites contained in the database for this land use may or may not be open for breakfast. In cases where it was confirmed that the sites were not open for breakfast, data for the AM peak hour of the adjacent street traffic were removed from the database.

If the restaurant has outdoor seating, its area is not included in the overall gross floor area. For a restaurant that has significant outdoor seating, the number of seats may be more reliable than GFA as an independent variable on which to establish a trip generation rate.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Florida, Georgia, Indiana, Kentucky, Massachusetts, Minnesota, New Hampshire, New Jersey, New York, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Texas, Vermont, and Wisconsin.

Source Numbers

126, 269, 275, 280, 300, 301, 305, 338, 340, 341, 358, 384, 424, 432, 437, 438, 444, 507, 555, 577, 589, 617, 618, 728, 868, 884, 885, 903, 927, 939, 944, 961, 962, 977, 1048

High-Turnover (Sit-Down) Restaurant (932)

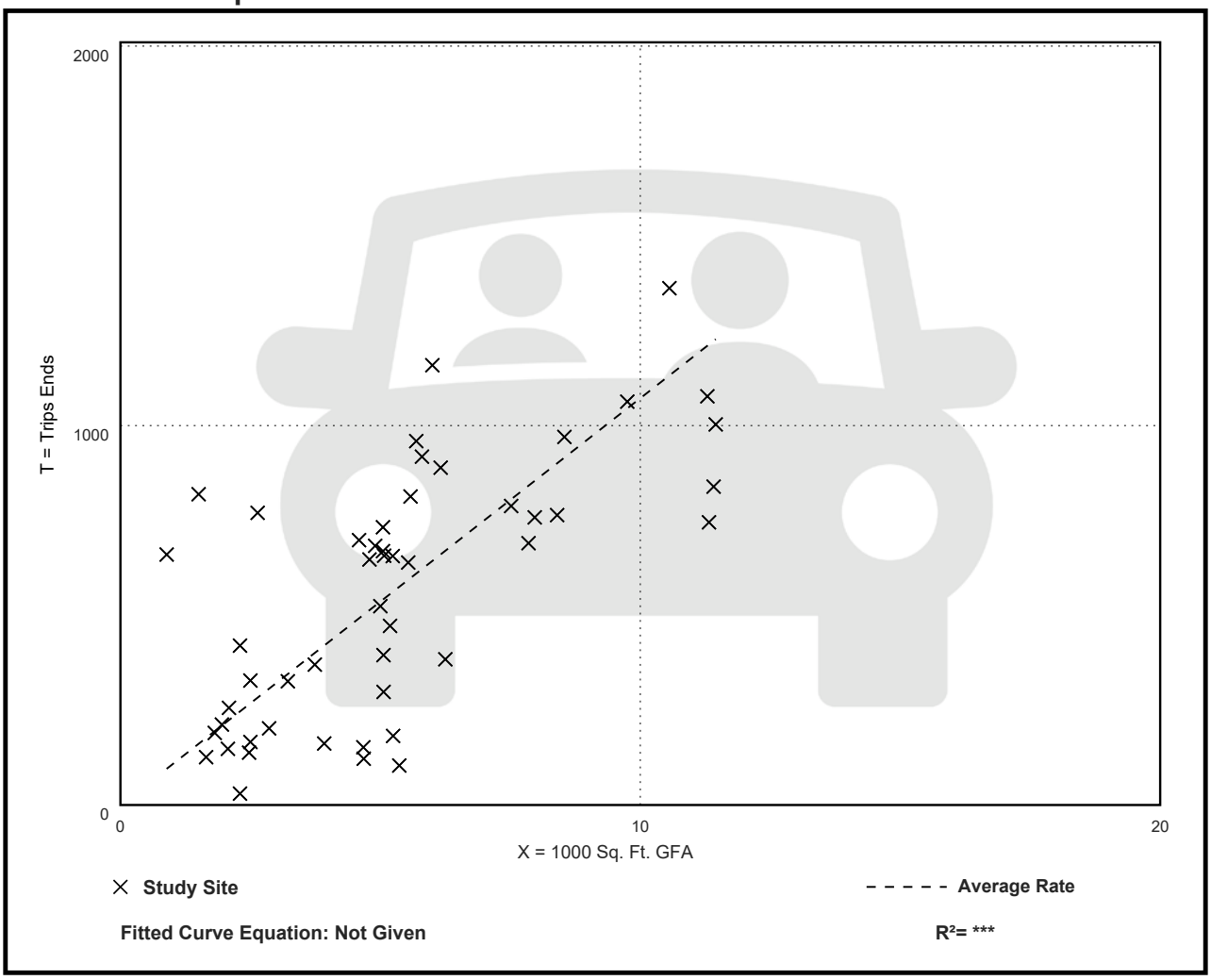
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 50
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
107.20	13.04 - 742.41	66.72

Data Plot and Equation



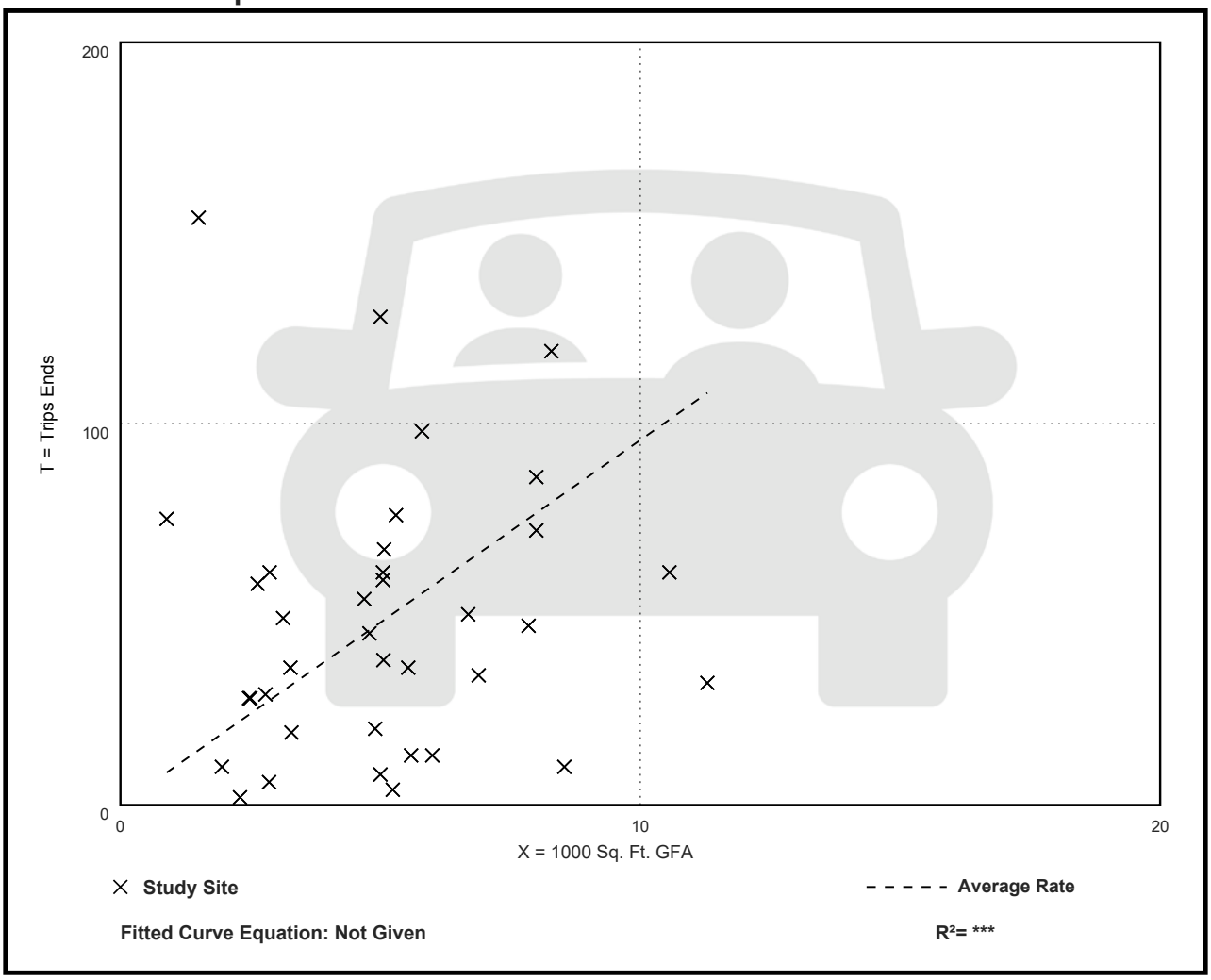
High-Turnover (Sit-Down) Restaurant
(932)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 37
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.57	0.76 - 102.39	11.61

Data Plot and Equation



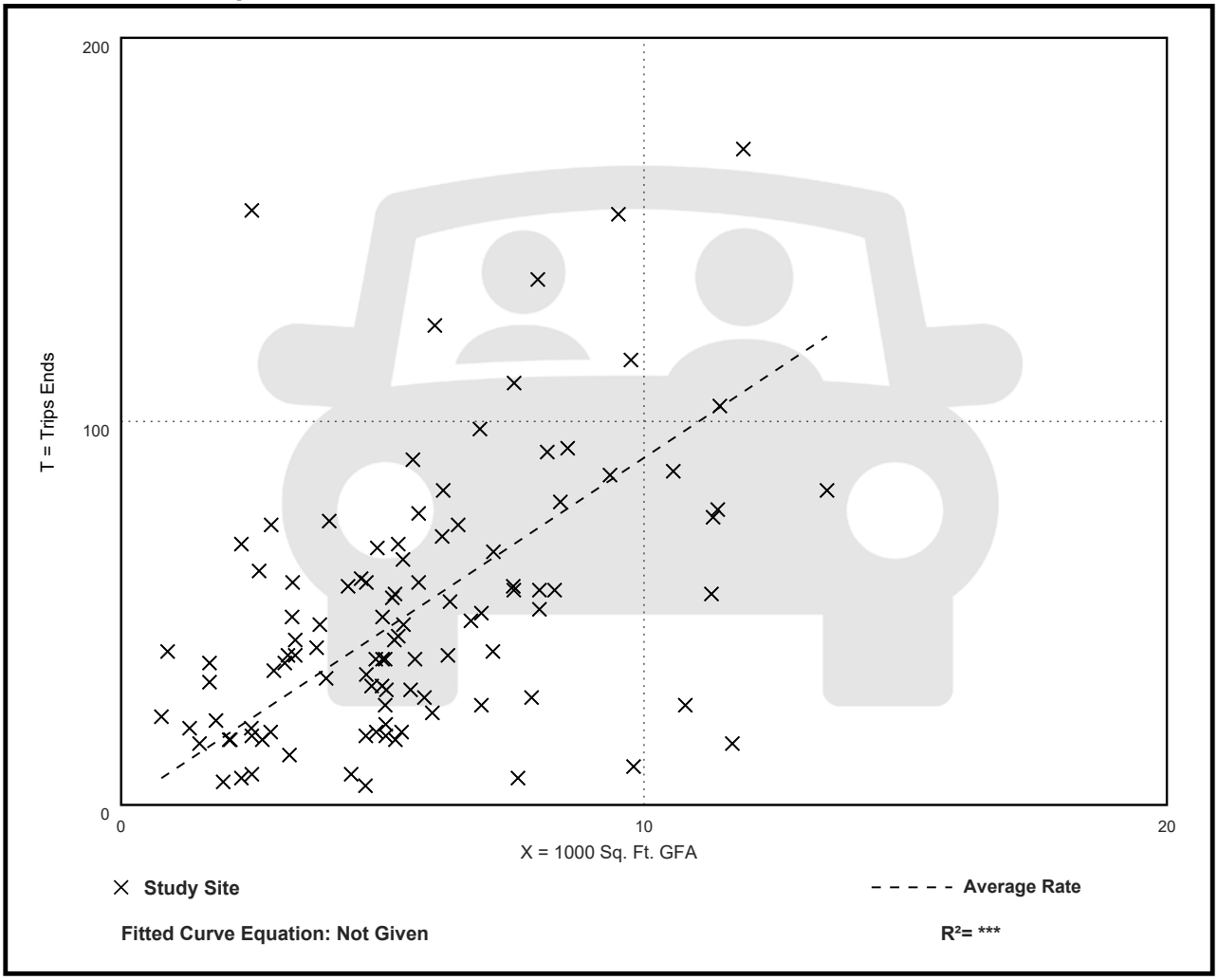
High-Turnover (Sit-Down) Restaurant (932)

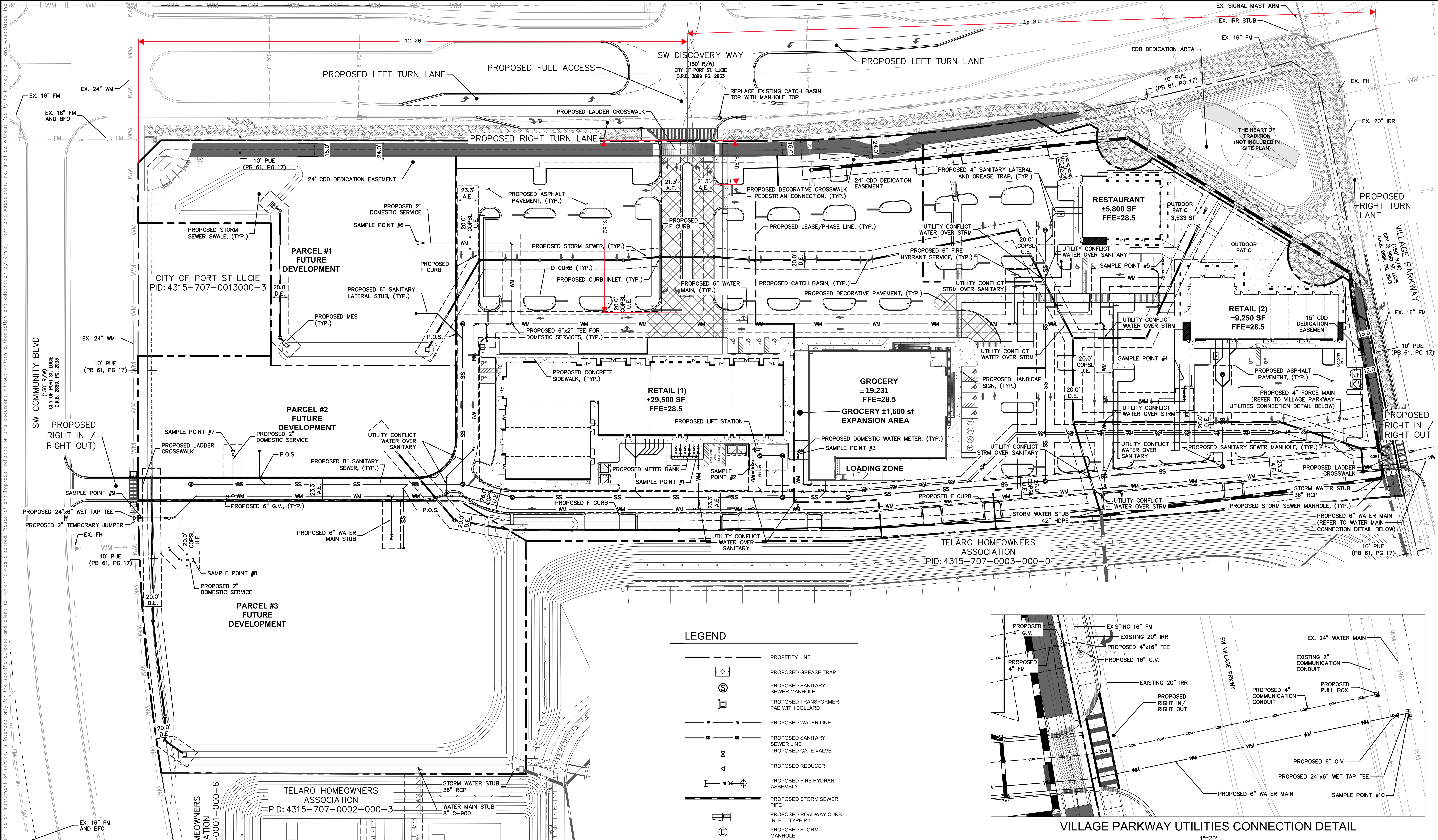
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 104
Avg. 1000 Sq. Ft. GFA: 6
Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.05	0.92 - 62.00	6.18

Data Plot and Equation





LEGEND

- PROPERTY LINE
- PROPOSED GREASE TRAP
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED TRANSFORMER PAD WITH BOLLARD
- PROPOSED WATER LINE
- PROPOSED SANITARY SEWER LINE
- PROPOSED GATE VALVE
- PROPOSED REDUCER
- PROPOSED FIRE HYDRANT ASSEMBLY
- PROPOSED STORM SEWER PIPE
- PROPOSED ROADWAY CURB INLET - TYPE P-5
- PROPOSED STORM MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED CURB INLET TYPE P-9
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- A.E. ACCESS EASEMENT

GENERAL NOTES:

1. HAZARDOUS WASTE DISPOSAL SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS
2. ALL LANDSCAPE AREAS ABUTTING VEHICULAR USE AREAS SHALL BE CURBED OR PROTECTED BY CURB STOPS.
3. ALL BUILDING, PARKING AND ACCESS AREAS SHALL DOCUMENT COMPLIANCE WITH THE REQUIREMENTS OF THE AMERICAN DISABILITIES ACT PRIOR TO THE ISSUANCE OF BUILDING PERMIT.
4. SOIL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE IN THE PLACE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
5. LANDSCAPING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 153 OF THE LANDSCAPE CODE OF THE CITY OF PORT ST. LUCIE.
6. NO LANDSCAPING OTHER THAN GRASSES SHALL BE LOCATED WITHIN 10' OF A CITY UTILITY LINE OR APPURTENANCE. ALL OTHER UTILITIES SHALL BE A MINIMUM OF 5' HORIZONTAL SEPARATION FROM CITY UTILITY MAINS FOR PARALLEL INSTALLATIONS AND A MINIMUM 18" BELOW CITY MAINS. (ALL MEASUREMENTS ARE TAKEN FROM OUTSIDE TO OUTSIDE)
7. NO LANDSCAPING SHALL BE PLACED IN A MANNER THAT WOULD CREATE CONFLICTS WITH THE INTENDED OPERATION AND MAINTENANCE OF ANY EXISTING UTILITY.
8. THIS APPLICATION IS NOT VESTED FOR ANY MUNICIPAL FEES. ALL FEES ARE CALCULATED AT TIME OF PAYMENT. THIS INCLUDES SPECIFICALLY IMPACT FEES, UPLAND PRESERVE FEES AND ANY ADMINISTRATIVE REVIEW FEES FOR CITY DEPARTMENTS. NO FEES ARE VESTED BASED ON DATE OF CITY COUNCIL APPROVAL.
9. SIGNS ARE NOT PART OF THIS REVIEW AND SHALL BE PERMITTED SEPARATELY FROM THE APPLICATION. (SEE CHAPTER 155 (SIGN CODE) CITY OF PORT ST. LUCIE LAND DEVELOPMENT REGULATIONS.)
10. THE PROPERTY OWNER, CONTRACTOR, AND AUTHORIZED REPRESENTATIVES SHALL PROVIDE PICKUP, REMOVAL, AND DISPOSAL OF LITTER WITHIN THE PROJECT LIMITS AND SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE AREA FROM THE EDGE OF PAVEMENT TO THE PROPERTY LINE WITH IN THE CITY'S RIGHT-OF-WAY IN ACCORDANCE WITH CITY CODE, SECTION 41.08 (G)
11. FENCE POSTS SHOULD AVOID UTILITY SERVICE LINES AT ALL TIMES.
12. UTILITY SERVICES CAN BE CONNECTED ONLY AFTER THE MAINS ARE INSTALLED AND TURNED OVER TO THE CITY.
13. ALL ADJACENT PROPERTIES AND PROPERTIES ACROSS THE SW COMMUNITY RIGHT OF WAY ARE ZONED MPUD WITH A FUTURE LAND USE OF NEW COMMUNITY DEVELOPMENT.
14. THE PROPERTY OWNER, CONTRACTOR, AND AUTHORIZED REPRESENTATIVES SHALL PROVIDE PICKUP, REMOVAL, AND DISPOSAL OF LITTER WITHIN THE PROJECT LIMITS AND SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE AREA FROM THE EDGE OF PAVEMENT TO THE PROPERTY LINE WITHIN THE CITY'S RIGHT-OF-WAY IN ACCORDANCE WITH CITY CODE, SECTION 41.08 (G).

LEGAL DESCRIPTION:

TRACT A OF TELARO AT SOUTHERN GROVE PLAT 2 (PB 94-1).
COMMERCIAL TRACT (15.04 AC - 655,142 SF) AND TRACT PARK (1.062 AC - 46,261 SF)

GRAPHIC SCALE IN FEET
0 25 50 100

THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR ADDRESSING THIS ISSUE.

VERTICAL DATUM
ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD '88). SUBTRACT 1.50' FROM NGVD '29 ELEVATION TO GET THE NAVD '88 ELEVATION.

811 Know what's below. Call before you dig.

CITY OF PORT ST. LUCIE PROJECT #
P21-239
PSLUSD PROJECT #
5211E

No.	REVISIONS	DATE	BY

Kimley-Horn

445 24TH STREET, SUITE 200, VERO BEACH, FL 32960
PHONE: 772-794-4100
WWW.KIMLEY-HORN.COM REGISTRY NO. 696

LICENSED PROFESSIONAL
CHRISTOPHER J. HOLLEN, P.E.
FLORIDA LICENSE NUMBER
74685
DATE:

KHA PROJECT	147842000
DATE	8/18/2021
SCALE	AS SHOWN
DESIGNED BY	DFD
DRAWN BY	DFD
CHECKED BY	CJH

PRELIMINARY ENGINEERING PLAN

THE SHOPPES AT THE HEART OF TRADITION

FOR

BANYAN DEVELOPMENT

SAINT LUCIE COUNTY FLORIDA

SHEET NUMBER
C-200

Appendix G

APPENDIX O: TRIP GENERATION SOURCE

Use Categories, Use Classifications, and Representative Uses	Unit of Measure	Trip Generation [1]	% New Trips	ITE Land Use Codes
Residential & Lodging Uses				
Single-Family Residential per sq. ft. (Maximum 3,500 sq. ft.)	per 1,000 sq. ft.	4.09	1.00	210 [2]
Active Adult (55+) Residential per sq. ft. (Maximum 3,500 sq. ft.)	per 1,000 sq. ft.	3.59	1.00	251, 252 [2]
Multi-Family Residential per sq. ft. (Maximum 2,500 sq. ft.)	per 1,000 sq. ft.	6.52	1.00	220, 221 [2]
Overnight Lodging (Hotel, Inn, Motel, Resort)	per room	5.05	1.00	310, 311, 312, 320
Mobile Residence (Mobile Home, Recreational Vehicle, Travel Trailer)	per space / lot	4.15	1.00	240, 416 [3]
Institutional Uses				
Community Serving (Civic, Place of Assembly, Museum, Gallery)	per 1,000 sq. ft.	8.65	0.50	495, 560, 580 [4]
Long Term Care (Assisted Living, Congregate Care Facility, Nursing Facility)	per 1,000 sq. ft.	5.42	0.80	254, 620
Private Education (Child Care, Day Care, Private Primary School, Pre-K)	per 1,000 sq. ft.	12.46	0.50	534, 536, 565 [5]
Industrial Uses				
Industrial (Assembly, Fabrication, Manufacturing, R&D, Trades, Utilities)	per 1,000 sq. ft.	3.31	0.80	110, 130, 140, 160
Commercial Storage (Mini-Warehouse, Boats, RVs & Outdoor Storage, Warehouse)	per 1,000 sq. ft.	3.27	0.80	1,30, 150, 151, 155
Distribution Center (Cold Storage, Fulfillment Centers, High-Cube)	per 1,000 sq. ft.	2.67	0.80	130, 154, 155, 156, 157
Recreational Uses				
Marina (Including dry storage) per berth	per berth	2.41	0.50	420
Outdoor Commercial Recreation (Golf, Multi-purpose, Sports, Tennis)	per acre	14.32	0.50	432, 488, 491 [3]
Indoor Commercial Recreation (Fitness, Gym, Health, Indoor Sports, Recreation)	per 1,000 sq. ft.	20.55	0.50	434, 435, 436, 437, 465, 492, 493 [6]
Office Uses				
Office (Bank, Dental, General, Higher Education, Hospital, Medical, Professional)	per 1,000 sq. ft.	9.74	0.90	710
Free-Standing Medical Office (Clinic, Dental, Emergency Care, Medical, Veterinary)	per 1,000 sq. ft.	23.22	0.70	640, 650
Commercial Services & Retail Uses				
Local Retail [Non-Chain or Franchisee] [7](Entertainment, Restaurant, Retail, Services)	per 1,000 sq. ft.	18.88	0.40	820
Multi-Tenant Retail (Entertainment, Restaurant, Retail, Services)	per 1,000 sq. ft.	37.75	0.40	820
Free-Standing Retail (Entertainment, Restaurant, Retail, Services)	per 1,000 sq. ft.	45.20	0.40	812, 813, 814, 815, 816, 820, 840, 841, 843, 848, 849, 850, 854, 857, 862, 869, 875, 881
Furniture or Mattress Store	per 1,000 sq. ft.	6.30	1.00	890
Quick Service Restaurant (Fast Casual or Food / Ghost Kitchen / Container) [8]	per 1,000 sq. ft.	330.70	0.30	930, 933, 934, 935, 937
Additive Fees for Commercial Services & Retail Uses				
Bank Drive-Thru Lane or Free-Standing ATM [9]	per lane / ATM	115.02	0.60	912
Motor Vehicle Quick Lube	per service bay	40.00	0.80	941
Motor Vehicle & Boat Cleaning (Detailing, Wash, Wax)	per lane or stall	132.10	0.50	947, 949
Motor Vehicle Charging or Fueling [10]	per charging or fueling position	220.31	0.20	853, 944, 945, 960
Pharmacy Drive-Thru [11]	per lane	89.04	0.40	881
Quick Service Restaurant Drive-Thru Lane [12]	per lane	252.81	0.30	934, 935, 937

[1] The Trip Generation Rates are based on average trip generation rates for all referenced land uses under the ITE Land Use Codes columns.

[2] Residential trip generation rates were converted into trip rates per 1,000 square feet. The first step in the conversion was assigning the following sq. ft. (typical industry standard) by type of unit per the 10th Edition of the ITE Trip Generation Manual: (210) single-family detached (2,275 sq. ft.); (220) one or two story multi-family (1,150); (221) multi-family (925 sq. ft.); (251) senior adult detached (1,500 sq. ft.); (252) senior adult attached (1,000 sq. ft.). The assigned square footage of each unit type was divided by 1,000: (210) single family detached (2,275 / 1,000 = 2.275); (220) one or two story multi-family (1,150 / 1,000 = 1.15); (221) multi-family (925 / 1,00 = 0.925); (251) senior adult detached (1,500 / 1,000 sq. ft. = 1.5); (252) senior adult attached (100 / 1000 = 1.0). The trip generation rates are based on occupied units per the ITE Trip Generation Manual. To obtain an occupied trip generation rate for single-family, the rate (9.44) way multiplied by 0.986 to account for the 1.4% owner occupied vacancy rate for owner occupied dwellings per the 2019 American Community Survey (ACS) for the City of Port St. Lucie Prepared by the U.S. Census Bureau (**Appendix U**). To properly account for trips from occupied multi-family units, the trip generation (6.31) for one or two story multi-family was multiplied by 1.17% (1+ ((3.17 - 2.72) / 2.72)) to adjust for the difference between the ITE occupancy rate of 2.72 residents per unit versus the rate of 3.17 residents per rental unit based on the 2019 ACS Survey (**Appendix U**). To properly account for trips from occupied multi-family units, the trip generation (4.75) for multi-family was multiplied by 1.29% (1+ ((3.17 - 2.46) / 2.46)) to adjust for the difference between the ITE occupancy rate of 2.46 residents per unit versus the rate of 3.17 residents per rental unit based on the 2019 ACS Survey (**Appendix U**). The following are the calculations for the residential uses, for active adult and multi-family, the net trip generation rate in the table above is the average of the two uses: (210) single-family detached (9.44 x 0.986 = 9.31; 9.31 / 2.275 = 4.09); (220) one or two story multi-family (6.31 x 1.17 = 7.38; 7.38 / 1.15 = 6.42); (221) multi-family (4.75 x 1.29 = 6.13; 6.13 / 0.925 = 6.62); (251) senior adult detached (5.6 / 1.5 = 3.73); (252) senior adult attached (3.44 / 1.0 = 3.4). All percentages and rates are rounded to the 100th place for illustration purposes. Any minor deviation is due to rounding based on calculated percentages versus illustration of rounding to the 100th place.

[3] Converted AM and PM Peak Hour Periods and applied a Peak to Daily Conversion of .1 (10% of daily traffic occurs during peak hours).

[4] Community Recreation Center trip generation divided by 2 passenger per vehicle. The trip generation of a museum was converted from AM and PM peak hour periods and a peak-to-daily conversion factor of 0.1 was applied (10% of daily traffic occurs during peak hours).

[5] Trip generation based on the average of the AM and PM peaks for Private K-12 Schools. Day care divided by 2 to account for vehicle occupancy. The average trip generation for K-12 was then used to calculate the daily rate.

[6] Golf driving range converted to acreage at two tee positions per one acre, Soccer Complex fields converted to acres at ratio of 2 acres per 1 field, Racquet / Tennis Club assume 2 courts plus accessory buildings per acre, Utilized vehicle occupancy of 3 persons per vehicle.

Table 7.2 Unconstrained Internal Capture Rates for Trip Destinations Within a Multi-Use Development

		WEEKDAY		
		MIDDAY PEAK HOUR	p.m. PEAK HOUR OF ADJACENT STREET TRAFFIC	DAILY
to OFFICE	from Office	6%	6%	2%
	from Retail	38%	31%	15%
	from Residential	0%	0%	N/A
to RETAIL	from Office	4%	2%	4%
	from Retail	31%	20%	28%
	from Residential	5%	9%	9%
to RESIDENTIAL	from Office	0%	2%	3%
	from Retail	37%	31%	33%
	from Residential	N/A	N/A	N/A

Caution: The estimated typical internal capture rates presented in this table rely directly on data collected at a limited number of multi-use sites in Florida. While ITE recognizes the limitations of these data, they represent the only known credible data on multi-use internal capture rates and are provided as illustrative of typical rates. ***If local data on internal capture rates by paired land uses can be obtained, the local data may be given preference.***

N/A—Not Available; logic indicates there is some interaction between these two land uses; however, the limited data sample on which this table is based did not record any interaction.

within a Multi-Use Development

		WEEKDAY		
		MIDDAY PEAK HOUR	p.m. PEAK HOUR OF ADJACENT STREET TRAFFIC	DAILY
from OFFICE	to Office	2%	1%	2%
	to Retail	20%	23%	22%
	to Residential	0%	2%	2%
from RETAIL	to Office	3%	3%	3%
	to Retail	29%	20%	30%
	to Residential	7%	12%	11%
from RESIDENTIAL	to Office	N/A	N/A	N/A
	to Retail	34%	53%	38%
	to Residential	N/A	N/A	N/A

Caution: The estimated typical internal capture rates presented in this table rely directly on data collected at a limited number of multi-use sites in Florida. While ITE recognizes the limitations of these data, they represent the only known credible data on multi-use internal capture rates and are provided as illustrative of typical rates. ***If local data on internal capture rates by paired land uses can be obtained, the local data may be given preference.***

N/A—Not Available; logic indicates there is some interaction between these two land uses; however, the limited data sample on which this table is based did not record any interaction.