

MEMORANDUM TO: Richard Silverman
MJK Real Estate Holding Company

FROM: Javier Millan
Principal

Luay R. Aboona, PE, PTOE
Principal

DATE: December 23, 2021

SUBJECT: Summary Traffic and Parking Evaluation
Proposed Outlot - Southpoint Retail Center
Arlington Heights, Illinois

This memorandum summarizes the findings of a traffic and parking evaluation prepared by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for the proposed development of a multi-tenant building in an outlot within the Southpoint retail center in Arlington Heights, Illinois. The plans call for constructing two quick service restaurants (QSRs) on an outlot parcel located in the southeast quadrant of the intersection of Palatine Road with the Southpoint retail center west drive. It is important to note that one of the quick service restaurants is proposed to be a Chipotle restaurant with a pick-up window only for those orders placed online or via a food delivery service. There are no specific plans for the other quick service restaurant. However, for analysis purposes, it was assumed to include a drive-through lane.

The purpose of this memorandum is to determine the impact, if any, of the traffic that will be generated by the proposed two quick service restaurants on the internal intersection and the adjacent area roadways as well as to evaluate the existing parking demand and the future parking demand with the proposed outlot.

Existing Conditions

The site of the proposed outlot, as previously indicated, is located in the southeast quadrant of the intersection of Palatine Road with the Southpoint shopping center west drive within the Southpoint retail center. **Figure 1** shows an aerial view of the site. Land uses in the vicinity of the site are mostly commercial consisting of the Floor & Décor store to the east, an Olive Garden and a Chili's restaurant to the west, and single-family homes to the north.

Existing Roadway System Characteristics

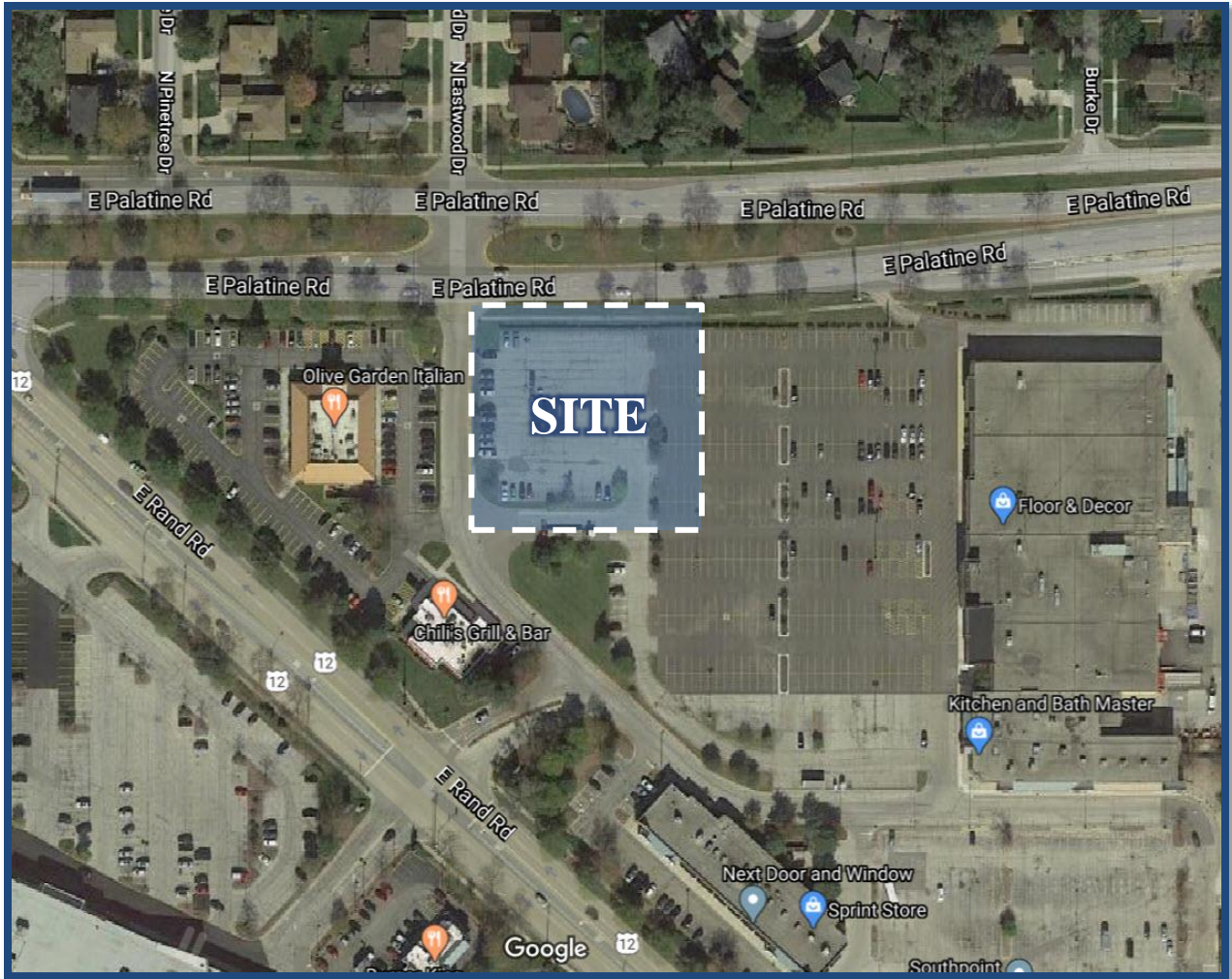
The principal roadways serving the Southpoint retail center are Rand Road and Palatine Road which are major arterials under the jurisdiction of the Illinois Department of Transportation (IDOT). Traffic signal control is provided at the Rand Road intersections with the Southpoint retail center/Town & Country shopping center access drive and at Jane Avenue with exclusive left-turn lanes provided on all approaches of both intersections. One full unsignalized intersection, a right-in/right-out access drive, and a right-in only access drive are provided on Palatine Road. Rand Road and Palatine Road have a posted speed limit of 35 mph.

Internally, the Southpoint retail center is served by a north-south ring road approximately 33 feet wide that provides one lane in each direction. No exclusive turn lanes are provided at its unsignalized intersection with the east-west drive aisle serving the Olive Garden and Chili's restaurant to the west and the Floor & Decor store to the east. The Olive Garden/Chili's restaurant access drive and the Floor & Décor access drive are under stop sign control at their intersection with the north-south ring road.

Existing Traffic Volumes

In order to determine current traffic conditions in the vicinity of the site, KLOA, Inc. conducted peak period traffic and pedestrian counts on Thursday October 14, 2021 during the weekday midday (11:00 A.M. to 2:00 P.M.) and weekday evening (4:00 P.M. to 6:00 P.M.) peak periods and on Saturday, October 16, 2021 during the midday (11:00 A.M. to 2:00 P.M.) peak period at the intersections of Rand Road with the Southpoint access drive/Town & Country access drive and Palatine Road with the Southpoint ring road/Eastwood Drive. The 2021 traffic counts were compared with previous traffic counts conducted in February 2020 before the pandemic. Based on a comparison of the traffic counts, the 2021 traffic counts were generally 10 to 25 percent higher and as such were utilized as based conditions. Previous traffic counts conducted at the intersection of the north-south ring road with the Olive Garden/Chili's restaurant access drive and the Floor & Décor access drive were utilized and adjusted to reflect 2021 traffic volumes.

The results of the traffic counts indicated that the weekday midday peak hour of traffic occurs from 12:00 P.M. to 1:00 P.M., the weekday evening peak hour of traffic occurs from 4:45 P.M. to 5:45 P.M., and the Saturday midday peak hour of traffic occurs from 12:00 P.M. to 1:00 P.M. **Figure 2** illustrates the existing peak hour traffic and pedestrian volumes. Copies of the traffic count summary sheets are included in the Appendix.

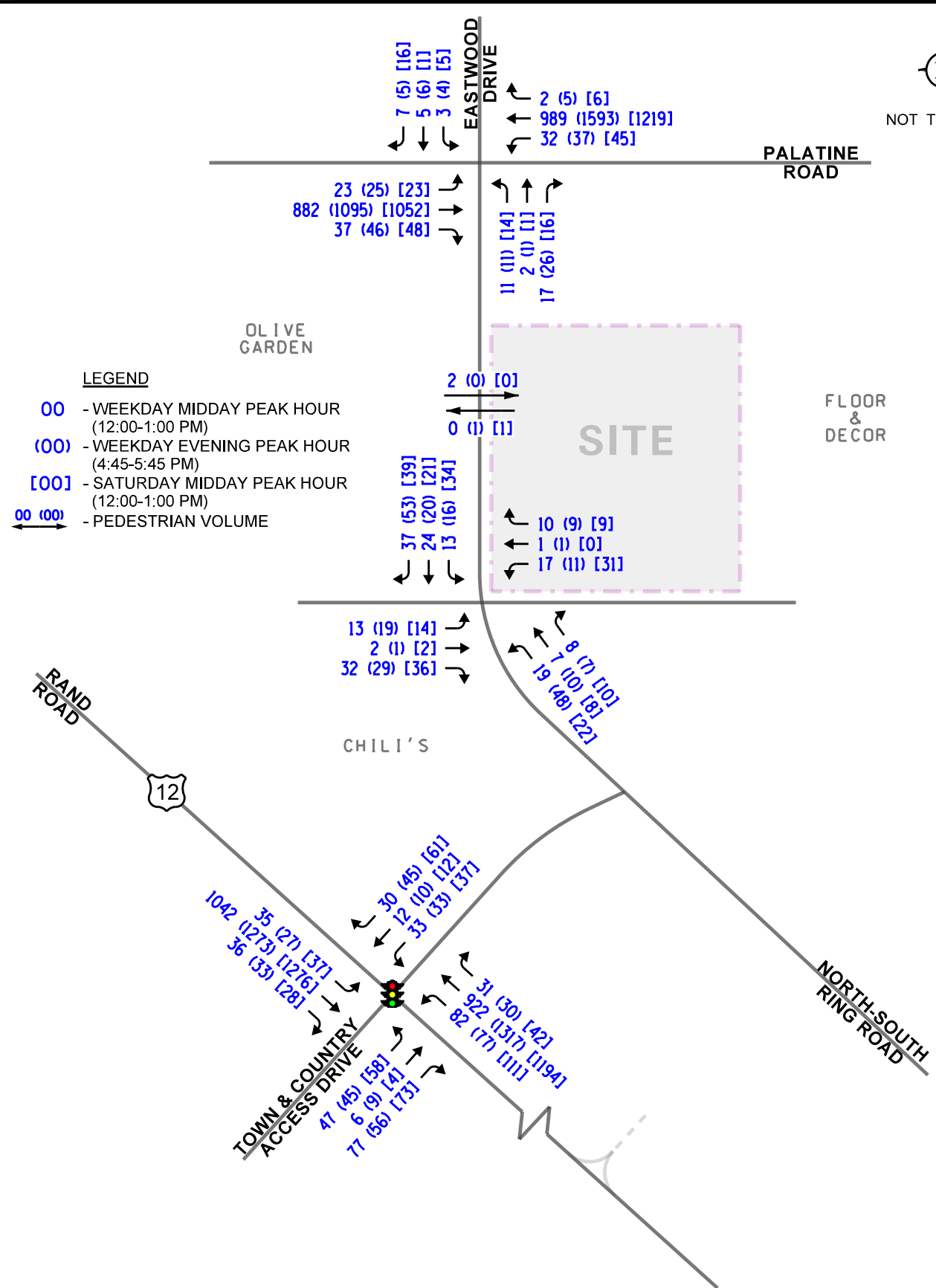


Aerial View of Site

Figure 1



NOT TO SCALE



Proposed Outlot Development
Arlington Heights, Illinois

Existing Traffic and Pedestrian Volumes

Proposed Development Plan and Trip Generation

Currently, the Southpoint center is approximately 225,149 square feet in size (including the vacant Bif Furniture retail space). As proposed, the outlot parcel located in the southeast quadrant of the intersection of Palatine Road with the Southpoint retail center west drive will be redeveloped with two QSR. Based on a review of the latest site plan, the existing north-south drive aisle bisecting the outlot and the Floor & Décor parking lot will be shifted east by approximately 100 feet creating a longer throat length between the ring road and the north-south drive aisle.

The traffic that will be generated by the proposed Chipotle restaurant was based on a survey of a free-standing Chipotle of a similar size (approximately 2,691 square feet) located at 300 Ogden Avenue in Westmont, Illinois. The results of the survey are included in the Appendix. The trips to be generated by the other QSR was estimated based on vehicle trip generation rates contained in *Trip Generation Manual*, 11th Edition, published by the Institute of Transportation Engineers (ITE). **Table 1** shows the site-generated traffic volumes for the proposed development. It is important to note that typical of shopping center, interaction between the existing and proposed land uses, or captured trips, where a patron may go to multiple commercial uses within in the same visit occur. As such, a 10 percent interaction reduction was applied to the weekday midday, evening, and Saturday midday peak hour trip generation.

As previously mentioned, it is important to note that the proposed pick-up window for the Chipotle restaurant is for those orders placed online or via a food delivery service. Based on information provided by Chipotle, on average, approximately 35 percent of customers use the pick-up lane. Also, typical utilization of the widow during the peak hours ranges between 15 and 20 vehicles.

Table 1
PROJECTED PEAK HOUR SITE-GENERATED TRAFFIC VOLUMES

Type/Size	Weekday Midday Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Chipotle (2,385 s.f.)	50	59	109	34	30	64	43	46	89
Quick Casual Restaurant (4,419 s.f.)	114	94	208	35	28	63	79	65	144
<i>Internal Capture Reduction (10%)</i>	<i><u>-16</u></i>	<i><u>-15</u></i>	<i><u>-31</u></i>	<i><u>-7</u></i>	<i><u>-6</u></i>	<i><u>-13</u></i>	<i><u>-12</u></i>	<i><u>-11</u></i>	<i><u>-23</u></i>
Total New Trips	148	138	286	62	52	114	110	100	210

Planned Access Improvements

Based on a recent traffic study prepared for a potential user for the vacant Bif Furniture store, a right-in/right-out access drive is proposed off Rand Road midpoint between the two signalized access drives serving the shopping center. While it is our understanding that the approval of the proposed right-in/right-out is still being evaluated by IDOT, at the request of the Village of Arlington Heights staff, the site traffic assignment and future analyses assume the provision of this right-in/right-out access drive.

Directional Distribution

Based on existing travel patterns and a previous traffic study conducted for a planned fitness center that was to occupy the Bif Furniture storefront, it is estimated that 40 percent of the traffic will arrive/depart to the north and 60 percent will arrive/depart to the south.

Site Traffic Assignment

The peak hour traffic volumes projected to be generated by the proposed development were assigned to the internal and external area roadways based on the previously estimated directional distribution, the proposed land use plan and planned access improvements. **Figure 3** illustrates the assignment of the development-generated traffic volumes.

Current Vacancies and Planned Developments

Based on information provided to KLOA, Inc., the Southpoint retail center has approximately 31,229 square feet of vacancies (not including the 110,000 square foot Bif furniture store). The traffic to be generated by these vacancies and the potential developments of a 3,460 square-foot credit union branch was estimated using the *ITE Trip Generation Manual*. **Table 2** shows the traffic to be generated by the current vacancies and the planned credit union. **Figure 4** shows the traffic assignment of these vacancies and future developments.

Table 2

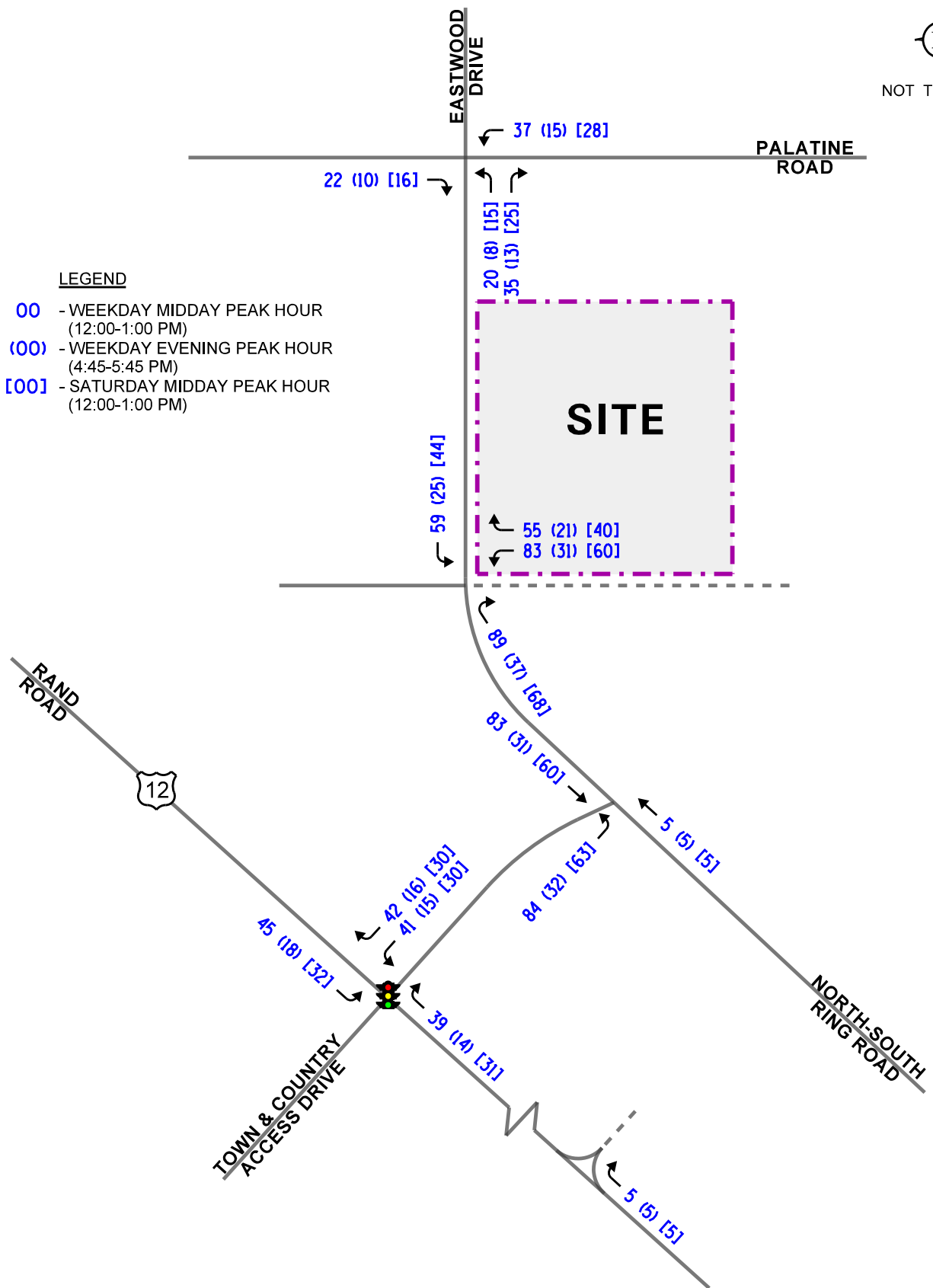
VACANCIES/PLANNED DEVELOPMENT PEAK HOUR TRAFFIC VOLUMES

Type/Size	Weekday Midday Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Retail (141,229 s.f.)	250	232	482	230	250	480	323	298	621
Credit Union (3,460 s.f.) ¹	20	20	40	25	25	50	30	30	60
<i>Internal Capture Reduction (10%)</i>	<u>-27</u>	<u>-25</u>	<u>-52</u>	<u>-26</u>	<u>-28</u>	<u>-54</u>	<u>-35</u>	<u>-33</u>	<u>-68</u>
Total New Trips	243	227	470	229	247	476	318	295	613
1 – Based on transaction data of a similar facility provided by the Credit Union									



NOT TO SCALE

- LEGEND**
- 00** - WEEKDAY MIDDAY PEAK HOUR (12:00-1:00 PM)
 - (00)** - WEEKDAY EVENING PEAK HOUR (4:45-5:45 PM)
 - [00]** - SATURDAY MIDDAY PEAK HOUR (12:00-1:00 PM)



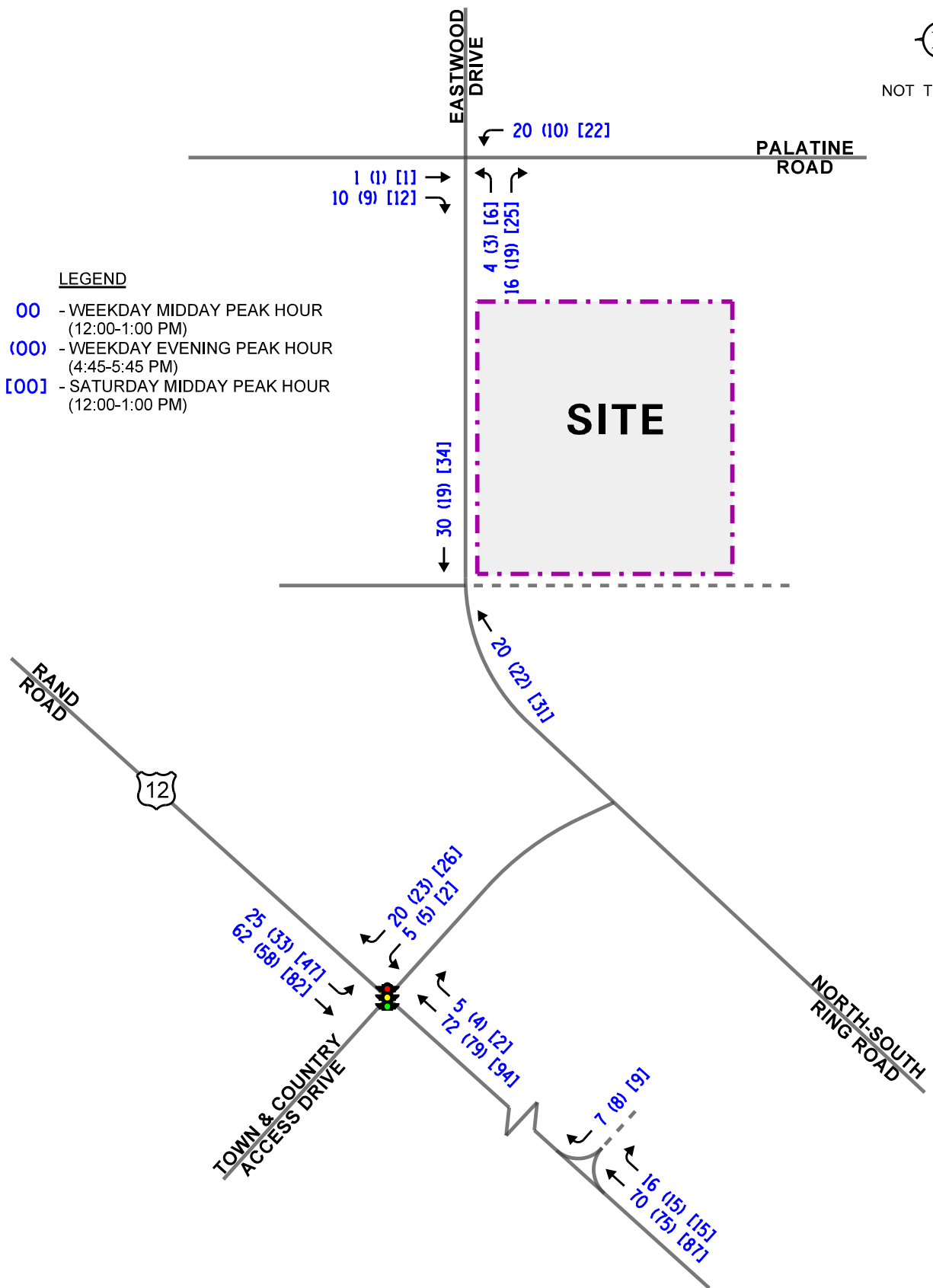
Proposed Outlot Development
Arlington Heights, Illinois

Estimated Site-Generated Traffic Volumes



NOT TO SCALE

- LEGEND**
- 00** - WEEKDAY MIDDAY PEAK HOUR (12:00-1:00 PM)
 - (00)** - WEEKDAY EVENING PEAK HOUR (4:45-5:45 PM)
 - [00]** - SATURDAY MIDDAY PEAK HOUR (12:00-1:00 PM)



Proposed Outlot Development
Arlington Heights, Illinois

Vacancies and Planned Credit Union
Traffic Assignment

Total Projected Traffic Volumes

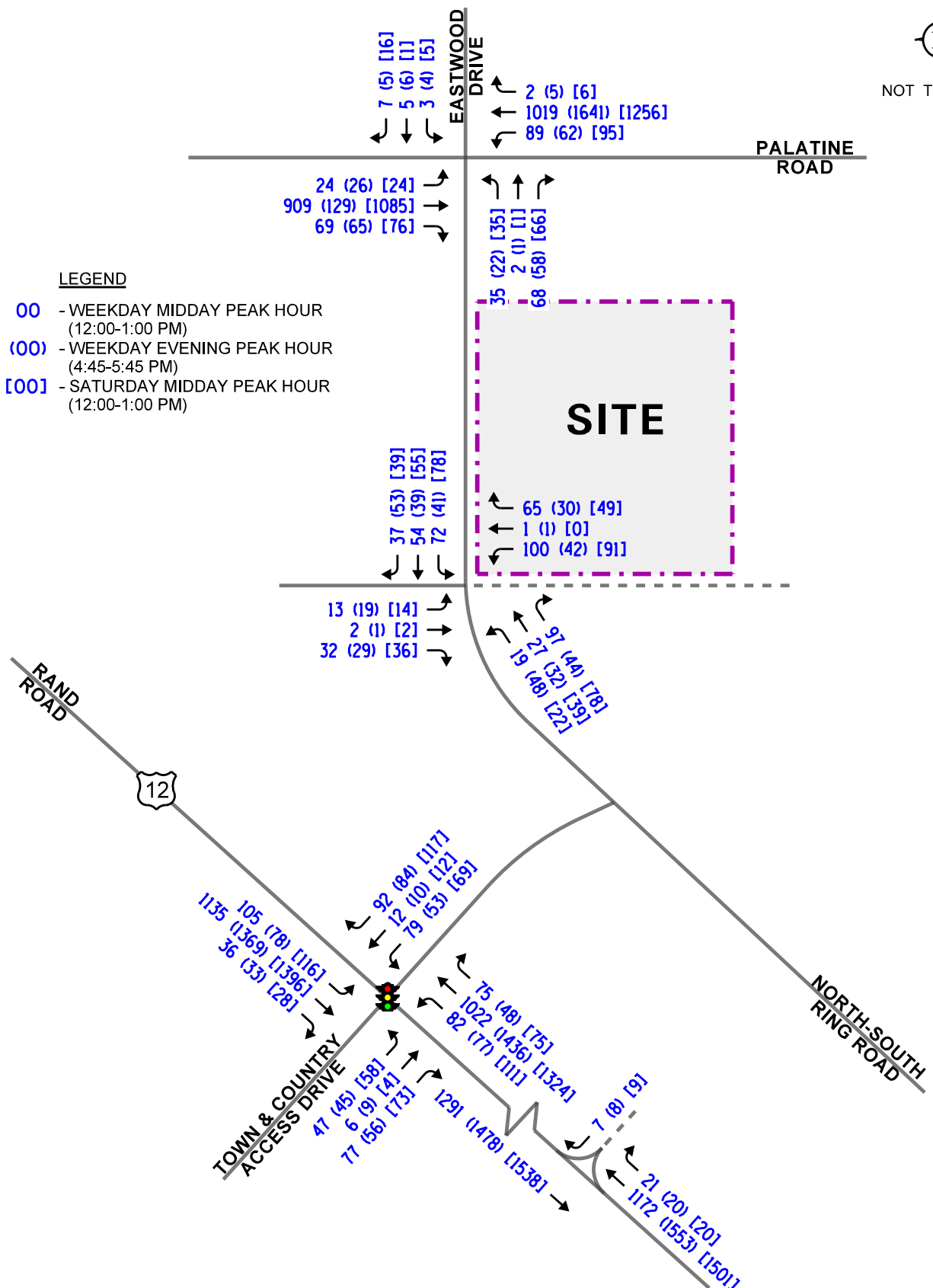
The total projected traffic volumes are comprised of the existing traffic volumes (Figure 2) increased by a growth factor of three percent to reflect Year 2026 conditions, site traffic assignment (Figure 3), and the vacancy/other developments traffic assignments (Figure 4). **Figure 5** illustrates the total traffic volumes.

Evaluation and Recommendations

Capacity analyses using Synchro/SimTraffic 11 capacity analysis software were conducted at the intersections of the north-south ring road with the Olive Garden/Chili's restaurant access drive and the Floor & Décor access drive to determine the impact, if any, of additional traffic generated by the proposed development. The results of the capacity analysis for the existing and projected traffic volumes for the intersections are summarized in **Tables 2** through **4**. A discussion of the operations of each intersection follows. Copies of the capacity analysis summary sheets are included in the Appendix.



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Proposed Outlot Development
Arlington Heights, Illinois

Total Projected Traffic Volumes

Table 2

CAPACITY ANALYSIS RESULTS – RAND ROAD/SOUTHPOINT NORTH DRIVE/TOWN & COUNTRY DRIVE

	Peak Hour	Operating Conditions by Approach											Overall	
		Southeast-bound			Northwest-bound			Northeast-bound			Southwest-bound			
		L	T	R	L	T	R	L	T	R	L	T		R
Existing Conditions	Weekday Midday Peak Hour	A 2.4	A 5.7	A 3.4	A 6.4	E 78.8	C 21.1	E 70.7	C 30.4	A 9.2				
		A – 5.6			A – 6.2			D – 41.9			D – 48.1			
	Weekday Evening Peak Hour	A 2.3	A 5.3	A 4.4	B 10.1	F 83.7	C 25.4	E 75.2	C 27.3	B 10.3				
		A – 5.3			A – 9.8			D – 49.5			D – 45.2			
	Saturday Midday Peak Hour	A 2.9	A 7.0	A 4.4	A 9.2	E 65.8	B 17.2	E 56.8	C 21.1	B 10.2				
		A – 7.4			A – 9.7			D – 38.0			C – 33.1			
Year 2026 Conditions (Total Projected)	Weekday Midday Peak Hour	A 4.8	A 7.3	A 4.4	A 9.0	E 74.6	B 17.5	F 83.1	B 18.5	B 11.8				
		A – 7.1			A – 8.6			D 38.1			D 46.4			
	Weekday Evening Peak Hour	A 4.5	A 5.8	A 5.0	B 12.7	F 92.9	C 24.3	F 84.4	C 22.6	B 12.1				
		A – 5.7			B – 12.3			D – 52.6			D – 44.8			
	Saturday Midday Peak Hour	A 6.4	A 7.7	A 5.7	B 12.8	F 80.9	B 16.3	E 66.3	B 17.7	B 12.7				
		A – 7.6			B – 12.3			D – 44.0			C – 34.6			

Delay is measured in seconds.

Table 3
 LEVEL OF SERVICE AND DELAY – EXISTING CONDITIONS

Intersection	Weekday Midday Peak Hour		Weekday Evening Peak Hour		Saturday Midday Peak Hour	
	LOS	Delay	LOS	Delay	LOS	Delay
North-South Ring Road with Olive Garden/Chili's Drive/Floor & Décor Drive Aisle						
• Eastbound Approach	A	9.1	A	9.4	A	9.1
• Westbound Approach	A	9.9	A	9.5	A	9.9
• Northbound Left	A	7.4	A	7.4	A	7.4
• Southbound Left	A	7.3	A	7.3	A	7.3
Palatine Road with Southpoint West Drive/Eastwood Drive						
• Eastbound Left Turn	C	15.1	D	26.6	C	18.9
• Westbound Left Turn	B	14.5	C	17.5	C	17.8
• Northbound Approach	C	19.8	C	23.4	D	26.2
• Southbound Approach	C	21.4	F	50.1	C	24.7

Table 4

LEVEL OF SERVICE AND DELAY – FUTURE CONDITIONS

Intersection	Weekday Midday Peak Hour		Weekday Evening Peak Hour		Saturday Midday Peak Hour	
	LOS	Delay	LOS	Delay	LOS	Delay
North-South Ring Road with Olive Garden/Chili's Drive Aisle/Floor & Décor Drive Aisle						
• Eastbound Approach	B	10.1	B	10.0	B	10.1
• Westbound Approach	B	11.7	B	10.6	B	12.1
• Northbound Left	A	7.4	A	7.5	A	7.4
• Southbound Left	A	7.6	A	7.4	A	7.6
Palatine Road with Southpoint West Drive/Eastwood Drive						
• Eastbound Left Turn	C	15.6	D	28.2	C	19.6
• Westbound Left Turn	C	17.4	C	19.7	C	22.5
• Northbound Approach	D	23.6	D	26.8	D	31.7
• Southbound Approach	D	26.8	F	53,1	D	29.5
Rand Road with Proposed Right-In/Right-Out						
• Southwest-bound Right	B	13.9	C	17.3	C	16.8

Discussion and Recommendations

The following summarizes how the intersections within the study area currently operate and are projected to operate assuming the total projected traffic volumes. It will also identify any roadway and traffic control improvements and/or modifications necessary to accommodate the projected traffic volumes.

Rand Road with Southpoint North Drive/Town & Country Drive

The results of the capacity analyses indicate that this intersection is operating at an overall acceptable Level of Service (LOS) during all three peak hours. Further inspection of the capacity analyses indicates that the left-turn movements from the minor approaches operate at LOS F and E during the weekday evening and Saturday midday peak hours, respectively. This is due to the long time vehicles have to wait as a result of the long cycle length and not due to capacity constraints. Under future conditions, the intersections will continue operating at an overall acceptable LOS with minimal increases in delay. Furthermore, based on a review of the capacity analyses and the simulation runs, the 95th percentile queues for outbound traffic will not extend to the ring road and all of the outbound vehicles will clear the intersections within one cycle length. As such, no geometric or traffic control improvements will be necessary at these intersections in conjunction with the proposed development.

Palatine Road with Southpoint West Drive/Eastwood Drive

The results of the capacity analyses indicate that all of the critical turning movements from Palatine Road are operating at an overall acceptable Level of Service (LOS) during all three peak hours. Further inspection of the capacity analyses indicates that the left-turn movement from Eastwood Drive operates at a LOS E during the weekday evening peak hour. This not uncommon and is expected when a minor road or access drive intersects a major arterial such as Palatine Road. Field observations indicate that the outbound left-turn movement is able to exit more efficiently than what the analyses indicate given the numerous gaps created in the through traffic stream by the traffic signals on Palatine Road at Rand Road to the west and Windsor Drive to the east.

Under future conditions, the Southpoint west drive and Eastwood Drive left-turn movements during the weekday evening peak hour will experience slightly longer delays. However, based on a review of the simulation runs, vehicles will be able to clear the intersections as they currently do under existing conditions. As such, no geometric or traffic control improvements will be necessary at this intersection in conjunction with the proposed development.

North-South Ring Road with Olive Garden/Chili's/Floor & Décor Drive Aisle

The results of the capacity analyses indicate that the outbound movements from this intersection are and will continue operating at a LOS B. Based on the projected traffic volumes, consideration should be given to restriping the north-south ring road to provide an exclusive left-turn lane (a conceptual exhibit is included in the Appendix). No additional geometric or traffic control improvements will be necessary at this intersection in conjunction with the proposed development.

Internal Circulation Evaluation

Based on a review of the current site plan, all two-way drive aisles will be 24 feet wide thus providing for efficient two-way traffic flow throughout the parking field. The westerly and southerly drive aisles adjacent to the buildings will be signed for one-way traffic and will range between 15.5 and 17 feet wide. The relocated north-south drive aisle immediately east of the proposed buildings should be under stop sign control at its intersection with the Floor & Décor drive aisle. This intersection should be periodically monitored to determine if modifications to the recommended traffic control should be implemented.

Chipotle Pick-up Window Evaluation

As previously indicated, the proposed Chipotle restaurant will be providing a drive-through lane for picking up orders placed online or via a food delivery service. No ordering board will be provided. Based on a review of the site plan, the pick-up lane will wrap around the building in a counterclockwise fashion with stacking for five vehicles from the pick-up window to the one-way southbound drive aisle west of the building. Exiting traffic from the pick-up lane will be under stop sign control. Based on information provided by Chipotle, the typical queue/stacking during the peak periods ranges between three to four vehicles with an average customer service time of 24 seconds. This is due to the fact that the drive-through lane is only for picking up orders that have already been paid for online or via a food delivery service. Should the queues be longer, approximately two spaces on the north side of the site will be signed for drive-through customers waiting for their order.

QSR Drive-Through Evaluation

Given that there are no concrete plans for the other QSR, the plan assumes a QSR with a regular drive-through lane that would also wrap around the building in a counterclockwise fashion and provide stacking for approximately 11 vehicles. In addition, the plan proposes an opening along the south side of the building to allow vehicles to by-pass or exit the drive-through lane should they desire to do so. Based on the preliminary plan for this lot, the outbound traffic from the drive-through lane will be under stop sign control and will be directed to turn left and circulate around the site to exit into the north-south drive aisle. Striping and signage indicating no right turns are allowed should be provided at the exit point of the drive-through lane.

Parking Occupancy Surveys

In order to determine the existing parking demand and, as requested by the Village of Arlington Heights, parking occupancy surveys were conducted during the following time periods:

- Friday and Saturday, February 28 and 29, 2021 between 11:30 A.M. and 9:00 P.M.

The parking occupancy surveys were conducted every 30 minutes and the parking field was divided into three areas as illustrated in **Figure 6**.

Area 1:

Serves the Olive Garden and Chili's restaurants and has approximately 144 spaces, of which eight are handicapped (Based on field inspection).

Area 2:

Proposed location of the outlot parcel and provides approximately 63 spaces (Based on Alta/NSPS survey).

Area 3:

Remainder of the parking field that serves Floor & Décor and the vacant space and has approximately 479 spaces, of which 19 are handicapped spaces (Alta/NSPS survey). This number of spaces does not include seven parking spaces on the rear of the building.

Based on the above, the results of the parking occupancy surveys are summarized in **Tables 5** and **6** for Friday and Saturday, respectively.

In reviewing the results of the parking occupancy, the peak periods by area, time of day, and overall per day was determined and are summarized in **Table 7**.



Parking Study Areas

Figure 6

Table 5
 PARKING OCCUPANCY SUMMARY (FRIDAY, FEBRUARY 28, 2020)

Time Period	Area 1 (144 Spaces)		Area 2 (63 Spaces)		Area 3 (479 Spaces)		Total (686 Spaces)	
	Occupancy	Surplus	Occupancy	Surplus	Occupancy	Surplus	Occupancy	Surplus
11:30 A.M.	27	117	19	44	41	438	87	599
12:00 Noon	47	97	18	45	38	441	103	583
12:30 P.M.	70	74	18	45	44	435	132	554
1:00 P.M.	67	77	17	46	37	442	121	565
1:30 P.M.	54	90	19	44	48	431	121	565
2:00 P.M.	48	96	18	45	42	437	108	578
2:30 P.M.	28	116	21	42	46	433	95	591
3:00 P.M.	23	121	22	41	48	431	93	593
3:30 P.M.	24	120	22	41	47	432	93	593
4:00 P.M.	30	114	23	40	47	432	100	586
4:30 P.M.	37	107	25	38	42	437	104	582
5:00 P.M.	51	93	27	36	53	426	131	555
5:30 P.M.	96	48	32	31	47	432	175	511
6:00 P.M.	131	13	41	22	42	437	214	472
6:30 P.M.	134	10	42	21	40	439	216	470
7:00 P.M.	122	22	33	30	31	448	186	500
7:30 P.M.	127	17	33	30	30	449	190	496
8:00 P.M.	115	29	31	32	28	451	174	512
8:30 P.M.	110	34	30	33	30	449	170	516
9:00 P.M.	94	50	30	33	24	455	148	538

Table 6
 PARKING OCCUPANCY SUMMARY (SATURDAY, FEBRUARY 29, 2020)

Time Period	Area 1 (144 Spaces)		Area 2 (63 Spaces)		Area 3 (479 Spaces)		Total (686 Spaces)	
	Occupancy	Surplus	Occupancy	Surplus	Occupancy	Surplus	Occupancy	Surplus
11:30 A.M.	35	109	19	44	61	418	115	571
12:00 Noon	46	98	22	41	57	422	125	561
12:30 P.M.	65	79	22	41	61	418	148	538
1:00 P.M.	72	72	24	39	56	423	152	534
1:30 P.M.	69	75	25	38	64	415	158	528
2:00 P.M.	79	65	26	37	68	411	173	513
2:30 P.M.	75	69	27	36	61	418	163	523
3:00 P.M.	75	69	28	35	56	423	159	527
3:30 P.M.	80	84	30	33	56	423	164	522
4:00 P.M.	92	52	33	30	57	422	182	504
4:30 P.M.	113	31	34	29	59	420	206	480
5:00 P.M.	129	15	39	24	52	427	220	466
5:30 P.M.	129	15	49	14	58	421	236	450
6:00 P.M.	137	7	51	12	46	433	234	452
6:30 P.M.	134	10	58	5	52	427	244	442
7:00 P.M.	127	17	55	8	44	435	226	460
7:30 P.M.	127	17	52	11	37	442	216	470
8:00 P.M.	125	19	39	24	34	445	198	488
8:30 P.M.	109	35	35	28	22	457	166	520
9:00 P.M.	91	53	29	34	18	461	138	548

Table 7
 PEAK PARKING OCCUPANCY SUMMARY

Time Period	Area 1 (144 spaces)		Area 2 (63 spaces)		Area 3 (479 Spaces)		Total (686 Spaces)	
	Peak	Percentage	Peak	Percentage	Peak	Percentage	Peak	Percentage
Friday								
Lunchtime	70	49%	18	29%	44	9%	132	19%
Dinner	134	93%	42	66%	40	8%	216	31%
Saturday								
Lunchtime	79	55%	26	41%	68	14%	173	25%
Dinner	134	93%	58	92%	52	11%	244	36%

Table 8

ESTIMATED PARKING DEMAND OF THE PROPOSED OUTLOT PARCEL

Time	Friday	Saturday
11:30 A.M.	44	34
12:00 Noon	68	42
12:30 P.M.	65	47
1:00 P.M.	51	48
1:30 P.M.	45	55
2:00 P.M.	31	60
2:30 P.M.	31	49
3:00 P.M.	21	34
3:30 P.M.	18	34
4:00 P.M.	16	26
4:30 P.M.	24	34
5:00 P.M.	33	36
5:30 P.M.	50	44
6:00 P.M.	52	52
6:30 P.M.	50	41
7:00 P.M.	47	32
7:30 P.M.	32	31
8:00 P.M.	19	26
8:30 P.M.	16	25
9:00 P.M.	14	20

Table 9
PROJECTED PARKING DEMAND

Time	Friday					Saturday				
	Existing	Vacancies	Outlot	Total	Surplus	Existing	Vacancies	Outlot	Total	Surplus
11:30 A.M.	87	118	44	249	380	115	107	34	256	373
12:00 Noon	103	124	68	295	334	125	139	42	306	323
12:30 P.M.	132	125	65	322	307	148	140	47	335	294
1:00 P.M.	121	128	51	300	329	152	142	48	342	287
1:30 P.M.	121	123	45	289	340	158	143	55	356	273
2:00 P.M.	108	118	31	257	372	173	143	60	376	253
2:30 P.M.	95	114	31	240	289	163	140	49	352	277
3:00 P.M.	93	109	21	223	406	159	139	34	332	297
3:30 P.M.	93	109	18	220	409	164	133	34	331	298
4:00 P.M.	100	108	16	224	405	182	126	26	334	295
4:30 P.M.	104	104	24	232	397	206	119	34	359	270
5:00 P.M.	131	100	33	264	365	220	110	36	366	263
5:30 P.M.	175	98	50	323	306	236	102	44	382	247
6:00 P.M.	214	96	52	362	267	234	92	52	378	251
6:30 P.M.	216	88	50	354	275	244	83	41	368	261
7:00 P.M.	186	81	47	314	315	226	75	32	333	296
7:30 P.M.	190	73	32	295	334	216	67	31	314	315
8:00 P.M.	174	65	19	258	371	198	68	26	292	337
8:30 P.M.	170	58	16	244	385	166	59	25	250	379
9:00 P.M.	148	50	14	212	417	138	50	20	208	421

Inspection of Table 9 indicates that the proposed parking supply will be adequate in accommodating the future demands. During the peak demand periods on Friday (6:30 to 7:30 P.M.) and on Saturday (5:30 to 6:30 P.M.), adequate surplus parking remains (40 to 43 percent of the total supply) which indicates that overall parking supply can accommodate the increased demand from the proposed QSR and the retail vacancies. It should be noted that, in order to address the use of Area 2 for parking by the two restaurants in the future with the development of the outlot parcel, the following measures are recommended:

- Designate a section within Area 3 for employee parking.
- Maximize the usage of Area 1 by customers of the restaurants.
- Designate a section within Area 3 for customer overflow parking.
- Encourage the restaurants to provide valet service.

Parking Evaluation

Based on a review of Table 9, even with a net loss of 57 parking spaces, the future parking supply will be adequate in meeting the overall parking needs of the two existing restaurants as well as the existing Floor & Décor, the vacant retail portion of the building and the proposed outlot parcel. The overflow demand of the restaurants can be accommodated through a number of parking management measures such as the designation of parking areas within Area 3 for employees and/or customers and provision of valet service.

Conclusion

Based on the preceding analyses and recommendations, the following conclusions have been made:

- The proposed development will be located within the Southpoint retail center and will consist of two QSR restaurants totaling an approximately 6,804 square-foot building to be located in the southeast quadrant of the intersection of Palatine Road with the Southpoint retail center west drive.
- The existing access system will be adequate and ensure that efficient and flexible access is provided, minimizing delays and reducing the traffic load at any specific access drive.
- The results of the capacity analysis show that the existing roadway system and the existing access drives will be able to sufficiently accommodate the estimated site-generated traffic as well as the vacancy and future development traffic.
- Given the proposed shift of the north-south drive aisle further east, additional throat length will be provided to accommodate the additional internal traffic demand.
- Based on the projected traffic volumes, consideration should be given to restriping the north-south ring road to provide exclusive left-turn lanes at its intersection with the Olive Garden/Chilis access drive/Floor & Décor drive aisle.

- The relocated north-south drive aisle immediately east of the proposed buildings should be under stop sign control at its intersection with the Floor & Décor drive aisle.
- The proposed pick-up window for the Chipotle restaurant is for those orders placed online or via a food delivery service. Based on information provided by Chipotle, on average, approximately 35 percent of customers use the pick-up lane. Also, typical utilization of the window during the peak hours ranges between 15 and 20 vehicles.
- The Chipotle pick-up lane will accommodate five vehicles. This stacking will be adequate to accommodate the expected peak utilization of the pick-up lane given that the typical queue/stacking during the peak periods ranges between three to four vehicles with an average customer service time of 24 seconds. Should additional demand be observed, two number of parking spaces north of the building will be signed and allocated for drive-through /pick-up customers.
- Based on a review of the site plan, the drive-through lane for the other QSR will provide total stacking for 11 vehicles.
- The proposed number of parking spaces will exceed the number of parking spaces required by Village Code and will be more than adequate in accommodating the projected peak parking demand of all of the adjacent land uses.

Appendix

Traffic Count Summary Sheets
Traffic Survey Results
Capacity Analysis Summary Sheets
Conceptual Exhibit

Traffic Count Summary Sheets

Palatine Road with Eastwood Drive - TMC

Thu Oct 14, 2021

Full Length (11 AM-2 PM, 4 PM-6 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

All Movements

ID: 888829, Location: 42.10987, -87.97382



Provided by: Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400,
Rosemont, IL, 60018, US

Leg Direction	Eastwood Drive Southbound						Palatine Road Westbound						Eastwood Drive Northbound						Palatine Road Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2021-10-14																									
11:00AM	0	1	0	0	1	-	1	210	6	1	218	0	4	1	0	0	5	0	6	188	6	1	201	0	425
11:15AM	3	1	0	0	4	-	0	201	3	1	205	0	3	2	3	0	8	0	8	205	6	3	222	1	439
11:30AM	2	3	2	0	7	-	1	219	10	3	233	0	4	0	0	0	4	0	5	182	2	1	190	0	434
11:45AM	3	2	0	0	5	-	0	250	12	3	265	0	2	2	2	0	6	0	11	225	6	1	243	0	519
Hourly Total	8	7	2	0	17	-	2	880	31	8	921	0	13	5	5	0	23	0	30	800	20	6	856	1	1817
12:00PM	2	0	2	0	4	-	1	254	7	2	264	1	5	0	3	0	8	1	11	205	5	1	222	0	498
12:15PM	1	3	0	0	4	-	0	242	4	2	248	0	3	0	6	0	9	0	6	217	6	3	232	0	493
12:30PM	1	0	1	0	2	-	1	243	9	3	256	0	7	0	0	0	7	0	9	235	6	2	252	0	517
12:45PM	0	1	1	0	2	-	0	236	8	2	246	0	7	1	6	0	14	0	3	224	0	2	229	0	491
Hourly Total	4	4	4	0	12	-	2	975	28	9	1014	1	22	1	15	0	38	1	29	881	17	8	935	0	1999
1:00PM	1	2	1	0	4	-	0	229	7	2	238	1	7	0	4	0	11	0	12	216	8	4	240	0	493
1:15PM	1	0	0	0	1	-	0	267	6	1	274	0	7	1	1	0	9	0	5	211	6	5	227	0	511
1:30PM	6	0	0	0	6	-	1	282	2	4	289	0	7	0	2	0	9	0	7	229	9	1	246	0	550
1:45PM	4	0	0	0	4	-	0	291	6	3	300	0	7	2	3	0	12	0	3	226	2	2	233	0	549
Hourly Total	12	2	1	0	15	-	1	1069	21	10	1101	1	28	3	10	0	41	0	27	882	25	12	946	0	2103
4:00PM	3	0	2	0	5	-	1	378	15	2	396	0	5	0	4	0	9	0	10	300	8	4	322	0	732
4:15PM	5	0	1	0	6	-	1	401	8	1	411	0	2	2	2	0	6	0	5	277	4	1	287	0	710
4:30PM	0	0	0	0	0	-	0	353	4	1	358	0	7	0	1	0	8	0	13	244	9	3	269	0	635
4:45PM	1	2	1	0	4	-	1	405	10	2	418	0	5	0	0	0	5	1	10	281	4	4	299	0	726
Hourly Total	9	2	4	0	15	-	3	1537	37	6	1583	0	19	2	7	0	28	1	38	1102	25	12	1177	0	2803
5:00PM	1	1	2	0	4	-	2	375	7	2	386	0	5	0	5	0	10	0	12	249	8	4	273	0	673
5:15PM	2	3	0	0	5	-	1	420	12	4	437	0	7	0	2	0	9	0	11	256	8	3	278	0	729
5:30PM	1	0	1	0	2	-	1	393	8	4	406	0	9	1	4	0	14	0	13	309	5	2	329	0	751
5:45PM	3	1	0	0	4	-	0	361	12	1	374	0	8	0	1	0	9	0	13	268	7	1	289	0	676
Hourly Total	7	5	3	0	15	-	4	1549	39	11	1603	0	29	1	12	0	42	0	49	1082	28	10	1169	0	2829
2021-10-16																									
11:00AM	3	0	1	0	4	-	1	278	9	1	289	0	6	2	3	0	11	0	3	243	4	1	251	0	555
11:15AM	4	1	1	0	6	-	1	275	3	1	280	0	0	0	0	0	0	0	8	249	7	3	267	0	553
11:30AM	5	0	1	0	6	-	0	298	7	3	308	0	1	0	2	0	3	0	7	253	9	1	270	0	587
11:45AM	2	2	2	0	6	-	0	280	12	2	294	0	5	2	2	0	9	0	9	250	6	2	267	0	576
Hourly Total	14	3	5	0	22	-	2	1131	31	7	1171	0	12	4	7	0	23	0	27	995	26	7	1055	0	2271
12:00PM	6	0	1	0	7	-	2	257	7	0	266	0	3	0	3	0	6	0	9	247	3	4	263	0	542
12:15PM	2	0	3	0	5	-	1	317	15	3	336	0	2	0	2	0	4	0	12	269	4	4	289	0	634
12:30PM	4	0	1	0	5	-	1	311	13	2	327	0	5	1	0	0	6	0	10	261	9	4	284	1	622
12:45PM	4	1	0	0	5	-	2	334	10	6	352	0	6	0	9	0	15	0	17	275	7	1	300	0	672
Hourly Total	16	1	5	0	22	-	6	1219	45	11	1281	0	16	1	14	0	31	0	48	1052	23	13	1136	1	2470
1:00PM	3	1	2	0	6	-	2	290	9	2	303	0	9	0	2	0	11	0	12	290	6	3	311	0	631
1:15PM	3	0	0	0	3	-	1	296	12	0	309	0	7	0	8	0	15	0	11	323	5	0	339	0	666
1:30PM	2	0	0	0	2	-	0	292	7	2	301	0	5	1	4	0	10	0	10	327	7	5	349	0	662
1:45PM	3	1	0	0	4	-	1	262	6	0	269	1	7	0	6	0	13	0	11	280	11	5	307	0	593
Hourly Total	11	2	2	0	15	-	4	1140	34	4	1182	1	28	1	20	0	49	0	44	1220	29	13	1306	0	2552
Total	81	26	26	0	133	-	24	9500	266	66	9856	3	167	18	90	0	275	2	292	8014	193	81	8580	2	18844
% Approach	60.9%	19.5%	19.5%	0%	-	-	0.2%	96.4%	2.7%	0.7%	-	-	60.7%	6.5%	32.7%	0%	-	-	3.4%	93.4%	2.2%	0.9%	-	-	-
% Total	0.4%	0.1%	0.1%	0%	0.7%	-	0.1%	50.4%	1.4%	0.4%	52.3%	-	0.9%	0.1%	0.5%	0%	1.5%	-	1.5%	42.5%	1.0%	0.4%	45.5%	-	-
Lights	81	24	26	0	131	-	22	9169	262	64	9517	-	164	17	89	0	270	-	290	7672	192	78	8232	-	18150
% Lights	100%	92.3%	100%	0%	98.5%	-	91.7%	96.5%	98.5%	97.0%	96.6%	-	98.2%	94.4%	98.9%	0%	98.2%	-	99.3%	95.7%	99.5%	96.3%	95.9%	-	96.3%
Single-Unit Trucks	0	0	0	0	0	-	2	166	4	1	173	-	2	0	1	0	3	-	1	158	1	0	160	-	336
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	8.3%	1.7%	1.5%	1.5%	1.8%	-	1.2%	0%	1.1%	0%	1.1%	-	0.3%	2.0%	0.5%	0%	1.9%	-	1.8%
Articulated Trucks	0	0	0	0	0	-	0	155	0	1	156	-	1	0	0	0	1	-	1	174	0	3	178	-	335
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	1.6%	0%	1.5%	1.6%	-	0.6%	0%	0%	0%	0.4%	-	0.3%	2.2%	0%	3.7%	2.1%	-	1.8%
Buses	0	0	0	0	0	-	0	10	0	0	10	-	0	0	0	0	0	-	0	10	0	0	10	-	20
% Buses	0%	0%	0%	0%	0%	-	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0.1%	0%	0%	0.1%	-	0.1%

Leg Direction	Eastwood Drive Southbound						Palatine Road Westbound						Eastwood Drive Northbound						Palatine Road Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
Bicycles on Road	0	2	0	0	2	-	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	3
% Bicycles on Road	0%	7.7%	0%	0%	1.5%	-	0%	0%	0%	0%	0%	-	0%	5.6%	0%	0%	0.4%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	2	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-100%	-	-	-	-	-	-100%	-	-	-	-	-	-100%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Palatine Road with Eastwood Drive - TMC

Thu Oct 14, 2021

Full Length (11 AM-2 PM, 4 PM-6 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

All Movements

ID: 888829, Location: 42.10987, -87.97382



Provided by: Kenig Lindgren O'Hara Aboona, Inc.

9575 W. Higgins Rd., Suite 400,
Rosemont, IL, 60018, US

[N] Eastwood Drive

Total: 368
In: 133 Out: 235

81
26
26

[W] Palatine Road

Total: 18332
In: 8580 Out: 9752

81
193
8014
292

Out: 8273
Total: 18129
In: 9856

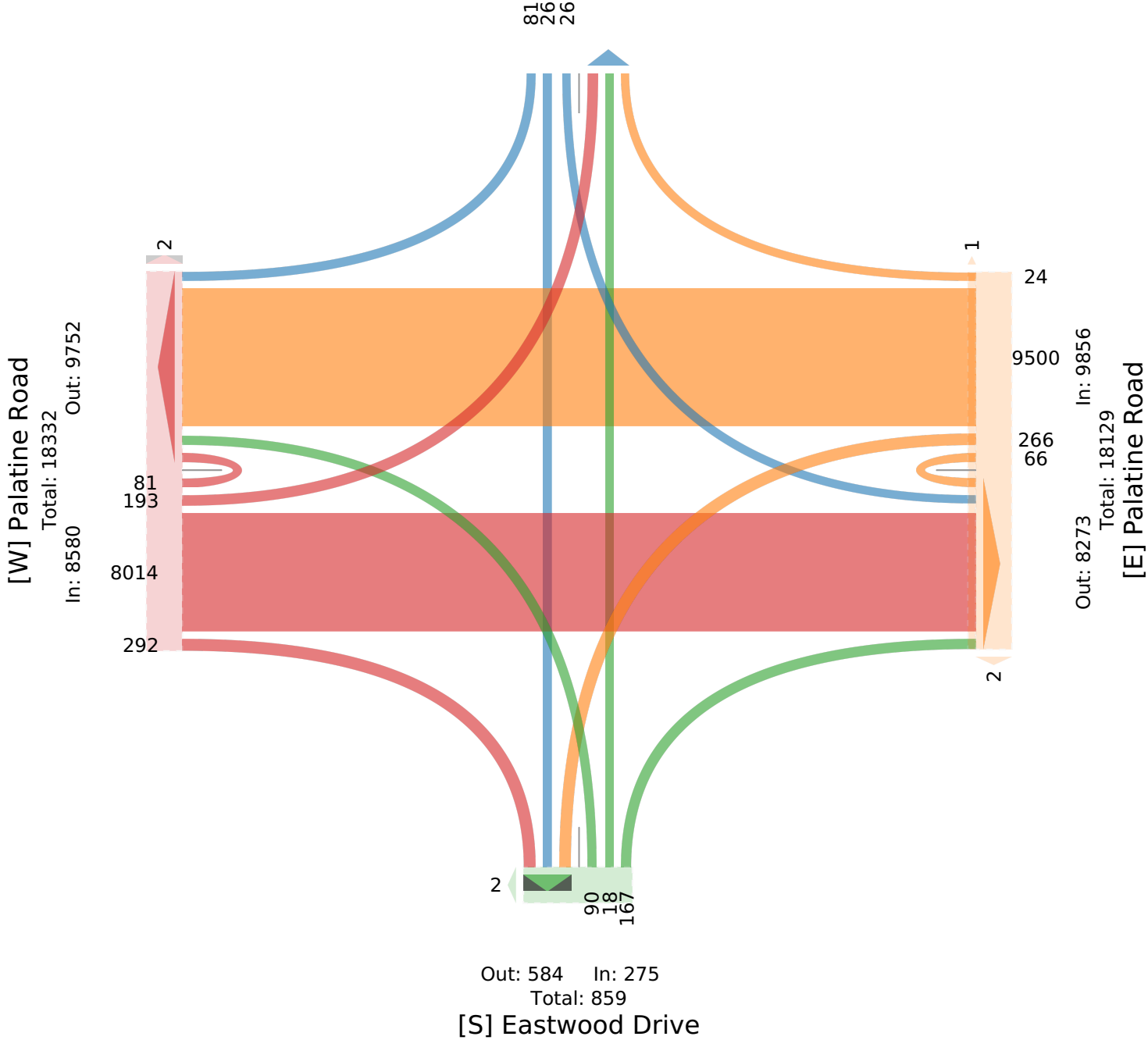
[E] Palatine Road

24
9500
266
66

Out: 584 In: 275
Total: 859

[S] Eastwood Drive

2
90
118
167



Palatine Road with Eastwood Drive - TMC

Thu Oct 14, 2021

Midday Peak (Oct 14 2021 11:45AM - 12:45 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

All Movements

ID: 888829, Location: 42.10987, -87.97382



Provided by: Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400,
Rosemont, IL, 60018, US

Leg Direction	Eastwood Drive Southbound						Palatine Road Westbound						Eastwood Drive Northbound						Palatine Road Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2021-10-14 11:45AM	3	2	0	0	5	-	0	250	12	3	265	0	2	2	2	0	6	0	11	225	6	1	243	0	519
12:00PM	2	0	2	0	4	-	1	254	7	2	264	1	5	0	3	0	8	1	11	205	5	1	222	0	498
12:15PM	1	3	0	0	4	-	0	242	4	2	248	0	3	0	6	0	9	0	6	217	6	3	232	0	493
12:30PM	1	0	1	0	2	-	1	243	9	3	256	0	7	0	0	0	7	0	9	235	6	2	252	0	517
Total	7	5	3	0	15	-	2	989	32	10	1033	1	17	2	11	0	30	1	37	882	23	7	949	0	2027
% Approach	46.7%	33.3%	20.0%	0%	-	-	0.2%	95.7%	3.1%	1.0%	-	-	56.7%	6.7%	36.7%	0%	-	-	3.9%	92.9%	2.4%	0.7%	-	-	-
% Total	0.3%	0.2%	0.1%	0%	0.7%	-	0.1%	48.8%	1.6%	0.5%	51.0%	-	0.8%	0.1%	0.5%	0%	1.5%	-	1.8%	43.5%	1.1%	0.3%	46.8%	-	-
PHF	0.583	0.333	0.375	-	0.875	-	0.500	0.973	0.667	0.833	0.975	-	0.607	0.250	0.458	-	0.833	-	0.841	0.938	0.958	0.583	0.941	-	0.978
Lights	7	4	3	0	14	-	2	919	31	8	960	-	17	2	10	0	29	-	36	813	23	6	878	-	1881
% Lights	100%	80.0%	100%	0%	93.3%	-	100%	92.9%	96.9%	80.0%	92.9%	-	100%	100%	90.9%	0%	96.7%	-	97.3%	92.2%	100%	85.7%	92.5%	-	92.8%
Single-Unit Trucks	0	0	0	0	0	-	0	39	1	1	41	-	0	0	1	0	1	-	0	27	0	0	27	-	69
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	3.9%	3.1%	10.0%	4.0%	-	0%	0%	9.1%	0%	3.3%	-	0%	3.1%	0%	0%	2.8%	-	3.4%
Articulated Trucks	0	0	0	0	0	-	0	30	0	1	31	-	0	0	0	0	0	-	1	42	0	1	44	-	75
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	3.0%	0%	10.0%	3.0%	-	0%	0%	0%	0%	0%	-	2.7%	4.8%	0%	14.3%	4.6%	-	3.7%
Buses	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	1
% Buses	0%	0%	0%	0%	0%	-	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Bicycles on Road	0	1	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	1
% Bicycles on Road	0%	20.0%	0%	0%	6.7%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	0
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Palatine Road with Eastwood Drive - TMC

Thu Oct 14, 2021

Midday Peak (Oct 14 2021 11:45AM - 12:45 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

All Movements

ID: 888829, Location: 42.10987, -87.97382



Provided by: Kenig Lindgren O'Hara Aboona, Inc.

9575 W. Higgins Rd., Suite 400, Rosemont, IL, 60018, US

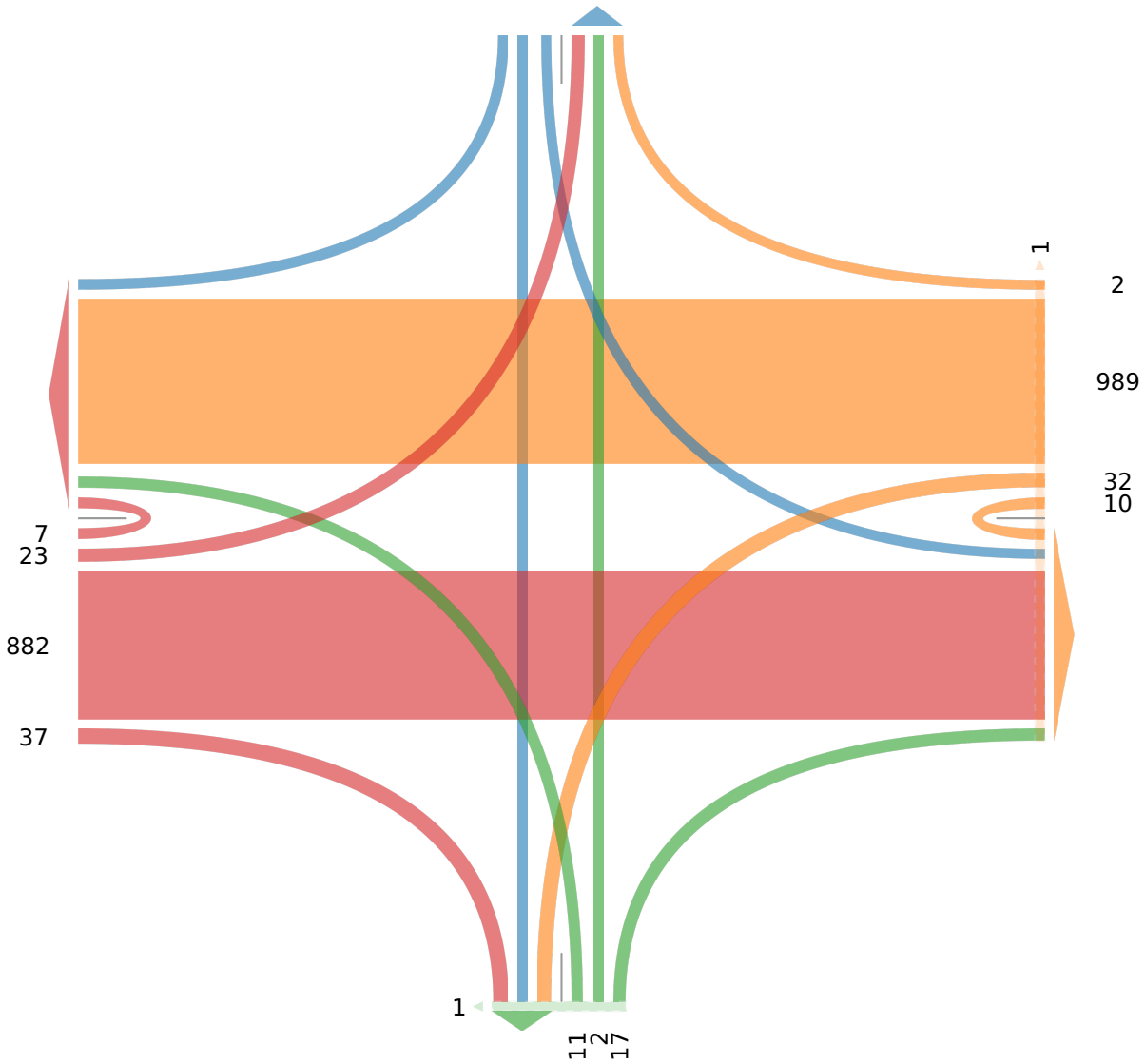
[N] Eastwood Drive

Total: 42

In: 15 Out: 27

7 5 3

[W] Palatine Road
Total: 1963
In: 949 Out: 1014



[E] Palatine Road
Total: 1945
In: 1033 Out: 912

[S] Eastwood Drive
Total: 104
In: 30 Out: 74

Palatine Road with Eastwood Drive - TMC

Thu Oct 14, 2021

PM Peak (Oct 14 2021 4:45PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

All Movements

ID: 888829, Location: 42.10987, -87.97382



Provided by: Kenig Lindgren O'Hara Aboona, Inc.

9575 W. Higgins Rd., Suite 400, Rosemont, IL, 60018, US

Leg Direction	Eastwood Drive Southbound						Palatine Road Westbound						Eastwood Drive Northbound						Palatine Road Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2021-10-14 4:45PM	1	2	1	0	4	-	1	405	10	2	418	0	5	0	0	0	5	1	10	281	4	4	299	0	726
5:00PM	1	1	2	0	4	-	2	375	7	2	386	0	5	0	5	0	10	0	12	249	8	4	273	0	673
5:15PM	2	3	0	0	5	-	1	420	12	4	437	0	7	0	2	0	9	0	11	256	8	3	278	0	729
5:30PM	1	0	1	0	2	-	1	393	8	4	406	0	9	1	4	0	14	0	13	309	5	2	329	0	751
Total	5	6	4	0	15	-	5	1593	37	12	1647	0	26	1	11	0	38	1	46	1095	25	13	1179	0	2879
% Approach	33.3%	40.0%	26.7%	0%	-	-	0.3%	96.7%	2.2%	0.7%	-	-	68.4%	2.6%	28.9%	0%	-	-	3.9%	92.9%	2.1%	1.1%	-	-	-
% Total	0.2%	0.2%	0.1%	0%	0.5%	-	0.2%	55.3%	1.3%	0.4%	57.2%	-	0.9%	0%	0.4%	0%	1.3%	-	1.6%	38.0%	0.9%	0.5%	41.0%	-	-
PHF	0.625	0.500	0.500	-	0.750	-	0.625	0.948	0.771	0.750	0.942	-	0.722	0.250	0.550	-	0.679	-	0.885	0.886	0.781	0.813	0.896	-	0.958
Lights	5	6	4	0	15	-	5	1571	37	12	1625	-	26	1	11	0	38	-	46	1065	25	13	1149	-	2827
% Lights	100%	100%	100%	0%	100%	-	100%	98.6%	100%	100%	98.7%	-	100%	100%	100%	0%	100%	-	100%	97.3%	100%	100%	97.5%	-	98.2%
Single-Unit Trucks	0	0	0	0	0	-	0	14	0	0	14	-	0	0	0	0	0	-	0	16	0	0	16	-	30
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	0.9%	0%	0%	0.9%	-	0%	0%	0%	0%	0%	-	0%	1.5%	0%	0%	1.4%	-	1.0%
Articulated Trucks	0	0	0	0	0	-	0	8	0	0	8	-	0	0	0	0	0	-	0	12	0	0	12	-	20
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0.5%	0%	0%	0.5%	-	0%	0%	0%	0%	0%	-	0%	1.1%	0%	0%	1.0%	-	0.7%
Buses	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2	0	0	2	-	2
% Buses	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.2%	-	0.1%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Palatine Road with Eastwood Drive - TMC

Thu Oct 14, 2021

PM Peak (Oct 14 2021 4:45PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

All Movements

ID: 888829, Location: 42.10987, -87.97382



Provided by: Kenig Lindgren O'Hara Aboona, Inc.

9575 W. Higgins Rd., Suite 400,
Rosemont, IL, 60018, US

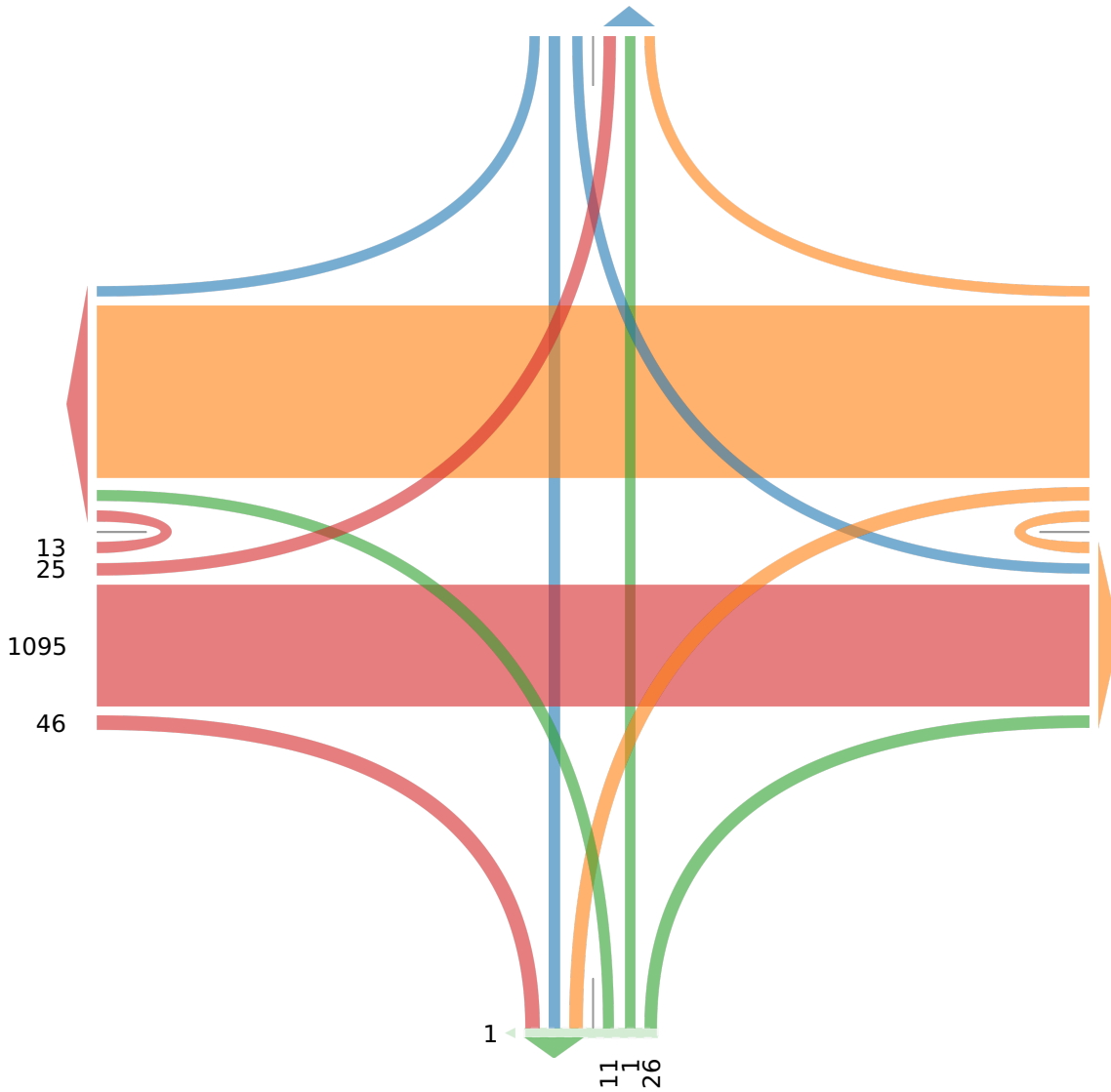
[N] Eastwood Drive

Total: 46

In: 15 Out: 31

5 6 4

[W] Palatine Road
Total: 2801
In: 1179 Out: 1622



[E] Palatine Road
Total: 2784
In: 1647 Out: 1137

[S] Eastwood Drive
Total: 127
In: 38 Out: 89

Palatine Road with Eastwood Drive - TMC

Sat Oct 16, 2021

Midday Peak (WKND) (Oct 16 2021 12PM - 1 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

All Movements

ID: 888829, Location: 42.10987, -87.97382



Provided by: Kenig Lindgren O'Hara Aboona, Inc.

9575 W. Higgins Rd., Suite 400, Rosemont, IL, 60018, US

Leg Direction	Eastwood Drive Southbound						Palatine Road Westbound						Eastwood Drive Northbound						Palatine Road Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2021-10-16 12:00PM	6	0	1	0	7	-	2	257	7	0	266	0	3	0	3	0	6	0	9	247	3	4	263	0	542
12:15PM	2	0	3	0	5	-	1	317	15	3	336	0	2	0	2	0	4	0	12	269	4	4	289	0	634
12:30PM	4	0	1	0	5	-	1	311	13	2	327	0	5	1	0	0	6	0	10	261	9	4	284	1	622
12:45PM	4	1	0	0	5	-	2	334	10	6	352	0	6	0	9	0	15	0	17	275	7	1	300	0	672
Total	16	1	5	0	22	-	6	1219	45	11	1281	0	16	1	14	0	31	0	48	1052	23	13	1136	1	2470
% Approach	72.7%	4.5%	22.7%	0%	-	-	0.5%	95.2%	3.5%	0.9%	-	-	51.6%	3.2%	45.2%	0%	-	-	4.2%	92.6%	2.0%	1.1%	-	-	-
% Total	0.6%	0%	0.2%	0%	0.9%	-	0.2%	49.4%	1.8%	0.4%	51.9%	-	0.6%	0%	0.6%	0%	1.3%	-	1.9%	42.6%	0.9%	0.5%	46.0%	-	-
PHF	0.667	0.250	0.417	-	0.786	-	0.750	0.912	0.750	0.458	0.910	-	0.667	0.250	0.389	-	0.517	-	0.706	0.956	0.639	0.813	0.947	-	0.919
Lights	16	1	5	0	22	-	6	1199	45	11	1261	-	16	1	14	0	31	-	48	1037	22	12	1119	-	2433
% Lights	100%	100%	100%	0%	100%	-	100%	98.4%	100%	100%	98.4%	-	100%	100%	100%	0%	100%	-	100%	98.6%	95.7%	92.3%	98.5%	-	98.5%
Single-Unit Trucks	0	0	0	0	0	-	0	8	0	0	8	-	0	0	0	0	0	-	0	6	1	0	7	-	15
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	0.7%	0%	0%	0.6%	-	0%	0%	0%	0%	0%	-	0%	0.6%	4.3%	0%	0.6%	-	0.6%
Articulated Trucks	0	0	0	0	0	-	0	11	0	0	11	-	0	0	0	0	0	-	0	9	0	1	10	-	21
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0.9%	0%	0%	0.9%	-	0%	0%	0%	0%	0%	-	0%	0.9%	0%	7.7%	0.9%	-	0.9%
Buses	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	1
% Buses	0%	0%	0%	0%	0%	-	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	1
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-100%

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Palatine Road with Eastwood Drive - TMC

Sat Oct 16, 2021

Midday Peak (WKND) (Oct 16 2021 12PM - 1 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

All Movements

ID: 888829, Location: 42.10987, -87.97382



Provided by: Kenig Lindgren O'Hara Aboona, Inc.

9575 W. Higgins Rd., Suite 400, Rosemont, IL, 60018, US

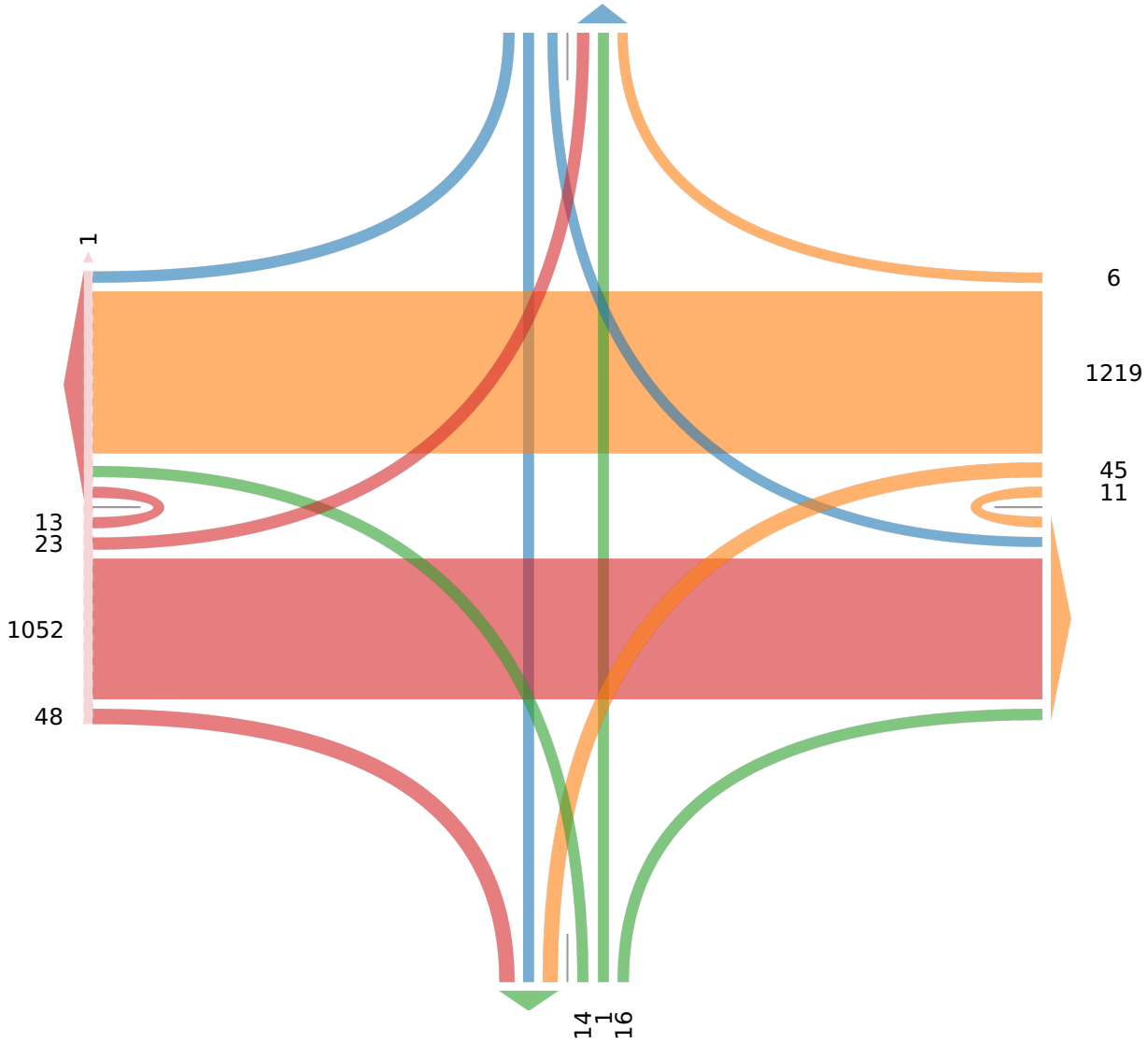
[N] Eastwood Drive

Total: 52

In: 22 Out: 30

16
15

[W] Palatine Road
Total: 2398
In: 1136 Out: 1262



[E] Palatine Road
Total: 2365
In: 1281 Out: 1084

[S] Eastwood Drive
Total: 125
Out: 94 In: 31

Palatine Road with Eastwood Drive - TMC

Sat Oct 16, 2021

PM Peak (WKND) (Oct 16 2021 1PM - 2 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

All Movements

ID: 888829, Location: 42.10987, -87.97382



Provided by: Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400,
Rosemont, IL, 60018, US

Leg Direction	Eastwood Drive Southbound						Palatine Road Westbound						Eastwood Drive Northbound						Palatine Road Eastbound						Int						
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*							
2021-10-16																															
1:00PM	3	1	2	0	6	-	2	290	9	2	303	0	9	0	2	0	11	0	12	290	6	3	311	0							631
1:15PM	3	0	0	0	3	-	1	296	12	0	309	0	7	0	8	0	15	0	11	323	5	0	339	0							666
1:30PM	2	0	0	0	2	-	0	292	7	2	301	0	5	1	4	0	10	0	10	327	7	5	349	0							662
1:45PM	3	1	0	0	4	-	1	262	6	0	269	1	7	0	6	0	13	0	11	280	11	5	307	0							593
Total	11	2	2	0	15	-	4	1140	34	4	1182	1	28	1	20	0	49	0	44	1220	29	13	1306	0							2552
% Approach	73.3%	13.3%	13.3%	0%	-	-	0.3%	96.4%	2.9%	0.3%	-	-	57.1%	2.0%	40.8%	0%	-	-	3.4%	93.4%	2.2%	1.0%	-	-							-
% Total	0.4%	0.1%	0.1%	0%	0.6%	-	0.2%	44.7%	1.3%	0.2%	46.3%	-	1.1%	0%	0.8%	0%	1.9%	-	1.7%	47.8%	1.1%	0.5%	51.2%	-							-
PHF	0.917	0.500	0.250	-	0.625	-	0.500	0.963	0.708	0.500	0.956	-	0.778	0.250	0.625	-	0.817	-	0.917	0.933	0.659	0.650	0.936	-							0.958
Lights	11	2	2	0	15	-	3	1119	34	4	1160	-	28	1	20	0	49	-	43	1203	29	13	1288	-							2512
% Lights	100%	100%	100%	0%	100%	-	75.0%	98.2%	100%	100%	98.1%	-	100%	100%	100%	0%	100%	-	97.7%	98.6%	100%	100%	98.6%	-							98.4%
Single-Unit Trucks	0	0	0	0	0	-	1	14	0	0	15	-	0	0	0	0	0	-	1	9	0	0	10	-							25
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	25.0%	1.2%	0%	0%	1.3%	-	0%	0%	0%	0%	0%	-	2.3%	0.7%	0%	0%	0.8%	-							1.0%
Articulated Trucks	0	0	0	0	0	-	0	7	0	0	7	-	0	0	0	0	0	-	0	8	0	0	8	-							15
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0.6%	0%	0%	0.6%	-	0%	0%	0%	0%	0%	-	0%	0.7%	0%	0%	0.6%	-							0.6%
Buses	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-							0
% Buses	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-							0%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-							0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-							0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0							0
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-							-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Palatine Road with Eastwood Drive - TMC

Sat Oct 16, 2021

PM Peak (WKND) (Oct 16 2021 1PM - 2 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

All Movements

ID: 888829, Location: 42.10987, -87.97382



Provided by: Kenig Lindgren O'Hara Aboona, Inc.

9575 W. Higgins Rd., Suite 400,
Rosemont, IL, 60018, US

[N] Eastwood Drive

Total: 49

In: 15 Out: 34

11 2

[W] Palatine Road

Total: 2490

In: 1306 Out: 1184

13 29

1220

44

4

1140

34

4

In: 1182

Out: 1254

Total: 2436

[E] Palatine Road

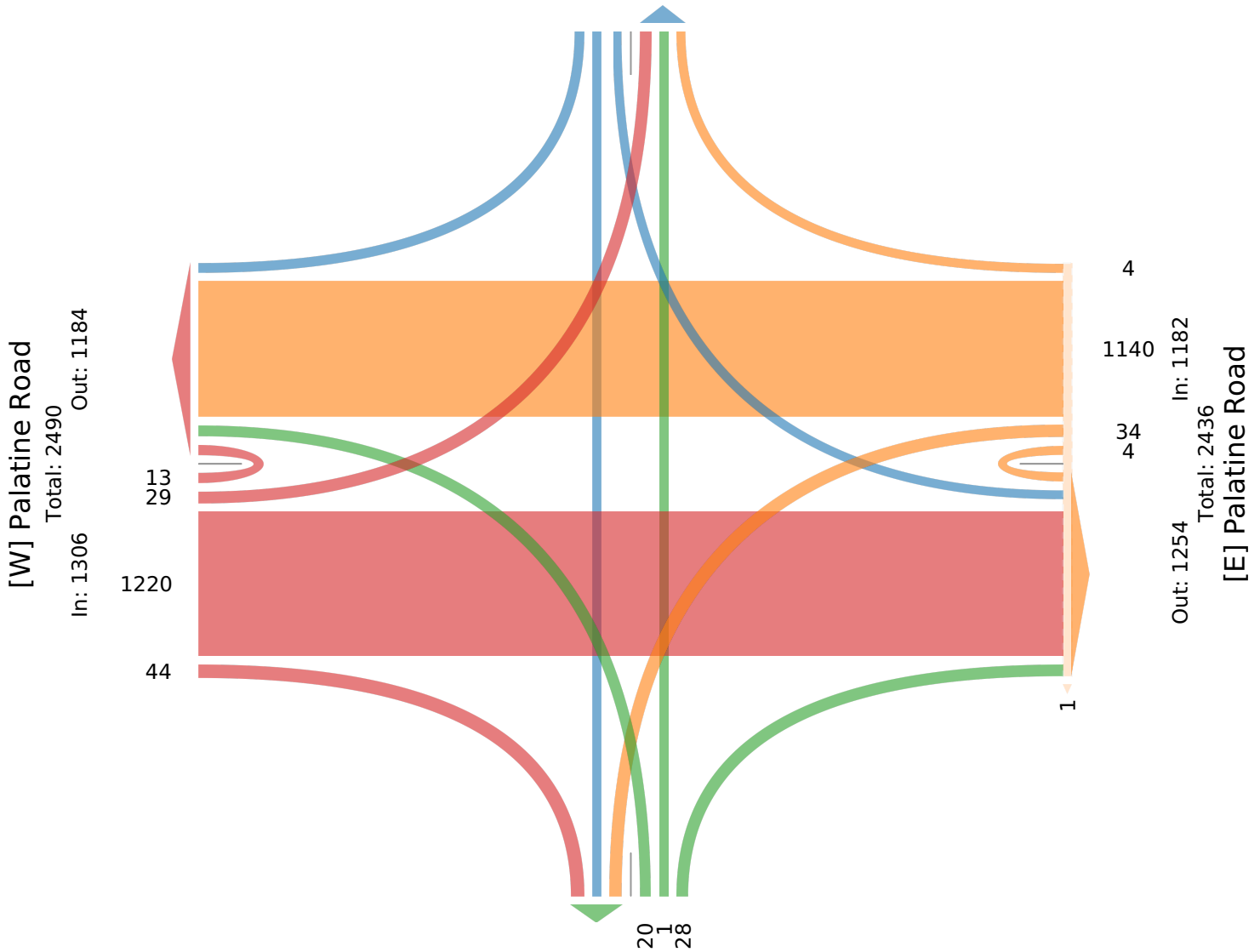
1

Out: 80 In: 49

Total: 129

[S] Eastwood Drive

20 1 28



Rand Road with Signalized Access - TMC

Thu Oct 14, 2021

Full Length (11 AM-2 PM, 4 PM-6 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

All Movements

ID: 888830, Location: 42.108233, -87.973935



Provided by: Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400,
Rosemont, IL, 60018, US

Leg Direction	Rand Road Southbound						Dorothy Road Westbound						Rand Road Northbound						Dorothy Road Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2021-10-14 11:00AM	1	213	2	0	216	0	8	1	5	0	14	0	5	213	14	0	232	0	11	1	11	0	23	0	485
11:15AM	4	239	3	0	246	1	1	2	4	0	7	0	4	220	17	0	241	0	12	1	10	0	23	0	517
11:30AM	7	251	6	0	264	0	3	1	2	0	6	0	7	223	14	0	244	0	8	1	7	0	16	0	530
11:45AM	12	257	7	1	277	0	12	1	6	0	19	0	5	215	15	0	235	0	15	2	16	0	33	0	564
Hourly Total	24	960	18	1	1003	1	24	5	17	0	46	0	21	871	60	0	952	0	46	5	44	0	95	0	2096
12:00PM	7	286	5	0	298	0	5	2	9	0	16	0	5	251	15	0	271	2	20	1	8	0	29	0	614
12:15PM	7	233	8	0	248	0	10	1	4	0	15	0	10	203	27	0	240	0	20	2	13	0	35	0	538
12:30PM	9	260	9	0	278	0	3	1	7	0	11	0	8	227	18	0	253	0	17	1	13	0	31	0	573
12:45PM	13	263	13	1	290	0	12	8	13	0	33	0	8	241	22	0	271	0	20	2	13	0	35	2	629
Hourly Total	36	1042	35	1	1114	0	30	12	33	0	75	0	31	922	82	0	1035	2	77	6	47	0	130	2	2354
1:00PM	8	259	7	0	274	0	12	1	7	0	20	0	5	214	13	0	232	0	21	2	16	0	39	0	565
1:15PM	7	242	4	0	253	0	6	5	6	0	17	1	8	248	16	0	272	0	10	3	15	0	28	0	570
1:30PM	6	270	5	0	281	0	23	0	6	0	29	0	7	212	18	0	237	0	12	3	11	0	26	1	573
1:45PM	11	244	3	1	259	0	5	3	7	0	15	0	2	247	12	0	261	0	25	3	22	0	50	0	585
Hourly Total	32	1015	19	1	1067	0	46	9	26	0	81	1	22	921	59	0	1002	0	68	11	64	0	143	1	2293
4:00PM	8	330	5	1	344	2	8	4	10	0	22	0	6	312	24	0	342	0	11	2	13	0	26	0	734
4:15PM	7	297	7	0	311	0	7	8	5	0	20	0	2	331	21	0	354	0	9	4	3	0	16	0	701
4:30PM	2	270	8	0	280	0	16	2	3	0	21	0	10	300	13	0	323	0	13	1	11	0	25	0	649
4:45PM	10	339	8	0	357	0	13	4	7	0	24	0	5	297	16	0	318	0	18	2	10	0	30	0	729
Hourly Total	27	1236	28	1	1292	2	44	18	25	0	87	0	23	1240	74	0	1337	0	51	9	37	0	97	0	2813
5:00PM	5	353	4	0	362	0	8	2	13	0	23	0	9	342	19	0	370	1	14	1	13	0	28	1	783
5:15PM	5	302	13	0	320	0	12	3	8	0	23	0	7	350	25	2	384	1	13	3	11	0	27	0	754
5:30PM	7	279	8	0	294	0	12	1	5	0	18	0	9	328	17	0	354	0	11	3	11	0	25	1	691
5:45PM	9	332	7	0	348	0	16	4	5	0	25	0	6	283	19	0	308	0	15	4	9	0	28	0	709
Hourly Total	26	1266	32	0	1324	0	48	10	31	0	89	0	31	1303	80	2	1416	2	53	11	44	0	108	2	2937
2021-10-16 11:00AM	4	301	11	0	316	0	3	2	7	0	12	0	8	259	26	0	293	0	26	2	14	0	42	0	663
11:15AM	7	324	11	0	342	0	14	2	8	0	24	0	11	304	26	0	341	0	25	1	11	0	37	0	744
11:30AM	4	328	6	1	339	0	7	1	7	0	15	0	13	311	18	0	342	0	21	1	10	0	32	0	728
11:45AM	6	303	7	0	316	0	10	2	4	0	16	0	10	314	28	0	352	0	20	0	12	0	32	1	716
Hourly Total	21	1256	35	1	1313	0	34	7	26	0	67	0	42	1188	98	0	1328	0	92	4	47	0	143	1	2851
12:00PM	7	316	13	1	337	0	19	1	9	0	29	0	7	272	29	0	308	0	19	0	8	0	27	0	701
12:15PM	5	317	7	0	329	1	15	2	10	0	27	0	10	283	21	0	314	0	19	2	14	0	35	0	705
12:30PM	7	329	8	0	344	0	11	4	7	0	22	0	15	313	28	0	356	0	18	1	14	0	33	0	755
12:45PM	9	314	9	0	332	0	16	5	11	0	32	0	10	326	33	0	369	0	17	1	22	0	40	0	773
Hourly Total	28	1276	37	1	1342	1	61	12	37	0	110	0	42	1194	111	0	1347	0	73	4	58	0	135	0	2934
1:00PM	7	339	9	0	355	0	7	2	9	0	18	0	3	279	27	0	309	0	22	1	10	0	33	0	715
1:15PM	9	304	13	0	326	0	11	2	9	0	22	0	7	310	26	0	343	0	17	1	22	0	40	0	731
1:30PM	9	331	10	0	350	0	7	1	6	0	14	1	7	285	27	1	320	0	19	4	13	0	36	0	720
1:45PM	5	319	10	0	334	1	9	1	14	0	24	0	5	284	25	1	315	0	19	1	14	0	34	1	707
Hourly Total	30	1293	42	0	1365	1	34	6	38	0	78	1	22	1158	105	2	1287	0	77	7	59	0	143	1	2873
Total	224	9344	246	6	9820	5	321	79	233	0	633	2	234	8797	669	4	9704	4	537	57	400	0	994	7	21151
% Approach	2.3%	95.2%	2.5%	0.1%	-	-	50.7%	12.5%	36.8%	0%	-	-	2.4%	90.7%	6.9%	0%	-	-	54.0%	5.7%	40.2%	0%	-	-	-
% Total	1.1%	44.2%	1.2%	0%	46.4%	-	1.5%	0.4%	1.1%	0%	3.0%	-	1.1%	41.6%	3.2%	0%	45.9%	-	2.5%	0.3%	1.9%	0%	4.7%	-	-
Lights	219	9171	239	6	9635	-	315	73	230	0	618	-	231	8622	665	4	9522	-	533	57	390	0	980	-	20755
% Lights	97.8%	98.1%	97.2%	100%	98.1%	-	98.1%	92.4%	98.7%	0%	97.6%	-	98.7%	98.0%	99.4%	100%	98.1%	-	99.3%	100%	97.5%	0%	98.6%	-	98.1%
Single-Unit Trucks	0	117	5	0	122	-	5	1	2	0	8	-	3	119	3	0	125	-	1	0	5	0	6	-	261
% Single-Unit Trucks	0%	1.3%	2.0%	0%	1.2%	-	1.6%	1.3%	0.9%	0%	1.3%	-	1.3%	1.4%	0.4%	0%	1.3%	-	0.2%	0%	1.3%	0%	0.6%	-	1.2%
Articulated Trucks	3	38	1	0	42	-	1	0	1	0	2	-	0	46	0	0	46	-	1	0	5	0	6	-	96
% Articulated Trucks	1.3%	0.4%	0.4%	0%	0.4%	-	0.3%	0%	0.4%	0%	0.3%	-	0%	0.5%	0%	0%	0.5%	-	0.2%	0%	1.3%	0%	0.6%	-	0.5%
Buses	1	18	0	0	19	-	0	0	0	0	0	-	0	9	0	0	9	-	1	0	0	0	1	-	29

Leg Direction	Rand Road Southbound						Dorothy Road Westbound						Rand Road Northbound						Dorothy Road Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
% Buses	0.4%	0.2%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0.1%	0%	0%	0.1%	-	0.2%	0%	0%	0%	0.1%	-	0.1%
Bicycles on Road	1	0	1	0	2	-	0	5	0	0	5	-	0	1	1	0	2	-	1	0	0	0	1	-	10
% Bicycles on Road	0.4%	0%	0.4%	0%	0%	-	0%	6.3%	0%	0%	0.8%	-	0%	0%	0.1%	0%	0%	-	0.2%	0%	0%	0%	0.1%	-	0%
Pedestrians	-	-	-	-	-	5	-	-	-	-	-	2	-	-	-	-	-	4	-	-	-	-	-	7	-
% Pedestrians	-	-	-	-	-	-100%	-	-	-	-	-	-100%	-	-	-	-	-	-100%	-	-	-	-	-	-100%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Rand Road with Signalized Access - TMC

Thu Oct 14, 2021

Full Length (11 AM-2 PM, 4 PM-6 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

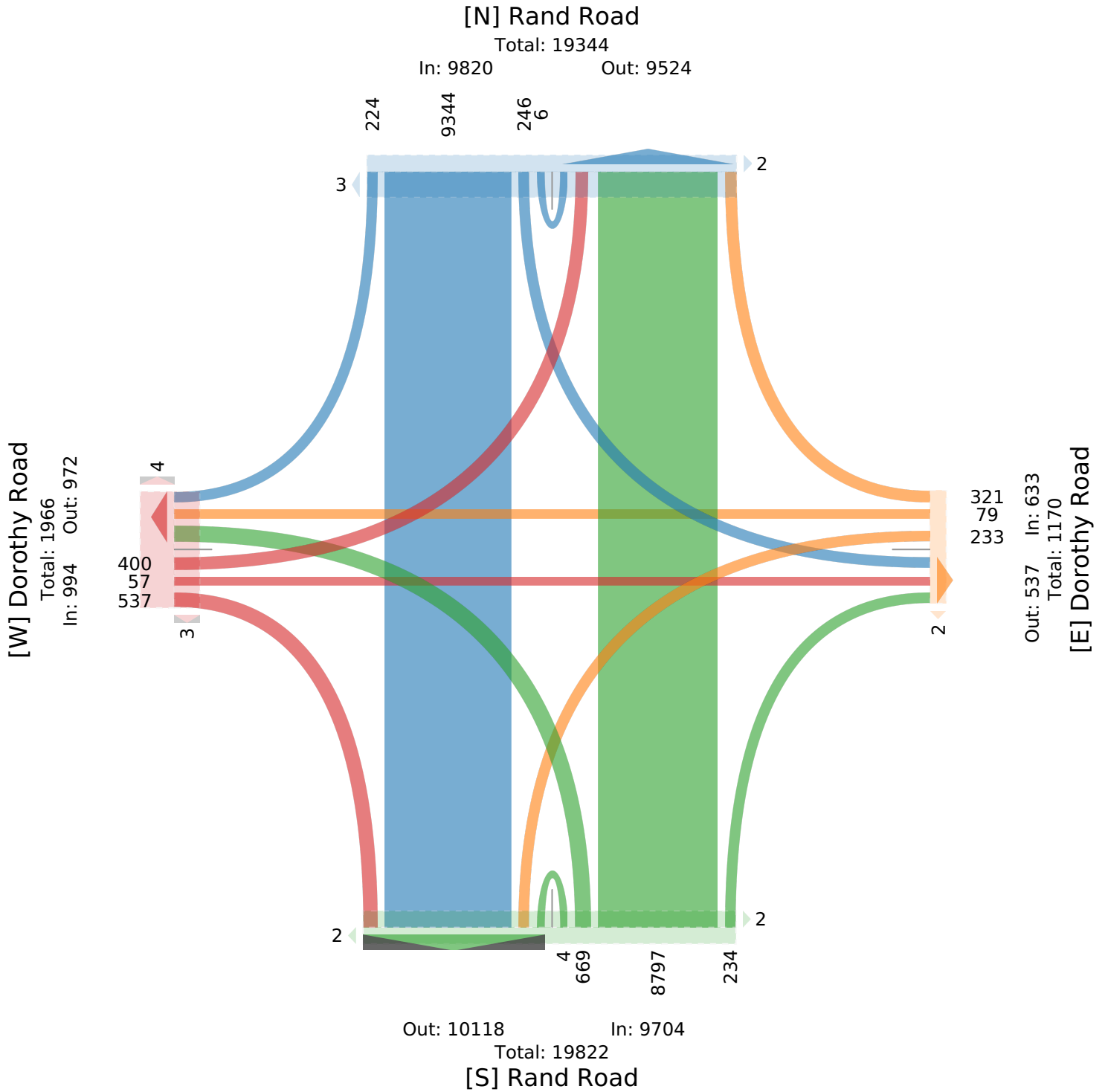
All Movements

ID: 888830, Location: 42.108233, -87.973935



Provided by: Kenig Lindgren O'Hara Aboona, Inc.

9575 W. Higgins Rd., Suite 400,
Rosemont, IL, 60018, US



Rand Road with Signalized Access - TMC

Thu Oct 14, 2021

Midday Peak (Oct 14 2021 12PM - 1 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

All Movements

ID: 888830, Location: 42.108233, -87.973935



Provided by: Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400,
Rosemont, IL, 60018, US

Leg Direction	Rand Road Southbound						Dorothy Road Westbound						Rand Road Northbound						Dorothy Road Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2021-10-14 12:00PM	7	286	5	0	298	0	5	2	9	0	16	0	5	251	15	0	271	2	20	1	8	0	29	0	614
12:15PM	7	233	8	0	248	0	10	1	4	0	15	0	10	203	27	0	240	0	20	2	13	0	35	0	538
12:30PM	9	260	9	0	278	0	3	1	7	0	11	0	8	227	18	0	253	0	17	1	13	0	31	0	573
12:45PM	13	263	13	1	290	0	12	8	13	0	33	0	8	241	22	0	271	0	20	2	13	0	35	2	629
Total	36	1042	35	1	1114	0	30	12	33	0	75	0	31	922	82	0	1035	2	77	6	47	0	130	2	2354
% Approach	3.2%	93.5%	3.1%	0.1%	-	-	40.0%	16.0%	44.0%	0%	-	-	3.0%	89.1%	7.9%	0%	-	-	59.2%	4.6%	36.2%	0%	-	-	-
% Total	1.5%	44.3%	1.5%	0%	47.3%	-	1.3%	0.5%	1.4%	0%	3.2%	-	1.3%	39.2%	3.5%	0%	44.0%	-	3.3%	0.3%	2.0%	0%	5.5%	-	-
PHF	0.692	0.911	0.673	0.250	0.935	-	0.625	0.375	0.635	-	0.568	-	0.775	0.918	0.759	-	0.955	-	0.963	0.750	0.904	-	0.929	-	0.936
Lights	35	1008	33	1	1077	-	28	11	32	0	71	-	31	896	82	0	1009	-	77	6	46	0	129	-	2286
% Lights	97.2%	96.7%	94.3%	100%	96.7%	-	93.3%	91.7%	97.0%	0%	94.7%	-	100%	97.2%	100%	0%	97.5%	-	100%	100%	97.9%	0%	99.2%	-	97.1%
Single-Unit Trucks	0	23	2	0	25	-	1	1	1	0	3	-	0	17	0	0	17	-	0	0	0	0	0	-	45
% Single-Unit Trucks	0%	2.2%	5.7%	0%	2.2%	-	3.3%	8.3%	3.0%	0%	4.0%	-	0%	1.8%	0%	0%	1.6%	-	0%	0%	0%	0%	0%	-	1.9%
Articulated Trucks	1	8	0	0	9	-	1	0	0	0	1	-	0	7	0	0	7	-	0	0	1	0	1	-	18
% Articulated Trucks	2.8%	0.8%	0%	0%	0.8%	-	3.3%	0%	0%	0%	1.3%	-	0%	0.8%	0%	0%	0.7%	-	0%	0%	2.1%	0%	0.8%	-	0.8%
Buses	0	3	0	0	3	-	0	0	0	0	0	-	0	2	0	0	2	-	0	0	0	0	0	-	5
% Buses	0%	0.3%	0%	0%	0.3%	-	0%	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0.2%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	2	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Rand Road with Signalized Access - TMC

Thu Oct 14, 2021

Midday Peak (Oct 14 2021 12PM - 1 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

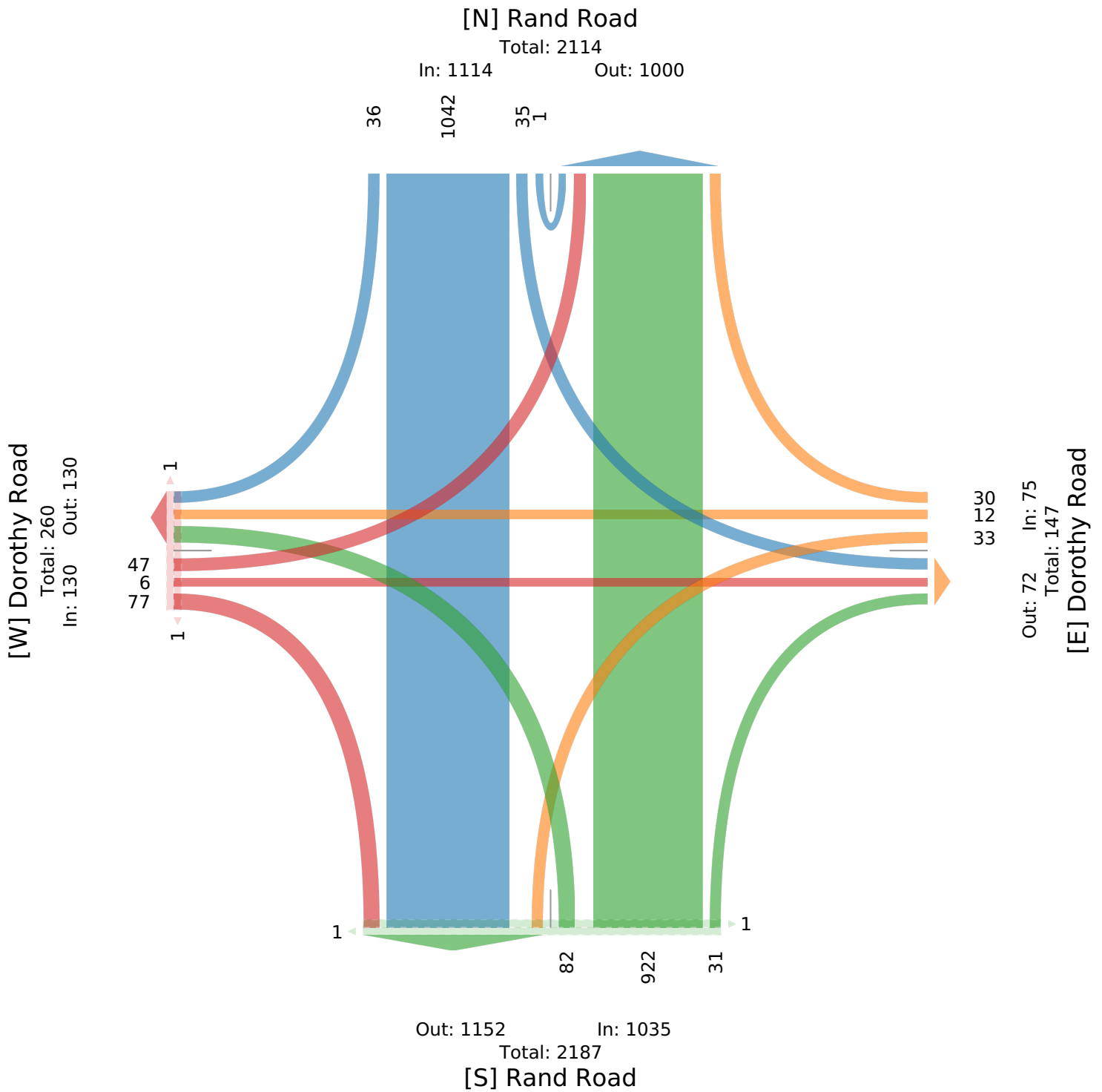
All Movements

ID: 888830, Location: 42.108233, -87.973935



Provided by: Kenig Lindgren O'Hara Aboona, Inc.

9575 W. Higgins Rd., Suite 400,
Rosemont, IL, 60018, US



Rand Road with Signalized Access - TMC

Thu Oct 14, 2021

PM Peak (Oct 14 2021 4:45PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

All Movements

ID: 888830, Location: 42.108233, -87.973935



Provided by: Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400,
Rosemont, IL, 60018, US

Leg Direction	Rand Road Southbound						Dorothy Road Westbound						Rand Road Northbound						Dorothy Road Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2021-10-14 4:45PM	10	339	8	0	357	0	13	4	7	0	24	0	5	297	16	0	318	0	18	2	10	0	30	0	729
5:00PM	5	353	4	0	362	0	8	2	13	0	23	0	9	342	19	0	370	1	14	1	13	0	28	1	783
5:15PM	5	302	13	0	320	0	12	3	8	0	23	0	7	350	25	2	384	1	13	3	11	0	27	0	754
5:30PM	7	279	8	0	294	0	12	1	5	0	18	0	9	328	17	0	354	0	11	3	11	0	25	1	691
Total	27	1273	33	0	1333	0	45	10	33	0	88	0	30	1317	77	2	1426	2	56	9	45	0	110	2	2957
% Approach	2.0%	95.5%	2.5%	0%	-	-	51.1%	11.4%	37.5%	0%	-	-	2.1%	92.4%	5.4%	0.1%	-	-	50.9%	8.2%	40.9%	0%	-	-	-
% Total	0.9%	43.1%	1.1%	0%	45.1%	-	1.5%	0.3%	1.1%	0%	3.0%	-	1.0%	44.5%	2.6%	0.1%	48.2%	-	1.9%	0.3%	1.5%	0%	3.7%	-	-
PHF	0.675	0.902	0.615	-	0.920	-	0.865	0.500	0.635	-	0.896	-	0.833	0.940	0.770	0.250	0.928	-	0.778	0.750	0.865	-	0.917	-	0.944
Lights	27	1257	32	0	1316	-	44	8	33	0	85	-	30	1303	76	2	1411	-	55	9	44	0	108	-	2920
% Lights	100%	98.7%	97.0%	0%	98.7%	-	97.8%	80.0%	100%	0%	96.6%	-	100%	98.9%	98.7%	100%	98.9%	-	98.2%	100%	97.8%	0%	98.2%	-	98.7%
Single-Unit Trucks	0	12	0	0	12	-	1	0	0	0	1	-	0	5	1	0	6	-	1	0	1	0	2	-	21
% Single-Unit Trucks	0%	0.9%	0%	0%	0.9%	-	2.2%	0%	0%	0%	1.1%	-	0%	0.4%	1.3%	0%	0.4%	-	1.8%	0%	2.2%	0%	1.8%	-	0.7%
Articulated Trucks	0	3	0	0	3	-	0	0	0	0	0	-	0	7	0	0	7	-	0	0	0	0	0	-	10
% Articulated Trucks	0%	0.2%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0.5%	0%	0%	0.5%	-	0%	0%	0%	0%	0%	-	0.3%
Buses	0	1	0	0	1	-	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	2
% Buses	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0.1%
Bicycles on Road	0	0	1	0	1	-	0	2	0	0	2	-	0	1	0	0	1	-	0	0	0	0	0	-	4
% Bicycles on Road	0%	0%	3.0%	0%	0.1%	-	0%	20.0%	0%	0%	2.3%	-	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0.1%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	2	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Rand Road with Signalized Access - TMC

Thu Oct 14, 2021

PM Peak (Oct 14 2021 4:45PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

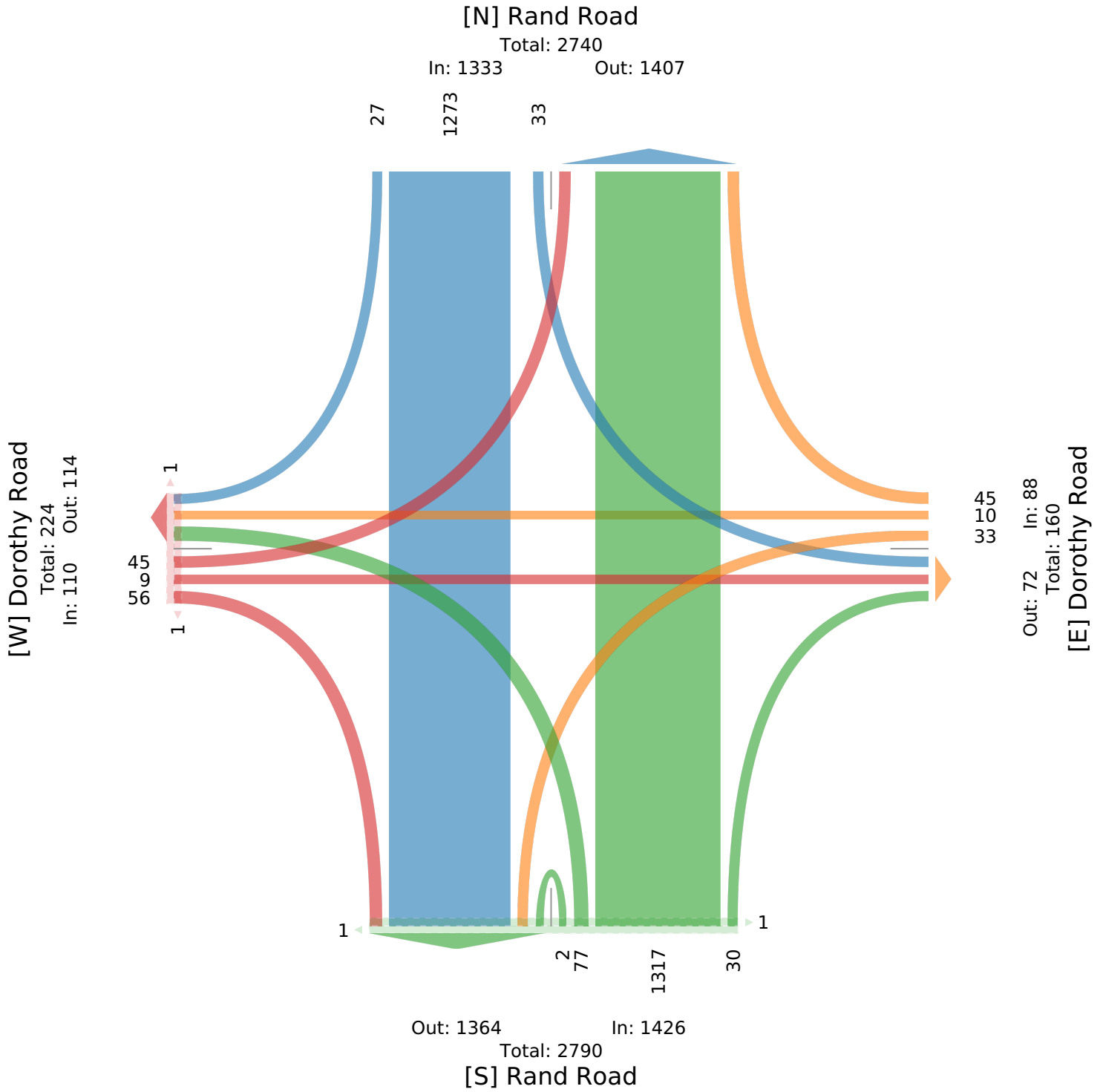
All Movements

ID: 888830, Location: 42.108233, -87.973935



Provided by: Kenig Lindgren O'Hara Aboona, Inc.

9575 W. Higgins Rd., Suite 400,
Rosemont, IL, 60018, US



Rand Road with Signalized Access - TMC

Sat Oct 16, 2021

Midday Peak (WKND) (Oct 16 2021 12PM - 1 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

All Movements

ID: 888830, Location: 42.108233, -87.973935



Provided by: Kenig Lindgren O'Hara Aboona, Inc.

9575 W. Higgins Rd., Suite 400, Rosemont, IL, 60018, US

Leg Direction	Rand Road Southbound						Dorothy Road Westbound						Rand Road Northbound						Dorothy Road Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2021-10-16 12:00PM	7	316	13	1	337	0	19	1	9	0	29	0	7	272	29	0	308	0	19	0	8	0	27	0	701
12:15PM	5	317	7	0	329	1	15	2	10	0	27	0	10	283	21	0	314	0	19	2	14	0	35	0	705
12:30PM	7	329	8	0	344	0	11	4	7	0	22	0	15	313	28	0	356	0	18	1	14	0	33	0	755
12:45PM	9	314	9	0	332	0	16	5	11	0	32	0	10	326	33	0	369	0	17	1	22	0	40	0	773
Total	28	1276	37	1	1342	1	61	12	37	0	110	0	42	1194	111	0	1347	0	73	4	58	0	135	0	2934
% Approach	2.1%	95.1%	2.8%	0.1%	-	-	55.5%	10.9%	33.6%	0%	-	-	3.1%	88.6%	8.2%	0%	-	-	54.1%	3.0%	43.0%	0%	-	-	-
% Total	1.0%	43.5%	1.3%	0%	45.7%	-	2.1%	0.4%	1.3%	0%	3.7%	-	1.4%	40.7%	3.8%	0%	45.9%	-	2.5%	0.1%	2.0%	0%	4.6%	-	-
PHF	0.750	0.970	0.712	0.250	0.975	-	0.803	0.600	0.841	-	0.859	-	0.700	0.916	0.841	-	0.913	-	0.961	0.500	0.659	-	0.844	-	0.949
Lights	27	1265	36	1	1329	-	61	12	36	0	109	-	42	1169	111	0	1322	-	73	4	58	0	135	-	2895
% Lights	96.4%	99.1%	97.3%	100%	99.0%	-	100%	100%	97.3%	0%	99.1%	-	100%	97.9%	100%	0%	98.1%	-	100%	100%	100%	0%	100%	-	98.7%
Single-Unit Trucks	0	10	1	0	11	-	0	0	1	0	1	-	0	22	0	0	22	-	0	0	0	0	0	-	34
% Single-Unit Trucks	0%	0.8%	2.7%	0%	0.8%	-	0%	0%	2.7%	0%	0.9%	-	0%	1.8%	0%	0%	1.6%	-	0%	0%	0%	0%	0%	-	1.2%
Articulated Trucks	0	1	0	0	1	-	0	0	0	0	0	-	0	3	0	0	3	-	0	0	0	0	0	-	4
% Articulated Trucks	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0.1%
Buses	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Buses	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Bicycles on Road	1	0	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	1
% Bicycles on Road	3.6%	0%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Rand Road with Signalized Access - TMC

Sat Oct 16, 2021

Midday Peak (WKND) (Oct 16 2021 12PM - 1 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

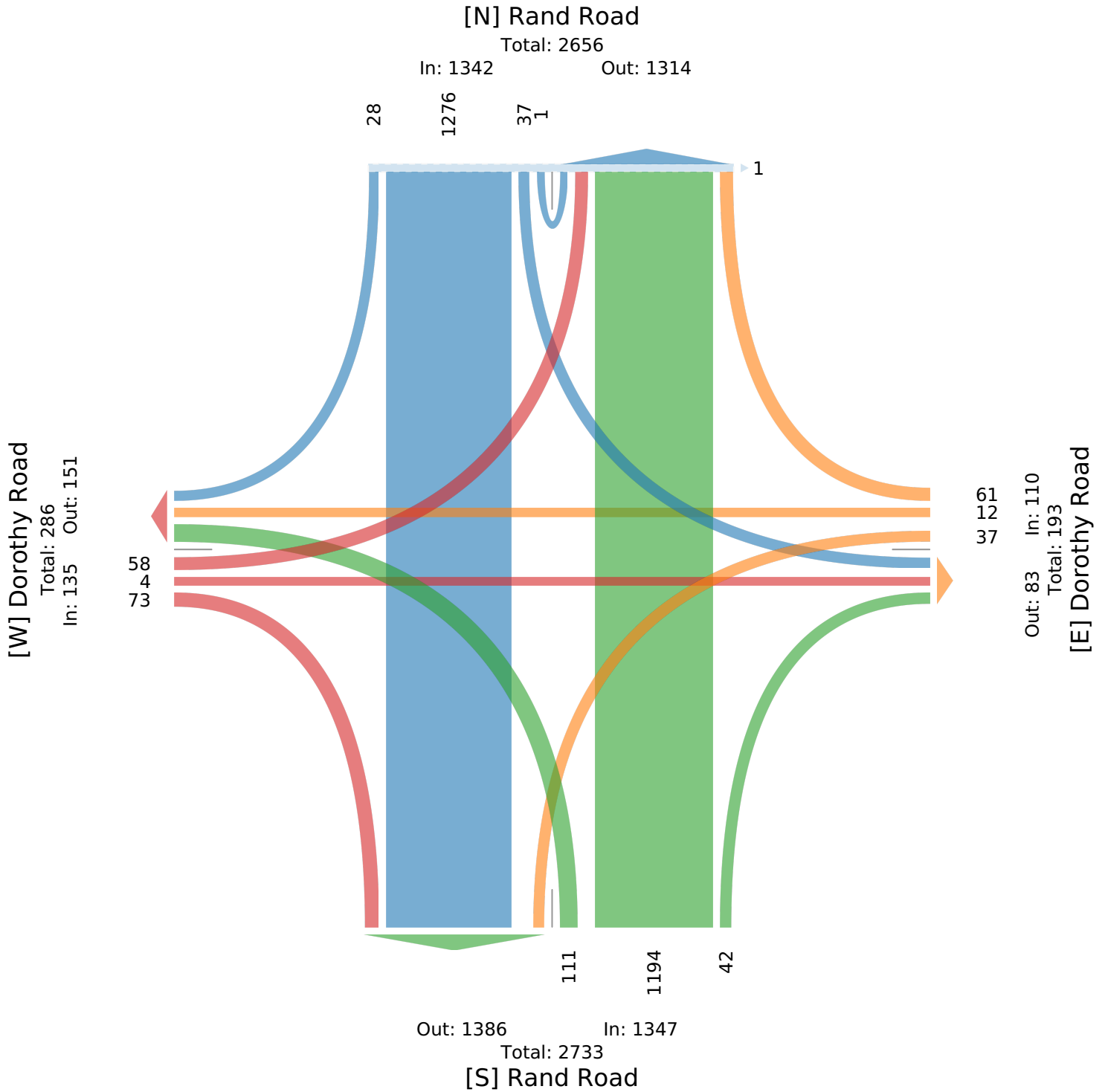
All Movements

ID: 888830, Location: 42.108233, -87.973935



Provided by: Kenig Lindgren O'Hara Aboona, Inc.

9575 W. Higgins Rd., Suite 400,
Rosemont, IL, 60018, US



Rand Road with Signalized Access - TMC

Sat Oct 16, 2021

PM Peak (WKND) (Oct 16 2021 1PM - 2 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

All Movements

ID: 888830, Location: 42.108233, -87.973935



Provided by: Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400,
Rosemont, IL, 60018, US

Leg Direction	Rand Road Southbound						Dorothy Road Westbound						Rand Road Northbound						Dorothy Road Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2021-10-16																									
1:00PM	7	339	9	0	355	0	7	2	9	0	18	0	3	279	27	0	309	0	22	1	10	0	33	0	715
1:15PM	9	304	13	0	326	0	11	2	9	0	22	0	7	310	26	0	343	0	17	1	22	0	40	0	731
1:30PM	9	331	10	0	350	0	7	1	6	0	14	1	7	285	27	1	320	0	19	4	13	0	36	0	720
1:45PM	5	319	10	0	334	1	9	1	14	0	24	0	5	284	25	1	315	0	19	1	14	0	34	1	707
Total	30	1293	42	0	1365	1	34	6	38	0	78	1	22	1158	105	2	1287	0	77	7	59	0	143	1	2873
% Approach	2.2%	94.7%	3.1%	0%	-	-	43.6%	7.7%	48.7%	0%	-	-	1.7%	90.0%	8.2%	0.2%	-	-	53.8%	4.9%	41.3%	0%	-	-	-
% Total	1.0%	45.0%	1.5%	0%	47.5%	-	1.2%	0.2%	1.3%	0%	2.7%	-	0.8%	40.3%	3.7%	0.1%	44.8%	-	2.7%	0.2%	2.1%	0%	5.0%	-	-
PHF	0.833	0.954	0.808	-	0.961	-	0.773	0.625	0.679	-	0.802	-	0.786	0.934	0.963	0.500	0.937	-	0.864	0.438	0.670	-	0.888	-	0.982
Lights	30	1275	41	0	1346	-	33	5	38	0	76	-	22	1150	104	2	1278	-	76	7	59	0	142	-	2842
% Lights	100%	98.6%	97.6%	0%	98.6%	-	97.1%	83.3%	100%	0%	97.4%	-	100%	99.3%	99.0%	100%	99.3%	-	98.7%	100%	100%	0%	99.3%	-	98.9%
Single-Unit Trucks	0	14	1	0	15	-	1	0	0	0	1	-	0	5	0	0	5	-	0	0	0	0	0	-	21
% Single-Unit Trucks	0%	1.1%	2.4%	0%	1.1%	-	2.9%	0%	0%	0%	1.3%	-	0%	0.4%	0%	0%	0.4%	-	0%	0%	0%	0%	0%	-	0.7%
Articulated Trucks	0	3	0	0	3	-	0	0	0	0	0	-	0	3	0	0	3	-	0	0	0	0	0	-	6
% Articulated Trucks	0%	0.2%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0.2%
Buses	0	1	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	1
% Buses	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Bicycles on Road	0	0	0	0	0	-	0	1	0	0	1	-	0	0	1	0	1	-	1	0	0	0	1	-	3
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	16.7%	0%	0%	1.3%	-	0%	0%	1.0%	0%	0.1%	-	1.3%	0%	0%	0%	0.7%	-	0.1%
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	100%	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Rand Road with Signalized Access - TMC

Sat Oct 16, 2021

PM Peak (WKND) (Oct 16 2021 1PM - 2 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road)

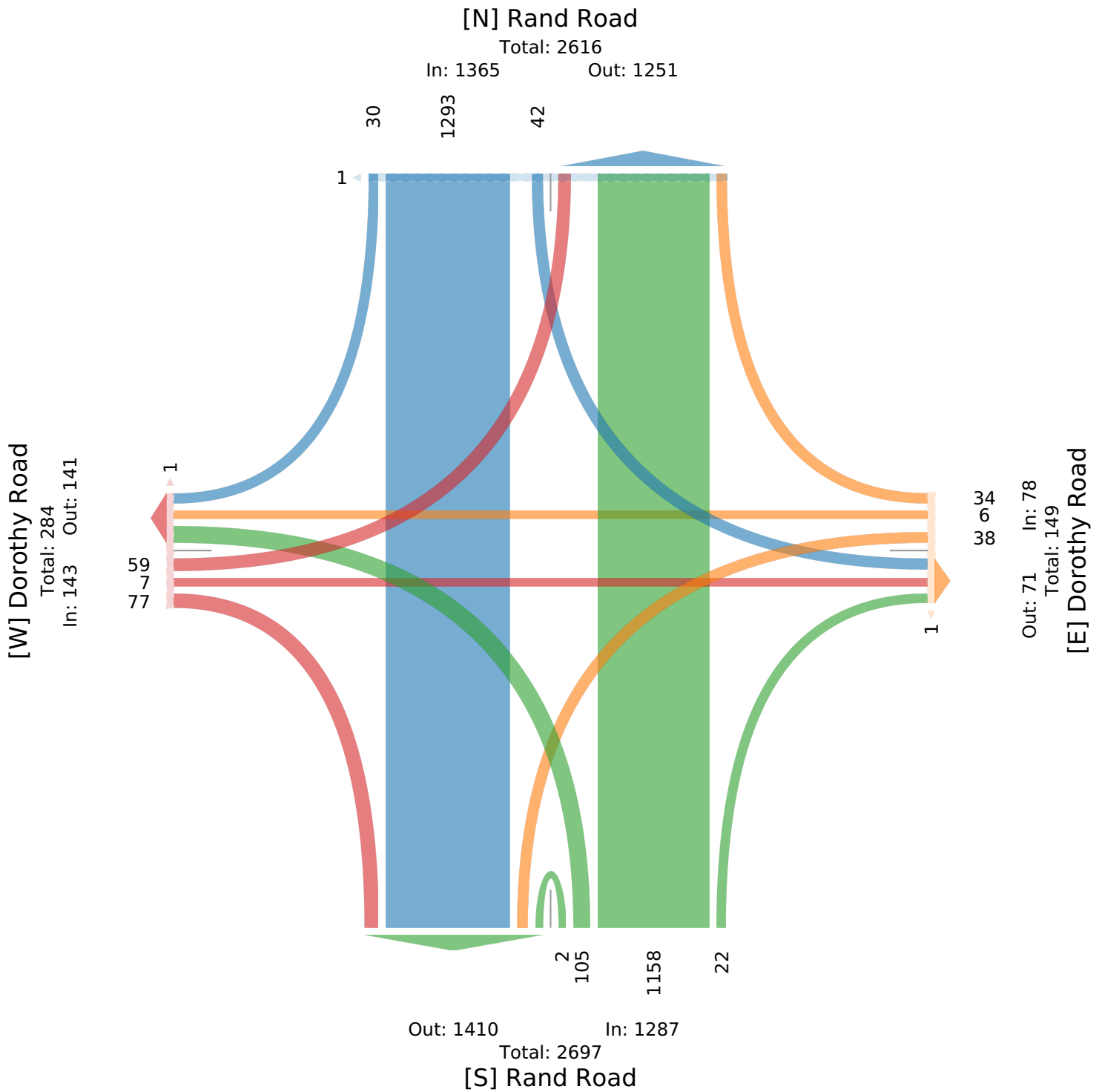
All Movements

ID: 888830, Location: 42.108233, -87.973935



Provided by: Kenig Lindgren O'Hara Aboona, Inc.

9575 W. Higgins Rd., Suite 400,
Rosemont, IL, 60018, US



Traffic Survey Results

TRAFFIC SURVEY RESULTS – CHIPOTLE RESTAURANT
 300 OGDEN AVENUE, WESTMONT, ILLINOIS

Time Period	In	Out	Total
Weekday Midday Peak Hour			
12:00 PM	21	20	41
12:15 PM	9	12	21
12:30 PM	16	12	28
12:45 PM	10	23	33
Total	56	67	123
Weekday Evening Peak Hour			
5:00 PM	12	10	22
5:15 PM	13	11	24
5:30 PM	6	6	12
5:45 PM	7	7	14
Total	38	34	72
Saturday Midday Peak Hour			
12:00 PM	8	14	22
12:15 PM	12	10	22
12:30 PM	12	14	26
12:45 PM	16	14	30
Total	48	52	100

Capacity Analysis Summary Sheets
Weekday Midday Peak Hour – Existing Conditions

Lanes, Volumes, Timings

10: Town & Country Drive/SouthPoint Drive & Rand Road

10/29/2021



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	35	1042	36	82	922	31	47	6	77	33	12	30
Future Volume (vph)	35	1042	36	82	922	31	47	6	77	33	12	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	145		0	230		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	120			110			25			25		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.995			0.861			0.892	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	5003	0	1805	3524	0	1656	1550	0	1805	1550	0
Flt Permitted	0.258			0.213			0.727			0.638		
Satd. Flow (perm)	490	5003	0	405	3524	0	1267	1550	0	1212	1550	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			5			85			33	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		795			490			187			123	
Travel Time (s)		18.1			11.1			4.3			2.8	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	3%	8%	0%	2%	0%	9%	0%	6%	0%	33%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	1185	0	90	1047	0	52	92	0	36	46	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	24.0		9.5	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	15.0	97.0		15.0	97.0		28.0	28.0		28.0	28.0	
Total Split (%)	10.7%	69.3%		10.7%	69.3%		20.0%	20.0%		20.0%	20.0%	
Yellow Time (s)	3.5	4.0		3.5	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effect Green (s)	115.3	106.8		117.2	109.2		11.1	11.1		11.1	11.1	
Actuated g/C Ratio	0.82	0.76		0.84	0.78		0.08	0.08		0.08	0.08	
v/c Ratio	0.08	0.31		0.22	0.38		0.52	0.46		0.38	0.30	
Control Delay	2.4	5.7		3.4	6.4		78.8	21.1		70.7	30.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	2.4	5.7		3.4	6.4		78.8	21.1		70.7	30.4	
LOS	A	A		A	A		E	C		E	C	
Approach Delay		5.6			6.2			41.9			48.1	
Approach LOS		A			A			D			D	
Queue Length 50th (ft)	4	106		10	142		46	6		32	11	
Queue Length 95th (ft)	11	152		26	247		90	60		67	51	

Lanes, Volumes, Timings

10: Town & Country Drive/SouthPoint Drive & Rand Road

10/29/2021



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Internal Link Dist (ft)		715			410			107			43	
Turn Bay Length (ft)	145			230								
Base Capacity (vph)	525	3817		460	2750		199	315		190	271	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.07	0.31		0.20	0.38		0.26	0.29		0.19	0.17	

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	140
Offset:	47 (34%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.52
Intersection Signal Delay:	9.2
Intersection LOS:	A
Intersection Capacity Utilization	53.2%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 10: Town & Country Drive/SouthPoint Drive & Rand Road



Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙ ↑↑↑			↙ ↑↑↑			↖ ↑			↖ ↑		
Traffic Vol, veh/h	23	882	37	32	989	2	11	2	17	3	5	7
Future Vol, veh/h	23	882	37	32	989	2	11	2	17	3	5	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	95	-	-	175	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	2	8	0	3	0	0	0	25	0	0	0
Mvmt Flow	24	928	39	34	1041	2	12	2	18	3	5	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1043	0	0	967	0	0	1483	2107	484	1530	2125	522
Stage 1	-	-	-	-	-	-	996	996	-	1110	1110	-
Stage 2	-	-	-	-	-	-	487	1111	-	420	1015	-
Critical Hdwy	5.3	-	-	5.3	-	-	6.4	6.5	7.6	6.4	6.5	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	7.3	5.5	-	7.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.7	5.5	-	6.7	5.5	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	3.8	4	4.15	3.8	4	3.9
Pot Cap-1 Maneuver	379	-	-	412	-	-	134	52	407	126	51	432
Stage 1	-	-	-	-	-	-	203	325	-	169	287	-
Stage 2	-	-	-	-	-	-	489	287	-	537	318	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	379	-	-	412	-	-	115	45	407	107	44	432
Mov Cap-2 Maneuver	-	-	-	-	-	-	177	182	-	149	181	-
Stage 1	-	-	-	-	-	-	190	305	-	158	263	-
Stage 2	-	-	-	-	-	-	432	263	-	478	298	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.5			19.8			21.4		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	178	407	379	-	-	412	-	-	235
HCM Lane V/C Ratio	0.077	0.044	0.064	-	-	0.082	-	-	0.067
HCM Control Delay (s)	26.9	14.3	15.1	-	-	14.5	-	-	21.4
HCM Lane LOS	D	B	C	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.2	0.1	0.2	-	-	0.3	-	-	0.2

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	2	32	17	1	10	19	7	8	13	24	37
Future Vol, veh/h	13	2	32	17	1	10	19	7	8	13	24	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	14	2	34	18	1	11	20	7	8	14	25	39

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	130	128	45	142	143	11	64	0	0	15	0	0
Stage 1	73	73	-	51	51	-	-	-	-	-	-	-
Stage 2	57	55	-	91	92	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	847	766	1031	832	752	1076	1551	-	-	1616	-	-
Stage 1	942	838	-	967	856	-	-	-	-	-	-	-
Stage 2	960	853	-	921	823	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	824	749	1031	790	735	1076	1551	-	-	1616	-	-
Mov Cap-2 Maneuver	824	749	-	790	735	-	-	-	-	-	-	-
Stage 1	930	830	-	954	845	-	-	-	-	-	-	-
Stage 2	937	842	-	881	816	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	9.3	4.1	1.3
HCM LOS	A	A		

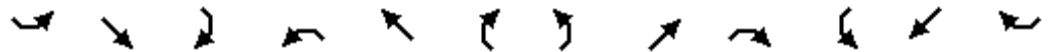
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1551	-	-	950	870	1616	-
HCM Lane V/C Ratio	0.013	-	-	0.052	0.034	0.008	-
HCM Control Delay (s)	7.4	0	-	9	9.3	7.2	0
HCM Lane LOS	A	A	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-

Capacity Analysis Summary Sheets
Weekday Evening Peak Hour – Existing Conditions

Lanes, Volumes, Timings

10: Town & Country Drive/SouthPoint Drive & Rand Road

10/29/2021



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	27	1273	33	77	1317	30	45	9	56	33	10	45
Future Volume (vph)	27	1273	33	77	1317	30	45	9	56	33	10	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	145		0	230		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	120			110			25			25		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.997			0.870			0.876	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	5116	0	1805	3564	0	1770	1653	0	1805	1664	0
Flt Permitted	0.172			0.173			0.720			0.713		
Satd. Flow (perm)	327	5116	0	329	3564	0	1341	1653	0	1355	1664	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			3			58			47	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		795			459			187			157	
Travel Time (s)		18.1			10.4			4.3			3.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	2%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	1360	0	80	1403	0	47	67	0	34	57	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	24.0		9.5	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	13.0	101.0		19.0	107.0		30.0	30.0		30.0	30.0	
Total Split (%)	8.7%	67.3%		12.7%	71.3%		20.0%	20.0%		20.0%	20.0%	
Yellow Time (s)	3.5	4.0		3.5	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effect Green (s)	125.7	117.4		128.3	121.7		10.6	10.6		10.6	10.6	
Actuated g/C Ratio	0.84	0.78		0.86	0.81		0.07	0.07		0.07	0.07	
v/c Ratio	0.08	0.34		0.23	0.49		0.50	0.39		0.36	0.35	
Control Delay	2.3	5.3		4.4	9.9		83.7	25.4		75.2	27.3	
Queue Delay	0.0	0.0		0.0	0.2		0.0	0.0		0.0	0.0	
Total Delay	2.3	5.3		4.4	10.1		83.7	25.4		75.2	27.3	
LOS	A	A		A	B		F	C		E	C	
Approach Delay		5.3			9.8			49.5			45.2	
Approach LOS		A			A			D			D	
Queue Length 50th (ft)	3	124		8	218		45	8		32	9	
Queue Length 95th (ft)	9	172		41	550		88	58		69	55	

Lanes, Volumes, Timings

10: Town & Country Drive/SouthPoint Drive & Rand Road

10/29/2021



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Internal Link Dist (ft)		715			379			107			77	
Turn Bay Length (ft)	145			230								
Base Capacity (vph)	375	4005		437	2891		214	313		216	305	
Starvation Cap Reductn	0	0		0	601		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.07	0.34		0.18	0.61		0.22	0.21		0.16	0.19	

Intersection Summary

Area Type:	Other
Cycle Length:	150
Actuated Cycle Length:	150
Offset:	48 (32%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
Natural Cycle:	70
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.50
Intersection Signal Delay:	10.3
Intersection LOS:	B
Intersection Capacity Utilization	64.0%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 10: Town & Country Drive/SouthPoint Drive & Rand Road

Ø1 13 s	Ø2 (R) 107 s	Ø4 30 s
Ø5 19 s	Ø6 (R) 101 s	Ø8 30 s

HCM 6th TWSC
 15: SouthPoint Drive/Eastwood Drive & Palatine Road

12/23/2021

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵ ↑↑↑			↵ ↑↑↑			↵ ↑		↵ ↑		↵	
Traffic Vol, veh/h	25	1095	46	37	1593	5	11	1	26	4	6	5
Future Vol, veh/h	25	1095	46	37	1593	5	11	1	26	4	6	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	95	-	-	175	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	2	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	26	1129	47	38	1642	5	11	1	27	4	6	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1647	0	0	1176	0	0	1941	2928	588	2225	2949	824
Stage 1	-	-	-	-	-	-	1205	1205	-	1721	1721	-
Stage 2	-	-	-	-	-	-	736	1723	-	504	1228	-
Critical Hdwy	5.3	-	-	5.3	-	-	6.4	6.5	7.1	6.4	6.5	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	7.3	5.5	-	7.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.7	5.5	-	6.7	5.5	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	3.8	4	3.9	3.8	4	3.9
Pot Cap-1 Maneuver	192	-	-	327	-	-	71	15	391	47	15	275
Stage 1	-	-	-	-	-	-	145	259	-	63	146	-
Stage 2	-	-	-	-	-	-	346	145	-	478	253	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	192	-	-	327	-	-	54	11	391	35	11	275
Mov Cap-2 Maneuver	-	-	-	-	-	-	113	87	-	51	98	-
Stage 1	-	-	-	-	-	-	125	224	-	54	129	-
Stage 2	-	-	-	-	-	-	286	128	-	383	219	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.4			23.4			50.1		
HCM LOS							C			F		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	110	391	192	-	-	327	-	-	95
HCM Lane V/C Ratio	0.112	0.069	0.134	-	-	0.117	-	-	0.163
HCM Control Delay (s)	41.8	14.9	26.6	-	-	17.5	-	-	50.1
HCM Lane LOS	E	B	D	-	-	C	-	-	F
HCM 95th %tile Q(veh)	0.4	0.2	0.5	-	-	0.4	-	-	0.6

Intersection												
Int Delay, s/veh	5.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	19	1	29	11	1	9	48	10	7	16	20	53
Future Vol, veh/h	19	1	29	11	1	9	48	10	7	16	20	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	20	1	31	12	1	9	51	11	7	17	21	56

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	205	203	49	216	228	15	77	0	0	18	0	0
Stage 1	83	83	-	117	117	-	-	-	-	-	-	-
Stage 2	122	120	-	99	111	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	757	697	1025	745	675	1070	1535	-	-	1612	-	-
Stage 1	930	830	-	892	803	-	-	-	-	-	-	-
Stage 2	887	800	-	912	807	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	724	666	1025	697	645	1070	1535	-	-	1612	-	-
Mov Cap-2 Maneuver	724	666	-	697	645	-	-	-	-	-	-	-
Stage 1	898	821	-	862	776	-	-	-	-	-	-	-
Stage 2	848	773	-	874	798	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.4		9.5		5.5		1.3	
HCM LOS	A		A					

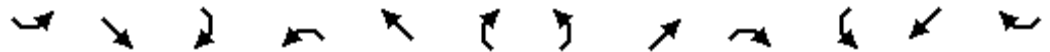
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1535	-	-	874	816	1612	-
HCM Lane V/C Ratio	0.033	-	-	0.059	0.027	0.01	-
HCM Control Delay (s)	7.4	0	-	9.4	9.5	7.3	0
HCM Lane LOS	A	A	-	A	A	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.1	0	-

Capacity Analysis Summary Sheets
Saturday Midday Peak Hour – Existing Conditions

Lanes, Volumes, Timings

10: Town & Country Drive/SouthPoint Drive & Rand Road

10/29/2021



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	37	1276	28	111	1194	42	58	4	73	37	12	61
Future Volume (vph)	37	1276	28	111	1194	42	58	4	73	37	12	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	145		0	230		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	120			110			25			25		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.995			0.857			0.875	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	5118	0	1787	3558	0	1770	1594	0	1805	1619	0
Flt Permitted	0.193			0.168			0.707			0.705		
Satd. Flow (perm)	367	5118	0	316	3558	0	1317	1594	0	1340	1619	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			6			76			64	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		795			467			187			157	
Travel Time (s)		18.1			10.6			4.3			3.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	3%	1%	1%	0%	2%	5%	2%	0%	1%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	1358	0	116	1288	0	60	80	0	39	77	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	24.0		9.5	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	14.0	80.0		18.0	84.0		22.0	22.0		22.0	22.0	
Total Split (%)	11.7%	66.7%		15.0%	70.0%		18.3%	18.3%		18.3%	18.3%	
Yellow Time (s)	3.5	4.0		3.5	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effect Green (s)	95.2	86.7		98.4	91.3		10.8	10.8		10.8	10.8	
Actuated g/C Ratio	0.79	0.72		0.82	0.76		0.09	0.09		0.09	0.09	
v/c Ratio	0.11	0.37		0.34	0.48		0.51	0.38		0.33	0.38	
Control Delay	2.9	7.0		4.4	9.2		65.8	17.2		56.8	21.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	2.9	7.0		4.4	9.2		65.8	17.2		56.8	21.1	
LOS	A	A		A	A		E	B		E	C	
Approach Delay		6.9			8.8			38.0			33.1	
Approach LOS		A			A			D			C	
Queue Length 50th (ft)	4	127		11	301		45	3		29	9	
Queue Length 95th (ft)	12	184		23	408		88	49		63	55	

Lanes, Volumes, Timings

10: Town & Country Drive/SouthPoint Drive & Rand Road

10/29/2021



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Internal Link Dist (ft)		715			387			107			77	
Turn Bay Length (ft)	145			230								
Base Capacity (vph)	429	3698		440	2709		175	278		178	271	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.37		0.26	0.48		0.34	0.29		0.22	0.28	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	62 (52%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
Natural Cycle:	65
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.51
Intersection Signal Delay:	10.2
Intersection LOS:	B
Intersection Capacity Utilization	61.7%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 10: Town & Country Drive/SouthPoint Drive & Rand Road

Ø1	Ø2 (R)	Ø4
14 s	84 s	22 s
Ø5	Ø6 (R)	Ø8
18 s	80 s	22 s

HCM 6th TWSC
 15: SouthPoint Drive/Eastwood Drive & Palatine Road

12/23/2021

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙ ↑↑↑			↙ ↑↑↑			↖ ↑			↖ ↑		
Traffic Vol, veh/h	23	1052	48	45	1219	6	14	1	16	5	1	16
Future Vol, veh/h	23	1052	48	45	1219	6	14	1	16	5	1	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	95	-	-	175	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	3	0	0	1	0	0	0	4	0	0	0
Mvmt Flow	24	1119	51	48	1297	6	15	1	17	5	1	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1303	0	0	1170	0	0	1808	2592	585	1892	2614	652
Stage 1	-	-	-	-	-	-	1193	1193	-	1396	1396	-
Stage 2	-	-	-	-	-	-	615	1399	-	496	1218	-
Critical Hdwy	5.3	-	-	5.3	-	-	6.4	6.5	7.18	6.4	6.5	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	7.3	5.5	-	7.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.7	5.5	-	6.7	5.5	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	3.8	4	3.94	3.8	4	3.9
Pot Cap-1 Maneuver	284	-	-	329	-	-	85	25	385	76	25	356
Stage 1	-	-	-	-	-	-	148	263	-	107	210	-
Stage 2	-	-	-	-	-	-	410	209	-	483	255	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	284	-	-	329	-	-	67	20	385	60	20	356
Mov Cap-2 Maneuver	-	-	-	-	-	-	124	122	-	93	121	-
Stage 1	-	-	-	-	-	-	135	241	-	98	179	-
Stage 2	-	-	-	-	-	-	331	178	-	421	233	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.6			26.2			24.7		
HCM LOS							D			C		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	124	385	284	-	-	329	-	-	206
HCM Lane V/C Ratio	0.129	0.044	0.086	-	-	0.146	-	-	0.114
HCM Control Delay (s)	38.3	14.8	18.9	-	-	17.8	-	-	24.7
HCM Lane LOS	E	B	C	-	-	C	-	-	C
HCM 95th %tile Q(veh)	0.4	0.1	0.3	-	-	0.5	-	-	0.4

Intersection												
Int Delay, s/veh	5.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	14	2	36	31	0	9	22	8	10	34	21	39
Future Vol, veh/h	14	2	36	31	0	9	22	8	10	34	21	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	15	2	38	33	0	9	23	8	11	36	22	41

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	179	180	43	195	195	14	63	0	0	19	0	0
Stage 1	115	115	-	60	60	-	-	-	-	-	-	-
Stage 2	64	65	-	135	135	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	787	717	1033	769	704	1072	1553	-	-	1611	-	-
Stage 1	895	804	-	957	849	-	-	-	-	-	-	-
Stage 2	952	845	-	873	789	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	758	690	1033	717	677	1072	1553	-	-	1611	-	-
Mov Cap-2 Maneuver	758	690	-	717	677	-	-	-	-	-	-	-
Stage 1	882	786	-	943	836	-	-	-	-	-	-	-
Stage 2	929	832	-	819	771	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.1		9.9		4		2.6	
HCM LOS	A		A					

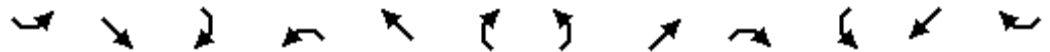
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1553	-	-	925	775	1611	-	-
HCM Lane V/C Ratio	0.015	-	-	0.059	0.054	0.022	-	-
HCM Control Delay (s)	7.4	0	-	9.1	9.9	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0.1	-	-

Capacity Analysis Summary Sheets
Weekday Midday Peak Hour – Future Conditions

Lanes, Volumes, Timings

10: Town & Country Drive/SouthPoint Drive & Rand Road

10/29/2021



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	↖	↗↖↗		↖	↗↖↗		↖	↗		↖	↗	
Traffic Volume (vph)	105	1135	36	82	1022	75	47	6	77	79	12	92
Future Volume (vph)	105	1135	36	82	1022	75	47	6	77	79	12	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	145		0	230		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	120			110			25			25		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.990			0.861			0.867	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	5003	0	1805	3509	0	1656	1550	0	1805	1588	0
Flt Permitted	0.200			0.190			0.568			0.661		
Satd. Flow (perm)	380	5003	0	361	3509	0	990	1550	0	1256	1588	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			11			85			101	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		795			377			187			123	
Travel Time (s)		18.1			8.6			4.3			2.8	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	3%	8%	0%	2%	0%	9%	0%	6%	0%	33%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	115	1287	0	90	1205	0	52	92	0	87	114	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	24.0		9.5	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	15.0	97.0		15.0	97.0		28.0	28.0		28.0	28.0	
Total Split (%)	10.7%	69.3%		10.7%	69.3%		20.0%	20.0%		20.0%	20.0%	
Yellow Time (s)	3.5	4.0		3.5	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effect Green (s)	112.8	103.0		112.0	102.6		14.6	14.6		14.6	14.6	
Actuated g/C Ratio	0.81	0.74		0.80	0.73		0.10	0.10		0.10	0.10	
v/c Ratio	0.30	0.35		0.25	0.47		0.50	0.39		0.66	0.45	
Control Delay	4.8	7.3		4.4	9.0		74.6	17.5		83.1	18.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	4.8	7.3		4.4	9.0		74.6	17.5		83.1	18.5	
LOS	A	A		A	A		E	B		F	B	
Approach Delay		7.1			8.6			38.1			46.4	
Approach LOS		A			A			D			D	
Queue Length 50th (ft)	15	135		12	205		46	6		78	11	
Queue Length 95th (ft)	35	195		28	321		88	58		133	68	

Lanes, Volumes, Timings

10: Town & Country Drive/SouthPoint Drive & Rand Road

10/29/2021



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Internal Link Dist (ft)		715			297			107			43	
Turn Bay Length (ft)	145			230								
Base Capacity (vph)	431	3683		416	2575		155	315		197	334	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.27	0.35		0.22	0.47		0.34	0.29		0.44	0.34	

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	140
Offset:	47 (34%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.66
Intersection Signal Delay:	11.8
Intersection LOS:	B
Intersection Capacity Utilization	60.8%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 10: Town & Country Drive/SouthPoint Drive & Rand Road

Ø1	Ø2 (R)	Ø4
15 s	97 s	28 s
Ø5	Ø6 (R)	Ø8
15 s	97 s	28 s

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙ ↑↑↑ ↘			↙ ↑↑↑ ↘			↙ ↑ ↘			↕		
Traffic Vol, veh/h	24	909	69	89	1019	2	35	2	68	3	5	7
Future Vol, veh/h	24	909	69	89	1019	2	35	2	68	3	5	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	95	-	-	175	-	-	50	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	2	8	0	3	0	0	0	25	0	0	0
Mvmt Flow	25	957	73	94	1073	2	37	2	72	3	5	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1075	0	0	1030	0	0	1664	2307	515	1696	2342	538
Stage 1	-	-	-	-	-	-	1044	1044	-	1262	1262	-
Stage 2	-	-	-	-	-	-	620	1263	-	434	1080	-
Critical Hdwy	5.3	-	-	5.3	-	-	6.4	6.5	7.6	6.4	6.5	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	7.3	5.5	-	7.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.7	5.5	-	6.7	5.5	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	3.8	4	4.15	3.8	4	3.9
Pot Cap-1 Maneuver	366	-	-	384	-	-	104	39	388	100	37	422
Stage 1	-	-	-	-	-	-	188	309	-	133	243	-
Stage 2	-	-	-	-	-	-	407	243	-	527	297	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	366	-	-	384	-	-	76	27	388	62	26	422
Mov Cap-2 Maneuver	-	-	-	-	-	-	152	132	-	115	124	-
Stage 1	-	-	-	-	-	-	175	288	-	124	183	-
Stage 2	-	-	-	-	-	-	293	183	-	397	277	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			1.4			23.6			26.8		
HCM LOS							C			D		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	151	388	366	-	-	384	-	-	181
HCM Lane V/C Ratio	0.258	0.184	0.069	-	-	0.244	-	-	0.087
HCM Control Delay (s)	36.9	16.4	15.6	-	-	17.4	-	-	26.8
HCM Lane LOS	E	C	C	-	-	C	-	-	D
HCM 95th %tile Q(veh)	1	0.7	0.2	-	-	0.9	-	-	0.3

HCM 6th TWSC

17: N-S Ring Road/SouthPoint Drive & Olive Garden Drive

12/23/2021

Intersection												
Int Delay, s/veh	6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕		↕	↕	
Traffic Vol, veh/h	13	2	32	100	1	65	19	27	97	72	54	37
Future Vol, veh/h	13	2	32	100	1	65	19	27	97	72	54	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	50	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	92	95	92	92	92	95	95	92	92	95	95
Heavy Vehicles, %	0	2	0	2	2	2	0	0	2	2	0	0
Mvmt Flow	14	2	34	109	1	71	20	28	105	78	57	39

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	390	406	77	372	373	81	96	0	0	133	0	0
Stage 1	233	233	-	121	121	-	-	-	-	-	-	-
Stage 2	157	173	-	251	252	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.12	6.52	6.22	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.518	4.018	3.318	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	573	534	990	585	557	979	1510	-	-	1452	-	-
Stage 1	775	712	-	883	796	-	-	-	-	-	-	-
Stage 2	850	756	-	753	698	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	504	499	990	535	520	979	1510	-	-	1452	-	-
Mov Cap-2 Maneuver	504	499	-	535	520	-	-	-	-	-	-	-
Stage 1	765	674	-	872	786	-	-	-	-	-	-	-
Stage 2	777	746	-	686	660	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB		
HCM Control Delay, s	10.1		11.7		1		3.4		
HCM LOS	B		B						

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1510	-	-	756	535	979	1452	-	-
HCM Lane V/C Ratio	0.013	-	-	0.066	0.205	0.072	0.054	-	-
HCM Control Delay (s)	7.4	-	-	10.1	13.5	9	7.6	-	-
HCM Lane LOS	A	-	-	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.8	0.2	0.2	-	-

HCM 6th TWSC
 22: Rand Road & Proposed R-I/R-O

10/29/2021

Intersection						
Int Delay, s/veh	0					
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Vol, veh/h	0	1291	1172	21	0	7
Future Vol, veh/h	0	1291	1172	21	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1403	1274	23	0	8

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	649
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	412
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	412
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	SE	NW	SW
HCM Control Delay, s	0	0	13.9
HCM LOS			B

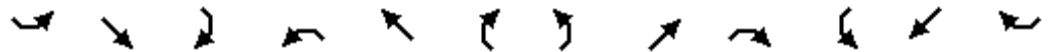
Minor Lane/Major Mvmt	NWT	NWR	SETSWLn1
Capacity (veh/h)	-	-	412
HCM Lane V/C Ratio	-	-	0.018
HCM Control Delay (s)	-	-	13.9
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1

Capacity Analysis Summary Sheets
Weekday Evening Peak Hour – Future Conditions

Lanes, Volumes, Timings

10: Town & Country Drive/SouthPoint Drive & Rand Road

10/29/2021



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	78	1369	33	77	1436	48	45	9	56	53	10	84
Future Volume (vph)	78	1369	33	77	1436	48	45	9	56	53	10	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	145		0	230		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	120			110			25			25		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.995			0.870			0.865	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	5121	0	1805	3558	0	1770	1653	0	1805	1644	0
Flt Permitted	0.135			0.157			0.573			0.713		
Satd. Flow (perm)	256	5121	0	298	3558	0	1067	1653	0	1355	1644	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			5			58			88	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		795			459			187			157	
Travel Time (s)		18.1			10.4			4.3			3.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	2%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	81	1460	0	80	1546	0	47	67	0	55	98	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	24.0		9.5	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	13.0	101.0		19.0	107.0		30.0	30.0		30.0	30.0	
Total Split (%)	8.7%	67.3%		12.7%	71.3%		20.0%	20.0%		20.0%	20.0%	
Yellow Time (s)	3.5	4.0		3.5	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effect Green (s)	125.6	116.5		125.5	116.5		11.4	11.4		11.4	11.4	
Actuated g/C Ratio	0.84	0.78		0.84	0.78		0.08	0.08		0.08	0.08	
v/c Ratio	0.29	0.37		0.25	0.56		0.58	0.37		0.54	0.48	
Control Delay	4.5	5.8		5.0	12.4		92.9	24.3		84.4	22.6	
Queue Delay	0.0	0.0		0.0	0.3		0.0	0.0		0.0	0.0	
Total Delay	4.5	5.8		5.0	12.7		92.9	24.3		84.4	22.6	
LOS	A	A		A	B		F	C		F	C	
Approach Delay		5.7			12.3			52.6			44.8	
Approach LOS		A			B			D			D	
Queue Length 50th (ft)	9	141		9	272		45	8		53	9	
Queue Length 95th (ft)	21	197		42	654		89	57		100	67	

Lanes, Volumes, Timings

10: Town & Country Drive/SouthPoint Drive & Rand Road

10/29/2021



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Internal Link Dist (ft)		715			379			107			77	
Turn Bay Length (ft)	145			230								
Base Capacity (vph)	317	3979		412	2764		170	313		216	336	
Starvation Cap Reductn	0	0		0	551		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.26	0.37		0.19	0.70		0.28	0.21		0.25	0.29	

Intersection Summary

Area Type:	Other
Cycle Length:	150
Actuated Cycle Length:	150
Offset:	48 (32%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.58
Intersection Signal Delay:	12.1
Intersection LOS:	B
Intersection Capacity Utilization	68.5%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 10: Town & Country Drive/SouthPoint Drive & Rand Road

Ø1	Ø2 (R)	Ø4
13 s	107 s	30 s
Ø5	Ø6 (R)	Ø8
19 s	101 s	30 s

HCM 6th TWSC

15: SouthPoint Drive/Eastwood Drive & Palatine Road

12/23/2021

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙ ↑↑↑			↙ ↑↑↑			↖ ↑			↖ ↑		
Traffic Vol, veh/h	26	1129	65	62	1641	5	22	1	58	4	6	5
Future Vol, veh/h	26	1129	65	62	1641	5	22	1	58	4	6	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	95	-	-	175	-	-	50	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	2	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	27	1164	67	64	1692	5	23	1	60	4	6	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1697	0	0	1231	0	0	2060	3077	616	2343	3108	849
Stage 1	-	-	-	-	-	-	1252	1252	-	1823	1823	-
Stage 2	-	-	-	-	-	-	808	1825	-	520	1285	-
Critical Hdwy	5.3	-	-	5.3	-	-	6.4	6.5	7.1	6.4	6.5	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	7.3	5.5	-	7.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.7	5.5	-	6.7	5.5	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	3.8	4	3.9	3.8	4	3.9
Pot Cap-1 Maneuver	182	-	-	308	-	-	60	12	375	40	12	265
Stage 1	-	-	-	-	-	-	135	246	-	53	130	-
Stage 2	-	-	-	-	-	-	313	129	-	468	237	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	182	-	-	308	-	-	41	8	375	25	8	265
Mov Cap-2 Maneuver	-	-	-	-	-	-	100	66	-	43	76	-
Stage 1	-	-	-	-	-	-	115	210	-	45	103	-
Stage 2	-	-	-	-	-	-	229	102	-	333	202	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.7			26.8			61.3		
HCM LOS							D			F		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	98	375	182	-	-	308	-	-	79
HCM Lane V/C Ratio	0.242	0.159	0.147	-	-	0.208	-	-	0.196
HCM Control Delay (s)	53.1	16.4	28.2	-	-	19.7	-	-	61.3
HCM Lane LOS	F	C	D	-	-	C	-	-	F
HCM 95th %tile Q(veh)	0.9	0.6	0.5	-	-	0.8	-	-	0.7

HCM 6th TWSC

17: N-S Ring Road/SouthPoint Drive & Olive Garden Drive

12/23/2021

Intersection												
Int Delay, s/veh	5.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕		↕	↕	
Traffic Vol, veh/h	19	1	29	42	1	30	48	32	44	41	39	53
Future Vol, veh/h	19	1	29	42	1	30	48	32	44	41	39	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	50	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	92	95	92	92	92	95	95	92	92	95	95
Heavy Vehicles, %	0	2	0	2	2	2	0	0	2	2	0	0
Mvmt Flow	20	1	31	46	1	33	51	34	48	45	41	56

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	336	343	69	335	347	58	97	0	0	82	0	0
Stage 1	159	159	-	160	160	-	-	-	-	-	-	-
Stage 2	177	184	-	175	187	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.12	6.52	6.22	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.518	4.018	3.318	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	622	579	1000	619	576	1008	1509	-	-	1515	-	-
Stage 1	848	766	-	842	766	-	-	-	-	-	-	-
Stage 2	829	747	-	827	745	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	572	543	1000	571	540	1008	1509	-	-	1515	-	-
Mov Cap-2 Maneuver	572	543	-	571	540	-	-	-	-	-	-	-
Stage 1	819	743	-	813	740	-	-	-	-	-	-	-
Stage 2	774	722	-	777	723	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10		10.6		2.9		2.3	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1509	-	-	765	570	1008	1515	-	-
HCM Lane V/C Ratio	0.033	-	-	0.067	0.082	0.032	0.029	-	-
HCM Control Delay (s)	7.5	-	-	10	11.9	8.7	7.4	-	-
HCM Lane LOS	A	-	-	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.3	0.1	0.1	-	-

HCM 6th TWSC
 22: Rand Road & Proposed R-I/R-O

10/29/2021

Intersection						
Int Delay, s/veh	0					
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Vol, veh/h	0	1478	1553	20	0	8
Future Vol, veh/h	0	1478	1553	20	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1607	1688	22	0	9

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	855
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	302
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	302
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	SE	NW	SW
HCM Control Delay, s	0	0	17.3
HCM LOS			C

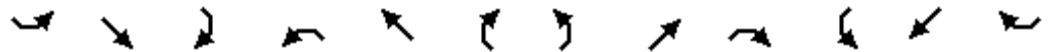
Minor Lane/Major Mvmt	NWT	NWR	SETSWLn1
Capacity (veh/h)	-	-	302
HCM Lane V/C Ratio	-	-	0.029
HCM Control Delay (s)	-	-	17.3
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.1

Capacity Analysis Summary Sheets
Saturday Midday Peak Hour – Future Conditions

Lanes, Volumes, Timings

10: Town & Country Drive/SouthPoint Drive & Rand Road

10/29/2021



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	116	1396	28	111	1324	75	58	4	73	69	12	117
Future Volume (vph)	116	1396	28	111	1324	75	58	4	73	69	12	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	145		0	230		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	120			110			25			25		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.992			0.857			0.864	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	5118	0	1787	3548	0	1770	1594	0	1805	1597	0
Flt Permitted	0.140			0.148			0.513			0.705		
Satd. Flow (perm)	266	5118	0	278	3548	0	956	1594	0	1340	1597	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			10			76			122	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		795			467			187			157	
Travel Time (s)		18.1			10.6			4.3			3.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	3%	1%	1%	0%	2%	5%	2%	0%	1%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	1483	0	116	1457	0	60	80	0	72	135	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	24.0		9.5	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	14.0	80.0		18.0	84.0		22.0	22.0		22.0	22.0	
Total Split (%)	11.7%	66.7%		15.0%	70.0%		18.3%	18.3%		18.3%	18.3%	
Yellow Time (s)	3.5	4.0		3.5	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.5	6.0		3.5	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effect Green (s)	95.3	85.7		95.2	85.6		11.8	11.8		11.8	11.8	
Actuated g/C Ratio	0.79	0.71		0.79	0.71		0.10	0.10		0.10	0.10	
v/c Ratio	0.40	0.41		0.38	0.57		0.65	0.36		0.55	0.51	
Control Delay	6.4	7.7		5.7	12.8		80.9	16.3		66.3	17.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.4	7.7		5.7	12.8		80.9	16.3		66.3	17.7	
LOS	A	A		A	B		F	B		E	B	
Approach Delay		7.6			12.3			44.0			34.6	
Approach LOS		A			B			D			C	
Queue Length 50th (ft)	14	151		14	368		45	3		54	9	
Queue Length 95th (ft)	30	209		25	495		91	49		100	68	

Lanes, Volumes, Timings

10: Town & Country Drive/SouthPoint Drive & Rand Road

10/29/2021



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Internal Link Dist (ft)		715			387			107			77	
Turn Bay Length (ft)	145			230								
Base Capacity (vph)	352	3656		411	2534		127	278		178	318	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.34	0.41		0.28	0.57		0.47	0.29		0.40	0.42	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	62 (52%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
Natural Cycle:	70
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.65
Intersection Signal Delay:	12.7
Intersection LOS:	B
Intersection Capacity Utilization	75.8%
ICU Level of Service	D
Analysis Period (min)	15

Splits and Phases: 10: Town & Country Drive/SouthPoint Drive & Rand Road

Ø1	Ø2 (R)	Ø4
14 s	84 s	22 s
Ø5	Ø6 (R)	Ø8
18 s	80 s	22 s

HCM 6th TWSC

15: SouthPoint Drive/Eastwood Drive & Palatine Road

12/23/2021

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙ ↑↑↑ ↘			↙ ↑↑↑ ↘			↙ ↑ ↘			↔		
Traffic Vol, veh/h	24	1085	76	95	1256	6	35	1	66	5	1	16
Future Vol, veh/h	24	1085	76	95	1256	6	35	1	66	5	1	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	95	-	-	175	-	-	75	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	3	0	0	1	0	0	0	4	0	0	0
Mvmt Flow	26	1154	81	101	1336	6	37	1	70	5	1	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1342	0	0	1235	0	0	1984	2791	618	2055	2828	671
Stage 1	-	-	-	-	-	-	1247	1247	-	1541	1541	-
Stage 2	-	-	-	-	-	-	737	1544	-	514	1287	-
Critical Hdwy	5.3	-	-	5.3	-	-	6.4	6.5	7.18	6.4	6.5	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	7.3	5.5	-	7.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.7	5.5	-	6.7	5.5	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	3.8	4	3.94	3.8	4	3.9
Pot Cap-1 Maneuver	272	-	-	306	-	-	66	19	367	60	18	346
Stage 1	-	-	-	-	-	-	136	247	-	84	179	-
Stage 2	-	-	-	-	-	-	346	178	-	472	237	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	272	-	-	306	-	-	43	12	367	33	11	346
Mov Cap-2 Maneuver	-	-	-	-	-	-	105	81	-	71	77	-
Stage 1	-	-	-	-	-	-	123	223	-	76	120	-
Stage 2	-	-	-	-	-	-	218	119	-	344	214	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			1.6			31.7			29.5		
HCM LOS							D			D		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	104	367	272	-	-	306	-	-	170
HCM Lane V/C Ratio	0.368	0.191	0.094	-	-	0.33	-	-	0.138
HCM Control Delay (s)	58.5	17.1	19.6	-	-	22.5	-	-	29.5
HCM Lane LOS	F	C	C	-	-	C	-	-	D
HCM 95th %tile Q(veh)	1.5	0.7	0.3	-	-	1.4	-	-	0.5

HCM 6th TWSC
 22: Rand Road & Proposed R-I/R-O

10/29/2021

Intersection						
Int Delay, s/veh	0					
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Vol, veh/h	0	1538	1501	20	0	9
Future Vol, veh/h	0	1538	1501	20	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1672	1632	22	0	10

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	0	-	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SE	NW	SW
HCM Control Delay, s	0	0	16.8
HCM LOS			C

Minor Lane/Major Mvmt	NWT	NWR	SETSWLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	-
HCM Lane LOS	-	-	-
HCM 95th %tile Q(veh)	-	-	-

HCM 6th TWSC

23: N-S Ring Road/SouthPoint Drive & Olive Garden Drive

12/23/2021

Intersection												
Int Delay, s/veh	6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↔			↕	↕	↕	↕		↕	↕	
Traffic Vol, veh/h	14	2	36	91	0	49	22	39	78	78	55	39
Future Vol, veh/h	14	2	36	91	0	49	22	39	78	78	55	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	50	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	92	95	92	92	92	95	95	92	92	95	95
Heavy Vehicles, %	0	2	0	2	2	2	0	0	2	2	0	0
Mvmt Flow	15	2	38	99	0	53	23	41	85	85	58	41

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	405	421	79	399	399	84	99	0	0	126	0	0
Stage 1	249	249	-	130	130	-	-	-	-	-	-	-
Stage 2	156	172	-	269	269	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.12	6.52	6.22	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.518	4.018	3.318	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	560	524	987	561	539	975	1507	-	-	1460	-	-
Stage 1	759	701	-	874	789	-	-	-	-	-	-	-
Stage 2	851	756	-	737	687	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	500	486	987	508	500	975	1507	-	-	1460	-	-
Mov Cap-2 Maneuver	500	486	-	508	500	-	-	-	-	-	-	-
Stage 1	748	660	-	861	777	-	-	-	-	-	-	-
Stage 2	792	745	-	665	647	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.1		12.1		1.2		3.5	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1507	-	-	758	508	975	1460	-	-
HCM Lane V/C Ratio	0.015	-	-	0.072	0.195	0.055	0.058	-	-
HCM Control Delay (s)	7.4	-	-	10.1	13.8	8.9	7.6	-	-
HCM Lane LOS	A	-	-	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.7	0.2	0.2	-	-

Conceptual Exhibit

