

### Traffic and Transportation Consulting

Kevin P. McDonough (1953-1994) John H. Rea, P.E. Jay S. Troutman, Jr., P.E. Scott T. Kennel

March 22, 2018

Montgomery Township Planning Board 2761 Route 206 Bellemead, NJ 08502

Re:

Village Walk at Montgomery Lots 60, 65, 68 and 69, Block 28005 Montgomery Township, Somerset County MRA File No. 16-243

### Dear Board Members:

McDonough & Rea Associates (MRA) has been asked to prepare a *Traffic Impact Analysis* for plans to raze the *Village Shopper II* mixed-use office/retail development and construct the *Village Walk at Montgomery* mixed-use residential/retail development on Route 206 in Montgomery Township as shown on *Figure I*, a *Site Location Map* in the *Appendix. Village Shopper II* contains 2 buildings with 31,000 SF with access to Route 206 via a signalized access opposite *Montgomery Center* and a right-in/right-out access.

The *Village Walk at Montgomery* redevelopment proposal contains a mixed-use residential/commercial building and 4 commercial buildings. The roadway improvement program in conjunction with the redevelopment proposal is as follows:

- Construct Intermediate Loop Road (Township Master Plan Roadway)
- > Upgrade Route 206 and the Intermediate Loop Road traffic signal with a southbound dedicated right turn lane
- Construct Inner Loop Road (Township Master Plan Roadway) right-in/right-out at Route 206
- Construct right-in/right-out access to Village Walk at Montgomery
- Construct alternate access via Sharbell residential development to Route 518 at Research Road

The following report sets forth the database accumulated and the conclusions reached with respect to *Village Walk at Montgomery*.

Please reply to:

1431 Lakewood Road, Suite C, Manasquan, NJ 08736 • (732) 528-7076 • Fax (732) 528-6673 
□ 105 Elm Street, Lower Level, Westfield, NJ 07090 • (908) 789-7180 • Fax (908) 789-7181



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-2-

March 22, 2018

### SCOPE OF STUDY

In order to prepare a thorough *Traffic Impact Analysis* for the *Village Walk at Montgomery* development, MRA has conducted the following tasks:

- 1. Made field visits to the site to establish existing roadway and traffic conditions in the area.
- 2. Conducted existing peak hour traffic counts at the access points to *Village Shopper II* along Route 206.
- 3. Prepared trip generation estimates for the *Village Walk at Montgomery* development based upon Institute of Transportation Engineers (ITE) data.
- 4. Distributed site generated traffic to the adjacent roadway network in accordance with existing directional distribution and the proposed access system.
- 5. Prepared estimates of future traffic volume demand for the design year of the development, including background traffic growth in accordance with New Jersey Department of Transportation (NJDOT) data as well as other approved/planned developments in the area.
- 6. Conducted level of service capacity analyses for the following intersections in accordance with *Highway Capacity Manual* procedures:
  - ➤ Route 206 and Intermediate Loop Road/Montgomery Center access
  - > Route 206 and Inner Loop Road
  - > Route 206 and site access
- 7. Reviewed the *Site Plan* prepared by Menlo Engineering with respect to availability and accessibility of the parking supply, and conformance to proper traffic engineering principles.



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-3-

March 22, 2018

### **EXISTING CONDITIONS**

The subject property contains a 1-story retail building and a 2-story retail/office building, totaling 31,000 SF located west of Route 206 opposite the *Montgomery Center*. The site is served by a full movement signalized access and a right-in/right-out access to southbound Route 206. The site access also serves *Village Shopper III*, a 37,600 office/retail development located north of the subject property.

The Route 206 and site access/*Montgomery Center* intersection is a signalized intersection that is controlled by a multi-phase traffic signal with the following lane assignments:

- ➤ Southbound Route 206 A left turn lane and a shared thru/right turn lane.
- Northbound Route 206 A left turn lane and a shared thru/right turn lane.
- ➤ Westbound *Montgomery Center* A dedicated right turn lane and a shared left/thru lane.
- Eastbound site access One shared left/thru/right turn lane.

### EXISTING TRAFFIC VOLUMES

Traffic volume data was collected by conducting manual turning movement counts at the Route 206 and *Village Shopper II* driveways during the critical weekday PM peak street hour and midday Saturday peak hour when traffic volumes on the adjacent roadway network are at a maximum and when retail facilities along Route 206 generate their maximum traffic volume. The counts were conducted in June 2017 from 4:00 PM to 7:00 PM on a weekday and from 11:00 AM to 2:00 PM on a Saturday. *Figure 2* in the *Appendix* illustrates existing peak hour traffic volumes on Route 206 along the site frontage.

## Proposed Roadway Improvements

The Montgomery Township Master Plan identifies several new roadways along the Route 206 corridor to accommodate future developments and to increase efficiency/capacity of the Route 206/Route 518 intersection (see attached *Montgomery Township Master Plan Circulation Element*).



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-4-

March 22, 2018

The Village Walk at Montgomery Land Use Plan includes the following improvements:

- Construction of the Intermediate Loop Road, a Township roadway, from Route 206 to the *Sharbell* property to the west connecting with Research Road.
- ➤ Construction of the Inner Loop Road, a Township roadway, from Route 206 to the *Sharbell* property connecting with Route 518.
- ➤ Construction of a dedicated right turn lane on Route 206 southbound approach at the Intermediate Loop Road intersection
- ➤ Install new traffic signal system at Route 206 and Intermediate Loop Road/Montgomery Center access intersection.

### TRIP GENERATION/DISTRIBUTION

Estimates of traffic to be generated by *Village Walk at Montgomery* were calculated using the 10<sup>th</sup> Edition of the ITE Trip Generation manual.

The following *Table* illustrates the anticipated AM and PM peak street hour and mid-day Saturday peak hour traffic that will be generated from each uses within *Village Walk at Montgomery*.

# TABLE I TRIP GENERATION VILLAGE WALK AT MONTGOMERY

	<u>We</u>	EKDAY	AM PSH	WI	EEKDAY	PM PSH		SAT. I	PH
<u>USE</u>	<u>IN</u>	<u>Out</u>	TOTAL	IN	<u>Out</u>	TOTAL	<u>IN</u>	<b>O</b> UT	TOTAL
Low Rise Apt. – 52 DU									
ITE LUC 223	5	19	24	19	9	28	18	17	35
Shopping Center – 56,000 SF									
ITE LUC 820	<u>112</u>	<u>68</u>	<u>180</u>	<u>170</u>	<u>184</u>	<u>354</u>	<u>204</u>	<u>188</u>	<u>392</u>
Sub Total	<u>117</u>	<u>87</u>	<u>204</u>	<u> 189</u>	<u>193</u>	<u>382</u>	<u>222</u>	<u>205</u>	<u>427</u>
Internal Credit	<u>-6</u>	4	<u>-10</u>	10	<u>-9</u>	<u>-19</u>	<u>-11</u>	<u>-10</u>	21
Total	111	83	194	179	184	363	211	195	406
Retail Pass-By	0	0	0	<u>-68</u>	<u>-72</u>	<u>-140</u>	<u>-61</u>	<u>-56</u>	<u>-117</u>
New Trips	111	83	194	111	112	223	150	139	289



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-5-

March 22, 2018

Please note that pass-by percentages for the traffic generated by the retail use was also established using ITE data (40 percent PM and 30 percent Saturday). In addition, an internal capture rate of 5 percent was assumed after conducting an internal capture analysis utilizing guidelines set forth by the ITE. The 5 percent internal capture rate is overly conservative as the calculated internal capture rate was 11.0 percent.

Once the amount of peak hour traffic to be generated by the various uses within *Village Walk at Montgomery* has been established, traffic needs to be distributed to the adjacent roadway network in accordance with anticipated origins and destinations of site generated traffic. MRA is familiar with commuting patterns in Somerset County and has over 30 years' experience working in the area. Based upon our experience, location of other commercial (existing/proposed) developments, proposed *Montgomery Township Master Plan* roadways and the existing roadway network, the following *Table* illustrates the anticipated distribution of traffic for each use within *Village Walk at Montgomery*.

TABLE II
TRAFFIC DISTRIBUTION

TO/FROM	RETAIL	RESIDENTIAL
Route 206-North	30%	45%
Route 206-South	30%	30%
Route 518-East	20%	0%
Route 518-West	10%	10%
Montgomery Center-East	5%	10%
Internal	<u>_5%</u>	<u>_5%</u>
Total	100%	100%

Figure 3 illustrates site generated and distributed traffic volumes at the site access points and through the adjacent roadway network.

Table III details the ITE traffic projections for the existing uses on the subject property.



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-6-

March 22, 2018

# TABLE III EXISTING TRIP GENERATION VILLAGE SHOPPER II

	$\overline{\mathbf{W}}\mathbf{E}$	EKDAY	AM PSH	$\mathbf{w}$	EEKDAY	PM PSH		SAT.	PH
<u>USE</u>	IN	<b>O</b> UT	<b>TOTAL</b>	IN	<u>Out</u>	TOTAL	<u>In</u>	OUT	TOTAL
Office $-8,000 \text{ SF}$									
ITE LUC 710	11	1	12	2	10	12	2	2	4
Retail – 23,000 SF									
ITE LUC 820	<u>100</u>	<u>62</u>	<u>162</u>	<u>88</u>	<u>96</u>	<u> 184</u>	<u>101</u>	<u>93</u>	194
Sub Total	111	63	174	90	106	196	103	95	198

Table IV was prepared to compare the traffic generation of the existing Village Shopper II development to the proposed Village Walk at Montgomery proposal to determine the type of access permit required by NJDOT.

TABLE IV
TRIP GENERATION COMPARISON
VILLAGE WALK AT MONTGOMERY VS. VILLAGE SHOPPER II

•	AM PSH 2-WAY	PM PSH 2-WAY	SAT. PH 2-WAY
Village Shopper-existing	174	196	198
Village Walk at Montgomery-Proposed	<u>204</u>	_382	_427
Net Difference	+30	+186	+229
5% Internal Credit (VW)	-10	-19	-21
Alternate Access Credit (VW)	<u>-19</u>	<u>-58</u>	<u>-68</u>
Route 206 Net Difference	+1	+109	+140

Based on the results of Table IV, the redevelopment project as proposed will qualify for an NJDOT Major Access Application since the net increase in peak hour traffic to the Route 206 access system is greater than 100 trips and less than 200 trips. Therefore, the study locations enumerated and analyzed herein comply with the NJDOT *Access Code* requirements.



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-7-

March 22, 2018

### Analysis of Future Traffic Conditions

A design year of 2022, 5 years in the future was selected for analysis. The NJDOT's *Background Traffic Growth Rate* data for the area was consulted and existing 2017 traffic volumes were expanded by a growth rate of 1.0 percent per year for 3 years and 0.50 percent for 2 years in order to arrive at year 2022 pre-development traffic volumes. In addition, an induced traffic volume adjustment has been factored into the future traffic volume projections to account for non-site related traffic with origins/destinations to the existing *Sharbell* neighborhoods west of the site.

Site generated traffic from 3 other developments in the area were surcharged onto the Route 206 study locations (*Figure A* in the *Appendix*) and they are as follows:

- ➤ Madison Marquette Southwest quadrant Route 206 and Route 518
  - 281,000 SF shopping center
  - 61,000 SF movie theater
  - 10,000 SF day care center
  - 34 single family homes
- > Sharbell West of Village Walk at Montgomery and north of Route 518
  - 107 townhomes
  - 40 condominiums
  - 80 apartments single family homes
- ➤ Kings Interest LLC Redevelopment Northeast quadrant Route 206 and Route 518
  - 48,240 SF retail space

The 2022 pre-development volumes include 2017 traffic volumes with growth, existing *Sharbell* induced traffic and site traffic from the 3 off-site developments referenced above and are depicted on *Figure 4* in the *Appendix*.

The existing Village Shopper II site traffic volumes were deducted from the base volumes in the analysis herein (traffic volume worksheet, *Figure 2A*, is attached to the *Appendix*) prior to surcharging the *Village Walk at Montgomery* site generated traffic volumes detailed in *Table I*.

Figure 5 in the Appendix illustrates year 2022 post-development traffic volumes with the Village Walk at Montgomery traffic included.



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-8-

March 22, 2018

Traffic engineers calculate levels of service of unsignalized and signalized intersections which relate to the quality of traffic flow. Level of service is a measure of average control delay. Average control delay is the time lost due to deceleration and the amount of time from when a vehicle is stopped for a traffic control device (or at the end of the queue) to when the vehicle departs the intersection. Delay is a relative quantity of driver discomfort, frustration, fuel consumption, and loss in travel time.

Levels of service range from "A" to "F," with "A" being the highest, or best attainable level of service. Level of service "E" with average control delays of not more than 50 seconds per vehicle at an unsignalized intersection or 80 seconds per vehicle at a signalized intersection indicates near to or at capacity conditions and is generally considered the limit of acceptable level of service and delay.

Full definitions of levels of service for unsignalized and signalized intersections and level of service summaries are included in the *Appendix*. The intersections studied by this report were analyzed according to the procedures set forth in the *Highway Capacity Manual 2010*, using the *Highway Capacity Software (HCS)*, release 7.4.

### ROUTE 206 AND INTERMEDIATE LOOP ROAD/MONTGOMERY CENTER ACCESS

The intersection is projected to operate at an overall level of service "D" and "F" for the PM peak street hour and Saturday peak hour, respectively, for the 2022 pre-development conditions. It is proposed to enhance the capacity and efficiency of the intersection with the construction of a southbound dedicated right turn lane and the restriping of the Montgomery Center westbound approach as a dedicated left turn lane and a shared thru/right turn lane. With the proposed improvements, the intersection is projected to operate at an overall level of service "D" and "E" for the PM and Saturday peak hours, respectively and the resulting levels of service are compliant with the NJDOT level of service guidelines as stipulated in the *Access Code*.

### ROUTE 206 AT SITE ACCESS

The site access right-in/right-out intersection will operate at level of service "C" and "D" for the PM peak street hour and Saturday peak hour, respectively.

### ROUTE 206 AND INNER LOOP ROAD

At this unsignalized intersection, an analysis was performed under the stop control scenario. Findings were that the intersection would operate at an overall level of service "C" and "E" for the PM peak street hour and Saturday peak hour, respectively.



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-9-

March 22, 2018

### SITE PLAN AND PARKING

A total of 285 parking spaces are required under Montgomery Township zoning requirements for Lots A-D, as referenced on the plans prepared by Menlo Engineering, and 302 are provided, meeting this requirement. The peak parking periods for the proposed uses are not coincidental and, therefore, shared parking will occur on site. The parking spaces are well distributed to efficiently serve the proposed uses. The overall circulation plan is sound and logical and is anticipated to operate safely and efficiently.

### **CONCLUSIONS**

It is concluded based on the analysis set forth in this report, that plans to redevelop the subject property and construct 2 Township Master Plan Roadways can be approved and operate compatibly with future traffic conditions in the area. The site driveway will operate at level of service "D" or better during the PM peak street hour and Saturday peak hour under the 2022 post-development condition. The signalized intersection at Route 206 and Intermediate Loop Road will be improved in connection with the redevelopment proposal and will operate at level of service "D" and "E" for the PM peak street hour and Saturday peak hour under the 2022 postdevelopment condition, respectively in accordance with the NJDOT level of service guidelines.

The Site Plan has been prepared in accordance with proper traffic engineering principles and provides for adequate parking and adequate circulation for customer and delivery vehicles.

A representative from MRA will be in attendance at an upcoming Montgomery Township Planning Board meeting to provide expert testimony and answer questions Board members, Board experts or the public may have.

Very truly yours.

Scott T. Kennel Sr. Associate

cc: Chris Szalay, PE

Vince Pugliese



# McDONOUGH & REA ASSOCIATES

**FIGURE** 

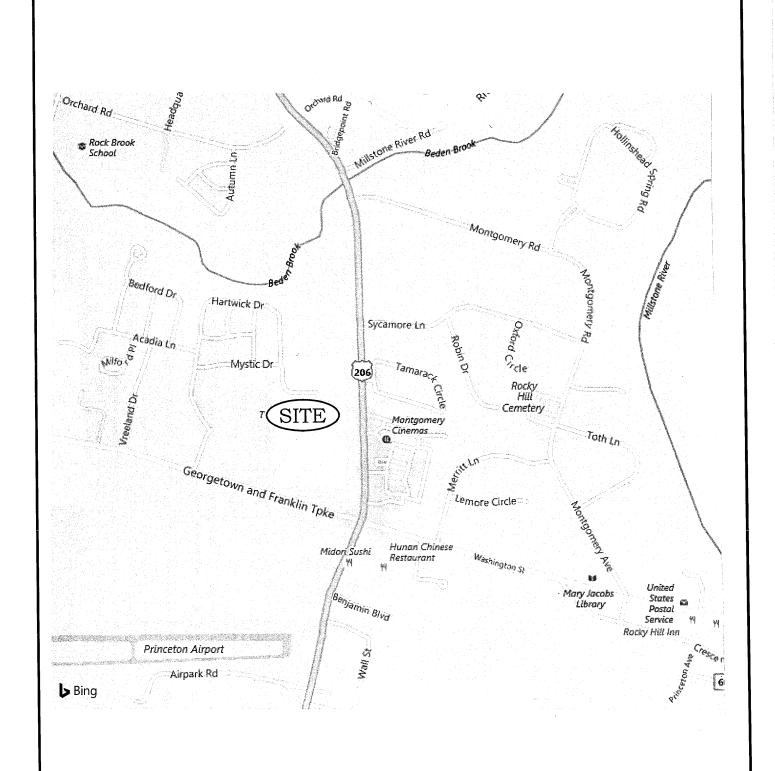
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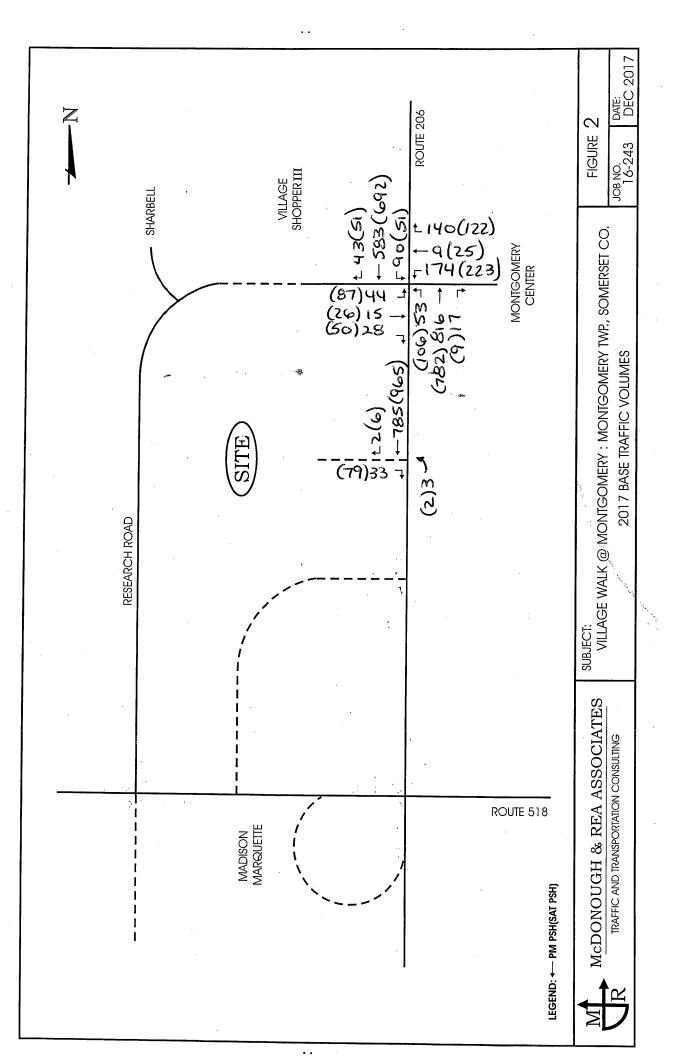
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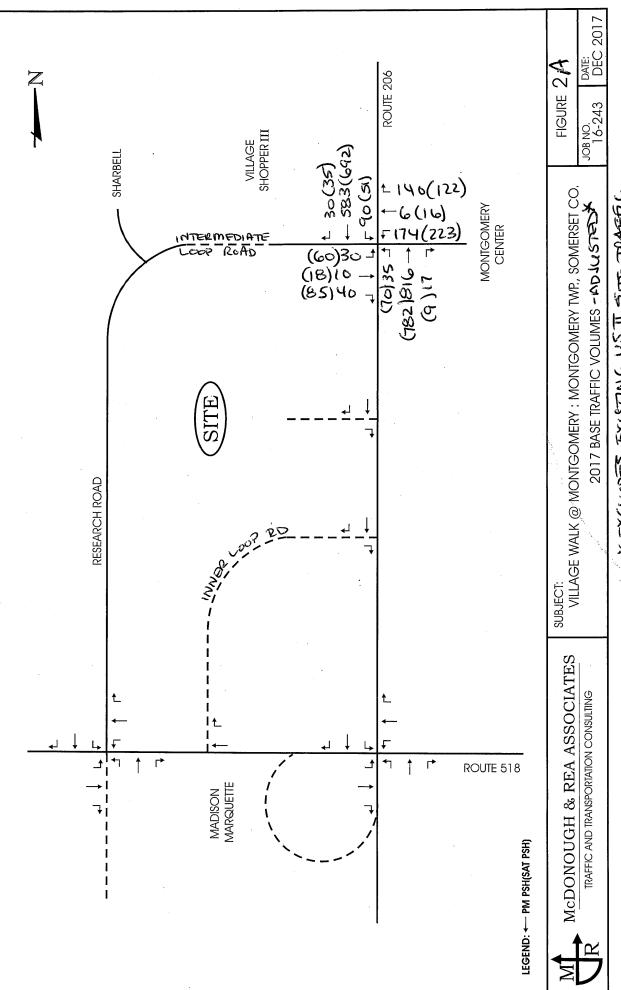
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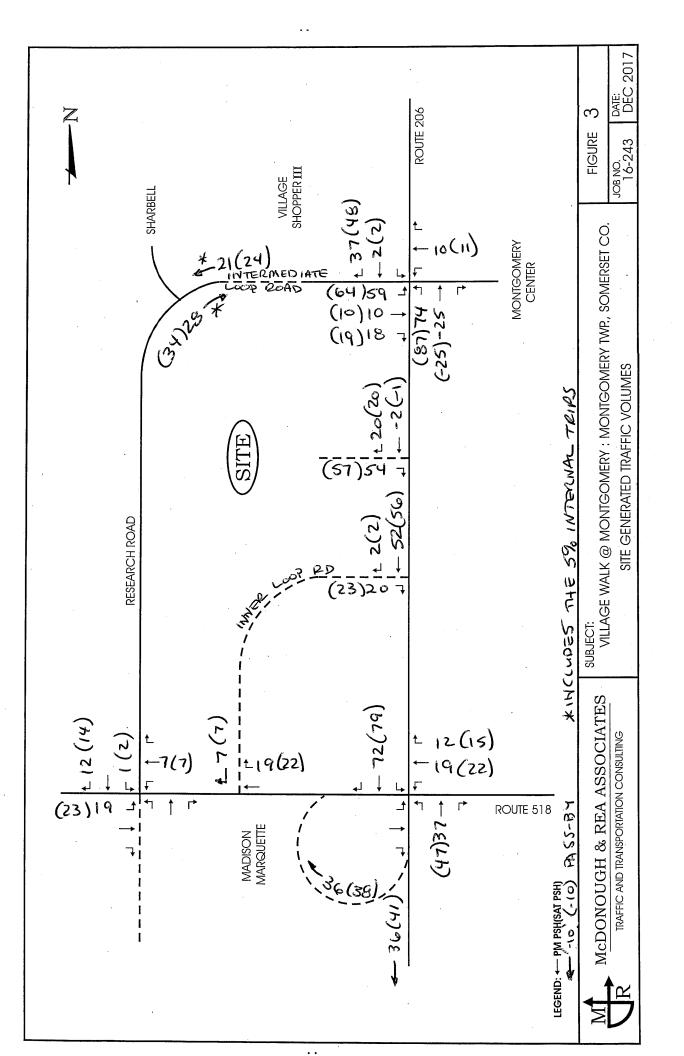
VILLAGE WALK @ MONTGOMERY : MONTGOMERY TWP., SOMERSET CO. SITE LOCATION MAP

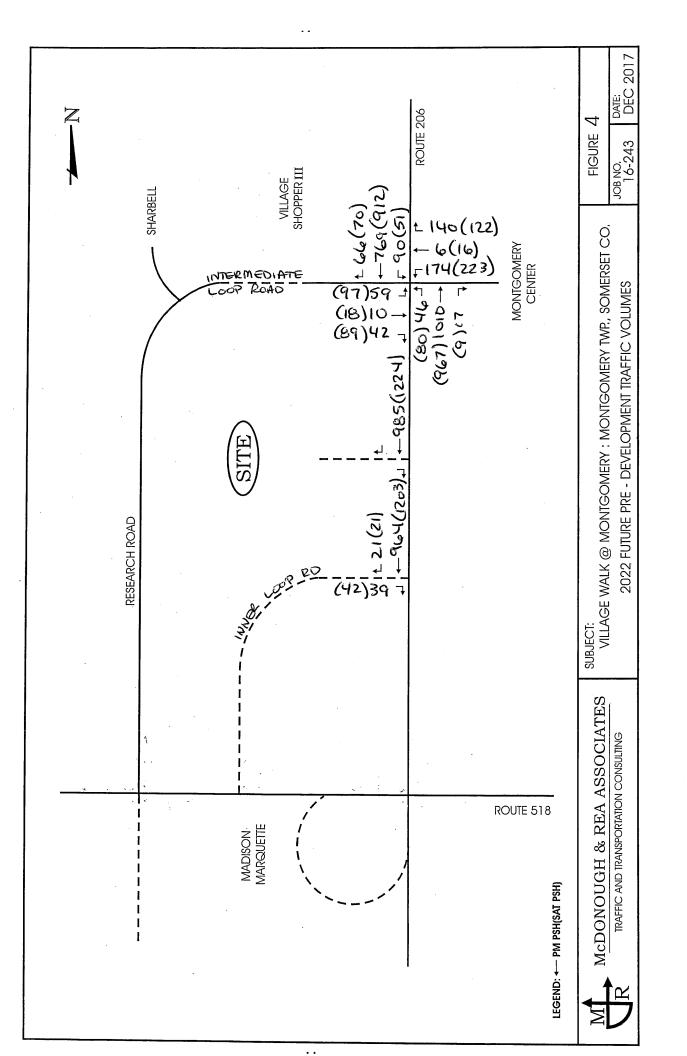


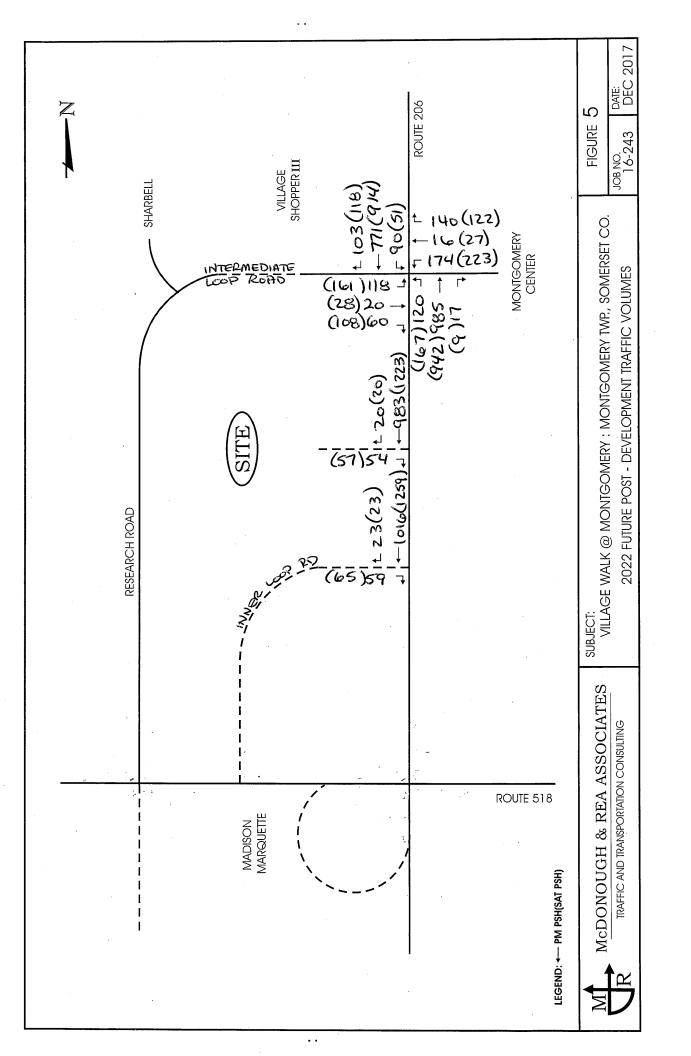


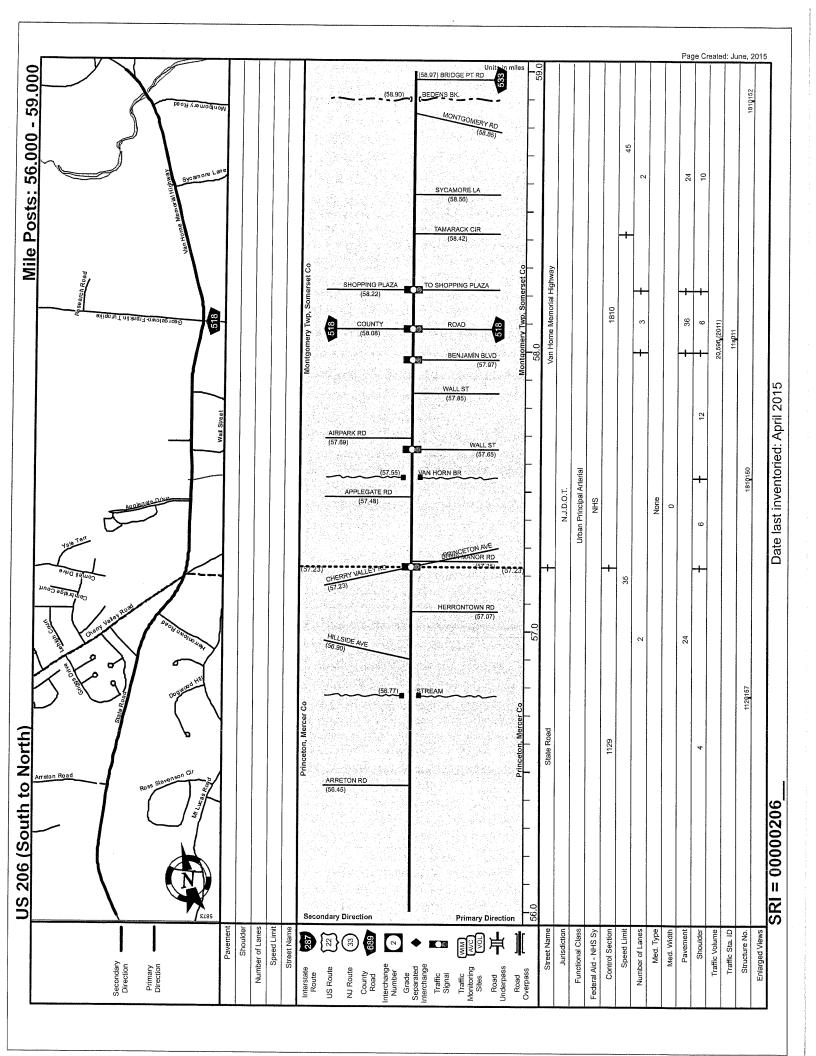


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ROUTE 206 & CENTER DR/VILLAGE MONTGOMERY TOWNSHIP, SOMERSET COUNTY MRA JOB 16-243 THURSDAY PM COUNT

VILLAGE SHOPPER

File Name: 16243 rt 206 & center pm1 Site Code: 00016243

Start Date: 6/8/2017 Page No: 1

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ROUTE 206 & CENTER DR/VILLAGE MONTGOMERY TOWNSHIP, SOMERSET COUNTY MRA JOB 16-243 THURSDAY PM COUNT VILLAGE SHOPPER

File Name: 16243 rt 206 & center pm1 Site Code: 00016243 Start Date: 6/8/2017 Page No: 1

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Groups Printed- CARS			App. Total	71	79	82	88	321	2	<u>_</u>	98	83	72	322	643		16.5
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			Start Time	04:00 PM	04:15 PM	04:30 PM	04:45 PM	Total	,	05:00 PM	05:15 PM	05:30 PM	05:45 PM	Total	Grand Total	Approch %	Total %

		Int. Total			1992		507	77.0	0.945			
		RTOR App. Total	-	I	/8		2,	5		2	ائ ا	0.702
r Exit		RTOR /			11	12.6	ç	ר		c	n	
illage Shopper Exit	Eastbound	Right		į	1/	19.5	ď	>		¢	٥	
Villag	ш	Thru		!	15	17.2	c	D			מ	
		Left		:	44	9.09	7.5	2	0	U5:30 PM	73	
		Right App. Total	=		875		000	777		L	272	0.972
506	puno	Right			12	1.4	_	4		,	<del>-</del>	
Route 206	Northb	Thru			810	95.6	000	202			211	
		Left			53	6.1	4	2	1	05:45 PM	13	
		App. Total	-	•	322		c	20			98	0.936
×;	73	Right RTOR App. Total			26	17.4	L	0			20	
op-Rite Exit	estboun,	Right			83	25.8	10	17			12	
Sho	We	Thru			6	2.8		7			က	
		Left			174	54.0		39		05:15 PM	51	
		App. Total			708			193			193	0.917
206	puno	Right	k 1 of 1		43	6	;	∞			∞	
Route 206	Southbound	Thru	PM - Pea		575	81.2	1 :	154			154	
		Left	PM to 05:45	05:00 PM	06	10.7	7.7	3		High Int. 05:30 PM	31	
		Start Time Left Thru Right App. Total	Peak Hour From 04:00	Intersection 05:00 PM	Volume	Dorrent Dorrent	Leicein	05:30 Volume	Peak Factor	High Int.	Volume	Peak Factor

McDonough & Rea Associates 1431 Lakewood Road Suite C

Manasquan NJ 08736 (732) 528-7076 ROUTE 206 & CENTER DR/VILLAGE MONTGOMERY TOWNSHIP, SOMERSET COUNTY MRA JOB 16-243 THURSDAY PM COUNT

VILLAGE SHOPPER

File Name: 16243 rt 206 & center pm1 Site Code: 00016243 Start Date: 6/8/2017 Page No: 1

				Int Total	11. 10lai	o	- 0	2 ~	25	ì	2	7		. 4	20	45	2	
				Ann Total	0	o C	0 0	) C	0		0	0	0	0	0	0	)	0.0
		r Fxit		RTOR	-	) C	) C	) C	0		0	0	0	0	0	0	0.0	0.0
⊋		/illage Shopper Exit	Fastholind	Right	0	0	0	0	0		0	0	0	0	0	0	0.0	0.0
	,	Village	L	Thru	0	0	0	0	0		0	0	0	0	0	0	0.0	0.0
				Left	0	0	0	0	0		0	0	0	0	0	0	0.0	0.0
			1172	App. Total	8	4	4		12	- <u>-</u>	_	က	9	_	-	23		51.1
		206	puno	=	1	0	<del>-</del>	0	-	,	0	7	2	~	5	9	26.1	13.3
		Route 206	Northbound	Thru	3	4	က	_	=		τ-	_	4	0	9	17	73.9	37.8
	RUCKS			Left	0	0	0	0	0	(	0	0	0	0	0	0	0.0	0.0
	<b>Groups Printed- TRUCKS</b>			App. Total	-	0	_	0	2	(	0	_	0	0	<del>-</del>	က		6.7
	Group	ij		RTOR /	0	0	0	0	0	Ó	0	0	0	0	0	0	0.0	0.0
		Shop-Rite Exit	estbound	Right	0	0	0	0	0	ď	0	_	0	0	-	~	33.3	2.2
		Sho	≯	Thru	0	0	0	0	0	C	0	0	0	0	0	0	0.0	0.0
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)				Right App. Total	_	က	2	2	11	•	_	က	~	က	80	19		42.2
		506	puno	Right	0	0	0	0	0	c	0	0	0	0	0	0	0.0	0.0
		Route 206	Southbound	Thru	<del>-</del>	7	2	2	10	•	_	က	<del>-</del>	က	∞	18	94.7	40.0
				Left	0	-	0	0	~	c	>	0	0	0	0	~	5.3	2.2
				Start Time	04:00 PM	04:15 PM	04:30 PM	04:45 PM	Total	0	05:00 PIM	05:15 PM	05:30 PM	05:45 PM	Total	Grand Total	Apprch %	Total %
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		Int. Total			25		10	0.625			
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er Exit	,	RTOR			0	0.0	0				
/illage Shopper Exit	astboulk	Right			0	0.0	0				
Village					0	0.0	0		Σ		
		Left			0	0.0	0		3:45:00 PM		
		Right App. Iotal			12		4			4	0.750
Route 206	2	Kight.			_	8.3	_			0	
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	9	Left				0.0	0		04:15 PM	0	
	H	Right RIOR App. Lotal			2		_			_	0.500
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Ϋ́ S	-	חבו			0	0.0	0			0	
		Lett			7	100.0	_		04:00 PM	<del>-</del>	
	T CAC	App. rotal			7		5			2	0.550
, 206	1400	Ngn Ingr	ak 1 of 1		0	0.0	0			0	
Route 206	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ם ו	5 PM - Pea		10	6.06	2			2	
	40	Left	PM to 05:4:	34:00 PM	<del>-</del>	9.1	0		04:30 PM	0	
	H	Start Ime	Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1	Intersection 04:00 PM	Volume	Percent	04:30 Volume	Peak Factor	High Int. 0	Volume	Peak Factor

McDonough & Rea Associates 1431 Lakewood Road Suite C Manasquan NJ 08736

> MONTGOMERY TOWNSHIP, SOMERSET COUNTY MRA JOB 16-243 SATURDAY COUNT ROUTE 206 & CENTER DR/VILLAGE VILLAGE SHOPPER

File Name: 16243 rt 206 & center sat1 Site Code : 00016243 Start Date: 6/10/2017 (732) 528-7076

Page No

		al Int. Total			3 2298		9 594	0.967		C	2
		Thru Right RTOR App. Total			163		29			20	0.81
er Exit	ρL	RTOR				3.1				~	
illage Shopper Exit	Eastbound	Right				27.6				16	
Villaç		Thru			26	16.0	∞		5	9	
		Left			87	53.4	14		01:00 PN	27	
		Right App. Total			897		253			253	0.886
206	puno	Right			6	1.0	2			2	
Route 206	Northbound	Thru			782	87.2	220			220	
		Left			106	11.8	31		12:30 PM	31	
		Right RTOR App. Total	=		370		9/			115	0.804
xit		RTOR			32	8.6	∞			တ	
Shop-Rite Exit	Westbound	Right			90	24.3	19			29	
Sho	≥	Thru			22	8.9	9			∞	
		Left			223	60.3	43		12:45 PM	69	
		App. Total			898	-	236			236	0.919
206	puno	Right	ak 1 of 1		51	5.9	15			15	
Route 206	Southbound	Thru	5 PM - Pea		692	79.7	181			181	
		Left	AM to 01:4:	12:30 PM	125	14.4	40		12:30 PM	40 18	
		Start Time Left Thru Right App. Total	Peak Hour From 11:00 AM to 01:45 PM - Peak 1 of 1	Intersection	Volume	Percent	12:30 Volume 40	Peak Factor	High Int.	Volume	Dook Factor

McDonough & Rea Associates 1431 Lakewood Road Suite C Manasquan NJ 08736 (732) 528-7076

ROUTE 206 & CENTER DR/VILLAGE MONTGOMERY TOWNSHIP, SOMERSET COUNTY MRA JOB 16-243 SATURDAY COUNT

VILLAGE SHOPPER

File Name: 16243 rt 206 & center sat1 Site Code: 00016243

Start Date : 6/10/2017 Page No : 1

			Int Total	486	451	510	520	1967	548	522	290	589	2249	577	528	562	492	2159	6375			
		-	App. Total	- 1	98	42	20	151	33	39	29	46	147	20	38	34	29	151	449		7.0	
_	r Exit	_	RTOR	4	0	2	4	∞	~	က	0	4	ω	<b>←</b>	0	0	7	က	19	4.2	0.3	
	Village Shopper Exit	Eastbound	Right	19	9	13	œ	37	4	13	7	16	40	16	9	18	7	47	124	27.6	1.9	
) ) ) )	Villag	, ш	Thru	5	က	1	7	26	4	2	8	7	34	9	2	5	က	19	79	17.6	1.2	
			Left	12	21	16	31	80	14	18	14	19	65	27	27	7	17	82	227	50.6	3.6	
			App. Total	171	162	173	160	999	193	195	251	220	829	219	200	192	184	795	2320		36.4	
	206	puno	_	က	7	_	4	10	က	_	7	7	8	2	က	က	4	12	30	1.3	0.5	
	Route 206	Northbound	Thru	143	133	131	128	535	150	162	218	184	714	200	173	171	164	208	1957	84.4	30.7	
- CARS			Left	25	27	41	28	121	40	32	31	34	137	17	24	18	16	75	333	14.4	5.2	
Groups Printed- CARS			App. Total	75	71	78	86	322	109	66	9/	115	399	95	87	103	92	374	1095		17.2	
Grou	xit		_				=		21	∞	80	6	46	6	9	13	14	45	128	11.7	2.0	
	Shop-Rite Exi	/estboun	Right	7	12	19	16	28	18	27	19	59	93	24	18	18	13	73	224	20.5	3.5	
	Sh	<b>S</b>	Thru	4	4	2	3	16	2	=	9	8	30	∞	က	7	_	4	09	5.2	6.0	
			Left	46	48	46	99	208	65	23	43	69	230	51	09	70	64	245	683	62.4	10.7	
			App. Total	211	188	217	212	828	213	189	234	208	844	216	203	233	187	839	2511		39.4	
	206	- 1	$\neg$	19	23	21	20	83	25	7	15	13	64	18	2	7	9	40	187	7.4	2.9	
	Route 206	Southbound	Thru	170	141	164	159	634	160	158	179	162	629	175	169	193	145	682	1975	78.7	31.0	
			Left	22	24	32	33	111	28	20	40	33	121	23	59	33	32	117	349	13.9	5.5	
			Start Time	11:00 AM	11:15 AM	11:30 AM	11:45 AM	Total	12:00 PM	12:15 PM	12:30 PM	12:45 PM	Total	01:00 PM	01:15 PM	01:30 PM	01:45 PM	Total	Grand Total	Apprch %	Total %	

	Route 206	3 206 20100			S S	Shop-Rite Exit	ŧ,			Route	> 206	Route 206		Village	illage Shopper Exit	er Exit		
Coulibouild	ממממ				`A	componi	3				מוומ			_	astronali	3		
Thru Right	Right	_	App. Total	Left	Thru	Right	Right RTOR App. Total	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	RTOR	Right RTOR App. Total Int. Total	Int. Total
Peak Hour From 11:00 AM to 01:45 PM - Peak 1 of 1	ak 1 of 1																	
_																		
685 51	51		861	223	25	8	32	370	106	775	0	890	87	26	45	5	163	2284
79.6 5.9				60.3	8.9	24.3	8.6		11.9	87.1	1.0		53.4	16.0	27.6	3.1		
2:30 Volume 40 179 15			234		9	19	80	9/	31	218	2	251	14	∞	7	0	29	290
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				12:45 PM					12:30 PM	_			01:00 PM					
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			0.920					0.804				0.886					0.815	

1431 Lakewood Road Suite C Manasquan NJ 08736 (732) 528-7076 McDonough & Rea Associates

> MONTGOMERY TOWNSHIP, SOMERSET COUNTY MRA JOB 16-243 SATURDAY COUNT VILLAGE SHOPPER ROUTE 206 & CENTER DR/VILLAGE

File Name : 16243 rt 206 & center sat1 Site Code : 00016243 Start Date : 6/10/2017 Page No : 1

	クインコピー・コンドニニュ schoip							
Northbound   Nor	ŀΞ	.E	Shop-Rit	Shop-Rit	Shop-Rit	Shop	Shop	Shop
Name		ō	Westbo					Southbound
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0 0 0 1 1 1 5 0 0 0 0 0 0 0 0 0 0 0 0 0			0		0	2 0	0 2 0	2 0 2 0
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$0.0 \mid 0.0  56.0  4.0  60.0 \mid 0.0  0.0  0.0  0.0$		٠.		0.0	0.0	0.0 0.0	0.0 0.0	100.0 0.0 0.0 0.0
		Ξ,		0.0	0.0	40.0 0.0 0.0	40.0 0.0 0.0	40.0 0.0 40.0 0.0 0.0
200 31.20	)		Westbound Westbound Right R 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Shop-Rite Exit  Westbound  Thru Right R 0	Shop-Rite Exit  Westbound  1	Shop-Rite Exit  Westbound  Westbound  1 0 0 0 0  2 0 0 0 0  0 0 0	the 206  thound  Right   App. Total   Left   Thru   Right   Ri	Southbound   Shop-Rite Exit   Shop-Rite Exit   Southbound   Westbound   Westbound   Newtbound   Newt

		Route	Route 206			ত	Shop-Rite Exit	Exit			Route	Route 206			Village	'illage Shopper Exit	ır Exit	
		South	Southbound			_	Westbound	ρι			North	Northbound			, Ш	Eastbound	77	
Start Time	Left	Thru	Right	Start Time Left Thru Right App. Total	Left	Thru		RTOR	Right RTOR App. Total	Left	Thru	Right	Right App. Total	Left	Thru	Right	Right RTOR App. Total	al Int. Total
Peak Hour From 11:00 AM to 01:45 PM - Peak 1 of 1	30 AM to 01:	45 PM - Pe	ak 1 of 1															
Intersection 12:30 PM	12:30 PN	_																
Volume	0	0 2	0	7	0	0	0	0	0	0	7	0	7	0	0	0	0	0 14
Percent	0.0	100.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0		0.0	0.0	0.0	0.0	
01:00 Volume	0	τ	0	_	0	0	0	0	0	0	က	0	က	0	0	0	0	0 4
Peak Factor																		0.875
High Int.	12:30 PN	_			10:45:00 AM	AM				01:00 PM	5			10:45:00 AM	۸M			
Volume	Volume 0	2	0	2	0	0	0	0	0	0	က	0	က					
Peak Factor				0.875									0.583					

# New Jersey Department of Transportation

# Daily Volume from 05/12/2015 through 05/14/2015

11s011, , Van Horne Memorial Highway-57.93, 00000206\_\_, Montgo Site Names:

SOMERSET County:

Urban Principal Arterial - Other Funct. Class:

Between Wall Street and RT 518 County Road Location:

RG3\_FC14 RG3\_FC14 Seasonal Factor Group: Daily Factor Group:

any ractor Group.	COV
xle Factor Group:	RG3_F(
rowth Factor Group:	RG3 FC

-1	Sun 05	Sun 05/10/2015	_	Mon	Mon 05/11/2015		Ine	Tue 05/17/2015		wea	Wed 05/15/2015		ını	THU 05/14/2015	- cI	H	CI07/CI/C0 114	<u>-</u>	Sat	Sat 05/16/2015	cIn
ROAD		S		ROAD	S	Z	ROAD	S	Z	ROAD	S	Z	ROAD	S	z	ROAD	S	z	ROAD	S	Z
00:00										68	39	50	93	45	48						
01:00										40	21	19	19	42	25						
05:00										37	10	27	52	27	25						
03:00										38	20	18	99	32	24						
04:00										79	45	34	95	58	37						
05:00										355	184	171	350	189	191						
00:90										066	463	527	1,061	909	555						
07:00										1,554	761	793	1,572	962	2176						
08:00										1,483	775	208	1,500	785	715						
00:60										1,308		578	1,316	969	621						
10:00										1,195		585	1,142	604	538						
11:00										1,327	648	619	1,271	664	209						
12:00										1,351	959	701	1,484	682	802						
13:00										1,325	625	700	1,402	671	731						
14:00										1,409	632	777	821	363	458						
15:00							1,480	639	841	1,489		853									
16:00							1,435	615	820	1,498		872									
17:00							1,416	569	847	1,475	609	998									
18:00							1,354	609	745	1,464	635	829									
19:00							1,154	549	909	1,199	555	644									
20:00							842	347	495	863	374	489									
21:00							584	256	328	511	215	296									
22:00	-						352	152	200	358	1	206								***************************************	
23:00							144	70	74	188		1111									
Volume							8,761	3,806	4,955	21,625	10,092	11,533	12,282	6,159	6,123						
AM Peak Vol										1,554	775	793	1,572	796	776						
AM Peak Fct										1.00	1.00	1.00	1.00	1.00	1.00						
AM Peak Hr										7:00		7:00	7:00	7:00	7:00						
PM Peak Vol										1,498	650	872									
PM Peak Fct										1.00	1.00	1.00									
PM Peak Hr										16:00	12:00	16:00									
Seasonal Fct							0.954	0.954	0.954	0.954	0.954	0.954	0.954	0.954	0.954						
Daily Fct							0.979	0.979	0.979	0.986	0.986	0.986	096.0	096'0	096.0						
Axle Fct							0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500						
Dulea Fot							2.000	2.000	2.000	2,000	2 000	0000	2 000	2 000	2,000		-				

ROAD AADT 19,886

DV03: Page 1 of 1

Directive No. 163 - 09

Route US 206 and Montgomery Shopping Center Driveway Montgomery Twp., Somerset Co.

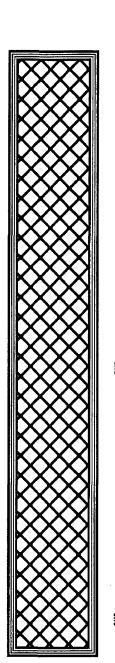
## 70, 95, 110 & 135 - SECOND BACKGROUND CYCLES

	<u>Phase</u>	Sign	nal Indicati	ons	•	Time (Se	econds)	
		<u>1 – 3</u>	<u>4 – 6</u>	<u>7 - 10</u>	<u>Plan I</u> (135 Sec.)	<u>Plan II</u> (110 Sec.)	<u>Plan III</u> (70 Sec.)	<u>Plan IV</u> (95 Sec.)
A)	Route US 206 ROW	G	G	R	108 – 87	83 – 63	43 – 31	68 - 46
,	Change	Υ	Υ	R	5*	5*	5*	5*
	Clearance	R	R	R	2	2	2	2
B)	Shopping Center Driveway ROW	R	R	G '	7 24**	7 – 25**	7 – 17** 3	7 – 27** 3
	Change	R	R	Y	3	3		2
	Clearance	R	R	R	2	2	2	2
C)	Route US 206 Lead Lefts	R/ <g-< td=""><td>R/<g-< td=""><td>R</td><td>5 – 9</td><td>5 – 7</td><td>5 – 7</td><td>5 – 7</td></g-<></td></g-<>	R/ <g-< td=""><td>R</td><td>5 – 9</td><td>5 – 7</td><td>5 – 7</td><td>5 – 7</td></g-<>	R	5 – 9	5 – 7	5 – 7	5 – 7
,	Changė	R/ <y-< td=""><td>R/<y-< td=""><td>R</td><td>3</td><td>3</td><td>3</td><td>3</td></y-<></td></y-<>	R/ <y-< td=""><td>R</td><td>3</td><td>3</td><td>3</td><td>3</td></y-<>	R	3	3	3	3
En	nergency Flash	Υ	Υ	R	-	-	-	-

### NOTES:

- 1. \*Offsets are measured from the beginning of yellow to Route US 206 traffic at Rocky Hill Road (CR 518) to the beginning of yellow to Route US 206 traffic at this intersection.
- 2. \*\*Actuation of a pedestrian push button shall guarantee 12 seconds of green time to Phase B.
- The Route US 206 left-turn slots are to be wired separately but concurrently timed if actuation occurs in both slots.
   Each slot shall have the capability of terminating or extending independently of the other, thereby reverting the timing to an actuated, non-conflicting Phase A movement.
- 4. The manual control cord is to be removed.
- 5. The vehicle interval is to be 2 seconds.
- 6. The memory circuit is to be off.

HOURS OF OPERATION	CYCLE LENGTH	*OFFSETS
Plan I - Monday thru Friday / 6:30 A.M 9:30 A.M.	135-Second Background Cycle	19 Seconds
Plan II - Monday thru Friday / 3:30 P.M 6:30 P.M.	110-Second Background Cycle	20 Seconds
Plan III - Monday thru Sunday / 10:00 P.M 6:30 A.M.	70-Second Background Cycle	15 Seconds
Plan IV - All Other Times	95-Second Background Cycle	7 Seconds



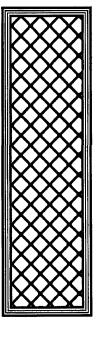
# TOWNSHIP OF MONTGOMERY

SOMERSET COUNTY NEW JERSEY

# **MASTER PLAN**

TRAFFIC CIRCULATION
PLAN ELEMENT
2005 Amendment No. 1

March 15, 2005



A PROPOSED REALIGNMENT OF THE SOUTHERN PORTION OF THE PROPOSED ROUTE 206/HILLSBOROUGH BYPASS TO PROVIDE AN ACHIEVABLE AND VIABLE DIRECT CONNECTION TO COUNTY ROUTE 601, AND RELATED ROUTE 206 CORRIDOR IMPROVEMENTS

# PROPOSED NEW ROADWAYS TO HELP ALLEVIATE TRAFFIC CONGESTION AT THE ROUTE 206/ROUTE 518 INTERSECTION AND RELATED ROUTE 206 CORRIDOR IMPROVEMENTS

At this time, the Transportation Advisory Committee has recommended a number of new roadways to help alleviate traffic congestion at the Route 206/Route 518 intersection and related Route 206 corridor improvements. The specifics of the recommendations, the need for the improvements and the benefits to the public which will result are discussed in an April 29, 2003 report prepared by McDonough & Rea Associates, the Township's Traffic Engineer.

The proposed roadway improvements are shown on the two (2) attached aerial photograph maps. Each roadway is proposed to provide for 2-way traffic within a fifty foot (50') right-of-way.

The following summarizes the proposed new roadways, and the descriptions are organized by the quadrant of the Route 206/Route 518 intersection within which they are located

### **Northwest Quadrant**

In the northwest quadrant of the Route 206/518 intersection, three (3) new loop roadways are proposed, as follows:

- 1. An "inner loop" roadway linking Route 518 to Route 206 is proposed behind the properties in the vicinity of the "Tigers Tale" restaurant.
- 2. An "intermediate loop" roadway is proposed which will connect with Route 518 at the existing Research Road intersection, extend northerly via Research Road, and then turn in an easterly direction through the "Village Shopper" shopping center to an intersection with Route 206 at the traffic signal currently located at the intersection with the driveway accessing the "Montgomery Shopping Center".
- 3. Finally, an "outer loop" roadway is proposed from a signalized intersection at Route 518, extending northerly along the western boundary of the "Sharbell" adult community tract between Route 518 and Bedens Brook, crossing Bedens Brook at a flood free bridge crossing, and intersecting with Orchard Road west of the Orchard Road/Route 206 intersection.

### **Southwest Quadrant**

In the southwest quadrant of the Route 206/518 intersection, three (3) new loop roadways are proposed to connect Route 518 with Route 206, as follows:

- 1. An "inner loop" roadway is proposed from Route 518 along the westerly and southerly sides of the "Amboy Bank" property to a new intersection with Route 206. Additionally, an extension of the "inner loop" along the westerly side of the "Amboy Bank" property will continue southwardly along the westerly side of the former "Z&W Mazda" car dealership to a "T" intersection with another new roadway (i.e., the "intermediate loop" discussed in the next paragraph) extending westerly from a new lighted intersection with Route 206 opposite the boulevard entrance to the "Princeton North Shopping Center".
- 2. An "intermediate loop" roadway is proposed to extend westerly from a new lighted intersection with Route 206 through undeveloped lands which are being considered for the development of a "shopping village", which primarily is to include an assortment of retail uses. The "intermediate loop" will turn north and intersect with Route 518 opposite Research Road.
- 3. An "outer loop" roadway it proposed to extend to the west from a "T" intersection with the "intermediate loop", proceed parallel and close to the northern boundary of the "Princeton Airport" in order to safeguard the continued agricultural use of the subject property, if desired by the property owner, and then turn north to a signalized intersection with Route 518 opposite the "outer loop" roadway in the northwest quadrant of the study area.

### **Southeast Quadrant**

In the southeast quadrant of the Route 206/518 intersection, new interconnected roadway segments are shown on the proposed "Traffic Circulation Plan". Most of these new roadway segments are located in neighboring Rocky Hill Borough, and whether or not they eventually are constructed will depend upon the results of ongoing discussions between the two (2) municipalities. The municipalities do share proprietary interest in the currently named "Schaeffer Tract" park, and the proposed roadway segments are proposed to provide alternative vehicular access into the park. Additionally, the proposed roadway segments will further help to enhance traffic circulation along Route 518 and at the Route 518/206 intersection. The new roadway segments include the following:

- 1. A north/south connector is shown to extend from Route 518 via Young Drive southwardly into the park, where it intersects with a new public roadway, which will be in place of, and an extension of, the existing boulevard driveway entrance into the "Princeton North Shopping Center" from the newly planned lighted intersection with Route 206.
- 2. The north/south connector is shown to extend further to the south through the park, and then turn west to an intersection with the existing loop driveway within the "Research Park" office complex.

### Northeast Quadrant

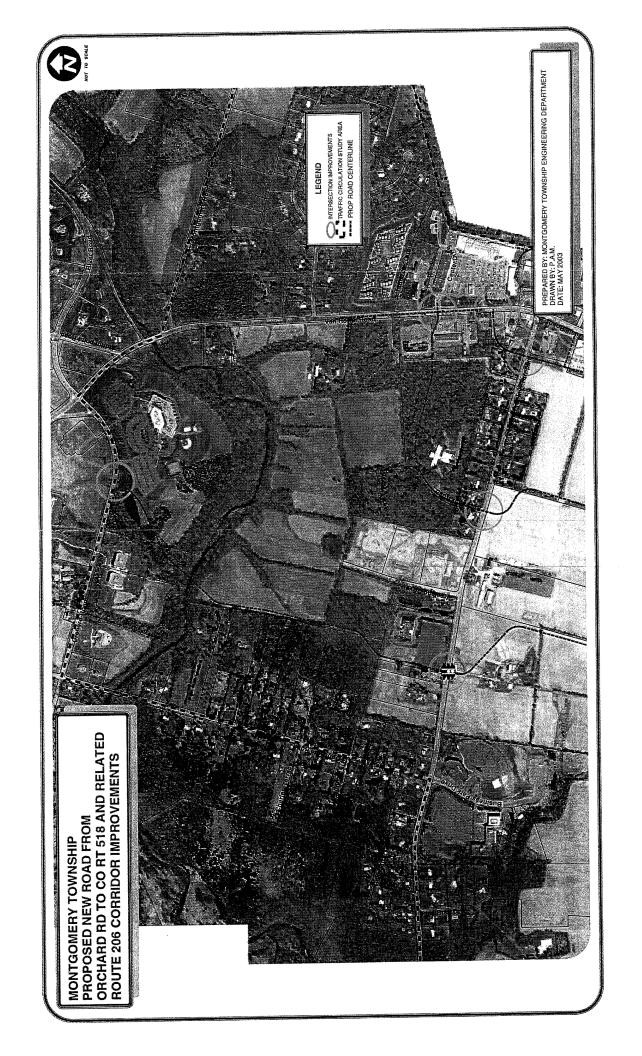
In the northeast quadrant of the Route 206/518 intersection, vehicular and pedestrian access to the "Montgomery Shopping Center" is intended to be provided from Route 518 through a portion of the "Princeton Gamma Tech" property.

PROPOSED NEW ROADWAYS
TO HELP ALLEVIATE TRAFFIC CONGESTION
AT THE ROUTE 206 INTERSECTION
WITH CHERRY VALLEY ROAD AND PRINCETON AVENUE
AND RELATED ROUTE 206 CORRIDOR IMPROVEMENTS

The Transportation Advisory Committee (TAC) previously recommended to the Planning Board that certain improvements be made to the Route 206 intersection with Cherry Valley Road and Princeton Avenue. The specifics of the recommendation and a documentation of the need for the improvements and the benefits to the public which will result are detailed in a March 8, 2002 report prepared by McDonough & Rea Associates, the Township's Traffic Engineer.

The recommendation from the Transportation Advisory Committee (TAC) for the improvements at the subject intersection was timely, since applications had been filed by "SDI, LLC" for the development of a "Commerce Bank" building and a "CVS Pharmacy" building on a tract of land at the southeast corner of the intersection. The subject tract of land straddles the Montgomery Township/Princeton Township boundary, and both Township's reviewed the proposed development.

The submission of the applications to develop the subject tract of land precipitated a dialogue between the municipal officials and staff members of Montgomery and Princeton, since both Townships recognize the safety problems associated with the relatively large volumes of traffic attempting to pass through the intersection, which has an irregular geometry and no left-turn lanes.

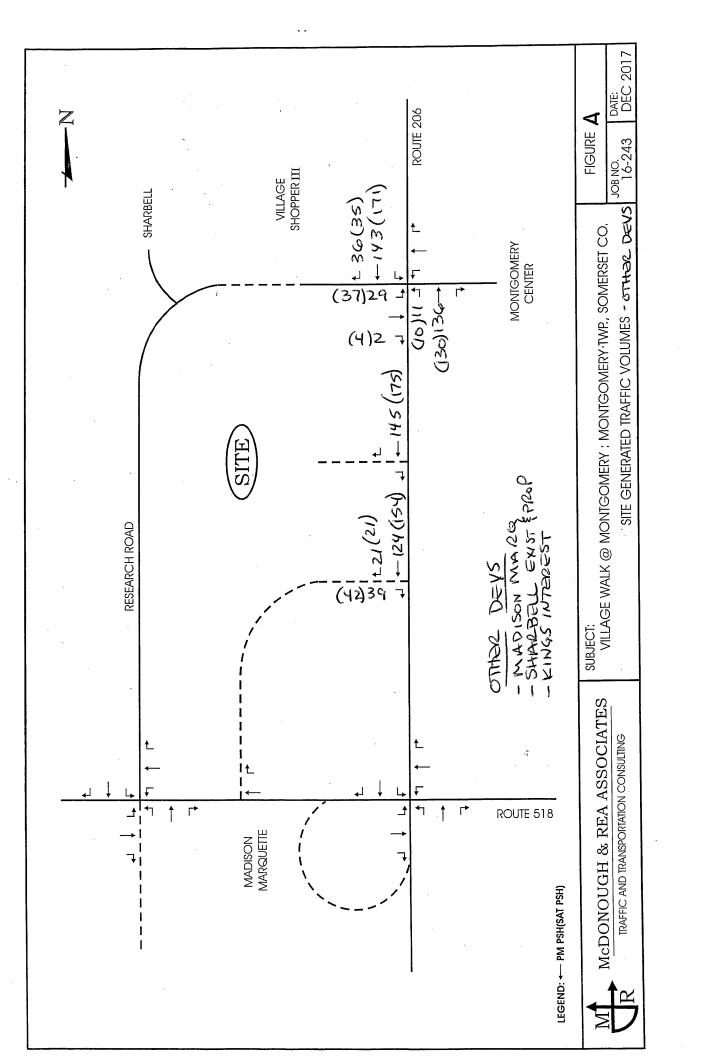


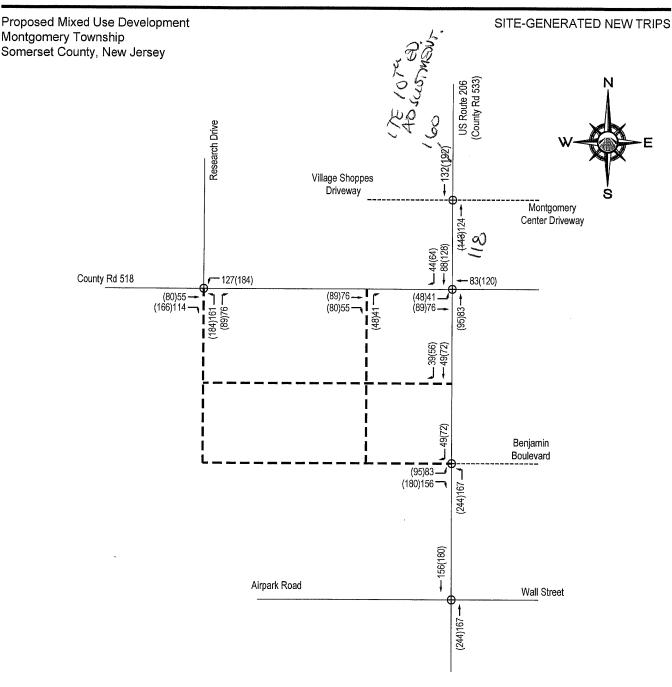
ITE Land Use: 820, Shopping Center	820, Shopping C		FROP SA								
Size of Development:	56,000 SF			10th							
Time Period	Average Rate	Studies	Avg. Size	<u>정</u>	Trips		Equ	Equation	Trips	Split	≝
Weekday Daily	37.75	147	453	0.76	2114.0	_	0.680	Ln(x)+ 5.570	4053.1	50 50	50
AM Peak Street Hour	0.94	84	351	0.50	52.6	<u></u>	0.500	(x)+ 151.780	179.8	62	38
PM Peak Street Hour	3.81	261	327	0.82	213.4	Ln(T)=	0.740	Ln(x)+ 2.890	353.8	48	52
AM Peak Hour of Generator	3.00	47	323	0.71	168.0	<u>"</u>	2.760	(x)+ 77.280	231.8	54	46
PM Peak Hour of Generator	4.21	53	298	0.76	235.8	Ln(T)=	0.720	Ln(x)+ 3.020	371.8	20	20
Saturday Daily	46.12	58	602	0.71	2582.7	-(T)nJ	0.620	Ln(x)+ 6.240	6221.2	50	20
Saturday Peak Hour of Generator	4.50	119	416	0.87	252.0	Ln(T)=	0.790	Ln(x)+ 2.790	391.5	52	48
Sunday Daily	21.10	30	509	Ů	1181.6		Not	Not Given	N/A	20	50
Sunday Peak Hour of Generator	2.79	24	382	NG	156.2		Not	Not Given	N/A	49	51
PM Pass-By Percentage						Ln(T)=	-0.291	Ln(x)+ 5.001	46.0		-
Saturday Pass-By Percentage						<u>=</u> L	-0.024	(x)+ 38.591	37.2		

ITE Land Use: 220, Multifamily Housing (Low-Rise)	220, Multifamily	Housing (L		CESSIONCS	G.		and the second second			17
Size of Development:	52	52 Dwelling Units	1 1	10th						
Time Period	Average Rate	Studies	Avg. Size	24	Trips		Equ	Equation	Trips	Split
Weekday Daily	7.32	29	168	96.0	380.6		7.560	(x)- 40.860	352.3	50 50
AM Peak Street Hour	0.46	42	199	06.0	23.9 L	Ln(T)=	0.950	Ln(x)- 0.510	25.6	23 77
PM Peak Street Hour	0.56	20	187	0.86	29.1	Ln(T)=	Ì	Ln(x)- 0.020	33.0	63 37
AM Peak Hour of Generator	0.56	36	161	0.91	29.1	Ln(T)=	ŀ	Ln(x)- 0.290	30.7	28 72
PM Peak Hour of Generator	0.67	35	146	0.94	34.8	<u> </u>		(x)+ 1.410	35.7	59 41
Saturday Daily	8.14	5	89	0.93	423.3	11	,	(x)- 521.690	206.8	50 50
Saturday Peak Hour of Generator	0.70	5	89	0.92	36.4	<u>  </u>	1.080	(x)- 33.240	22.9	N/A
Sunday Daily	6.28	5	89	96.0	326.6	<u> </u>	10.130	(x)- 341.890	184.9	50 50
Sunday Peak Hour of Generator	0.67	5	89	0.93	34.8	<u>"</u>	1.120	(x)- 40.410	17.8	N/A

!		=	50	38	52	46	20	20	48	50	51			
		Split	50	62				20	-i	-	-			
		Trips	2213.1	163.3	183.1	140.8	195.9	3583.2	193.8	A/N	A/N	59.7	38.0	
Commence of the commence of th		Equation	Ln(x)+ 5.570	(x)+ 151.780	Ln(x)+ 2.890	(x)+ 77.280	Ln(x)+ 3.020	Ln(x)+ 6.240	Ln(x)+ 2.790	Not Given	Not Given	Ln(x)+ 5.001	(x)+ 38.591	
		Equ	0.680	0.500	0.740	2.760	0.720	0.620	0.790	Not	Not (	-0.291	-0.024	
			Ln(T)=	II.	Ln(T)=	=1	Ln(T)=	Ln(T)=	Ln(T)=			Ln(T)=	=	
		Trips	868.3	21.6	87.6	0.69	96.8	1060.8	103.5	485.3	64.2			
	10th	ᆲ	0.76	0.50	0.82	0.71	0.76	0.71	0.87	ŊĊ	NG			
CASTO C		Avg. Size	453	351	327	323	298	602	416	509	382			
		Studies	147	84	261	47	53	58	119	30	24			
820, Shopping Co	23,000	Average Rate	37.75	0.94	3.81	3.00	4.21	46.12	4.50	21.10	2.79	A MILE AND REPORT OF THE PROPERTY OF THE PROPE		
ITE Land Use: 820, Shopping Center	Size of Development:	Time Period	Weekday Daily	AM Peak Street Hour	PM Peak Street Hour	AM Peak Hour of Generator	PM Peak Hour of Generator	Saturday Daily	Saturday Peak Hour of Generator	Sunday Daily	Sunday Peak Hour of Generator	PM Pass-By Percentage	Saturday Pass-By Percentage	

IIE Land Use:	ITE Land Use: 710, General Office Bu	fice Building	uilding OXXST7VC	7/VG	and the second s					
Size of Development:	8,000 SF	SF		10th						
Time Period	Average Rate	Studies	Avg Size	<b>D</b> 2	o King				1	
			221.2	1	2011		Equation	=	LIDS	Split
weekday Dally	9.74	99	171	0.83	_	_n(T)= 0.9	970 Ln(	x)+ 2.500	916	50 5
AM Peak Street Hour	1.16	32	117	0.85	9.3	1	340	x)+ 26 400	2.70	2 0
PM Peak Street Hour	1.15	32	114	0.88	7	1	350 1 00	0 050 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.4.0	00
AM Peak Hour of Generator	1.47	228	209	0.84	11 0	n(T)=	380 1 20	A) 1 0.300	.0.0 .0.0	φ ;
PM Peak Hour of Generator	1.42	576	205	000		- 1	000	A)T 1.000	-Ω.O	χχ -
	1.00	011	007	0.02				x)+ 65.390	74.2	00
Saturday Dally	2.21	5	94	g	17.7		Not Give	U	A/N	50 5
Saturday Peak Hour of Generator	0.53	က	82	NG	4.2	And the second s	Not Given			
Sunday Daily	0.70	5	94	NG	5.6		Not Given		<b>V</b>	40
Sunday Peak Hour of Generator	0.21	c.	82	טוט	17		1014		<b>T</b>	00
The second secon		)	1	2	-				N/A	58 4,





**LEGEND** 

AA(BB) PM(SAT) PEAK HOUR VOLUMES

EXISTING ROADWAY

EXISTING DRIVEWAY

EXISTING TRAFFIC SIGNAL

PROPOSED DRIVEWAY

 
 PEAK HOUR
 ENTER
 EXIT
 TOTAL

 PM
 551
 517
 1068

 SAT
 802
 596
 1398
 10Th DITION TG

**TABLE 1 - Trip Generation Estimates** 

	TABLE		y dente	ution L	Juna	.03 /			
Use	THE RESERVE OF THE PARTY OF THE	eekday 'eak Ho		CONTROL AND THE STATE OF	eekday eak Ho	THE RESERVE OF THE PARTY OF THE		irday Mi eak Hoi	
	In	Out	Total	- In	Out	Total	In	Out	Total
48,240sf Retail Space	62	38	1-00	177	191	368	283	261	544
Total	62	38	1200-	177	191	<i>-368</i>	283	261	.544
Retail Pass-By	0	0	0	60	65 (	P-125	73	68 (	55141
Total Pass-By*	0	0	0	- 60	- 65	- 125	- <i>73</i>	- 68	- 141
Total New	62	38	100	117	126	243	210	193	403~

We determined study locations based on the new trips shown in Table 1.

245

### **Existing Use Site Traffic**

A portion of the project site is currently developed with a 3,300 sf high-turnover sit-down restaurant. To provide an accurate evaluation of the proposed redevelopment's impact on the surrounding roadways we took into account the existing property use on the site and the traffic the use creates. We generated trip generation estimates associated with the full occupancy of the 3,300 sf high-turnover sit-down restaurant. The existing property use trips were then subtracted from the proposed new site generated trips, since that traffic exists on the adjacent roadways in the surrounding area. We removed the existing use trips from the proposed new trips in order to develop a more accurate representation of the new traffic the redevelopment will add to the road system. Table 2 summarizes the peak hour trips that would be generated by the proposed new redevelopment with a reduction of the existing property uses at full occupancy. We prepared trip generation estimates for the existing property uses at full occupancy using data compiled for Land Use 932 (High-Turnover Sit-Down Restaurant) by ITE as contained in the publication Trip Generation, 9<sup>th</sup> edition.

**TABLE 2 - Trip Generation Reduction** 

Use	P	ekday eak Ho	ur	Pi	ekday eak Ho	ur	P	rday M eak Ho	ur
A CONTRACTOR OF STREET	-In	Out	Total	ln	Out	Total	.ln	Out	Total
3,300 sf High-Turnover Restaurant	20	16	36	20	13	33	24	22	46
Total Existing Use New Trips	- 20	- 16	- 36	- 20	- 13	- 33	- 24	- 22	- 46
Total Proposed New Trips	62	38	100	117	1262	2943-	210	193	403-
Total New Trips With Reduction	42	22	64	97	113	210	186	171	357

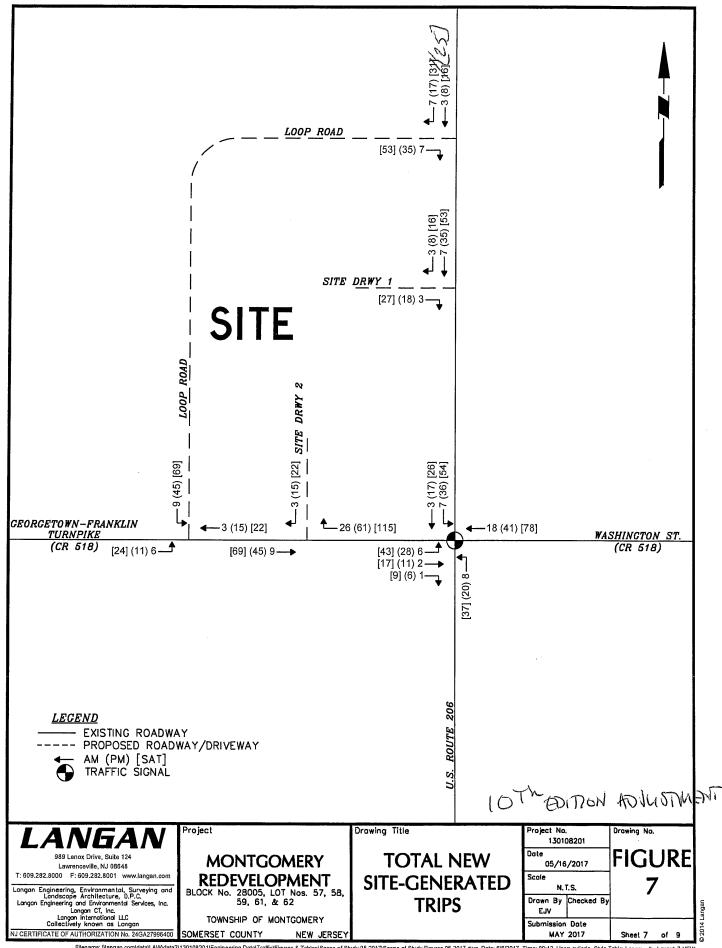
193

200

#### TRAFFIC IMPACT STUDY AREA

We determined the direction distribution of site-generated trips based on existing travel patterns in the study area, demographic data and a gravity model.

We defined the primary market area for the site using a 5-mile radius from the site. We identified the population for each census tract within the area through available census data. We then developed a gravity model based on the population and distance to the site





# MEMORANDUM

To:

Scott Kennel

From:

Nick Verderese

c:

Mark Cannuli

Date:

June 27, 2017

Revised October 19, 2017

Re:

Trip Generation/Distribution Sharbell Kepner - Tregoe Tract

CR 518 at Research Road Block 28001 - Lot 66

Montgomery Township, Somerset County, NJ

DT# 0043-14-015TE

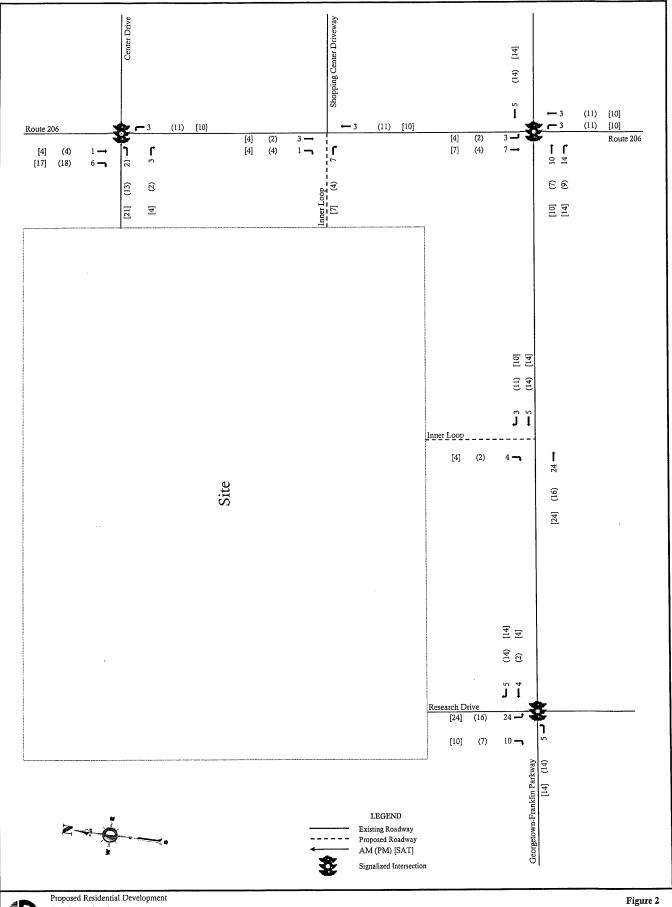
Dynamic Traffic has prepared the following assessment to determine the site generated traffic associated with the development of Block 28001 – Lot 66 with an approximate size of 25.72 acres. It is proposed to raze the site and construct 107 townhomes, 40 condominiums, and 80 apartments. Access to the site will be provided via a new connection to the traffic signal at Route 206 and Village Shopper, a new right turn in/right turn out roadway along Route 206 between Village Shopper and CR 518, a new right turn in/right turn out roadway along CR 518 between Route 206 and Research Road, and the existing Research Road intersection with CR 518.

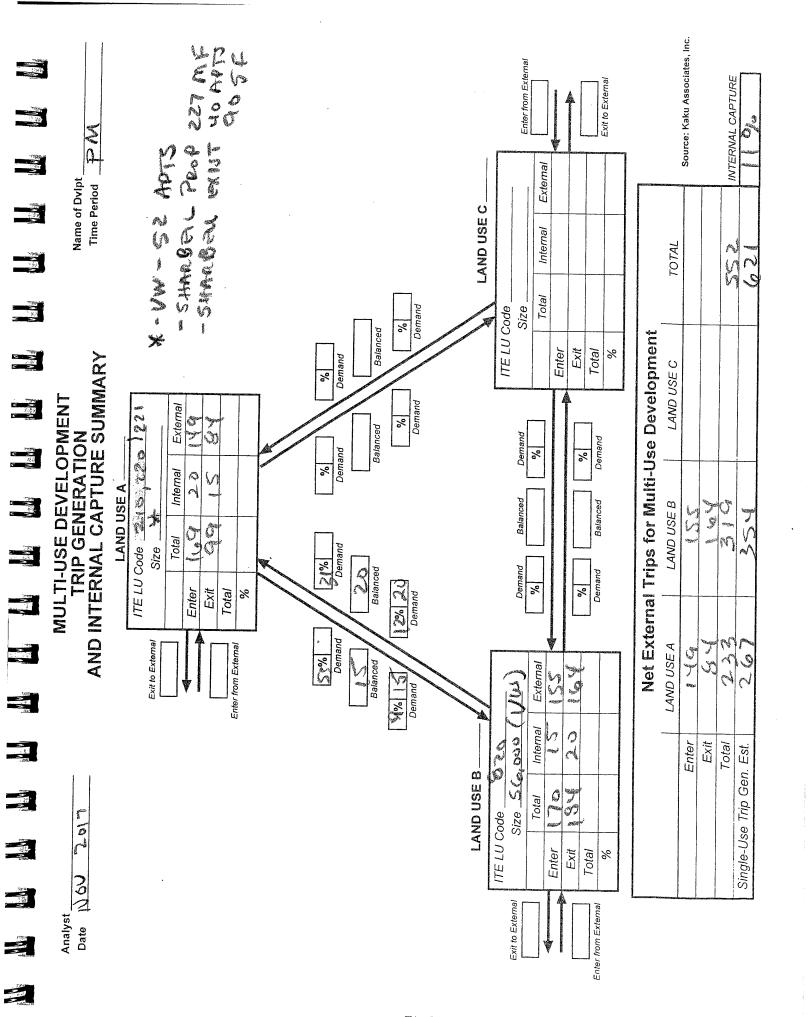
#### **Trip Generation**

Trip generation projections for The Project were made utilizing trip generation research data as published under Land Use Code (LUC) 220 - Multifamily Housing (Low-Rise) and LUC 221 -Multifamily Housing (Mid-Rise) in the Institute of Transportation Engineers' (ITE) publication, Trip Generation, 10th Edition. This publication sets forth trip generation rates based on traffic counts conducted at research sites throughout the country.

> Table I Trin Generation

T T		AM PSH PM PSH						SAT PSH				
Trip Type	In	Out	Total	In	Out	Total	In	Out	Total			
107 Low-Rise Multifamily Housing Units	12	39	51	40	23	63	41	41	82			
120 Mid-Rise Multifamily Housing Units	11	30	41	32	21	53	28	29	57			
Total	23	69	92	72	44	116	69	70	139			





# LEVEL OF SERVICE FOR SIGNALIZED INTERSECTIONS<sup>1</sup>

Level of Service	<b>Description</b>	Control (Signal) Delay Per Vehicle (Seconds)
A	Very short delay, good progression; most vehicles do not stop at intersection.	<u>&lt;</u> 10.0
В	Generally good progression and/or short cycle length; more vehicles stop at intersection than at Level of Service "A."	$> 10.0$ and $\le 20.0$
C	Fair progression and/or longer cycle length; significant number of vehicles stop at intersection, though many still pass through without stopping.	$> 20.0$ and $\le 35.0$
D	Congestion becomes noticeable; longer delays from unfavorable progression, long cycle lengths, or high volume/capacity ratios; many vehicles stop at intersection.	$> 35.0$ and $\leq 55.0$
E	Considered to be the <u>limit of acceptable delay</u> ; indicative of poor progression, long cycle lengths, or high volume/capacity ratios; frequent individual cycles failures.	$> 55.0$ and $\le 80.0$
F	Often an indication of over-saturation (i.e., arrival flow exceeds capacity); also caused by poor progression and long cycles lengths; capacity is not necessarily exceeded under this level of service.	> 80.0

<sup>&</sup>lt;sup>1</sup> Transportation Research Board, <u>Highway Capacity Manual 2010</u>, National Research Council, Washington, DC, 2010.

**Table** 

# Future 2022 Levels of Service

## Route 206 and Montgomery Walk

2002	PM P	eak Hour No-	-Build	PM	Peak Hour B	uild	Allowable	<u>Violation</u>	PM Pe	ak Hour w/Mi	<u>tigation</u>
Lane Group	V/C	Delay	LOS	V/C	<u>Delay</u>	<u>LOS</u>	<u>Delay</u>	?	<u>V/C</u>	<u>Delay</u>	LOS
NB Left	0.17	18.4	В	0.54	31.9	С	33.8	N	0.41	20.5	С
NB Thru/Right	1.04	61.0	E	1.01	53.9	D	65.8	N	1.01	53.9	D
SB Left	0.54	37.1	D	0.54	37.1	D	47.8	N	0.54	37.1	D
SB Thru/Right	0.83	26.3	С	0.90	32.6	С	39.7	N	0.78	23.6	С
EB Left/Thru/Right	0.29	37.2	D	0.53	42.8	D	47.8	N			
EB Left	0.20								0.45	47.4	D
EB Thru/Right									0.23	36.1	D
WB Left/Thru	0.52	43.6	D	0.59	46.6	D	52.7	N			
WB Right	0.27	36.8	D	0.27	36.8	D	47.6	N			
WB Left	0.27	00.0		0,2,		-			0.61	51.4	D
									0.31	37.5	D
WB Thru/Right Overall	-	43.9	D		43.0	D				39.2	D

	Saturda	y Peak Hour I	No-Build	Saturo	lay Peak Hou	ır Build	<u>Allowable</u>	<u>Violation</u>	<u>Saturday</u>	Peak Hour w	Mitigation
Lane Group	V/C	Delay	LOS	V/C	<u>Delay</u>	LOS	<u>Delay</u>	?	<u>V/C</u>	<u>Delay</u>	LOS
NB Left	0.42	27.0	С	0.87	60.9	E	40.2	_ Y	0.87	60.9	E
NB Thru/Right	1.16	110.4	F	1.13	98.6	F	110.4	N	1.13	98.6	F
SB Left	0.27	23.8	С	0.27	23.8	С	37.8	N	0.27	23.8	С
SB Thru/Right	1.18	108.0	F	1.25	148.1	F	148.1	Y	1.09	81.3	F
EB Left/Thru/Right	0.43	30.7	С	0.64	36.6	D					
EB Left									0.46	36.1	D
EB Thru/Right	'								0.32	28.5	С
WB Left/Thru	0.62	38.2	D	0.67	40.9	D	48.6	N			
WB Right	0.17	26.4	С	0.17	26.4	С	39.8	N			
WB Left									0.71	48.1	D
WB Thru/Right									0.23	27.1	С
Overall		89.9	F		9.6	F				72.4	E

		HCS	7 Sig	naliz	ed Int	ersec	tion F	Resul	ts Su	nmar	y				
General Inform	nation							1	ntersec	tion Inf	ormatio	on	题	세계하다	
Agency		MRA						]	Duration	, h	0.25			41	
Analyst	<del></del>	STK		Analy	sis Date	е		F	Area Typ	е	Other				¥ E
Jurisdiction				Time	Period	РМ		F	PHF		0.92		<b>₹</b> - <b>♦</b>	# <del>1</del> =	- <del>-</del> - <del>-</del>
Urban Street		ROUTE 206-VILLA	GE.	Analy	sis Yea	r 2022	NOBUII	.D /	Analysis	Period	1> 7:0	00			
Intersection				File N	ame									<b>ጎ</b> ‡	280
Project Descrip	tion	HCS Export											ă	বাংকিয়	rici
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Demand (v), v	eh/h			59	10	42	174	6	140	46	1010	17	-90	769	43
Signal Informa	tion		l Haris Se	Γ	т т							4000			
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Offset, s	0			ł	15	<b>1</b> *1	<b>"</b> ≒" "	`					2	3	マ 4
Uncoordinated	No	Reference Point Simult. Gap E/W	End On	Green		63.0	25.0	0.0	0.0	0.0					لك
Force Mode	Fixed	Simult. Gap E/VV	On	Yellow		5.0 2.0	3.0 2.0	0.0	0.0	0.0		<b>\</b>   \	) <u> </u>		Y
Force wode	rixed	Simult. Gap N/S	On	Red	0.0	12.0	[2.0	0.0	0.0	0.0		0	*	- 6	*
Timer Results				EB		EBT	WB	1.5	WBT	NBI		NBT	SBI		SBT
Assigned Phase	A	ne broke merkille i voles en end brørser starrer i	11. (12. 14. 14. 14. 14. 14. 14. 14. 14. 14. 14		<del>-</del>	4			8	5	- 3.7% 8.6%	2	1	- 688 TOUR	6
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Phase Duration	. S					30.0			30.0	10.0		70.0	10.0	)	70.0
		5), S	5.40.50			5.0	4	32.66	5.0	3.0		7.0	3.0		7.0
Max Allow Head			2 10 (no. 4 d) (n	1,0000000000000000000000000000000000000	100 m	3.2			3.2	2.8		0.0	2.8		0.0
Queue Clearan						8.7			16.4	3.1		. 35 11/29/5	4.3		21.555.25
Green Extensio			alamater 150 ann			0.7			0.6	0.0		0.0	0.0		0.0
				1257-127		1.00	i de la como		1,00	1.00			1.00	<del></del>	
Max Out Probal						0.00			0.03	0.14			1.00		
Movement Gro		ults			EB			WB	(0.56e)		NB		2000	SB	
Approach Move				L	Т	R	L	Т	R	L	Т	R	L	Т	R
Assigned Move		Water State of the Control of the Co		7.	. 4	1.4	. 3	- 8	18	. 5	. 2 -	12	1	6	16
Adjusted Flow F					121			196	98	50	1116		98	883	
		w Rate ( s ), veh/h/l	n	1,200,000	.1580			1361	1598	1795	1880		1795	1867	
Queue Service			i en de siste	10.004.0000.00	0.0	ages species	12.55 mb. 12.75 m	7.6	5.5	1.1	63.0	- Arjana makana	2.3	42.1	n ngga sandawa
Cycle Queue Cl		e iime ( <i>g c</i> ), s	own, kor	balla self-	6.7	1,723,732		14.4	5.5	1.1	63.0		2.3	42.1	
Green Ratio ( <i>g.</i> Capacity ( <i>c</i> ), v			i Salan Baran	Altakoria	0.23	i gertin tuka	XXXXXXXXXX	0.23	0.23	0.64	0.57	Agricinas Astor	0.64	0.57	e Selections Skew
Volume-to-Capa		tio (V)			:409 0.305	456 360	*M157	374	363	289	1076		180 0.544	1070 0.825	
		ln ( 50 th percentile)	15 E. Fyllos (186	F. Edd Gulf. Nov.	0.295 73.1	983879855	19 pagion	0.523 132.8	0.269 59	0.173 15.4	1.037 927.4	Pre-mission	0.544 50.3	483.2	
		eh/In ( 50 th percentile)		a Maria (A)	2.9			5.3	2.3	0.6	36.8	122 212 32	2.0	483.2 19.2	
		RQ) (50 th percent			0.00	1990/34/25 (c)	\$1968\XX	0.00	0.00	0.00	0.00	Seguita.	0.00	0.00	
Uniform Delay (			.110/	73.535.43	35.4		eger (See Sepale)	38.4	35.0	17.1	23.5	15 15 Tag (15 15 15 15 15 15 15 15 15 15 15 15 15 1	25.7	19.0	1 55.7550
Incremental Del				SAR SEA	1.8	149.52	grassiani.	5.2	1.8	1.3	37.5	50,800	11.3	7.3	d ye beli
			artiaces and afficie	44 SE SE	0.0		**************************************	0.0	0.0	0.0	0.0	18,000,000	0.0	0.0	
	tial Queue Delay ( d ₃ ), s/veh ontrol Delay ( d ), s/veh			Excess of	37.2	13/4144	3 g 2 g 2 g	43.6	36.8	18.4	61,0	10.00	37.1	26.3	100
	evel of Service (LOS)			- specified (Fig.)	D	- ng pa grandi i	1900	D	D	В	F		D	C	1 - 10 mm - 10
	pproach Delay, s/veh / LOS				2**	D	41.3		D	59.1		 ∀E ***	27.4		C
Intersection Del					Communication (1997)		3.9	and person solds.			en estra estár		D	-,	91.19F1 1022/2017
										1					
Multimodal Re	sults				EB			WB			· NB			SB	
Pedestrian LOS	Score /	/LOS													
Bicycle LOS Sc	/cle LOS Score / LOS				Y713 61										

	HCS7	' Sig	nalize	d Inte	ersec	tion R	esult	ts Sun	nmary	′				
						- 27 - 27 - 27								
General Information							lı	ntersect	ion Info	rmatio	n			. I C.
Agency MRA								Ouration,	h	0.25				
Analyst STK			Analys	is Date			A	rea Type	9	Other				<u> </u>
Jurisdiction			Time F	eriod	РМ		F	PHF		0.92		<u> </u>	- ₩ = =	<b>7</b>
Urban Street ROUTE 206	S-VILLAG	E	Analys	is Year	2022	BUILD	Α	nalysis l	Period	1> 7:0	0			<u> </u>
Intersection			File Na										7 1	
Project Description HCS Export			L									a a	41141711	de
Demand Information		State of the state		EB:		2 (1997) 1 (1997)	WB	ar y droei de	in a said the	NB			SB	15.05.17
Approach Movement			L	Т	R	L	T	R	L	Т	R	L	T	R
Demand (v), veh/h		10 - 10 <del>1</del> 0 - 1	118	20	60	174	16	140	120	985	17	90	771	103
Signal Information				7	1	- 5	닠							_
Cycle, s 110.0 Reference	Phase	2		ĸ	St.	*13 *					<b>≥</b>	Ψ,		€ ₄
Offset, s 0 Reference	Point	End	Green	7.0	63.0	25.0	0.0	0.0	0.0					K
Uncoordinated No Simult. Gap	E/W	On	Yellow		5.0	3.0	0.0	0.0	0.0		\  4	<b>)</b>		7
Force Mode Fixed Simult. Gap	N/S	On:	Red	0.0	2.0	2.0	0.0	0.0	0.0		5	6	7	. 8
		- F - 10									H P			
Timer Results			EBL		EBT	WBI	La B	WBT	NBL		NBT⊹	SBL	1500 - 1500 - 1500	SBT
Assigned Phase					4			8	5		2	1		6
Case Number		BY SE W.		8.0		33: 252	7.0	1.1		4.0	1.1		4.0	
Phase Duration, s					30.0			30.0	10.0		70.0	10.0	)	70.0
Change Period, ( Y+R c), s		77/XX			5.0			5.0	3.0	AL MA	7.0	3.0	77.5 Telephone	7.0
Max Allow Headway ( MAH ), s					3.2			3.2	2.8		0.0	2.8		0.0
Queue Clearance Time ( g s ), s	(3) (2) (4)		SERVE.		15.3	10 To	46	19.1	5.1		eri ar yerine. Girgalikase ya	4.3		
Green Extension Time ( g e ), s					0.8			0.6	0.0		0.0	0.0		0.0
Phase Call Probability	ACTE ALEXA		42.50	70 II	1.00			1.00	1,00	10 To	A SECTION S	1.00	5   W	
Max Out Probability	AND THE PERSON OF THE PERSON O		2.500.00		0.03			0.21	1.00			1.00	)	
Max out Frontal Transfer														
Movement Group Results				EB			WB			NB		1707 544	SB	
Approach Movement			L	Т	R	L	Т	R	L	T	R	L	Т	R
Assigned Movement	U.S. A. C.	13.9.5	. 7	4	14	3	- 8	18	5	2	12	*1	6	. 16
Adjusted Flow Rate ( v ), veh/h				215			207	98	130	1089		98	950	
Adjusted Saturation Flow Rate (s)	. veh/h/ln	45.46.4	29.50	1557	11/3/2	X24.24	1274	1598	1795	1879	17763	1795	1846	\$ 15 m
Queue Service Time ( g s ), s	, 112 512 1V. (15 2	43 57 2 37 3		0.0			3.7	5.5	3.1	63.0		2.3	49.8	
Cycle Queue Clearance Time ( g c)	's	ht ON		13.3	Section.	-2502.50	17.1	5.5	∜3.1	63.0	1 (1)	2.3	49.8	NO.
Green Ratio ( g/C )	) compared from \$1.76.		369723405	0.23	\$150 G 1 MG 1		0.23	0.23	0.64	0.57		0.64	0.57	
Capacity (c), veh/h	/ 10 PM (10 PM)	Saviety:	18555000	406	(2)22	1000	352	363	240	1076	\$ 1185	180	1057	100
Volume-to-Capacity Ratio ( X )	and the second	magn mar rann	1446554675-141	0.530	1988 1 JAN 40 A	Papakananan V	0.586		0.543			0.544	0.899	
Back of Queue (Q), ft/ln (50 th pe	rcentile)	No.		143.7	146.00	1507750	146.9		62.4	873.9	10.000	50.3	589.8	
Back of Queue (Q), weh/ln (50 th		a <b>)</b>	- 14 ( 1 m - 15 m )	5.7	(Selverings)	- marked 8,42 co	5.8	2.3	2.5	34.7	507EG (2.584 BC)(2)	2.0	23.4	3507 (20,7), 5,7 (3)
Queue Storage Ratio ( RQ ) ( 50 th			Medicine.	0.00	35,350	1,382.E.F	0.00	0.00	0.00	0.00		0.00	0.00	
	percentil	(C)		37.9	unitarije (s	###XD####	39.6	35.0	23.3	23.5	47543600	25.7	20.7	3075,3000
Uniform Delay ( d 1 ), s/veh	agagagaga (mid s	ga i prejekar	sajti vela keri	4.9	5357,569	3) (Sa) (	7.0	1.8	8.6	30.4	\$10 kg (8) 8	11.3	11.9	8 87458
Incremental Delay ( d 2 ), s/veh	<u> </u>	W. 4-(504)			પુત્રમાં પ્રાથમિક વાર્ષ		0.0	0.0	0.0	0.0	100000	0.0	0.0	g 349 G 349
Initial Queue Delay ( d 3), s/veh	256, 926 S. T. F.	gaige en ensee	ospat a	0.0	dangarkh	l (a Agraeria)	46.6		31.9	53,9	35/20804	37.1	32.6	25555
Control Delay ( d ), s/veh	<b>机料料</b>	58047	42.8					31,9 C	53,9 F	9 5/5/45/268	37.1	32.6 C		
		42.8	D	l D	24814	D	D	<u> </u>		I Spanis	3	<u></u>		
Level of Service (LOS)						43.	4	D	51.	<b>9</b>	D ~	33. D	U.S. S.	C
Approach Delay, s/veh / LOS			1	43.0										
					4	3.0								
Approach Delay, s/veh / LOS Intersection Delay, s/veh / LOS					4	J.0	145		ga anteste	( ND			CD	
Approach Delay, s/veh / LOS				EΒ	4	3.0	-WB			NB			SB	

	HCS7 Sig	nalize	d Inte	ersec	tion R	lesu	Its Sur	nmary	/				
General Information							Intersect	ion Info	ormatio	n	- Ba		i T
Agency M	IRA						Duration,	h	0.25				
Analyst S	TK	Analys	sis Date				Area Typ	е	Other				
Jurisdiction		Time I	eriod	РМ			PHF		0.92			w <del>1</del> €	<b>→</b>
Urban Street R	OUTE 206-VILLAGE	Analys	sis Year	2022	BUILD N	ЛIT	Analysis	Period	1> 7:0	0			Ę
Intersection		File N	ame									1 1	
Project Description H	CS Export						•				ă.	4 1 HY	e d'i
Demand Information		# 1550 A 650 - 1550 A 650 - 1550 A 650 A	∵ EB⊹			W			NB			SB	
Approach Movement		L	Т	R	L	T		L	T	R	<u> </u>	Т	R
Demand ( v ), veh/h		118	20	60	174	16	140	120	985	17	90	771	103
	The second section of the sect			<del>1 II:</del>					1886 18		- 1		
Signal Information			<b>L</b>	1	3	4					KT2		я
	Reference Phase 2	4	<b> </b>	. St	<b>"</b>  ₹ "	•				<b>2</b>	$ Y_2 $	3	❤ ₄
a viveria vive and contract of a second vive a	Reference Point End	Green		63.0	25.0	0.0		0.0					<b>5</b>
	Simult. Gap E/W On	Yellow		5.0	3.0	0.0		0.0			ו או		Y
Force Mode Fixed S	Simult: Gap N/S On	Red	0.0	2.0	2.0	0.0	0.0	0.0		5	6	7	8
- Company - Comp	ner Soner i Alexandria de Calara Calara de Cal	. To a 100 1	ye.	COT	\A/F	1	WDT I	MDI	122 1223	NIDT	CDI	arka lauta	CRT
Timer Results		EBI	-444 965	EBT	WB	Live (	WBT	NBI	4/33/1 845/51	NBT 2	SBL 1	1,275	SBT 6
Assigned Phase	Phonos and a statement of the Children State Contribution Contribution	a an	Sidnat State	4	A, to the war to the co	a description	8	5	Ly No. 1 Harris			idente o ante	3.0
Case Number	7 May 1949		6.0		42604	6.0	1.1		4.0	1.1	2 CAN-1 (ALA)		
Phase Duration, s	ta getinger following for each there is a contractor of a strong decision.			30.0	economic de la la la la	Andre Le	30.0	10.0		70.0	10.0		70.0
Change Period, (Y+R c),				5.0 3.1	28 838	34,4 \$	5.0	3.0		7.0	3.0		7.0
Max Allow Headway ( MA			1		escension estate.		3.1	2.8		0.0	2.8		0.0
Queue Clearance Time (			384 161	18.6	1 section of	1 (1 × 1)	21.7	5.1		0.0	4.3		0.0
Green Extension Time ( g	J е ), S			0.6	255 325	CONTRACT OF	0.4	0.0		0.0	0.0		0.0
Character and a second of the				1.00	(Miller Se	AV 85 7	1.00	1,00		Space Acre	1.00		
Max Out Probability				0.13			0.86	1.00	) [		1.00	)	
lu so bas	1		ΕĐ			WE	1922. Žižovi - 1933.		NB			SB	
Movement Group Resul	IS	1	EB T	R	1	T	R	1	Т	R	# 25 C S 25 C S 25 C	Т	R
Approach Movement	en e		Sales A 1997		3	8		. 5	- 2 - ∞	12	7×1:%	6.6	16
Assigned Movement		120	4 87	14	189	115		130	1089	- 1 <b>L</b>	98	838	112
Adjusted Flow Rate ( v ),		128		9.0867.34	1321	163		1795	1879	\$2.750 E.S.	1795	1885	1598
Adjusted Saturation Flow		1287	1661	25.34 75.5	15.0	6.4		3.1	63.0	3,655,004,847	2.3	37.6	3.5
Queue Service Time ( g s		10.1	4.7	Jakanis si		6,4		3.1	63.0	58500 B	2.3	37.6	3.5
Cycle Queue Clearance	nme (yc), s	16.6	4.7 0.23		19.7 0.23	0.23		0.64	0.57	18 4 5 3 S	0.64	0.57	0.57
Green Ratio ( g/C )		0.23		\$5855 to 45	309	372		320	1076	September 1	180	1080	915
Capacity ( c ), veh/h	- / V )	283	377		0.612	0.31		0.407	1.012	500000000	0.544	0.776	
Volume-to-Capacity Ratio		0.454	<del></del>	(Autoriae)	140.2	69.6		40.9	859.6	TAKE W	49.7	419.2	31,8
Back of Queue (Q), ft/In		90.2	51.1		5.6	2.8		1.6	34.1	\$1900 (60) est	2.0	16.6	1.3
Back of Queue (Q), veh		3.6	2.0	get Freduc	-	0.00		0.00	0.00		0.00	0.00	0.00
Queue Storage Ratio ( R		0.00	0.00 34.7	1,000	0.00 42.7	35.3		16.7	23.5		25.7	18.1	10.8
Illustra mas Dalau / al. \ - L.		42.2	34./	<u> </u>		-		3.8	30,4	i Vegija do	11.3	5.5	0.3
Uniform Delay ( d 1), s/ve		E 0	1.1	The state of the	<b>2</b>			<b>■ .</b> ∪. O .		1	11.0		0.0
Incremental Delay ( d 2 ),	s/veh	5.2	1.4	4.23	8.7	2.2					$\cap$		
Incremental Delay ( d 2 ), Initial Queue Delay ( d 3 )	s/veh , s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	4
Incremental Delay ( d 2 ), Initial Queue Delay ( d 3 ) Control Delay ( d ), s/veh	s/veh , s/veh	0.0 47.4	0.0 36.1		0.0 51.4	0.0 37.		0.0 20.5	0.0 53.9		37.1	23.6	11.1
Incremental Delay ( d 2 ), Initial Queue Delay ( d 3 ) Control Delay ( d ), s/veh Level of Service (LOS)	s/veh , s/veh	0.0 47.4 D	0.0 36.1 D		0.0 51.4 D	0.0 37.5 D	5	0.0 20.5 C	0.0 53.9 F		.37.1	23.6 C	11.1 B
Incremental Delay ( d 2 ), Initial Queue Delay ( d 3 ) Control Delay ( d ), s/veh Level of Service (LOS) Approach Delay, s/veh / l	s/veh ), s/veh LOS	0.0 47.4	0.0 36.1 D	D 2	0.0 51.4 D 46.	0.0 37.5 D		0.0 20.5	0.0 53.9 F	D	37.1 D 23.	23.6 C	11.1
Incremental Delay ( d 2 ), Initial Queue Delay ( d 3 ) Control Delay ( d ), s/veh Level of Service (LOS)	s/veh ), s/veh LOS	0.0 47.4 D	0.0 36.1 D		0.0 51.4 D	0.0 37.5 D	5	0.0 20.5 C	0.0 53.9 F	D	.37.1	23.6 C	11.15 B
Incremental Delay ( d 2 ), Initial Queue Delay ( d 3 ) Control Delay ( d ), s/veh Level of Service (LOS) Approach Delay, s/veh / L Intersection Delay, s/veh	s/veh ), s/veh LOS	0.0 47.4 D	0.0 36.1 D		0.0 51.4 D 46.	0.0 37.8 D	5       D	0.0 20.5 C	0.0 53.9 F 3	D	37.1 D 23.	23.6 C 5	11.1 B
Incremental Delay ( d 2 ), Initial Queue Delay ( d 3 ) Control Delay ( d ), s/veh Level of Service (LOS) Approach Delay, s/veh / l	s/veh ,, s/veh LOS / LOS	0.0 47.4 D	0.0 36.1 D		0.0 51.4 D 46.	0.0 37.5 D	5       D	0.0 20.5 C	0.0 53.9 F	D	37.1 D 23.	23.6 C	11.1 B

		HCS	7 Sig	naliz	ed In	ersec	tion I	Resul	lts Su	mmar	y				
General Inform	nation								Intersec	tion Inf	ormatio	on		20/16 11/19/11	FIC.
Agency		MRA							Duration		0.25				1
Analyst		STK			sis Dat	е	<del></del>		Area Typ	e	Other		_4		1
Jurisdiction				Time	Period	SAT			PHF		0.92		<u> </u>	. <b>#</b> ‡≣	~ <del>√</del>
Urban Street		ROUTE 206-VILLA	GE	<del></del>	sis Yea	r 2022	NOBUI	LD /	Analysis	Period	1> 7:	00	_8		
Intersection				File N	ame									17	
Project Descrip	tion	HCS Export											l å	isilisiyi	rici
Demand Infor	mation				EB			WE	)		NB			SB	
Approach Move				L	T	R		T	R	L	Тт	R	1 1	T	R
Demand (v), v			75-07-16	97	18	89	223			80	967	9	.51	912	51
Pomiana (17);	Civil	The state of the s		31	10	03	223	) 10	122	00	307		J.	312	1 01
Signal Informa	ation				ΤŢ	11.	ı	J							
Cycle, s	95.0	Reference Phase	2	1	R	- 1		<b>7</b>				<b>Y</b>	<b>\Pi</b>		4
Offset, s	.0	Reference Point	End	Greer	7.0	46.0	27.0	0.0	0.0	0.0		1	2	3	<u> Y</u> 4
Uncoordinated	No	Simult. Gap E/W	On	Yellow		5.0	3.0	0.0	0.0	0.0			<b>S</b>		<b>&gt;</b>
Force Mode	Fixed	Simult. Gap N/S	On 🕾	Red	0.0	2.0	2.0	0.0	0.0	0.0		5	. 6	7	6.1
Timer Results				EB		EBT	WB	BL :	WBT	NB		NBT	SBI		SBT
Assigned Phase	е					4	<u> </u>		8	5		2	1		6
Case Number	9.00					8.0	+2 97/5/79 - 178/8/8	34 3	7.0	1.1		4.0	1.1		4.0
	hase Duration, s					32.0			32.0	10.0	<del>-</del>	53.0	10.0		53.0
	hange Period, ( Y+R c), s					5.0	14-574		5.0	3.0		7.0	3.0		7.0
Max Allow Head			strá leva in váko	Victoria de la composición dela composición de la composición de la composición de la composición dela composición de la composición dela composición dela composición de la composición dela composición de la composición dela composición dela composición dela composición dela composición dela composición dela composic	n desar estas	3.3	ta salah da ka	- Marie - 1970	3.3	2.8	865. e. 1975.	0.0	2.8		0.0
Queue Clearan			STATE	900000		12.6			21.0	4.1			3.3		
Green Extensio		( <i>g</i> e ), S	AC Mathematices	<del></del>		1.1	Net u varian	.d%=10 %0.e	0.7	0.0	<del>-</del>	0.0	0.0		0.0
Phase Call Prol Max Out Probal			Existante.			1.00	EVEL PRI	,	1.00	1.00		St. Phylinia	1.00		76.7
Max Out Flobal	Unity			-		0.00		1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	0.24	0.91			0.21	l e	
Movement Gro	up Res	ults			EB			WB			NB			SB	
Approach Move	ment			L	Т	R	L	Т	R	L	Т	R	L	Т	R
Assigned Move	ment			7	4	14	3	8		5	2	12	1 3	-6	16
Adjusted Flow F	Rate ( v	), veh/h			222			260	78	87	1061		55	1047	
Adjusted Satura	ation Flo	w Rate ( s ), veh/h/li	n 🦠	242	1603	445-413-4 444-413-4		1225	1598	1795	1882	15 (15)	1795	1867	1100
Queue Service					0.0			8.5	3.5	2.1	46.0		1.3	46.0	
Cycle Queue Cl	earance	e Time (₂g.c), s		Million 1	10.6			19.0	3.5	2.1	46.0	SALES.	.1.3	46.0	)
Green Ratio ( g					0.28			0.28	0.28	0.56	0.48		0.56	0.48	
Capacity ( c ), v				\$10.27	511	1.74 × 2.5		421	454	208	911		208	904	
Volume-to-Capa					0.434			0.616		0.418	1.164		0.266	1.158	<u> </u>
Back of Queue	(Q), ft/	In (50 th percentile)		100 A	112.9			154.1	35.8	30.5	1025. 1		18.3	1001.1	
Back of Queue	(Q) ve	eh/ln ( 50 th percentil	e)	44/9-5/51	4.5	i sanahabili	1900 (Silvi), 1	6.1	1.4	1.2	40.7		0.7	39.7	talalisi.
		RQ)(50 th percenti			0.00	\$305678	W. Str	0.00	0.00	0.00	0.00	)	0.00	0.00	3.44
Uniform Delay (				300 300 (See	28.1	1.750 m. 18 <sup>20</sup> 1.5	- 874 A(内容)	31.6	25.6	20.9	24.5	9.55 st. 565	20.7	24.5	as a stockly
Incremental Del				N. Carlo	2.7	9-2-	Mak	6.6	0.8	6.1	85.9		3.1	83.4	400-45
Initial Queue De					0.0			0.0	0.0	0.0	0.0	* * * * * * * * * * * * * * * * * * *	0.0	0.0	
Control Delay (	· · · · · · · · · · · · · · · · · · ·			1555E	30.7			38.2	26.4	27.0	110.4		23.8	107.9	
Level of Service					С			D	С	С	F		C	F	Section Prof.
Approach Delay	<del></del>	/LOS		30.7	7. ]	C ·	35.4	4	D	104.	<u>.                                    </u>	F	103.	1	F
Intersection Del	ay, s/ve	h/LOS				89	9.9						F		
Multimodal Res					EB			WB			NB			SB	
Pedestrian LOS															
Bicycle LOS Sc	ore / LC	S											113779 C		

HCS7 Sig	nalize	d Inte	ersec	tion R	Resul	ts Sun	nmary	/				
General Information					1	ntersect	ion Info	ormatio	n	Į	41741	. I ()
Agency MRA					E	Ouration,	h	0.25			41,	
Analyst STK	Analys	sis Date			F	rea Typ	е	Other				4
Jurisdiction	Time I		SAT		F	PHF		0.92		<b>₹</b> - <b>♦</b>	- vi 🔓 =	<u></u>
Urban Street ROUTE 206-VILLAGE	Analys	sis Year	2022 [	BUILD	A	Analysis	Period	1> 7:0	0	1		Ī
Intersection	File N							<u> </u>			ካ ቴ	
Project Description HCS Export	1					·				12	4 14 4 1	16
Traject 2 compton												
Demand Information		EB			WB			: NB			SB	
Approach Movement	L	Т	R	L	T	R	L	Т	R	L	Т	R
Demand ( v ), veh/h	161	28	108	223	27	122	167	942	9	51	914	118
Signal Information		7	21,2	_ 5	<u>.</u>							
Cycle, s 95.0 Reference Phase 2		R	<b>*</b> 17	*  \$\ \	:"				<b>4</b>	Ψ.	-	4
Offset, s 0 Reference Point End	Green	7.0	46.0	27.0	0.0	0.0	0.0		1	2		3 7 K
Uncoordinated No Simult. Gap E/W On	Yellow		5.0	3.0	0.0	0.0	0.0	<b>-</b>	4	<b>)</b> (		<b>→</b>
Force Mode Fixed Simult, Gap N/S On	Red	0.0	2.0	2.0	0.0	0.0	0.0		5	6	7	8
							1					
Timer Results	EB		ЕВТ	WBI	Day 34	WBT	NBL		NBT	SBL	50 57 645 147, 26 50 50	SBT
Assigned Phase			4			8	5		2	1		6
Case Number	10.5		8.0		%) ii	7.0	1.1		4.0	1.1		4.0
Phase Duration, s			32.0			32.0	10.0		53.0	10.0		53.0
Change Period, (Y+Rc), s			5.0			5.0	3:0		7.0	3.0	35 A 335	7.0
Max Allow Headway ( <i>MAH</i> ), s	3.		3.3	- Translation of Streets 1		3.3	2.8		0.0	2.8		0.0
Queue Clearance Time (gs), s	<u> </u>		19.3			23.4	7.4			3.3	S. (1.00)	
Green Extension Time ( g e ), s			1.1			0.7	0.0		0.0	0.0		0.0
Phase Call Probability			1.00	1.78395755	\$4.61 19.	1.00	1.00		rodenski i Dose Braviosio	1.00		
Max Out Probability			0.14	Taga Samangara		0.86	1.00		- 10 Page 51 30 Mg	0.21		145 177 - 1 (27.85)
Wax Out i Tobability			J. 17			0.00	1.00			0.2		
Movement Group Results		EB		(No. 30)	WB		\$200 P.S.	NB			SB	
Approach Movement	L	Т	R	L	Т	R	L	Т	R	L	Т	R
Assigned Movement	7	- 4	14	-3	-8	18	.5	. 2	12	1.	6	16
Adjusted Flow Rate ( v ), veh/h		323			272	78	182	1034		55	1122	
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1500000	1570		na ing palam	1170	1598	1795	1882		1795	1847	
Queue Service Time ( $g_s$ ), s	of the second second	0.0	Sept. Sept. Sept. 1	A Authority of	4.0	3.5	5.4	46.0	1.0000000000000000000000000000000000000	1.3	46.0	1
Cycle Queue Clearance Time ( g c ), s	1924.0(1947	17.3	736 64	\$25 <b>4</b> 265	21.4	3.5	5.4	46.0		1,3	46:0	Sa. F
Green Ratio ( g/C )	applace opposite.	0.28	ar, 400 (1994)	in stry Sygn to the	0.28	0.28	0.56	0.48	- 2012 HURSE	0.56	0.48	100/40/40/50
Capacity (c), veh/h	762 marchan	505		25 Sec. 15	404	454	208	911	2020au	208	894	4550
Volume-to-Capacity Ratio ( X )		0.640		years I must be been	0.672		0.872	1.134	a S. co. Ma physical gar	0.266	1.254	
	Made Services	184.7	1488/55/8	Markett a	169.4		98	949.6	gright SM sylan	18.3	1241.9	9.03886
Back of Queue (Q), ft/ln (50 th percentile)		7.3	3043334		6.7	1.4	3.9	37.7	(881. 1982년부 34년)	0.7	49.3	Profit Access
Back of Queue (Q), veh/ln (50 th percentile)	köpel (hv.) av		1286030	Property and	0.00	0.00	0.00	0.00	legap la malik	0.00	0.00	17,45,65
Queue Storage Ratio (RQ) (50 th percentile)		0.00	-1845 (FA)							20.7	24.5	1 40 45 6
Uniform Delay ( d 1 ), s/veh	ajjýsky stále	30.5	te, ja jakki i	Legronia de	32.3	25.6	24.6	24.5	more and			g0366344
Incremental Delay (d2), s/veh	1887 S	6.1	48754		8.6	8.0	36.2	74.1	08 S70780	3.1	123.6	
Initial Queue Delay ( d 3), s/veh		0.0	Street of the second	A Fee SAVA	0.0	0.0	0.0	0.0	ggartik distri	0.0	0.0	FQ5006, 4.2
Control Delay ( d ), s/veh		36.6			40.9	26.4	60.9	98,6	1786	23.8	148.1	
Level of Service (LOS)		D		Suggest to a	D	<u> </u>	Е	F		С	F	<u></u>
Approach Delay, s/veh / LOS	36.	3	D	37.6	6	D.	92.9	9   '	F	142.	2   .	F
Intersection Delay, s/veh / LOS			99	9.6		ALVZING COLUMN TO AL	WANTED PROPERTY AND ADDRESS OF THE PARTY AND A			F		propaga di wasan sa na
Multimodal Results	<b>表现实</b>	EB			WB			NB			SB	nger viller al type viller
Pedestrian LOS Score / LOS												
Bicycle LOS Score / LOS	装装											

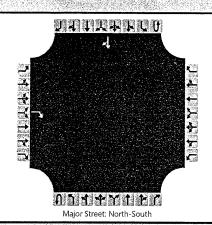
	HCS7 Sig	ınaliz	ed Int	ersec	tion F	Resu	Its Su	mmar	٧			*	
									<i>J</i>				
General Information				1904-01-04-00-00-00-00			Intersec	tion Inf	ormatio	on		4441	मद
Agency	MRA						Duration		0.25			] r	
Analyst	STK	Analy	sis Date	9			Area Typ	·	Other	•	- <u>-</u>		불
Jurisdiction			Period	SAT			PHF		0.92			w∱≘	. A
Urban Street	ROUTE 206-VILLAGE	+	sis Year		BUILD		Analysis	Period	1> 7:0	20			
Intersection		File N					,, 0.0		1			N &	
Project Description	HCS Export	1									- 3	4147	ri Ci
											198		
Demand Information			EB			W	3		NB			SB	
Approach Movement		L	Т	R	L	T	R	L	T	R	L	Т	R
Demand ( v ), veh/h		161	28	108	223	27	122	167	942	9	51	914	118
Signal Information			7	21.7		Ľ			\$4				
Cycle, s 95.0	Reference Phase 2	]	5	Fat	aĦ³ i					<b>∠</b>	Ψ	-	<b>-</b> 4 ∥
Offset, s 0	Reference Point End	Greer	7.0	46.0	27.0	0.0	0.0	0.0			4	3	.⊒ .4 K
Uncoordinated No	Simult. Gap E/W On	Yellov		5.0	3.0	0.0		0.0		⟨  4	<b>&gt;</b>		<b>*</b>
Force Mode Fixed	Simult. Gap N/S On	Red	0.0	2.0	2.0	0.0	0.0	0.0		5	. 6	7	8
10 (10 (10 (10 (10 (10 (10 (10 (10 (10 (													
Timer Results		EB	L S	EBT	WB	Light &	WBT	NBI	1964 486	NBT	SBI	95 90 1 50 21 98 3 40	SBT.
Assigned Phase		4		4			8	5		2	1		6
Case Number			6.0	2005 25 34 2005 25 34		6.0	1.1	16540 AM 1644 SA	4.0	1.1		3.0	
Phase Duration, s		32		32.0			32.0	10.0	)	53.0	10.0	)	53.0
Change Period, ( Y+R		5.		5.0			5.0	3.0		7.0	3,0		7.0
Max Allow Headway ( /	<i>MAH</i> ), s	3.		3.2			3.2	2.8		0.0	2.8		0.0
Queue Clearance Time	(gs),s	18		18.0	)		26.7	7.4			3.3	n de la composition della comp	
Green Extension Time		1		1.0			0.1	0.0		0.0	0.0		0.0
Phase Call Probability				1.00	0		1.00	1.00			1.00	)	N. Lien V. A. M. Grunder
Max Out Probability				0.06			1.00	1.00	)		0.21	ı	
Movement Group Res	sults		EB .			WB			NB			SB	
Approach Movement		L	Т	R	L	Т	R	L	Т	R	L	Т	R
Assigned Movement		· 7	4	- 14	3	- 8	18	. 5	. 2	√12 ≥		. 6	16
Adjusted Flow Rate ( v		175	148		242	108		182	1034		55	993	128
Adjusted Saturation Flo		1296	1649	多类的	1250	1667		1795	1882		1795	1885	1598
Queue Service Time ( g		11.3	6.7		18.0	4.7		5.4	46.0		1.3	46.0	4.3
Cycle Queue Clearance	e Time ( <i>g ₅</i> ), s	16.0	6.7		24.7.	4.7	9 1995	5.4	46.0	9.00	. 1.3	46.0	4.3
Green Ratio ( g/C )		0.28	0.28		0.28	0.28		0.56	0.48		0.56	0.48	0.48
Capacity ( c ), veh/h		380	469		343	474		208	911		-208∍	913	774
Volume-to-Capacity Ra		0.460	0.315		0.707	0.227	7	0.872	1.134	1000	0.266	1.088	0.166
Back of Queue (Q), ft/		98.8	71,2		163.2	50		98	949.6		18.3	840.7	40.1
Back of Queue (Q), ve		3.9	2.8	<u> </u>	6.5	2.0		3.9	37.7		0.7	33.4	1.6
Queue Storage Ratio (		0.00	0.00		0.00	0.00	_	0.00	0.00		.0.00	0.00	0.00
Uniform Delay ( d 1 ), si		32.2	26.7		36.4	26.0		24.6	24.5		20.7	24.5	13.7
Incremental Delay ( d 2		4.0	1.8	1-94(-75) 5-95(-75)	11.6	1,1		36.2	74.1		3.1	56.8	0.5
Initial Queue Delay ( d		0.0	0.0		0.0	0.0		0.0	0.0	<u> </u>	0.0	0.0	0.0
Control Delay ( d ), s/ve	eh	36.1 D	28.5 C		48.1	27.1		60.9	98.6		23.8	81.3	14.2
Level of Service (LOS)					D	C		Е	F		С	F	В
	pproach Delay, s/veh / LOS				41.6	3	D	92.9	)	E	71.0	3	E
Intersection Delay, s/ve	h/LOS		DATE OF THE PARTY	72	2.4	70.00.00					E		
		<u> </u>						<b>.</b>					
Multimodal Results			EB			WB			NB			SB	
Pedestrian LOS Score	····				<u> </u>			<b></b>			<u> </u>		
Bicycle LOS Score / LC													

# LEVEL OF SERVICE CRITERIA FOR $\label{eq:two-Way} \textbf{Stop-Controlled Intersections}^1$

Level of Service	<b>Average Control Delay</b>
A	≤ 10.0 Seconds Per Vehicle
В	$> 10.0$ and $\leq 15.0$ Seconds Per Vehicle
C	$> 15.0$ and $\leq 25.0$ Seconds Per Vehicle
D	$>$ 25.0 and $\leq$ 35.0 Seconds Per Vehicle
E	$>$ 35.0 and $\leq$ 50.0 Seconds Per Vehicle
F	> 50.0 Seconds Per Vehicle

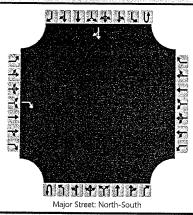
<sup>&</sup>lt;sup>1</sup> Transportation Research Board, <u>Highway Capacity Manual 2010</u>, National Research Council, Washington, DC, 2010.

HCS7 Two-Way Stop-Control Report												
General Information		Site Information										
Analyst	STK	Intersection	RT 206 & SITE ACCESS									
Agency/Co.	MRA	Jurisdiction										
Date Performed	1/19/2018	East/West Street	SITE ACCESS									
Analysis Year	2022	North/South Street	RT 206									
Time Analyzed	РМ	Peak Hour Factor	0.95									
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25									
Project Description	16-243PFB-2	-										



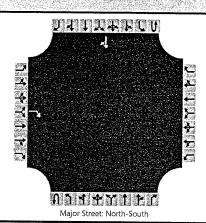
Approach	Eastbound					West	bound			North	bound			South	bound			
Movement	٠U	, L,	%I%	R	Ü	ar L	: T	.≟R	U	L	) T	R	U	L	έŢ.,	R		
Priority		10	11	12		7	8	9	<b>1</b> U	1	2	3	4U	4	5	6		
Number of Lanes	14 A 15 A	0	_0_	1.5		0	0	0	0	0	0	0	0	0	31 <sub>2</sub>	0		
Configuration				R						<u> </u>						TR		
Volume, V (veh/h)			(0) (5) (4) (5) (5)	054			716-758. -26-860	35-17760 Against							0983	020		
Percent Heavy Vehicles (%)				3														
Proportion Time Blocked			V (1000) (1000)	1 (1) (1) 14-1 (1)				7.75		14.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		\$7,94st k garaya		1.3			
Percent Grade (%)		, (	)											•				
Right Turn Channelized		A	lo .		1485.00(1)) 2427.004	N.	10			N	o .		No					
Median Type/Storage		***************************************	**************************************	Undi	vided							· · · · · · · · · · · · · · · · · · ·						
Language with a first control of the second of the second	1942	Jen Je	NAME OF STREET				er geltig	ALCO C	Side Vil	Activities		1600	Magazi Wi	1442	1.74			
Critical and Follow-up He	adwa	ys	i en e															
Critical and Follow-up He  Base Critical Headway (sec)	adwa	ys :	1 75 52-60	6.2	l .													
a garage and the second se	adwa	ys		6.23														
Base Critical Headway (sec)	adwa	ys 																
Base Critical Headway (sec) Critical Headway (sec)	adwa	ys		6.23														
Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)			ervice	6.23 3.3 3.33														
Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)			ervice	6.23 3.3 3.33														
Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and			ervice	6.23 3.3 3.33														
Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and				6.23 3.3 3.33														
Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, and Flow Rate, v (veh/h)  Capacity, c (veh/h)			ervice	6.23 3.3 3.33 57 277														
Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Pelay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio			rvice	6.23 3.3 3.33 57 277 0.21														
Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Pelay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q <sub>95</sub> (veh)			ervice	6.23 3.3 3.33 57 277 0.21 0.8														

HCS7 Two-Way Stop-Control Report												
General Information		Site Information										
Analyst	STK	Intersection	RT 206 & SITE ACCESS									
Agency/Co.	MRA	Jurisdiction										
Date Performed	1/19/2018	East/West Street	SITE ACCESS									
Analysis Year	2022	North/South Street	RT 206									
Time Analyzed	SAT	Peak Hour Factor	0.95									
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25									
Project Description	16-243SFB-2											



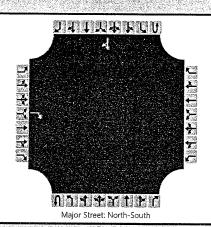
Approach	T	F			Westbound					or eleveristics, o	Carried Strategies	100000000000000000000000000000000000000		1.1940.419.494	180, NGC 21-1400			
		Eastbound								North	bound		Southbound					
Movement	U	₹ <b>L</b>	T	i R⊸	U.	L	<b>T</b> ∳	R	U	L	T	R	. U∴.	+L)	T	R		
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6		
Number of Lanes		0	0	1		0	0	0	0	- 0	- 0	.0	. 0	. 0	51%	0		
Configuration				R												TR		
Volume, V (veh/h)				-57		147.5	12.24		a ka sakan A la Gorg	da ing sa	aratar Gunas				1223	020		
Percent Heavy Vehicles (%)				3														
Proportion Time Blocked	***	4 Politi			3 ST 1236				10.65	11 11 v 1	70	1.046		10-2	or a sage			
Percent Grade (%)		(	)								L				1.000000000	1000		
Right Turn Channelized		N	о ,			N	lo			N	0		No					
Median Type/Storage				Undi	vided				W 1 ( 17 ) Au 1		Congression and Advanced Advan	10 Alexander   10 Alexander	***: *********************************	6,47 HOVE DECK 2				
Critical and Follow-up H	eadway	/S														e e e		
Base Critical Headway (sec)				6.2										- aguardage extra		I		
Critical Headway (sec)			V 3469	6.23	233	QALS.										14762 x 546 54		
Base Follow-Up Headway (sec)				3.3							y	The services of	100000000000000000000000000000000000000	No destruction	200 3000			
Follow-Up Headway (sec)				3.33			15.45						Selly.		36.43	79.50 30.50		
Delay, Queue Length, an	d Level	of Se	rvice			de la certa de				No sept 1983								
Flow Rate, v (veh/h)			3 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	60				*.401404.4947.11	10 (10 to 10 to	120,000,000,000,000			SWE STANKE STANKEN					
Capacity, c (veh/h)	91,733 1,835,73			-197	##45 (1.50 p.s.)										Y. A.W.			
v/c Ratio				0.31	F. 1434 V. 151 F. 154		egry same			HA SESSION	* . j. 24 (* 19 ° ).	a u jituara	F-2 6464-	0.02.000.0000	i i galak lepit ba	12.1388		
95% Queue Length, Q <sub>95</sub> (veh)		P-97122		1.2			jeto.			TV#3K		Asta				N. Page 16		
Control Delay (s/veh)			-y v 5.000	31.2	- 45 35 4.3	10 Mari 40 M			T-1, . , . 124.14		- 21, 11 - 31	31 M 54 43 40A	1 (46)	uma nyaéta ().				
Level of Service, LOS		23.4		D							18.18							
Approach Delay (s/veh)		31	.2	**************************************	2,22 (28.2%)	1415 440	responding to	1 5 5 6 To 1834	gg gyman (sint)	<u> </u>	45. A B	11.18 M. V.	- 534,875 (P	1,5434,64	1,346			

HCS7 Two-Way Stop-Control Report											
General Information		Site Information									
Analyst	STK	Intersection	RT 206 & INNER LOOP								
Agency/Co.	MRA	Jurisdiction									
Date Performed	1/19/2018	East/West Street	INNER LOOP								
Analysis Year	2022	North/South Street	RT 206								
Time Analyzed	PM	Peak Hour Factor	0.95								
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25								
Project Description	16-243PFB-3										



Approach		Eastl	oound			West	bound		T	North	bound		and the late of th	South	bound	The second		
Movement:	U	L	T	R	٤Ü	V.L	T	R	" U	% L	Т	R	- US	#L	Т	R		
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6		
Number of Lanes		0	-0	111		0	. 0	0	0	0	0	0	0	0	1	0		
Configuration				R				- 15 K ( N ) (			guaran, an sa	460000000000000000000000000000000000000	4,4,5,6,6,6,6	134 578863	1 2575, 7 34.	TR		
Volume, V. (veh/h)	87.20			59	\$2,748.	Version de la compansion de la compansio	5403	(1) (1)		35574			1.934	4.705	1016	23		
Percent Heavy Vehicles (%)				3		1000 44 300		. 13.40.6-31.4		2, 47, 447, 467		ethelicite de la		4.01 34.00		277		
Proportion Time Blocked				4.40 h		1835				35 A S						338		
Percent Grade (%)			0					e and the second		1 2 mg me		1 1000 3 120	41905, ASS/10 A	(A) (A) (A) (A)		<u> </u>		
Right Turn Channelized		N	lo	10.567	A-1-36	1	10			N	lo		No					
Median Type/Storage				Undi	vided		Service March Color Service			000000000000000000000000000000000000000		LA SYSTEM						
Critical and Follow-up He	adwa	ys																
Base Critical Headway (sec)				6.2						l								
Critical Headway (sec)		15 m 6 M 6 C	1.10	6.23					ASSAS.	72.043								
Base Follow-Up Headway (sec)				3.3					The State Week		200 8 ( 202)	111 1,22 11	100 May 144	Technology	1264351646000	390,880		
Follow-Up Headway (sec)	igy, y			3.33		ANJA	มายารสมาต รัฐ (พ.ศ.ษต		15.75 15.75	#4.45g . 17 1924 - 124		1400. (1974) 146. (4.10)						
Delay, Queue Length, and	Leve	of Se	rvice			12 12 15 15 15												
Flow Rate, v (veh/h)		2-120	700 (100 pt 40 pt	62					ing States (1)		a a meade	0.9/9/5.54				Γ		
Capacity, c (veh/h)				263				\$7.50A			W. 15				2000	5,319		
v/c Ratio			S 180 - 190	0.24			323,130,133	, kdp. (v Drugel)	12% er (2) er (	81,001,000	3. 15 A 15	100	. 10 k 1950 k	34115 be	S. SynAsselly			
95% Queue Length, Q <sub>95</sub> (veh)				0.9			49.78							#GEE	10 Mg / 10 mg	14%		
Control Delay (s/veh)		2000		22.9	r Swindered	Ta Mara	175	1-9-5-40	N-3 (-), (6)		3115.76.7		14.44.50	5-6-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5				
Level of Service, LOS	78. A.D	je in		C		4.4.4	\$ \$1,50,000 \$ 1,750,000				2 400		177.500					
Approach Delay (s/veh)		22	.9			-10 64		274 (3 - 2 - 3)		(Age 14)	i straultet	La 15 191	4 400 (40		12-143 No.			
					I								l					

HCS7 Two-Way Stop-Control Report												
General Information		Site Information										
Analyst	STK	Intersection	RT 206 & INNER LOOP									
Agency/Co.	MRA	Jurisdiction										
Date Performed	1/19/2018	East/West Street	INNER LOOP									
Analysis Year	2022	North/South Street	RT 206									
Time Analyzed	SAT	Peak Hour Factor	0.95									
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25									
Project Description	16-243SFB-3											



Approach	Eastbound					West	bound			North	bound			South	bound			
Movement	U	L	T	. R	U	S\$L ≥	ŤŢ	R	U -	L	T	R	U	3/ <b>L</b> _3/	Ŧ	R		
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6		
Number of Lanes		0	0	13	31435	.0	0	0	0	0	0	0	0	0	21	0		
Configuration				R												TR		
Volume, V (veh/h)				65			500 Y			4 a 5 a 5 a 5 a 5 a 5 a 5 a 5 a 5 a 5 a	- 124.5 - 434.5 kg	N (80%) S (80%)	100		1259	23		
Percent Heavy Vehicles (%)				3	<u> </u>											- December		
Proportion Time Blocked		119.0		1000	* 11.	7155												
Percent Grade (%)		(	)	<u>*</u>						1			e je se energe		ACCEPTAGE AND			
Right Turn Channelized		N	0			. °∧ N	lo .			, N	lo		No					
Median Type/Storage				Undi	vided													
Critical and Follow-up He	adwa	ys									9							
Base Critical Headway (sec)				6.2	The metode start of											N SECTIONS		
Critical Headway (sec)				6.23								74. 886. 67. 88.27	75-57-57	20 70 ° 5		9 (A)		
Base Follow-Up Headway (sec)				3.3							W 4 2 2 2	m 180/gg (2004	est program and	10004.1	100,000	20010000		
Follow-Up Headway (sec)			40.4	3.33	Percent Rosto de									A PANALYA PANALYA				
Delay, Queue Length, and	Leve	l of Se	ervice	Applied to							de la disco			- 20 Aug - 14 156 - 17 Aug				
Flow Rate, v (veh/h)				68			A 10 PE 10 A	100 May 1 100 May 1 1	Mary Company (Mary	and the second second		1707-130000				l .		
Capacity, c (veh/h)				186								4:53		V.	Jawa Terranja	15 A. A. 17		
v/c Ratio				0.37					Car, terror		100000000000000000000000000000000000000		1988 T. B. F. F. S.		(1) 4 (1) 4			
95% Queue Length, Q <sub>95</sub> (veh)				1,6					3 4 4 5 F	7400		1448.70						
Control Dolovy (s (vals)				35.1			A STATE OF	2. 30 5 5 5	, annun, ette		. 1 - 4-5 (214)	7 10 24	2018/3					
Control Delay (s/veh)			10.00	200 P 300	All programs	property.	ayed, inc	Production 1			A LIVERY	50. 894	1713/2021	Transport (C. 1)	gy (mela ik	3397		
Level of Service, LOS				Ε										1.4		1		
		35	.1	E.				(A. 1742) A							50.1.9			