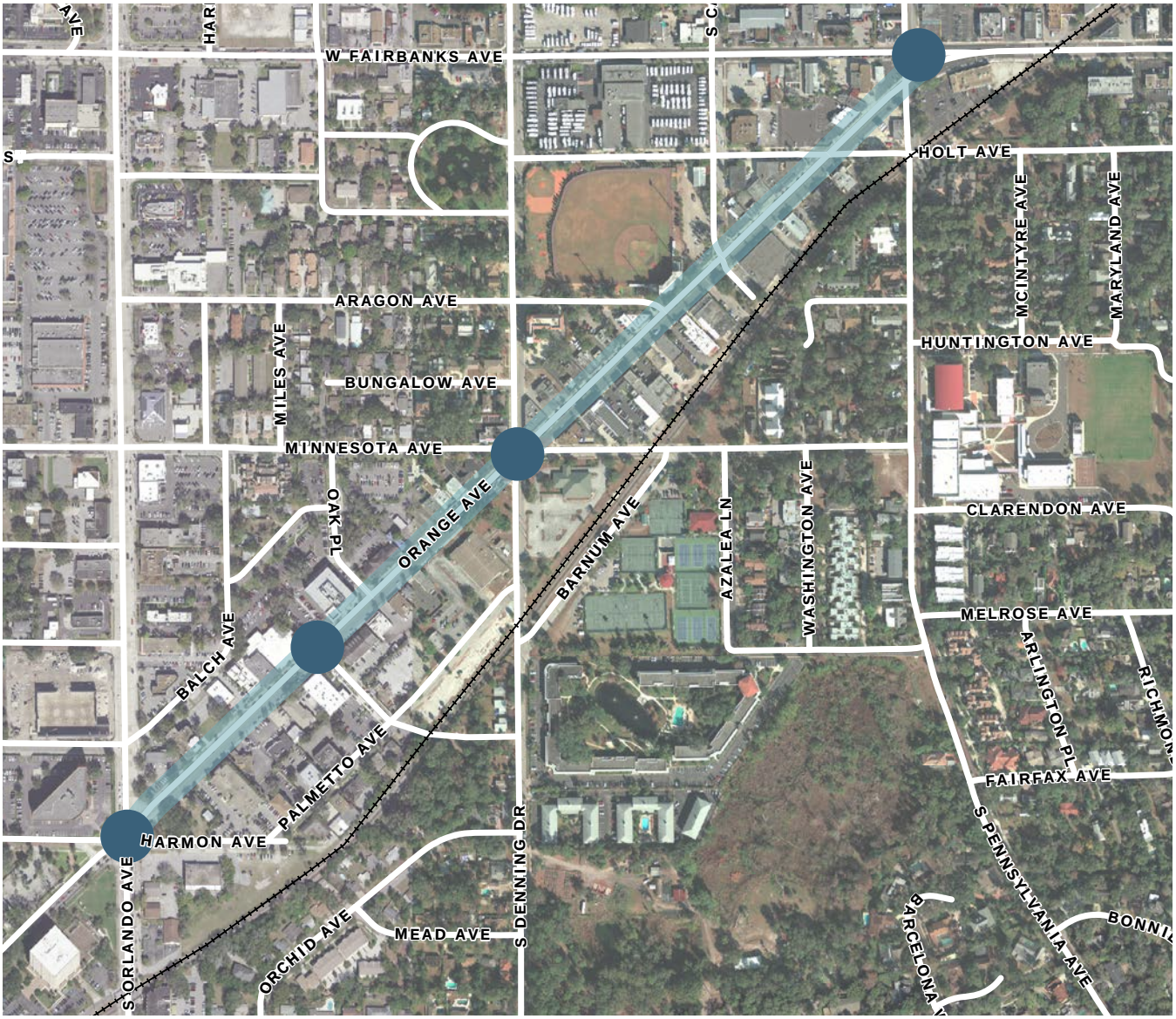
STUDY AREA AND CONTEXT

Orange Avenue serves as a commuter corridor, but is also a visible gateway to Winter Park from neighboring jurisdictions. The study area includes Orange Avenue (SR 427) from US 17/92 (Orlando Avenue) to SR 426 (Fairbanks Avenue). In addition to the signalized intersections at the study area boundaries, the study also includes signalized intersections at Cypress Avenue and at Minnesota Avenue /Denning Drive. Development along Orange Avenue is characterized by one to two floor attached and detached retail and office buildings at shallow to medium setbacks. Parking is often located on-street or along the side and rear of buildings. However, as Orange Avenue continues to attract development interest, it has the potential to carry development at higher intensities and densities that support a safer and more diverse suite of travel choices.

FIGURE 1: CORRIDOR STUDY AREA



Kimley»Horn

DRIVING PRINCIPLES

Understanding the future of Orange Avenue requires a holistic look at several interrelated elements. The intent of this mobility assessment is to promote corridor enhancements that fulfill a variety of community expectations including development interest, safety, operations, placemaking, connectivity, and travel choices. This mobility assessment considers these five driving principles and highlights the key factors of each that must be considered as the future vision of the corridor is realized.

DEVELOPMENT INTEREST

As interest in developing along Orange Avenue continues, careful consideration will need to be given to both preservation and redevelopment or infill strategies to ensure that the City's timeless scale and character are maintained as stated in Vision Winter Park.

SAFETY

As identified in the City of Winter Park Comprehensive Plan, the City seeks to create a safe transportation network for all users and all travel modes. The ability for Orange Avenue to achieve its full potential will be influenced by the level of safety and comfort those using the corridor experience.

OPERATIONS

Today Orange Avenue serves as a commuter corridor, and in some locations serves over 30,000 vehicles per day. This information helps provide an understanding of the current operation of the corridor and how future alternatives will impact daily users and the transportation network as a whole. Traffic operations is an important consideration; however, its appropriate to consider traffic in the context of a variety of goals for the corridor. The modern approach to evaluating corridor alternatives shouldn't be exclusively influenced by traffic operations. While this initial memorandum documents existing traffic and operations, future evaluation efforts will be broadened to include the other driving principles for the corridor.

PLACEMAKING

The City of Winter Park's brand is evident along Orange Avenue through landscaped bulb-outs, brick paver crosswalks, and desirable destinations. It will continue to be important to consider landscaping, branding, and urban design features that will further enhance the creation of quality places with lasting value.

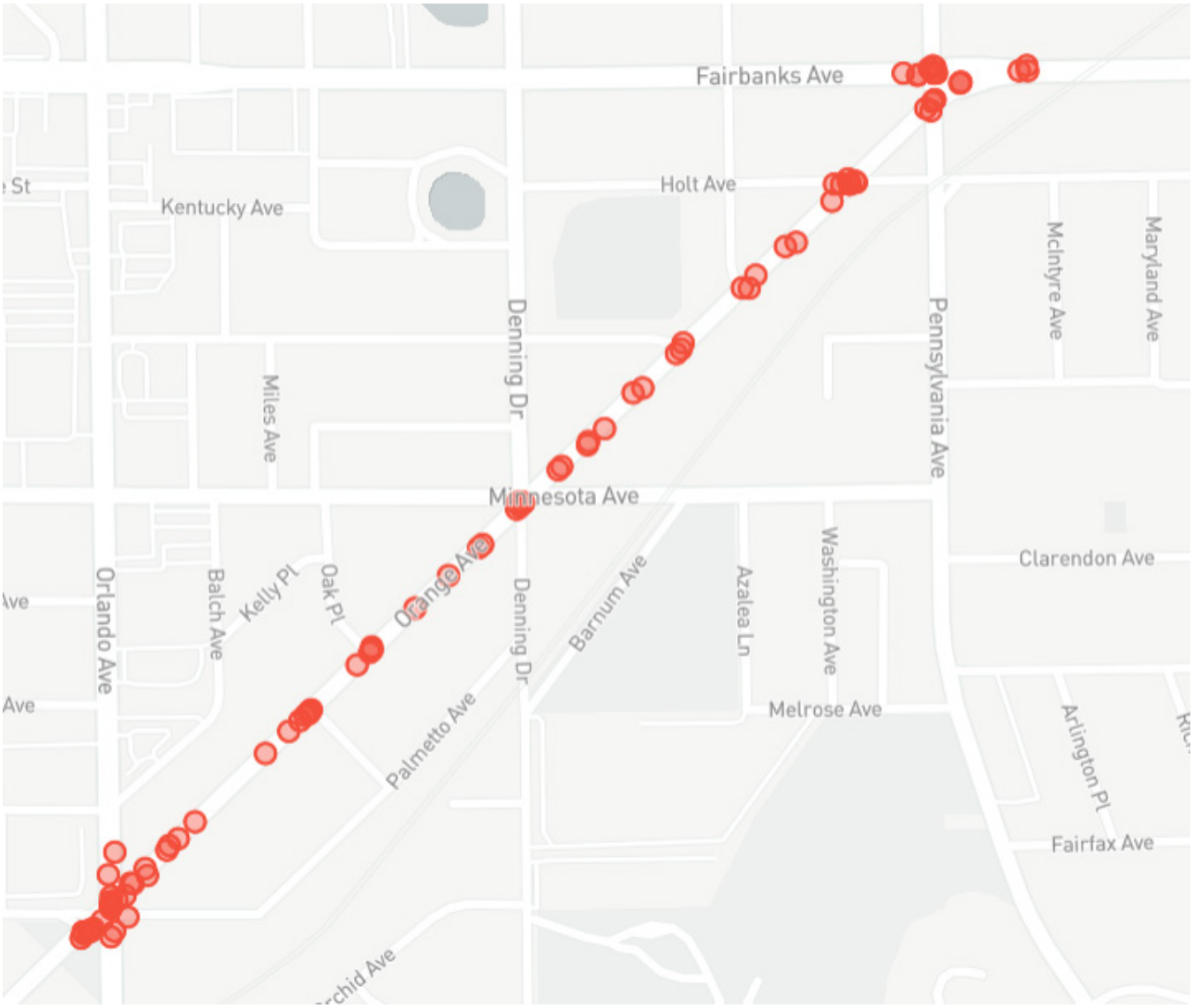
CONNECTIVITY AND TRAVEL CHOICE

Orange Avenue boasts a well-connected residential population with access to a strong street network, transit options, and employment opportunities. In the Comprehensive Plan, the City places an emphasis on the provision of a balanced multimodal network that promotes a walkable, bicycle-friendly environment that encourages transit use as well as ensures efficiency on the road network. As the corridor continues to be improved, maintaining and enhancing this connectivity and modal balance will be critical.

SAFETY

In the last five years, nearly 500 crashes have occurred along Orange Avenue or at it's major intersections. Crashes are predominately "rear-end" collisions that result in only property damage. However, between July 2014 and July 2019, eight of nine crashes involving a pedestrian or bicyclist resulted in an injury. Additionally, nearly 27% of crashes were noted as "sideswipe same direction," or "collision with a parked vehicle." The map below highlights over 120 injury crashes that occurred along the corridor or at study intersections. Concentrations are highest at Fairbanks Avenue and Orlando Avenue. The future alternatives for Orange Avenue should consider safety enhancements for all corridor users, such as enhanced pedestrian crossings and access management strategies.

FIGURE 2: JULY 2014 TO JULY 2019 INJURY CRASHES

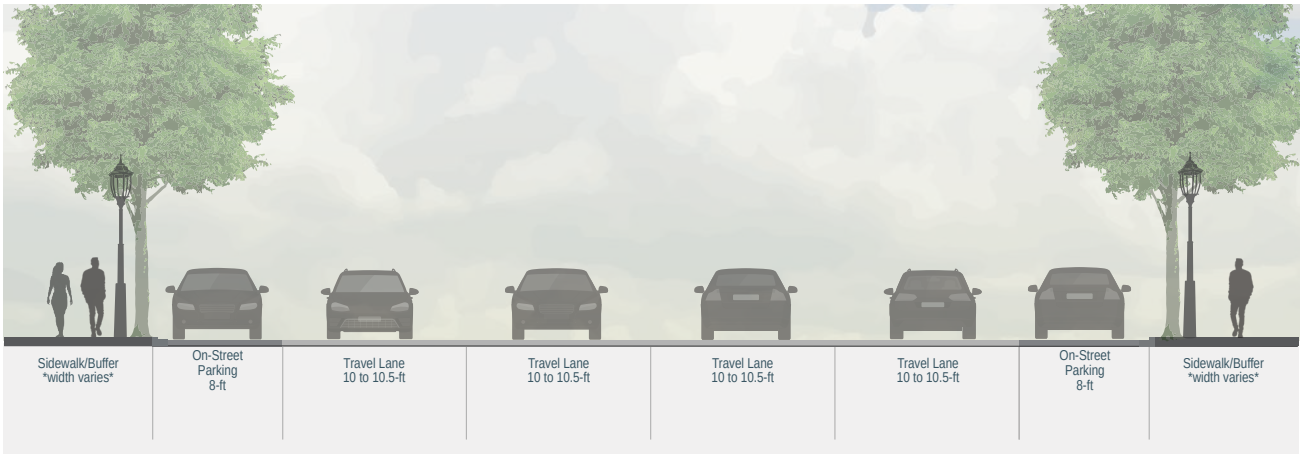


OPERATIONS

Orange Avenue is a 4-lane undivided roadway with select areas that include on-street parking. Orange Avenue is functionally classified as an Urban Principal Arterial. There are no turn lanes, with exception to the boundary intersections (US 17/92 and Fairbanks). Sidewalks of varying widths are included, with street lights, benches, transit stops, and shade trees provided along the roadway. Lane widths vary between 10' and 10.5' wide in the locations that were measured. Parking lane widths (measured from the face of curb) are approximately 8' wide. The total distance from face-of-curb to face-of-curb is approximately 55-56' for the areas that have on-street parking. There is no on-street parking in the block immediately south of Pennsylvania Avenue. Similarly, there is no on-street parking in the 340' northeast of the Orlando Avenue intersection. The posted speed limit along Orange Avenue is 30 mph. Many intersections and mid-block locations have bulb-outs that reduce crossing distances. A typical view of the roadway is shown in Figure 3 and Figure 4.

FIGURE 3: TYPICAL VIEW OF ORANGE AVENUE (LOOKING NORTH NEAR CAPEN AVENUE)

FIGURE 4: EXISTING TYPICAL SECTION OF ORANGE AVENUE



DATA COLLECTION AND ANALYSIS

Existing signal timing plans were obtained from City staff and used for the analysis. Turning movement counts were collected May 15, 2019 from 7:00 am to 9:00 am and from 4:00 pm to 6:00 pm for all study area intersections.

A site visit was conducted June 19th to observe operating conditions. Noteworthy observations include:

- Several vehicles were observed speeding through the corridor, some in excess of 40 mph
- Metered westbound conditions approaching the study area from the upstream Fairbanks Avenue & New York Avenue intersection
- On-street parking is parking is sporadically utilized during typical retail hours. The travel speeds and multiple travel lanes make parallel parking an intimidating maneuver for many. (top right image)
- Sight distance is limited by tight right-of-way and setbacks at the intersection of Orange Avenue, Denning Drive & Minnesota Avenue (top left image)
- Existing trees along the road in bulb-outs provide good shade for pedestrians (bottom left image)
- Only one bicyclist was observed during the site visit
- Long queues were observed at the intersections, due in part to long cycle lengths and multiple change intervals for the extra intersection legs (bottom right image)

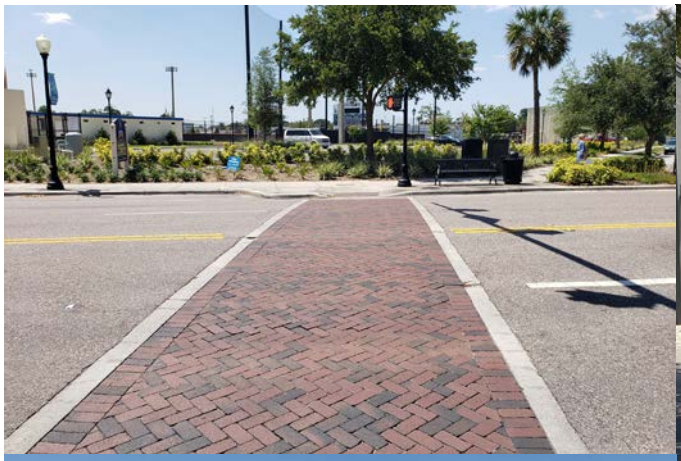
OPERATIONAL PERFORMANCE

Operational performance of the corridor was assessed using Synchro software at the study area intersections for AM and PM peak-hour conditions. The resulting volume-to-capacity ratios and average vehicle delays are shown in Table 1 and Table 2 of the Appendix. The maximum (95th percentile) queue lengths are shown in Table 3 and 4 of the Appendix. As shown in the tables, the study area intersections operate with congestion, near their operating capacities.

NO
TURN
ON RED

PLACEMAKING

The City has taken many proactive steps along Orange Avenue to provide a strong sense of place and preserve the scale and character associated with Winter Park. As the corridor attracts new development, as well as redevelopment, the City should work to ensure the corridor evolves to become a welcoming gateway corridor with consistent landscaping, lighting, and pedestrian scale amenities. Any changes to the corridor should be carefully selected to include elements that compliment the desired character and quality of place expectations for the corridor.

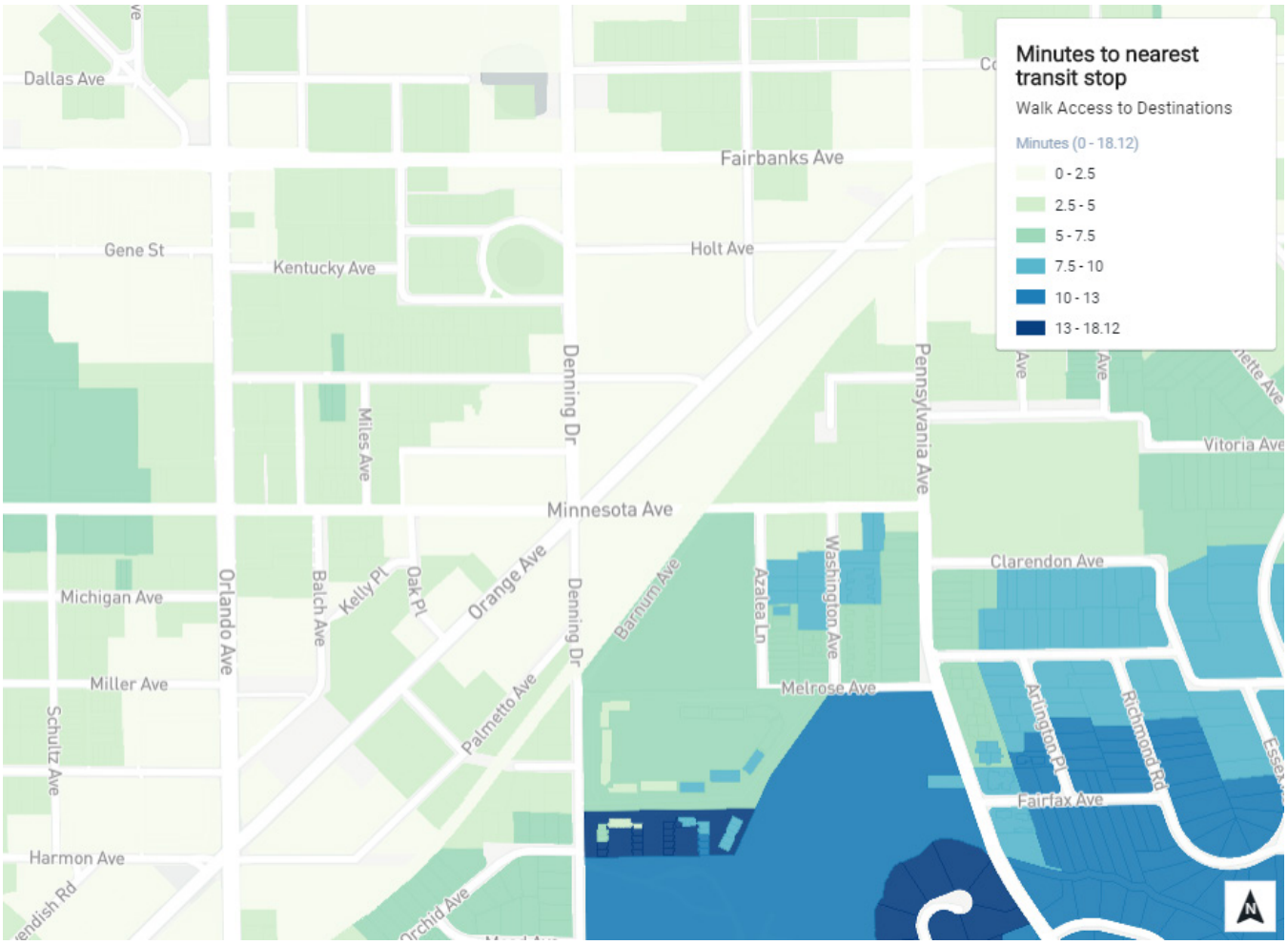


CONNECTIVITY AND TRAVEL CHOICE

Vehicle and transit access along Orange Avenue is easy and convenient due to a well-gridded network, and key connections to higher classification roadways such as Fairbanks Avenue and Orlando Avenue. Alternatively the environment along Orange Avenue isn't inviting to even the most skilled bicyclist. Similarly, pedestrian accommodations aren't of sufficient width and contain several interruptions that lessen the pedestrian experience. Crossing the street as a pedestrian is limited to signalized intersections and occurs without mid-point refuge and requires walkers to be cognizant of multiple travel lanes, speeding traffic, and a multitude of permissive turning movements.

- Residents at the center of the study area have access to approximately 23,000 jobs within a 30-minute transit ride
- 53.5% of study area residents live within a 5-minute walk of a transit stop
- 88.5% of study area residents live within a 10-minute walk of a park
- Approximately 132,000 daily vehicle trips are made to, from, or within the study area

FIGURE 5: WALK ACCESS TO NEAREST TRANSIT STOP (MINUTES)



APPENDIX

TABLE 1: 2019 AM PEAK TRAFFIC OPERATIONAL PERFORMANCE

Intersection	Control Type	Approach	Max V/C Movement	Max V/C Ratio	Delay (s)
Orange Avenue, Orlando Avenue, and Harmon Avenue	Signalized	EB	-	-	-
		WB	-	-	-
		NB	NBT	0.80	50.9
		SB	SBT	2.99	194.2
		NE	NET	0.96	95.2
		SW	SWL	0.97	110.9
		Overall	SBT	2.99	106.2
Orange Avenue and Cypress Ave	Signalized	EB	-	-	-
		NW	NWL	0.12	18.2
		NE	NET	0.16	0.9
		SW	SWT	0.43	1.6
		Overall	SWT	0.43	1.6
Orange Avenue, Minnesota Avenue, and S Denning Drive	Signalized	EB	EBT	0.82	67.2
		WB	WBT	0.98	94.6
		NB	NBT	0.24	49.3
		SB	SBT	0.77	72.3
		NE	NET	0.55	33.3
		SW	SWT	0.79	40.3
		Overall	WBT	0.98	51.6
Orange Ave / W Fairbanks Ave / S Pennsylvania Ave"	Signalized	EB	EBT	0.52	45.8
		WB	WBL	1.26	169.0
		NB	NBT	1.21	192.6
		SB	SBT	0.87	101.3
		NE	NER	0.44	30.4
		Overall	WBL	1.26	72.1

TABLE 2: 2019 PM PEAK TRAFFIC OPERATIONAL PERFORMANCE

Intersection	Control Type	Approach	Max V/C Movement	Max V/C Ratio	Delay (s)
Orange Avenue, Orlando Avenue, and Harmon Avenue	Signalized	EB	-	-	-
		WB	-	-	-
		NB	NBT	0.77	58.7
		SB	SBL	0.79	147.1
		NE	NET	0.92	97.0
		SW	SWL	0.86	108.3
		Overall	NET	0.92	72.1
Orange Avenue and Cypress Ave	Signalized	EB	-	-	-
		NW	NWL	0.37	25.9
		NE	NET	0.26	3.1
		SW	SWT	0.26	3.2
		Overall	NWL	0.37	4.4
Orange Avenue, Minnesota Avenue, and S Denning Drive	Signalized	EB	EBT	0.71	59.5
		WB	WBT	0.78	68.7
		NB	NBT	0.70	57.9
		SB	SBL	0.69	72.8
		NE	NET	0.79	42.9
		SW	SWT	0.57	35.8
		Overall	NET	0.79	49.3
Orange Ave / W Fairbanks Ave / S Pennsylvania Ave"	Signalized	EB	EBT	1.16	137.0
		WB	WBL	1.17	138.7
		NB	NBT	1.13	156.3
		SB	SBT	0.93	100.6
		NE	NER	0.44	31.6
		Overall	NBT	1.17	82.1

TABLE 3: 2019 AM PEAK MAXIMUM (95TH PERCENTILE) QUEUE LENGTHS

Approach	Movement	Orange Ave / Orlando Ave / Harmon Ave	Orange Ave & Cypress Ave	Orange Ave / Minnesota Ave / S Denning Dr	Orange Ave / W Fairbanks Ave/ S Pennsylvania Ave
EB	L2	-	-	-	-
	L	-	-	-	-
	T	-	-	223	318
	R	-	-	-	-
	R2	-	-	-	-
WB	L2	-	-	-	-
	L	-	-	-	649
	T	-	-	447	176
	R	-	-	-	-
	R2	-	-	-	-
NB	L2	-	-	-	-
	L	55	-	-	-
	T	633	-	69	155
	R	-	-	-	-
	R2	-	-	-	-
SB	L2	79	-	-	-
	L	-	-	74	-
	T	858	-	189	232
	R	-	-	-	-
	R2	-	-	-	-
NW	L2	-	-	-	-
	L	-	24	-	-
	T	-	-	-	-
	R	-	-	-	-
	R2	-	-	-	-
NE	L2	-	-	-	-
	L	290	-	-	-
	T	616	35	221	-
	R	-	-	-	219
	R2	-	-	-	-
SW	L2	-	-	-	-
	L	485	-	-	-
	T	374	61	341	-
	R	-	-	-	-
	R2	-	-	-	-

TABLE 4: 2019 PM PEAK MAXIMUM (95TH PERCENTILE) QUEUE LENGTHS

Approach	Movement	Orange Ave / Orlando Ave / Harmon Ave	Orange Ave & Cypress Ave	Orange Ave / Minnesota Ave / S Denning Dr	Orange Ave / W Fairbanks Ave/ S Pennsylvania Ave
EB	L2	-	-	-	-
	L	-	-	223	-
	T	-	-	246	474
	R	-	-	-	-
	R2	-	-	-	-
WB	L2	-	-	-	-
	L	-	-	90	472
	T	-	-	308	218
	R	-	-	-	-
	R2	-	-	-	-
NB	L2	-	-	-	-
	L	78	-	-	-
	T	692	-	215	479
	R	-	-	-	-
	R2	-	-	-	-
SB	L2	-	-	-	-
	L	185	-	169	-
	T	758	-	230	438
	R	-	-	-	-
	R2	-	-	-	-
NW	L2	-	-	-	-
	L	-	63	-	-
	T	-	-	-	-
	R	-	-	-	-
	R2	-	-	-	-
NE	L2	-	-	-	-
	L	551	-	-	-
	T	812	61	338	-
	R	-	-	-	349
	R2	-	-	-	-
SW	L2	-	-	-	-
	L	419	-	-	-
	T	357	58	232	-
	R	-	-	-	-
	R2	-	-	-	-