

FINAL TECHNICAL MEMORANDUM

Project:	Downtown Apex Parking Length of Stay	To:	Jenna Shouse, Town of Apex Shannon Cox, Town of Apex
Subject:	Downtown Apex Parking Length of Stay	From:	Lisa Lundeen
Date:	August 19, 2022	cc:	File

Introduction

The Town of Apex has contracted with Exult Engineering to provide an addendum to the 2019 parking utilization study (completed by Stantec, December 2019) to include a length of stay analysis. The purpose of the length of stay analysis is to confirm where additional turnover and enforcement may be needed, where there is existing capacity, and timing of the high-demand periods to develop other parking management strategies.

Study Area

The study area for the length of stay analysis included the following off-street parking lots and on-street parking areas, along with their Parking ID number, as shown in Figure 1:

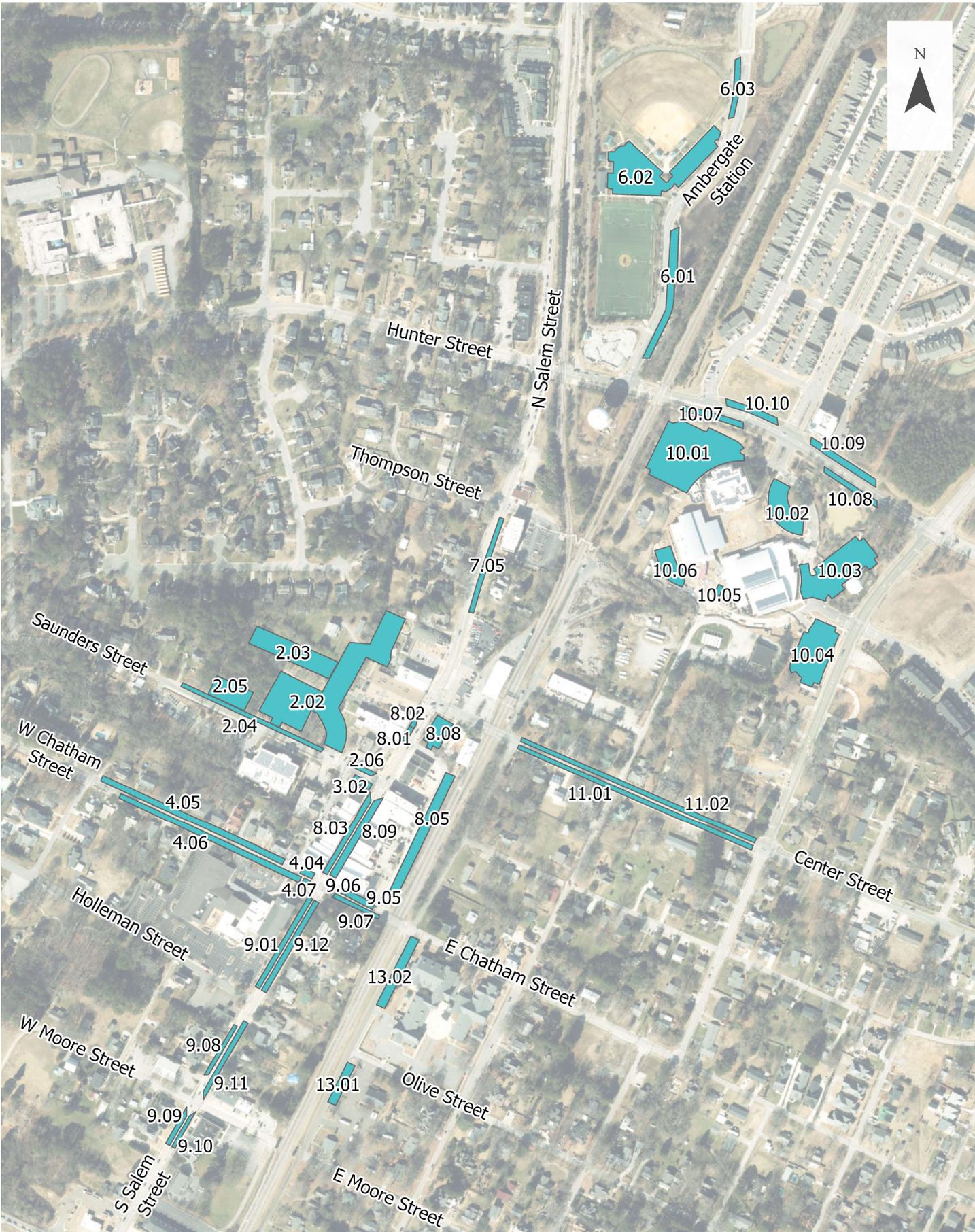
Off-Street Parking Lots:

- Saunders Lot, Pavement (2.02)
- Saunders Lot, Gravel (2.03)
- Saunders Street Unofficial Lot (2.05)
- Hunter Street Park (6.02)
- Seaboard Lot (8.05)
- Depot Lot (8.08)
- Apex Town Hall (10.01)
- Apex Town Campus Half Moon Lot (10.02)
- Apex Community Center (10.03)
- Apex Community Center Overflow (10.04)
- Apex Senior Center Accessible Spaces (10.05)
- Apex Senior Center (10.06)

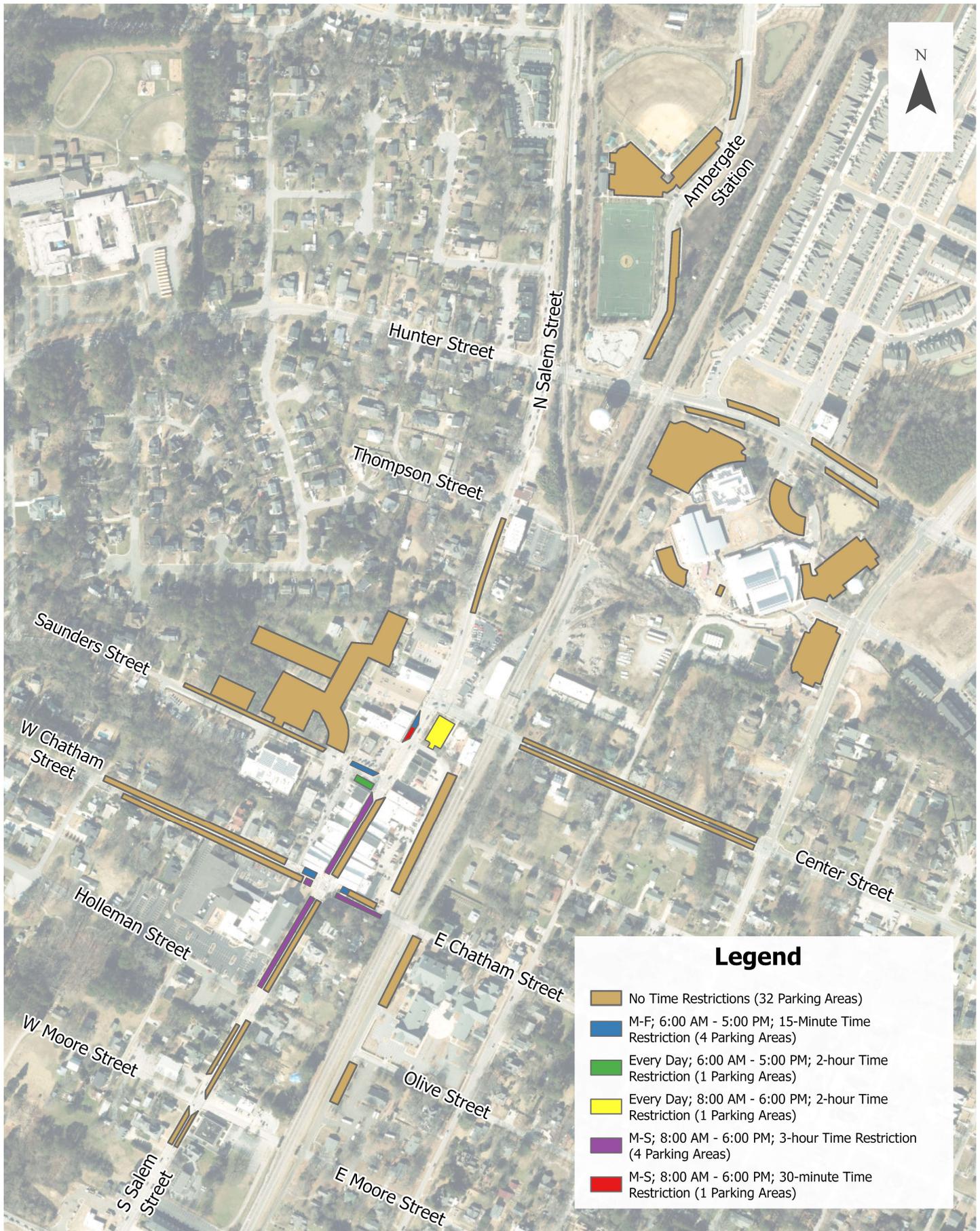
On-Street Parking Areas:

- Saunders Street, North Side (2.04)
- Saunders Street, North Side, Loading (2.06)
- Saunders Street, South Side (3.02)
- West Chatham Street, North Side, Loading (4.04)
- West Chatham Street, North Side (4.05)
- West Chatham Street, South Side (4.06)
- West Chatham Street, South Side (4.07)
- Ambergate Station, East Side (6.01)
- Ambergate Station, West Side (6.03)

- North Salem Street, East Side (Center to Thompson) (7.05)
- North Salem Street, West Side (Center to Seaboard) (8.01)
- North Salem Street, West Side, Loading (Center to Seaboard) (8.02)
- North Salem Street, West Side (Saunders Street to Chatham Street) (8.03)
- North Salem Street, East Side (Saunders to Chatham) (8.09)
- South Salem Street, West Side (Holleman to Chatham) (9.01)
- East Chatham Street, North Side (Salem Street to Seaboard Street) (9.05)
- East Chatham Street, North Side, Loading (9.06)
- East Chatham Street, South Side (Salem Street to Seaboard Street) (9.07)
- South Salem Street, West Side (Moore to Holleman) (9.08)
- South Salem Street, West Side (NC 55 to Moore) (9.09)
- South Salem Street, East Side (NC 55 to Moore) (9.10)
- South Salem Street, East Side (Moore to Holleman) (9.11)
- South Salem Street, East Side (Holleman to Chatham) (9.12)
- Hunter Street, South Side, West of Town Campus (10.07)
- Hunter Street, South Side, East of Town Campus (10.08)
- Hunter Street, North Side, East of Town Campus (10.09)
- Hunter Street, North Side, West of Town Campus (10.10)
- Center Street, South Side (North Elm Street to North Mason Street) (11.01)
- Center Street, North Side (North Elm Street to North Mason Street) (11.02)
- South Elm Street, East Side (Olive Street to East Moore Street) (13.01)
- South Elm Street, East Side (East Chatham Street to Olive Street) (13.02)



Downtown Apex Parking Length of Stay Study
 Figure 1: Study Area



Downtown Apex Parking Length of Stay Study
 Figure 2: Existing Parking Time Restrictions

Data Collection

Parking occupancy and duration data was collected at the off-street parking lots and on-street parking areas identified above between 9:00 AM and 10:00 PM on Thursday, May 19, 2022, and Saturday, May 21, 2022, as recommended by Town Staff, based on the need to measure parking on a typical weekday and typical weekend day. Available pedestrian count data showed that, on average, visitation to downtown Apex is highest on Thursdays and Saturdays. Data technicians recorded the first three or four license plate numbers of each parked vehicle in a space during this time period every 30 minutes to determine how long specific vehicles remained parking in the same space.

Parking Analysis

Knowing how long vehicles are parked can inform different parking or time restriction policies. Occupancy is calculated by summing the vehicles parked during a given time period and dividing by the total number of spaces. Parking occupancies of 85-90% are usually considered the highest acceptable target, since someone looking for a space will not find an empty one easily. Occupancies above 100% are possible, when vehicles park illegally or in unofficial spaces. Occupancy data provides objective information to support or contradict claims of inadequate parking availability. High occupancies in one area combined with lower occupancies nearby indicate an opportunity for parking management. In this case, excess demand should be reallocated to the nearby available supply.

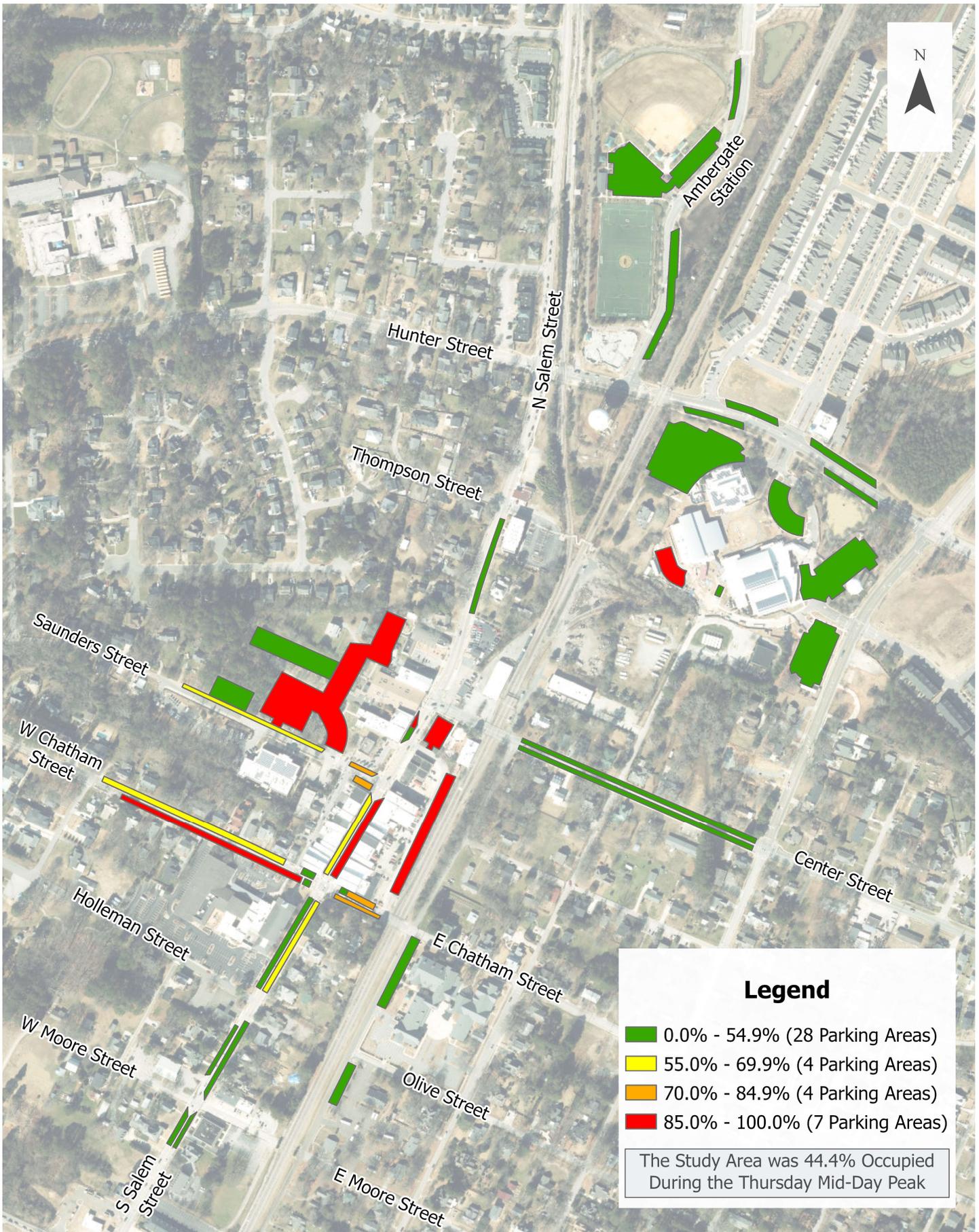
The length of time a car remains in a given parking space is length of stay, or duration, and can be estimated from the partial license plate information. Duration was calculated for each vehicle observed, and then averaged for each parking area and time period. Duration data can be used to understand parking behavior in order to redefine or confirm time restrictions and use existing spaces more efficiently.

Figures 2-5 show the peak occupancy for the Thursday mid-day peak, Thursday evening peak, Saturday mid-day peak, and Saturday evening peak.

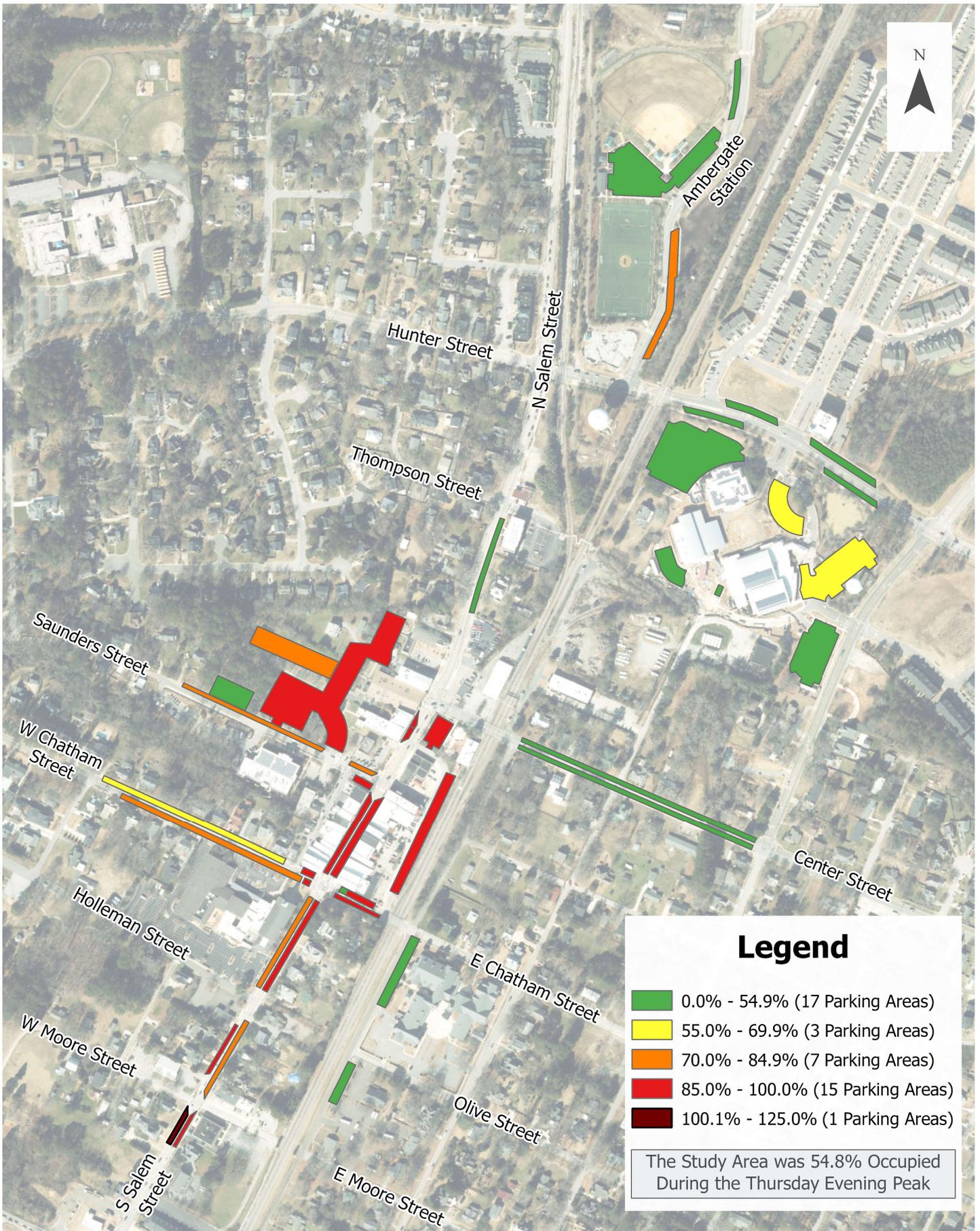
The following subsections detail the parking occupancy and parking duration for each time period and parking area in the study.

It is important to note that the following parking areas had little to no vehicles parked on Thursday and Saturday, and therefore no summaries were prepared:

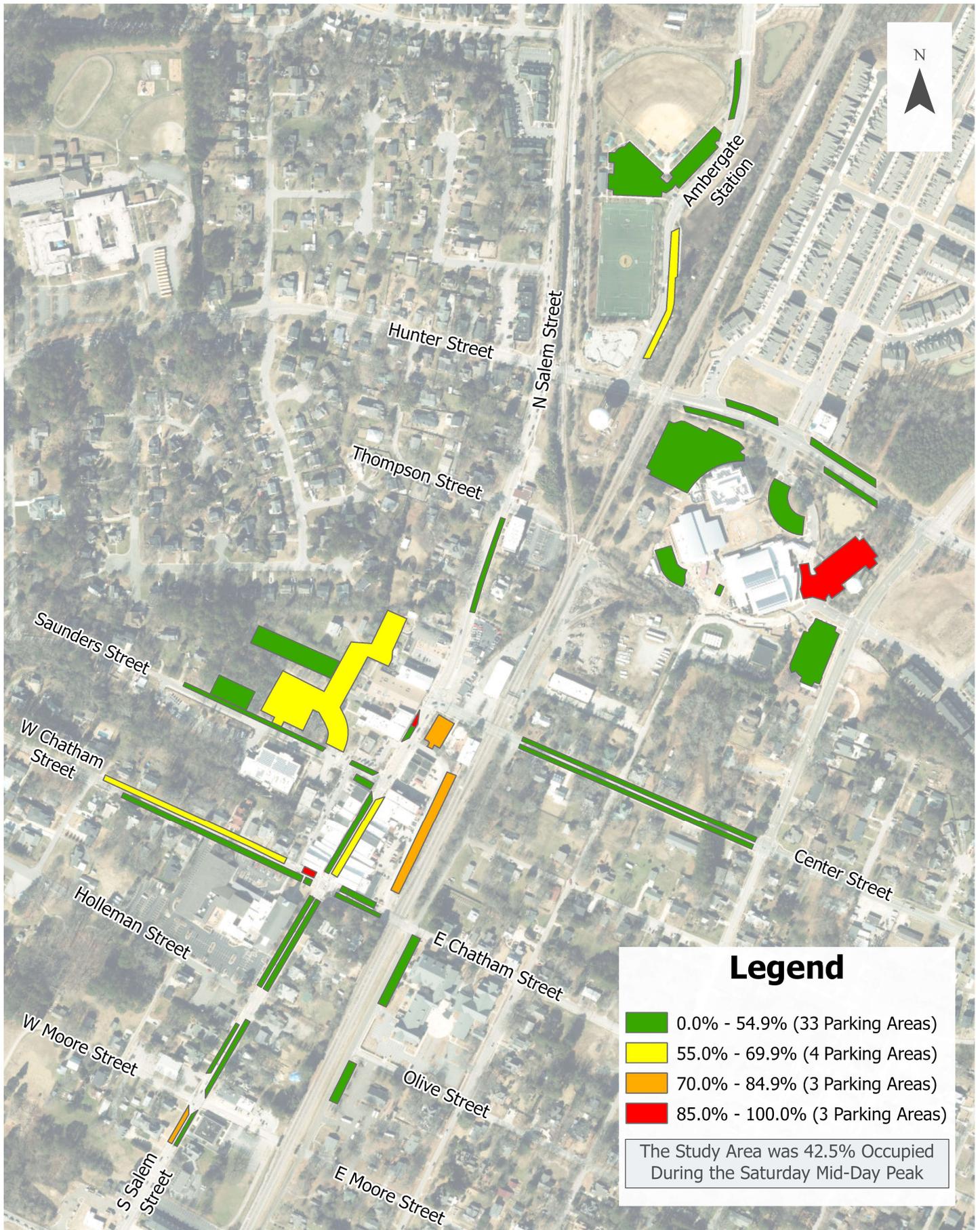
- North Salem Street, East Side (Center to Thompson) (7.05) – only one vehicle was parked here on Thursday from 8:00 PM to 9:30 PM; and no vehicles were parked here on Saturday
- Hunter Street, North Side, West of Town Campus (10.10) – no vehicles were parked here on Thursday or Saturday
- Center Street, South Side (North Elm Street to North Mason Street) (11.01) – no vehicles were parked here on Thursday or Saturday
- Center Street, North Side (North Elm Street to North Mason Street) (11.02) – one vehicle was parked here on Thursday from 7:00 PM to 10:00 PM; no vehicles were parked here on Saturday



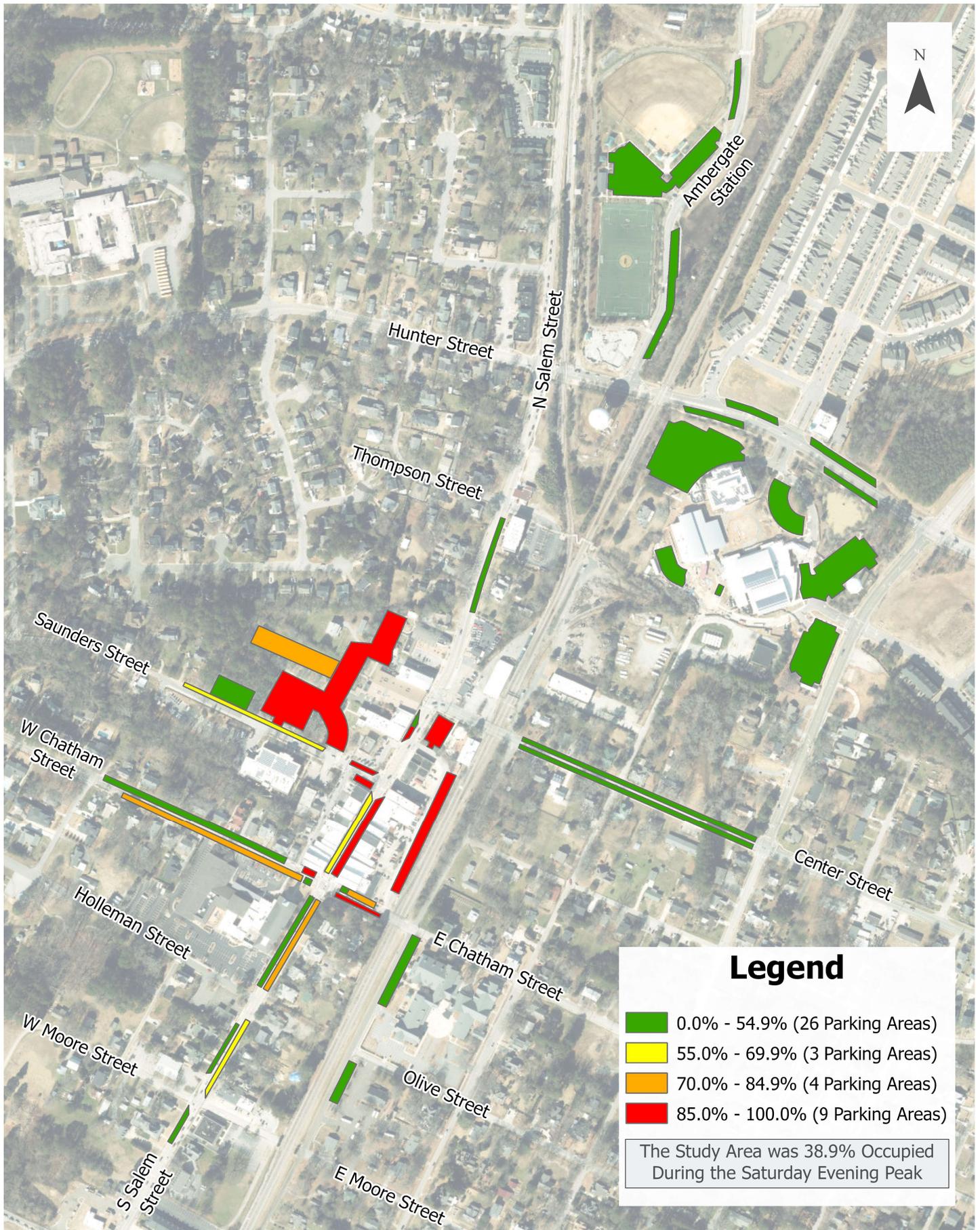
Downtown Apex Parking Length of Stay Study
 Figure 3: Thursday Mid-Day Peak Hour Occupancy (12:30 PM)



Downtown Apex Parking Length of Stay Study
 Figure 4: Thursday Evening Peak Hour Occupancy (7:00 PM)



Downtown Apex Parking Length of Stay Study
 Figure 5: Saturday Mid-Day Peak Hour Occupancy (11:00 AM)

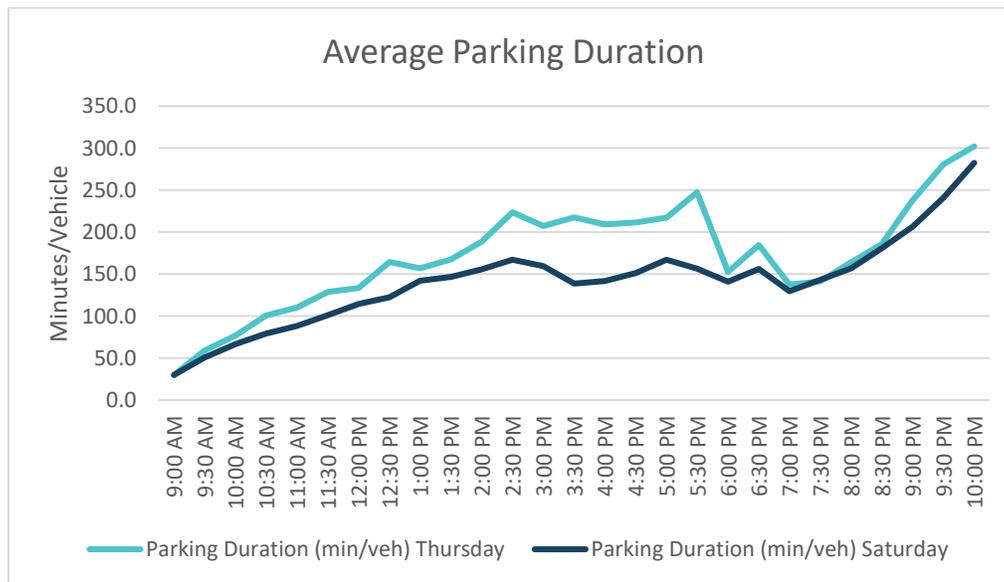
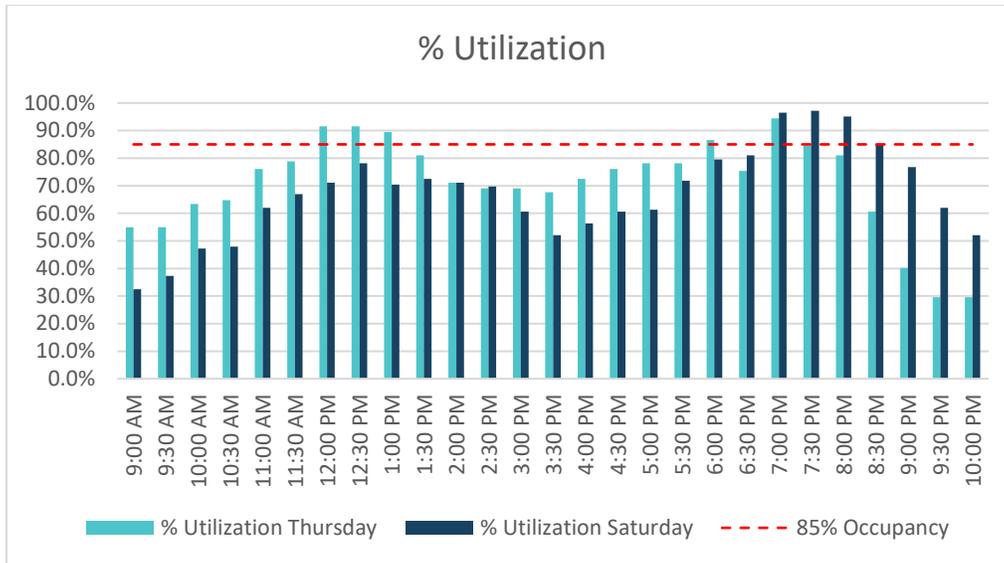


Downtown Apex Parking Length of Stay Study
 Figure 6: Saturday Evening Peak Hour Occupancy (7:00 PM)

Saunders Lot, Pavement (2.02) – 142 Parking Spaces

Saunders Lot (Pavement) - 2.02				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	54.9%	32.4%	30.0	30.0
9:30 AM	54.9%	37.3%	59.2	50.9
10:00 AM	63.4%	47.2%	77.0	66.7
10:30 AM	64.8%	47.9%	100.8	79.4
11:00 AM	76.1%	62.0%	110.6	88.3
11:30 AM	78.9%	66.9%	128.8	101.4
12:00 PM	91.5%	71.1%	133.6	114.7
12:30 PM	91.5%	78.2%	164.4	122.4
1:00 PM	89.4%	70.4%	157.1	142.2
1:30 PM	81.0%	72.5%	167.5	146.8
2:00 PM	71.1%	71.1%	188.9	155.9
2:30 PM	69.0%	69.7%	223.5	167.3
3:00 PM	69.0%	60.6%	207.2	159.8
3:30 PM	67.6%	52.1%	217.5	138.6
4:00 PM	72.5%	56.3%	209.1	141.8
4:30 PM	76.1%	60.6%	211.7	151.4
5:00 PM	78.2%	61.3%	217.4	167.2
5:30 PM	78.2%	71.8%	247.4	156.8
6:00 PM	86.6%	79.6%	152.7	141.2
6:30 PM	75.4%	81.0%	184.5	156.3
7:00 PM	94.4%	96.5%	137.7	129.6
7:30 PM	84.5%	97.2%	141.5	143.5
8:00 PM	81.0%	95.1%	164.3	157.1
8:30 PM	60.6%	85.2%	185.9	181.0
9:00 PM	40.1%	76.8%	237.9	206.7
9:30 PM	29.6%	62.0%	280.7	241.0
10:00 PM	29.6%	52.1%	302.1	282.6
Average Parking Duration Per Parking Spot (min/veh)			196.0	175.3
Maximum Parking Duration Among All Spots (min/veh)			810.0	810.0

Saunders Lot, Pavement (2.02) – 142 Parking Spaces

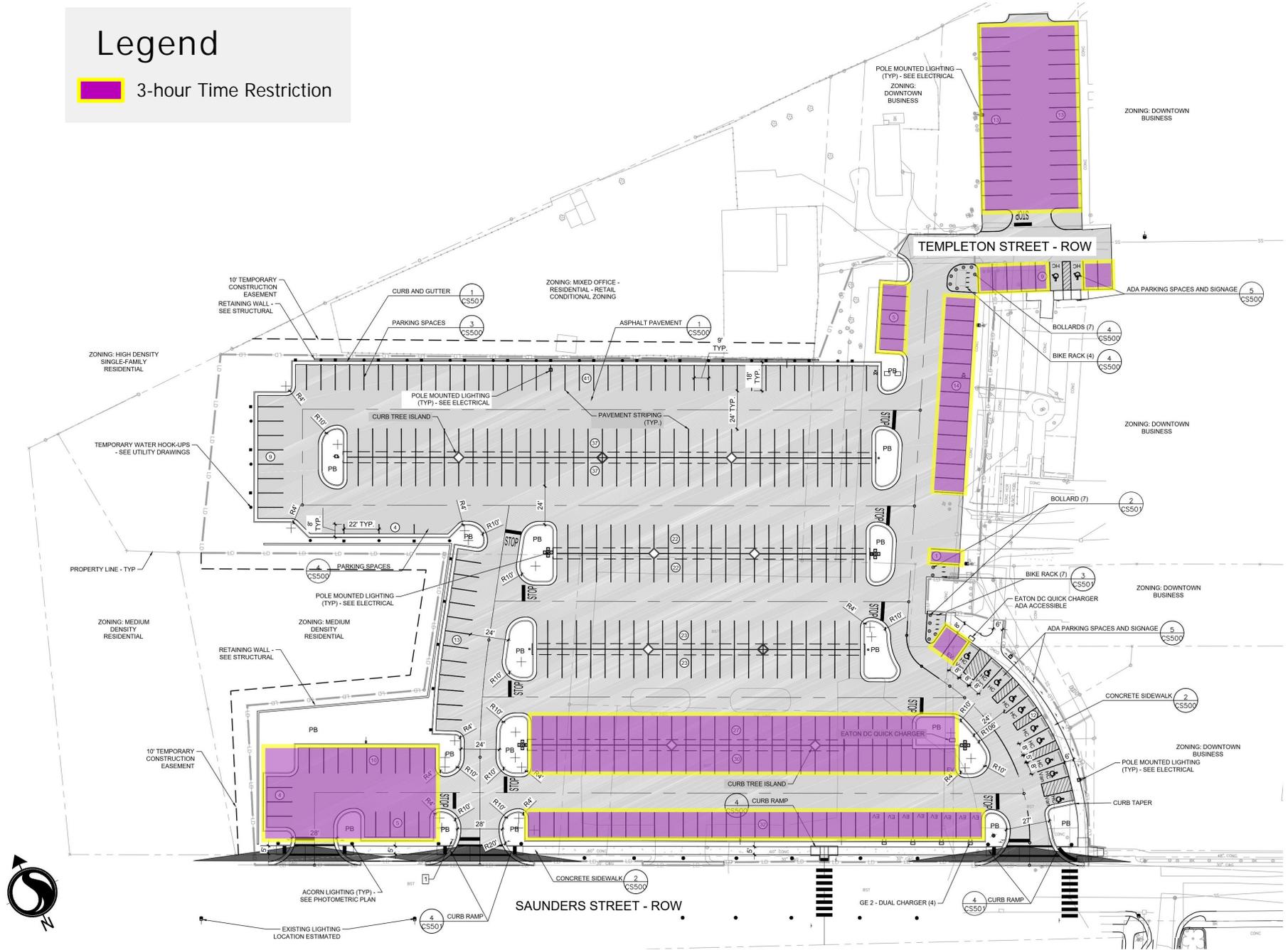


The collected data for Saunders Lot, Pavement, shows that there was available parking on both Thursday and Saturday. However, data did indicate that this parking lot was over 85% occupied during the mid-day and evening hours on Thursday, and the evening hours on Saturday. The average parking duration per parking spot was 196.0 minutes per vehicle on Thursday, and 175.3 minutes per vehicle on Saturday.

A new parking facility to replace the Saunders Lot will create 178 additional parking spaces in this location. It is recommended to implement a 3-hour parking limit for the parking spaces defined in Figure 7 below to encourage turnover, and enforce it with mobile Automatic License Plate Readers (ALPR), as described in the recommendations section of this technical memorandum. There are no time restriction or enforcement recommendations for the remaining parking spaces in the Saunders Lot. Since data shows that there is available parking during these peak times in the Hunter Street Lot and Apex Town Campus, it is also recommended to provide signage to these parking lots with available capacity.

Legend

 3-hour Time Restriction

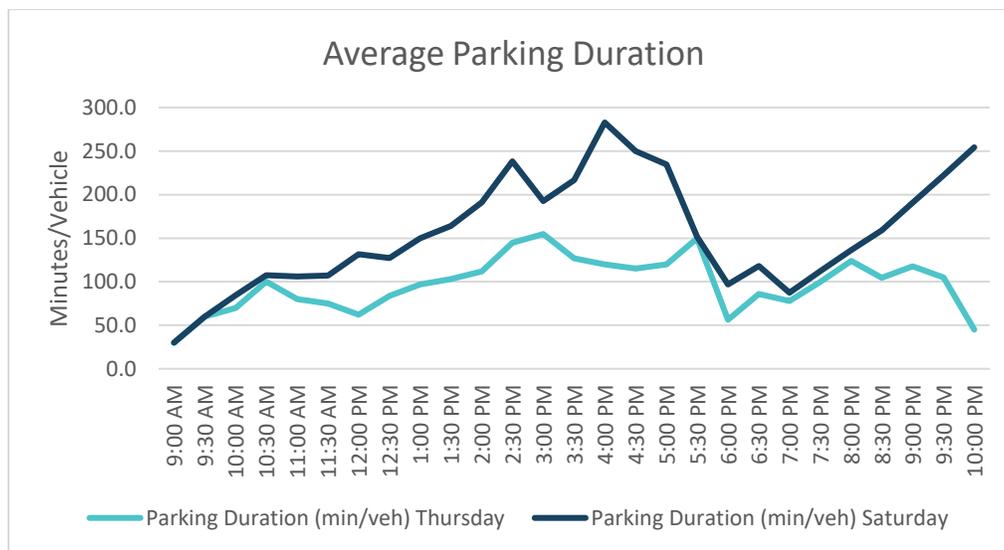
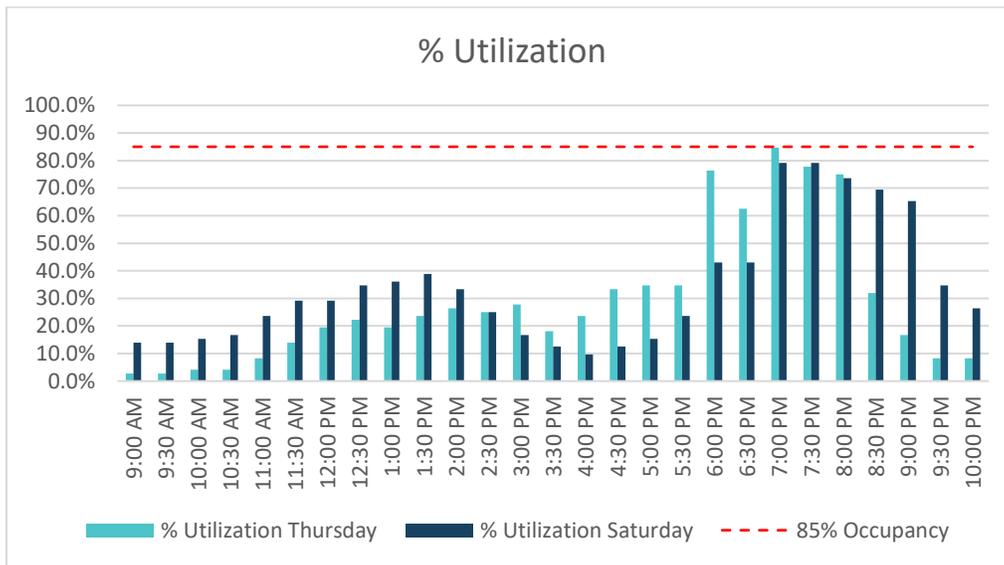


Downtown Apex Parking Length of Stay Study
 Figure 7: Saunders Lot Parking Recommendations

Saunders Lot, Gravel (2.03) – 72 Parking Spaces

Saunders Lot (Gravel) - 2.03				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	2.8%	13.9%	30.0	30.0
9:30 AM	2.8%	13.9%	60.0	60.0
10:00 AM	4.2%	15.3%	70.0	84.5
10:30 AM	4.2%	16.7%	100.0	107.5
11:00 AM	8.3%	23.6%	80.0	105.9
11:30 AM	13.9%	29.2%	75.0	107.1
12:00 PM	19.4%	29.2%	62.1	131.4
12:30 PM	22.2%	34.7%	83.6	127.2
1:00 PM	19.4%	36.1%	96.9	150.0
1:30 PM	23.6%	38.9%	103.1	163.9
2:00 PM	26.4%	33.3%	111.7	191.3
2:30 PM	25.0%	25.0%	144.7	238.3
3:00 PM	27.8%	16.7%	154.7	192.5
3:30 PM	18.1%	12.5%	126.9	216.7
4:00 PM	23.6%	9.7%	120.0	282.9
4:30 PM	33.3%	12.5%	115.0	250.0
5:00 PM	34.7%	15.3%	120.0	234.5
5:30 PM	34.7%	23.6%	150.0	151.8
6:00 PM	76.4%	43.1%	56.2	96.8
6:30 PM	62.5%	43.1%	86.0	118.1
7:00 PM	84.7%	79.2%	77.7	87.4
7:30 PM	77.8%	79.2%	99.6	112.1
8:00 PM	75.0%	73.6%	123.9	136.4
8:30 PM	31.9%	69.4%	104.3	159.0
9:00 PM	16.7%	65.3%	117.5	190.9
9:30 PM	8.3%	34.7%	105.0	222.0
10:00 PM	8.3%	26.4%	45.0	254.2
Average Parking Duration Per Parking Spot (min/veh)			110.4	175.6
Maximum Parking Duration Among All Spots (min/veh)			540.0	810.0

Saunders Lot, Gravel (2.03) – 72 Parking Spaces

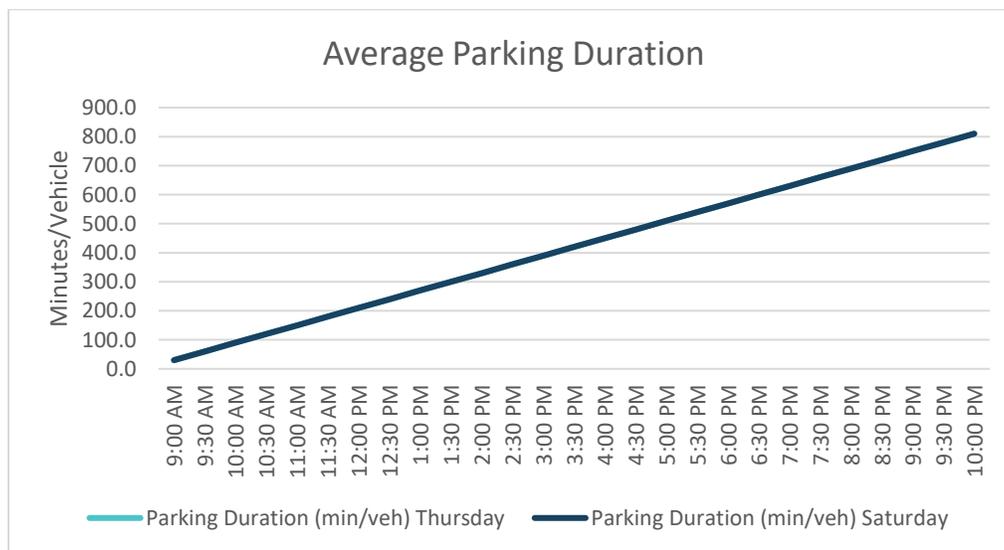
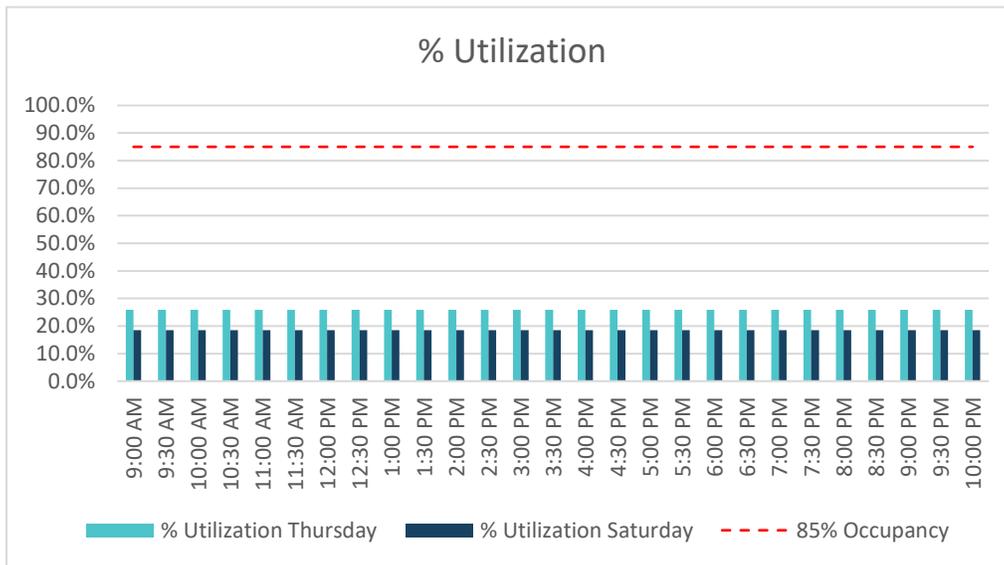


The collected data for Saunders Lot, Gravel, shows that there was available parking on both Thursday and Saturday. The average parking duration per parking spot was 110.4 minutes per vehicle on Thursday, and 175.6 minutes per vehicle on Saturday. A new parking facility to replace the entire Saunders Lot will create 178 additional parking spaces in this location. It is recommended to implement a 3-hour parking limit for the parking spaces defined in Figure 7 to encourage turnover, and enforce it with mobile ALPR, as described in the recommendations section of this technical memorandum. There are no time restriction or enforcement recommendations for the remaining parking spaces in the Saunders Lot. Since data shows that there is available parking during these peak times in the Hunter Street Lot and Apex Town Campus, it is also recommended to provide signage to these parking lots with available capacity.

Saunders Street Unofficial Lot (2.05) – 27 Parking Spaces

Saunders Unofficial Lot - 2.05				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	25.9%	18.5%	30.0	30.0
9:30 AM	25.9%	18.5%	60.0	60.0
10:00 AM	25.9%	18.5%	90.0	90.0
10:30 AM	25.9%	18.5%	120.0	120.0
11:00 AM	25.9%	18.5%	150.0	150.0
11:30 AM	25.9%	18.5%	180.0	180.0
12:00 PM	25.9%	18.5%	210.0	210.0
12:30 PM	25.9%	18.5%	240.0	240.0
1:00 PM	25.9%	18.5%	270.0	270.0
1:30 PM	25.9%	18.5%	300.0	300.0
2:00 PM	25.9%	18.5%	330.0	330.0
2:30 PM	25.9%	18.5%	360.0	360.0
3:00 PM	25.9%	18.5%	390.0	390.0
3:30 PM	25.9%	18.5%	420.0	420.0
4:00 PM	25.9%	18.5%	450.0	450.0
4:30 PM	25.9%	18.5%	480.0	480.0
5:00 PM	25.9%	18.5%	510.0	510.0
5:30 PM	25.9%	18.5%	540.0	540.0
6:00 PM	25.9%	18.5%	570.0	570.0
6:30 PM	25.9%	18.5%	600.0	600.0
7:00 PM	25.9%	18.5%	630.0	630.0
7:30 PM	25.9%	18.5%	660.0	660.0
8:00 PM	25.9%	18.5%	690.0	690.0
8:30 PM	25.9%	18.5%	720.0	720.0
9:00 PM	25.9%	18.5%	750.0	750.0
9:30 PM	25.9%	18.5%	780.0	780.0
10:00 PM	25.9%	18.5%	810.0	810.0
Average Parking Duration Per Parking Spot (min/veh)			810.0	810.0
Maximum Parking Duration Among All Spots (min/veh)			810.0	810.0

Saunders Street Unofficial Lot (2.05) – 27 Parking Spaces



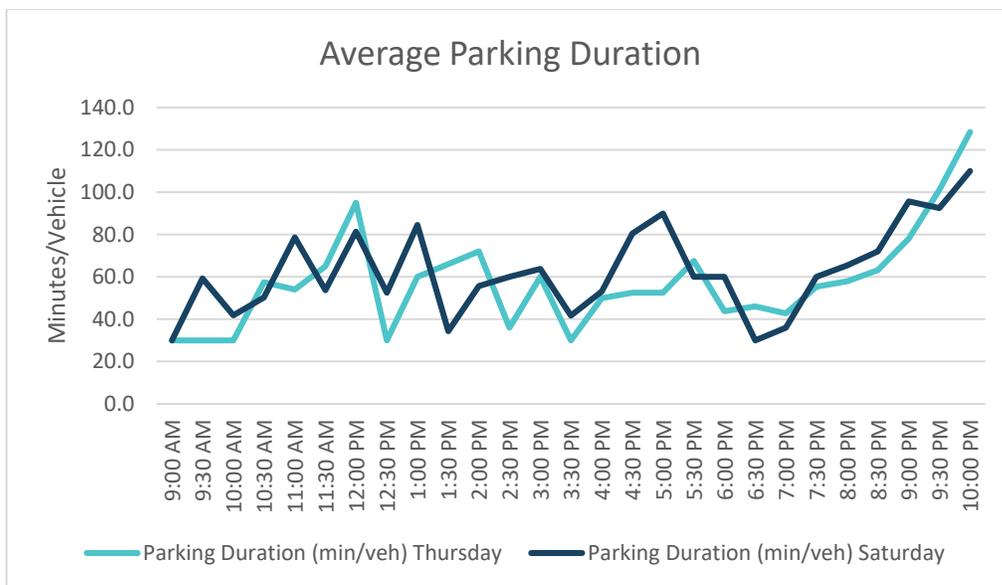
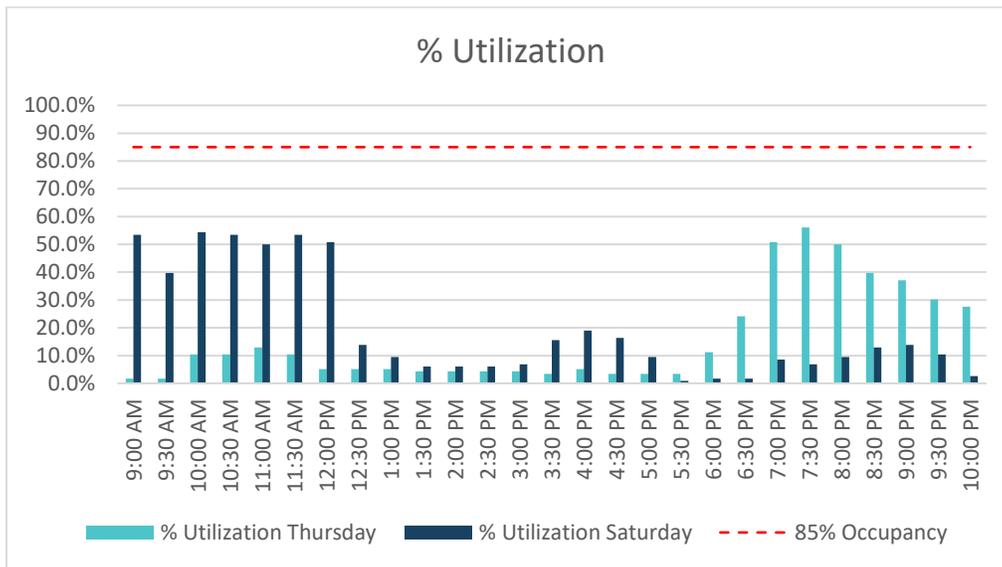
The collected data for Saunders Street Unofficial Lot shows that there was available parking on both Thursday and Saturday. The data collectors noted that there was no turnover in this parking lot, and the same vehicles remained all day. Therefore, the average parking duration per parking spot was 810.0 minutes per vehicle on both Thursday and Saturday.

A new parking facility to replace the entire Saunders Lot will create 178 additional parking spaces in this location. When the new facility is built, it is recommended to implement a 3-hour parking limit for the parking spaces defined in Figure 7 to encourage turnover, and enforce it with mobile ALPR, as described in the recommendations section of this technical memorandum. There are no time restriction or enforcement recommendations for the remaining parking spaces in the Saunders Lot. Since data shows that there is available parking during these peak times in the Hunter Street Lot and Apex Town Campus, it is also recommended to provide signage to these parking lots with available capacity.

Hunter Street Park (6.02) – 116 Parking Spaces

Hunter Street Park - 6.02				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	1.7%	53.4%	30.0	30.0
9:30 AM	1.7%	39.7%	30.0	59.3
10:00 AM	10.3%	54.3%	30.0	41.9
10:30 AM	10.3%	53.4%	57.5	50.3
11:00 AM	12.9%	50.0%	54.0	78.6
11:30 AM	10.3%	53.4%	65.0	53.7
12:00 PM	5.2%	50.9%	95.0	81.4
12:30 PM	5.2%	13.8%	30.0	52.5
1:00 PM	5.2%	9.5%	60.0	84.5
1:30 PM	4.3%	6.0%	66.0	34.3
2:00 PM	4.3%	6.0%	72.0	55.7
2:30 PM	4.3%	6.0%	36.0	60.0
3:00 PM	4.3%	6.9%	60.0	63.8
3:30 PM	3.4%	15.5%	30.0	41.7
4:00 PM	5.2%	19.0%	50.0	53.2
4:30 PM	3.4%	16.4%	52.5	80.5
5:00 PM	3.4%	9.5%	52.5	90.0
5:30 PM	3.4%	0.9%	67.5	60.0
6:00 PM	11.2%	1.7%	43.8	60.0
6:30 PM	24.1%	1.7%	46.1	30.0
7:00 PM	50.9%	8.6%	42.7	36.0
7:30 PM	56.0%	6.9%	55.4	60.0
8:00 PM	50.0%	9.5%	57.9	65.5
8:30 PM	39.7%	12.9%	63.3	72.0
9:00 PM	37.1%	13.8%	78.1	95.6
9:30 PM	30.2%	10.3%	101.1	92.5
10:00 PM	27.6%	2.6%	128.4	110.0
Average Parking Duration Per Parking Spot (min/veh)			75.6	69.0
Maximum Parking Duration Among All Spots (min/veh)			210.0	210.0

Hunter Street Park (6.02) – 116 Parking Spaces



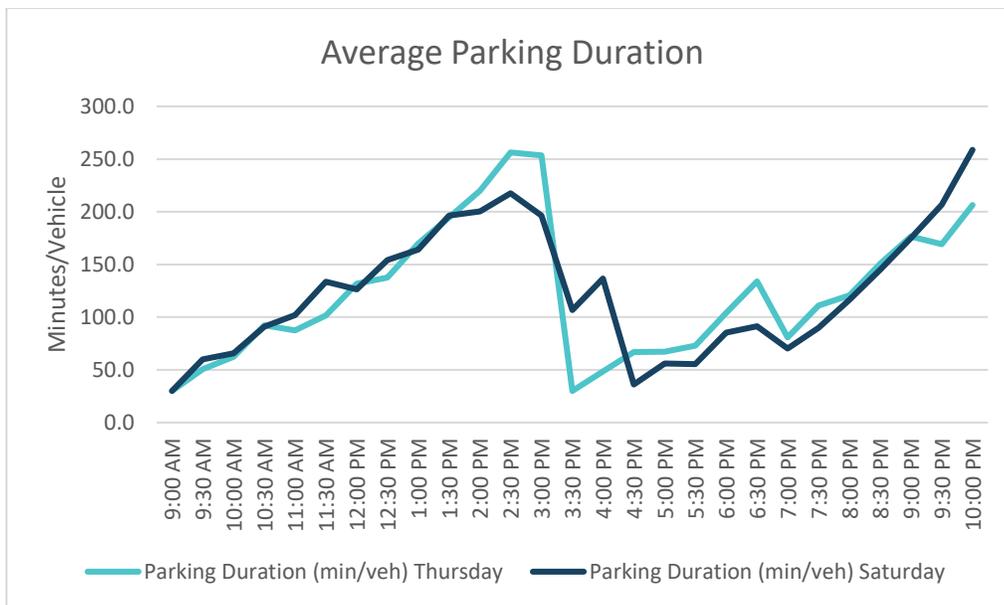
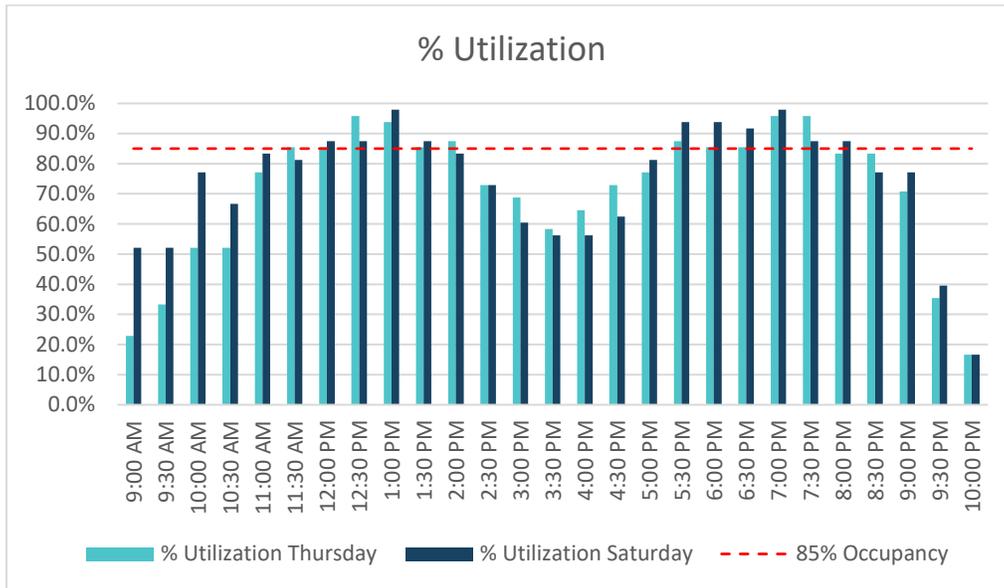
The collected data for Hunter Street Park shows that there was available parking on both Thursday and Saturday. It is important to note that a brief storm occurred on Saturday evening that caused the parking vacancies from 5:30-6:30pm. Data indicates that this parking area is utilized most often on weekday evenings and weekend mornings. The average parking duration per parking spot was 75.6 minutes per vehicle on Thursday, and 69.0 minutes per vehicle on Saturday. Since the parking supply was greater than the parking demand, there are no turnover or enforcement recommendations for Hunter Street Park.

Since data shows that there is available parking in the Hunter Street Park lot on both Thursday and Saturday, it is recommended to encourage use of this lot during peak occupancy periods. As described in other sections, it is recommended to provide additional signage to this lot from the Saunders Lot, Depot Lot, and Seaboard Lot.

Seaboard Lot (8.05) – 48 Parking Spaces

Seaboard Lot - 8.05				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	22.9%	52.1%	30.0	30.0
9:30 AM	33.3%	52.1%	50.6	60.0
10:00 AM	52.1%	77.1%	62.4	65.7
10:30 AM	52.1%	66.7%	92.4	90.9
11:00 AM	77.1%	83.3%	87.6	101.8
11:30 AM	85.4%	81.3%	101.7	133.8
12:00 PM	85.4%	87.5%	131.7	126.4
12:30 PM	95.8%	87.5%	137.6	154.3
1:00 PM	93.8%	97.9%	170.0	164.0
1:30 PM	85.4%	87.5%	194.6	196.4
2:00 PM	87.5%	83.3%	220.0	200.3
2:30 PM	72.9%	72.9%	256.3	217.7
3:00 PM	68.8%	60.4%	253.6	196.6
3:30 PM	58.3%	56.3%	30.0	106.7
4:00 PM	64.6%	56.3%	48.4	136.7
4:30 PM	72.9%	62.5%	66.9	36.0
5:00 PM	77.1%	81.3%	67.3	56.2
5:30 PM	87.5%	93.8%	72.9	55.3
6:00 PM	85.4%	93.8%	103.9	85.3
6:30 PM	85.4%	91.7%	133.9	91.4
7:00 PM	95.8%	97.9%	80.9	70.2
7:30 PM	95.8%	87.5%	110.9	90.0
8:00 PM	83.3%	87.5%	120.8	116.4
8:30 PM	83.3%	77.1%	150.8	145.1
9:00 PM	70.8%	77.1%	176.5	175.1
9:30 PM	35.4%	39.6%	169.4	206.8
10:00 PM	16.7%	16.7%	206.3	258.8
Average Parking Duration Per Parking Spot (min/veh)			162.7	146.6
Maximum Parking Duration Among All Spots (min/veh)			420.0	450.0

Seaboard Lot (8.05) – 48 Parking Spaces

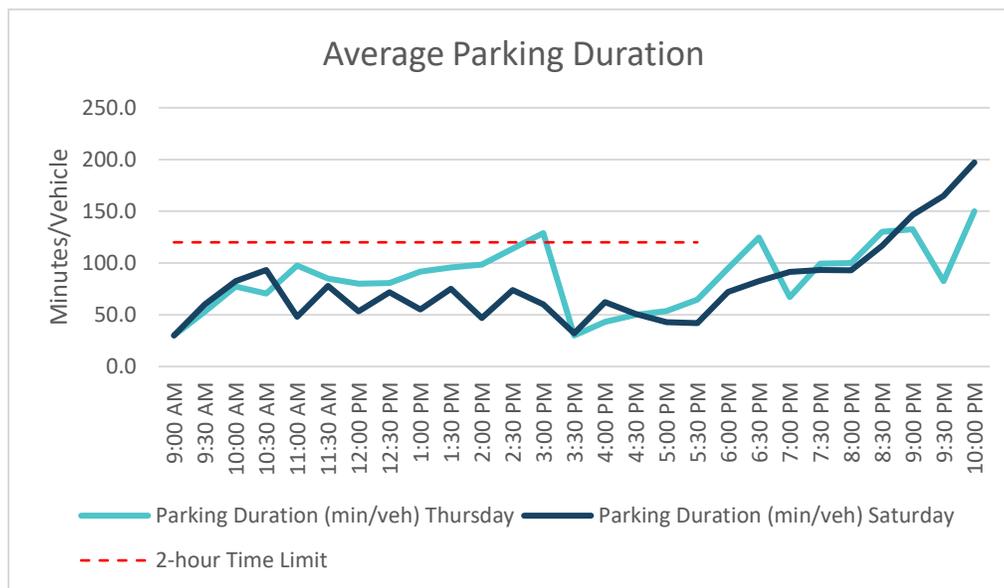
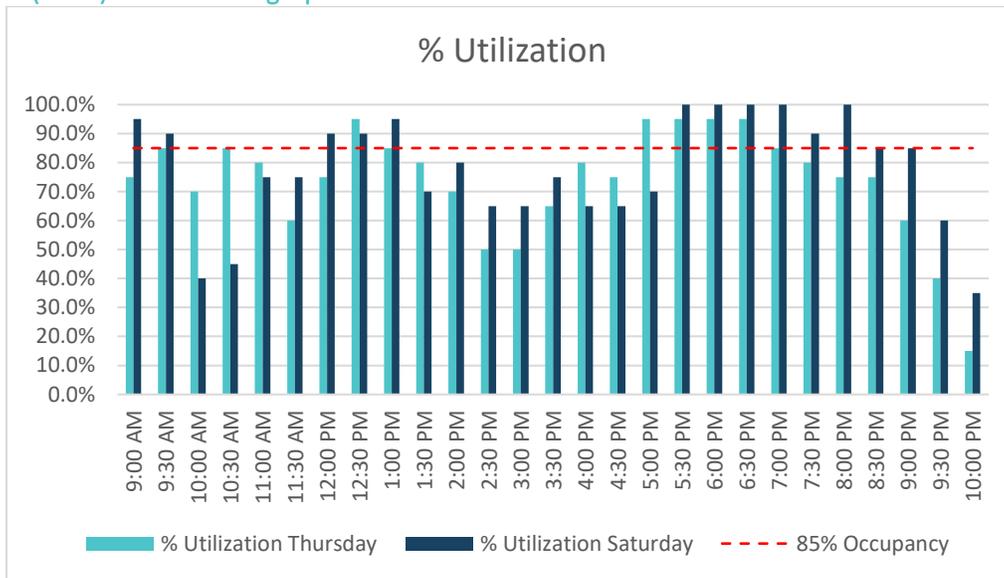


The collected data for Seaboard Lot shows that there was available parking on both Thursday and Saturday. However, data did indicate that this parking lot was over 85% occupied around lunch time and dinner time on both Thursday and Saturday. There are currently no time restrictions for this parking lot. The average parking duration per parking spot was 162.7 minutes per vehicle on Thursday, and 146.6 minutes per vehicle on Saturday. Since this is a heavily utilized parking lot, it is recommended to encourage turnover by implementing and enforcing a 3-hour time restriction with mobile ALPR, as described in the recommendations section of this technical memorandum. Since data shows that there is available parking during these peak times in the Hunter Street Lot and Apex Town Campus, it is also recommended to provide signage to these parking lots with available capacity.

Depot Lot (8.08) – 21 Parking Spaces

Depot Lot - 8.08				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	75.0%	95.0%	30.0	30.0
9:30 AM	85.0%	90.0%	52.9	60.0
10:00 AM	70.0%	40.0%	77.1	82.5
10:30 AM	85.0%	45.0%	70.6	93.3
11:00 AM	80.0%	75.0%	97.5	48.0
11:30 AM	60.0%	75.0%	85.0	78.0
12:00 PM	75.0%	90.0%	80.0	53.3
12:30 PM	95.0%	90.0%	80.5	71.7
1:00 PM	85.0%	95.0%	91.8	55.3
1:30 PM	80.0%	70.0%	95.6	75.0
2:00 PM	70.0%	80.0%	98.6	46.9
2:30 PM	50.0%	65.0%	114.0	73.8
3:00 PM	50.0%	65.0%	129.0	60.0
3:30 PM	65.0%	75.0%	30.0	32.0
4:00 PM	80.0%	65.0%	43.1	62.3
4:30 PM	75.0%	65.0%	50.0	50.8
5:00 PM	95.0%	70.0%	53.7	42.9
5:30 PM	95.0%	100.0%	64.7	42.0
6:00 PM	95.0%	100.0%	94.7	72.0
6:30 PM	95.0%	100.0%	124.7	82.5
7:00 PM	85.0%	100.0%	67.1	91.5
7:30 PM	80.0%	90.0%	99.4	93.3
8:00 PM	75.0%	100.0%	100.0	93.0
8:30 PM	75.0%	85.0%	130.0	116.5
9:00 PM	60.0%	85.0%	132.5	146.5
9:30 PM	40.0%	60.0%	82.5	165.0
10:00 PM	15.0%	35.0%	150.0	197.1
Average Parking Duration Per Parking Spot (min/veh)			91.8	86.7
Maximum Parking Duration Among All Spots (min/veh)			390.0	144.0

Depot Lot (8.08) – 21 Parking Spaces



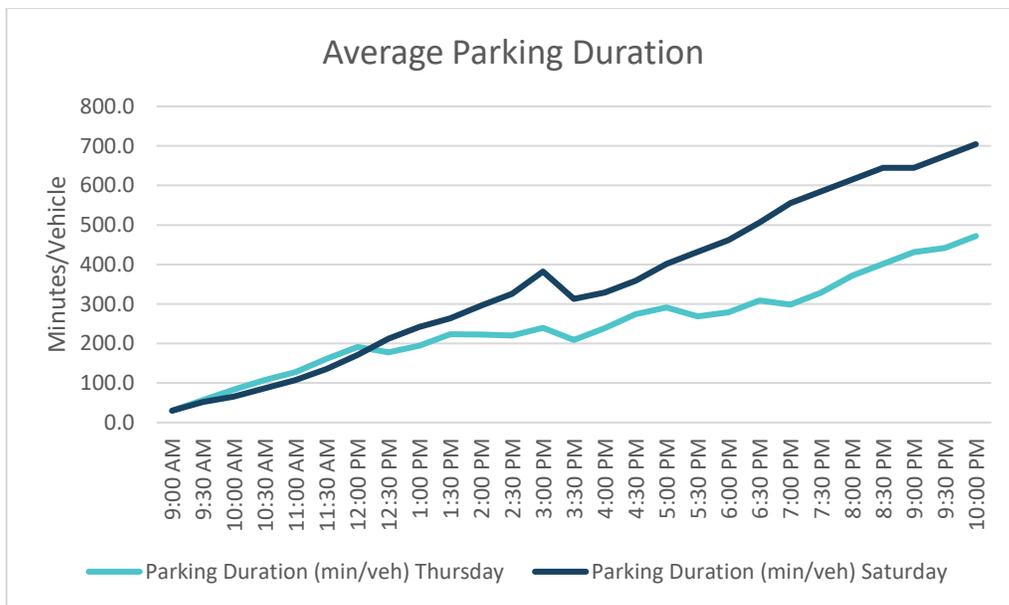
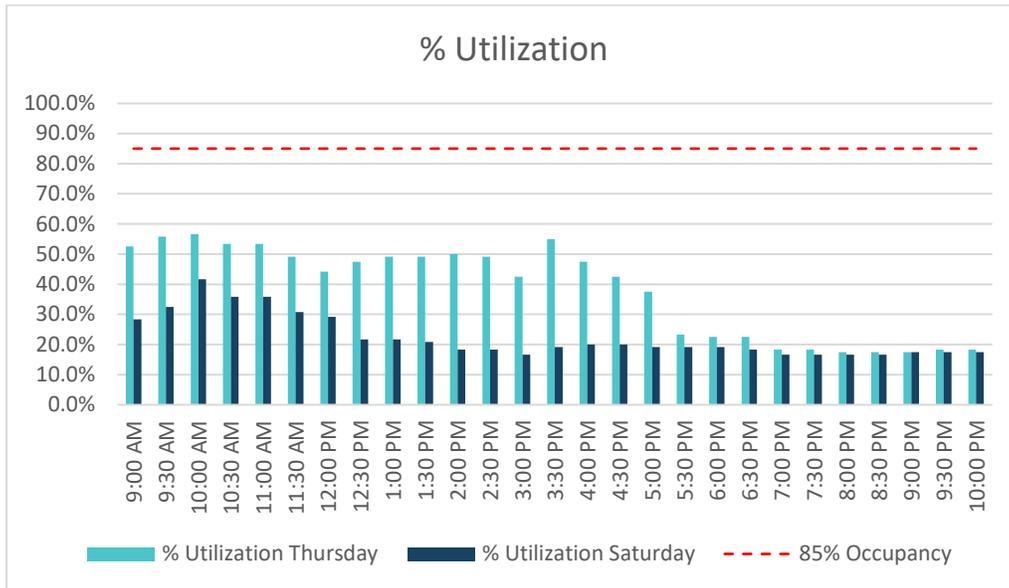
The collected data for Depot Lot shows that there was available parking on Thursday, and available parking for 81% of the day on Saturday. The data did indicate that this parking lot was over 85% occupied for 2/3 of the day on Thursday, and 48% of the day on Saturday. There is currently a 2-hour time restriction from 8:00 AM to 6:00 PM, as shown in the Average Parking Duration graph above. Data indicates that this time restriction was adhered to for 95% of the day on Thursday, and all day on Saturday.

The average parking duration per parking spot was 91.8 minutes per vehicle on Thursday, and 86.7 minutes per vehicle on Saturday. Since this is a highly utilized parking lot, it is recommended to extend the 2-hour time restriction until 8:00 PM, and encourage turnover by enforcing the 2-hour time restriction with mobile ALPR, as described in the recommendations section of this technical memorandum. Since data shows that there is available parking during these peak times in the Hunter Street Lot and Apex Town Campus, it is also recommended to provide signage to these parking lots with available capacity.

Apex Town Hall (10.01) – 120 Parking Spaces

Apex Town Hall - 10.01				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	52.5%	28.3%	30.0	30.0
9:30 AM	55.8%	32.5%	56.9	52.3
10:00 AM	56.7%	41.7%	83.4	66.0
10:30 AM	53.3%	35.8%	107.3	86.5
11:00 AM	53.3%	35.8%	128.0	107.4
11:30 AM	49.2%	30.8%	161.7	135.4
12:00 PM	44.2%	29.2%	191.3	171.4
12:30 PM	47.5%	21.7%	177.4	212.3
1:00 PM	49.2%	21.7%	194.2	242.3
1:30 PM	49.2%	20.8%	223.2	264.0
2:00 PM	50.0%	18.3%	222.5	295.9
2:30 PM	49.2%	18.3%	220.7	325.9
3:00 PM	42.5%	16.7%	239.4	382.5
3:30 PM	55.0%	19.2%	209.1	313.0
4:00 PM	47.5%	20.0%	238.9	328.8
4:30 PM	42.5%	20.0%	274.1	358.8
5:00 PM	37.5%	19.2%	291.3	401.7
5:30 PM	23.3%	19.2%	268.9	431.7
6:00 PM	22.5%	19.2%	278.9	461.7
6:30 PM	22.5%	18.3%	308.9	505.9
7:00 PM	18.3%	16.7%	298.6	555.0
7:30 PM	18.3%	16.7%	328.6	585.0
8:00 PM	17.5%	16.7%	371.4	615.0
8:30 PM	17.5%	16.7%	401.4	645.0
9:00 PM	17.5%	17.5%	431.4	644.3
9:30 PM	18.3%	17.5%	441.8	674.3
10:00 PM	18.3%	17.5%	471.8	704.3
Average Parking Duration Per Parking Spot (min/veh)			254.8	297.8
Maximum Parking Duration Among All Spots (min/veh)			810.0	810.0

Apex Town Hall (10.01) – 120 Parking Spaces



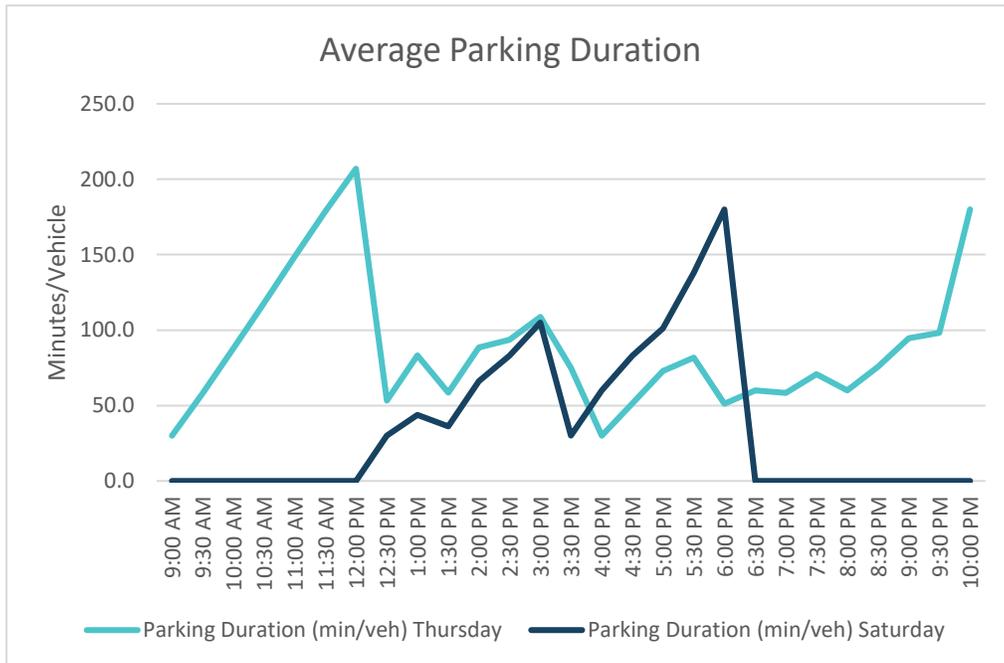
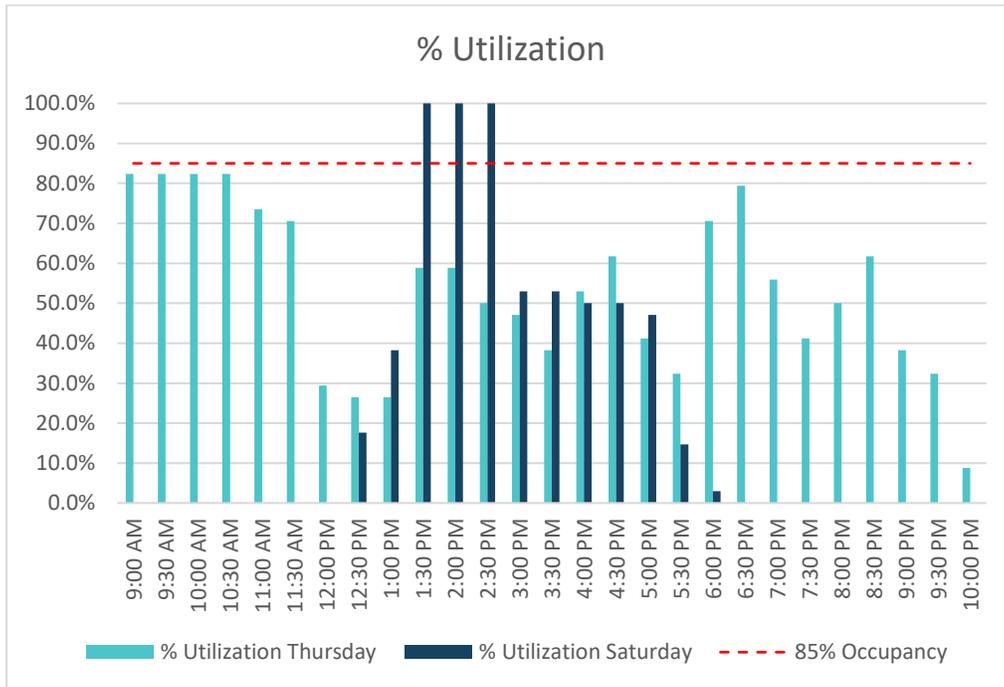
The collected data for Apex Town Hall shows that there was available parking on both Thursday and Saturday. The average parking duration per parking spot was 254.8 minutes per vehicle on Thursday, and 297.8 minutes per vehicle on Saturday. Since the parking supply was greater than the parking demand, there are no turnover or enforcement recommendations for Apex Town Hall.

Since data shows that there is available parking in the Apex Town Hall lot on both Thursday and Saturday, it is recommended to encourage use of this lot during peak occupancy periods. As described in other sections, it is recommended to provide additional signage to this lot from the Saunders Lot, Depot Lot, and Seaboard Lot.

Apex Town Campus Half Moon Lot (10.02) – 34 Parking Spaces

Apex Town Hall Half Moon Lot - 10.02				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	82.4%	0.0%	30.0	-
9:30 AM	82.4%	0.0%	57.9	-
10:00 AM	82.4%	0.0%	87.9	-
10:30 AM	82.4%	0.0%	117.9	-
11:00 AM	73.5%	0.0%	148.8	-
11:30 AM	70.6%	0.0%	178.8	-
12:00 PM	29.4%	0.0%	207.0	-
12:30 PM	26.5%	17.6%	53.3	30.0
1:00 PM	26.5%	38.2%	83.3	43.8
1:30 PM	58.8%	100.0%	58.5	36.2
2:00 PM	58.8%	100.0%	88.5	66.2
2:30 PM	50.0%	100.0%	93.5	82.9
3:00 PM	47.1%	52.9%	108.8	105.0
3:30 PM	38.2%	52.9%	75.0	30.0
4:00 PM	52.9%	50.0%	30.0	60.0
4:30 PM	61.8%	50.0%	51.4	82.9
5:00 PM	41.2%	47.1%	72.9	101.3
5:30 PM	32.4%	14.7%	81.8	138.0
6:00 PM	70.6%	2.9%	51.3	180.0
6:30 PM	79.4%	0.0%	60.0	-
7:00 PM	55.9%	0.0%	58.4	-
7:30 PM	41.2%	0.0%	70.7	-
8:00 PM	50.0%	0.0%	60.0	-
8:30 PM	61.8%	0.0%	75.7	-
9:00 PM	38.2%	0.0%	94.6	-
9:30 PM	32.4%	0.0%	98.2	-
10:00 PM	8.8%	0.0%	180.0	-
Average Parking Duration Per Parking Spot (min/veh)			94.7	99.0
Maximum Parking Duration Among All Spots (min/veh)			330.0	180.0

Apex Town Campus Half Moon Lot (10.02) – 34 Parking Spaces



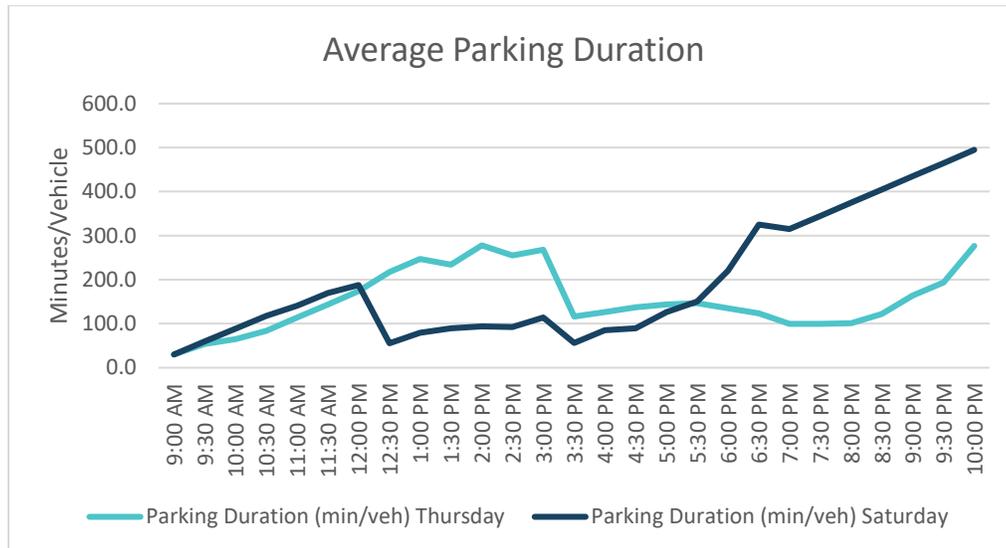
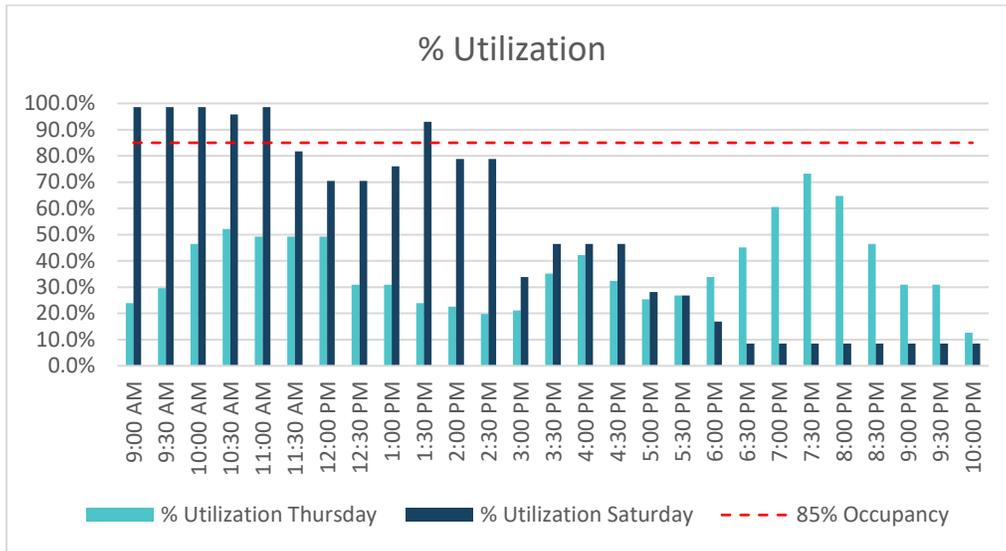
The collected data for Apex Town Campus Half Moon Lot shows that there was available parking all day on Thursday. It is important to note that there was a farmers market set up on Saturday morning between 9:00 AM and 12:00 PM, so no parking data was collected during these hours on Saturday. The data indicates that there was no available parking on Saturday between 1:30 PM to 3:00 PM, and the average parking duration between 1:30 PM to 3:00 PM was 61.8 minutes per vehicle. Data indicates that this parking area is utilized most often on weekdays and weekend afternoons. The average parking duration per parking spot was 94.7 minutes per vehicle on Thursday, and 99.0

minutes per vehicle on Saturday. Since the parking supply was greater than the parking demand on Thursday, and the average length of stay when the parking lot was at 100% occupancy on Saturday was just over 60 minutes, there are no turnover or enforcement recommendations for Apex Town Campus Half Moon Lot.

Apex Community Center (10.03) – 71 Parking Spaces

Apex Community Center - 10.03				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	23.9%	98.6%	30.0	30.0
9:30 AM	29.6%	98.6%	54.3	59.6
10:00 AM	46.5%	98.6%	64.5	88.7
10:30 AM	52.1%	95.8%	83.5	117.4
11:00 AM	49.3%	98.6%	114.0	140.6
11:30 AM	49.3%	81.7%	144.0	169.7
12:00 PM	49.3%	70.4%	174.0	187.8
12:30 PM	31.0%	70.4%	217.1	55.8
1:00 PM	31.0%	76.1%	247.1	79.4
1:30 PM	23.9%	93.0%	234.4	89.5
2:00 PM	22.5%	78.9%	278.0	93.8
2:30 PM	19.7%	78.9%	255.0	92.1
3:00 PM	21.1%	33.8%	268.0	113.8
3:30 PM	35.2%	46.5%	116.4	56.4
4:00 PM	42.3%	46.5%	126.0	85.5
4:30 PM	32.4%	46.5%	137.0	89.1
5:00 PM	25.4%	28.2%	143.3	126.0
5:30 PM	26.8%	26.8%	146.8	150.0
6:00 PM	33.8%	16.9%	135.0	220.0
6:30 PM	45.1%	8.5%	123.8	325.0
7:00 PM	60.6%	8.5%	99.8	315.0
7:30 PM	73.2%	8.5%	99.8	345.0
8:00 PM	64.8%	8.5%	101.1	375.0
8:30 PM	46.5%	8.5%	121.8	405.0
9:00 PM	31.0%	8.5%	163.6	435.0
9:30 PM	31.0%	8.5%	193.6	465.0
10:00 PM	12.7%	8.5%	276.7	495.0
Average Parking Duration Per Parking Spot (min/veh)			150.0	148.2
Maximum Parking Duration Among All Spots (min/veh)			780.0	810.0

Apex Community Center (10.03) – 71 Parking Spaces



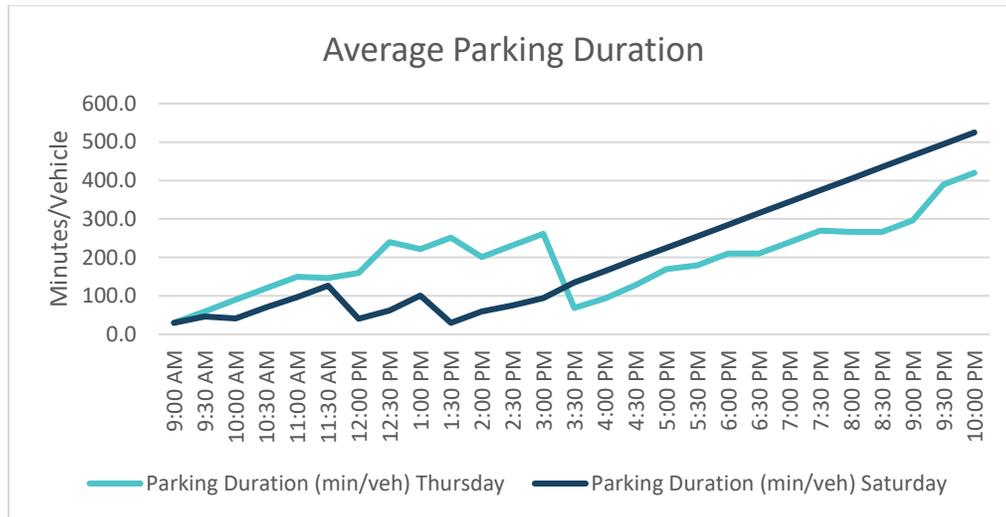
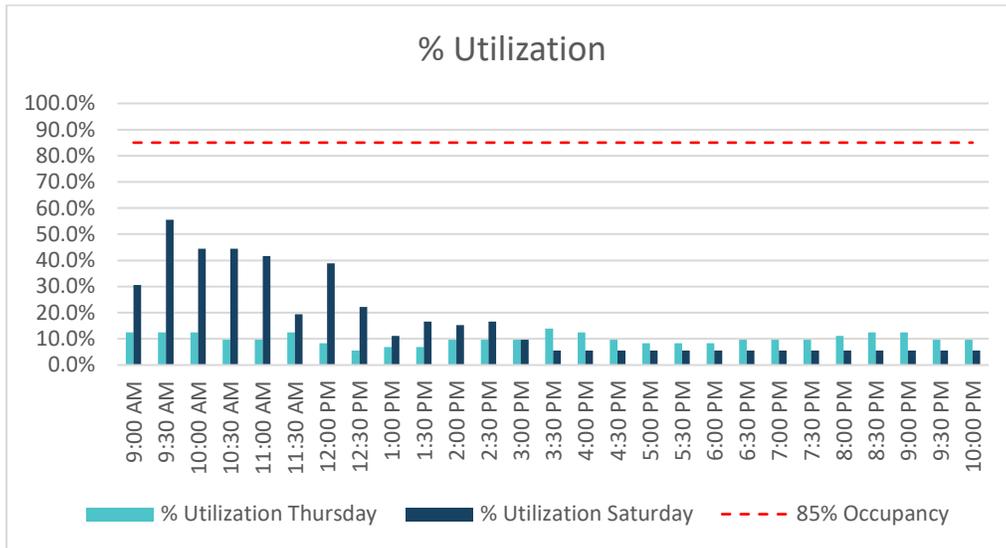
The collected data for Apex Community Center shows that there was available parking all day on Thursday. It is important to note that there was a farmers market set up on Town Campus on Saturday morning between 9:00 AM and 12:00 PM. The data indicates that this parking lot was close to 100% occupancy on Saturday morning between 9:00 AM and 11:30 AM, likely as a result of the farmers market. Since there was available parking nearby on Hunter Street and in the Apex Community Center Overflow Lot, it is recommended to provide signage to these additional parking areas during an event on Town Campus, such as the farmers market.

Data indicates that this parking area is utilized most often on weekdays and weekend mornings. The average parking duration per parking spot was 150.0 minutes per vehicle on Thursday, and 148.2 minutes per vehicle on Saturday. Since the parking supply was greater than the parking demand on Thursday, and the average length of stay when the parking lot was near capacity on Saturday was just under 90 minutes, there are no turnover or enforcement recommendations for Apex Community Center.

Apex Community Center Overflow (10.04) – 73 Parking Spaces

Apex Community Center Overflow - 10.04				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	12.5%	30.6%	30.0	30.0
9:30 AM	12.5%	55.6%	60.0	46.5
10:00 AM	12.5%	44.4%	90.0	41.3
10:30 AM	9.7%	44.4%	120.0	70.3
11:00 AM	9.7%	41.7%	150.0	97.0
11:30 AM	12.5%	19.4%	146.7	126.4
12:00 PM	8.3%	38.9%	160.0	40.7
12:30 PM	5.6%	22.2%	240.0	61.9
1:00 PM	6.9%	11.1%	222.0	101.3
1:30 PM	6.9%	16.7%	252.0	30.0
2:00 PM	9.7%	15.3%	201.4	60.0
2:30 PM	9.7%	16.7%	231.4	75.0
3:00 PM	9.7%	9.7%	261.4	94.3
3:30 PM	13.9%	5.6%	69.0	135.0
4:00 PM	12.5%	5.6%	93.3	165.0
4:30 PM	9.7%	5.6%	128.6	195.0
5:00 PM	8.3%	5.6%	170.0	225.0
5:30 PM	8.3%	5.6%	180.0	255.0
6:00 PM	8.3%	5.6%	210.0	285.0
6:30 PM	9.7%	5.6%	210.0	315.0
7:00 PM	9.7%	5.6%	240.0	345.0
7:30 PM	9.7%	5.6%	270.0	375.0
8:00 PM	11.1%	5.6%	266.3	405.0
8:30 PM	12.5%	5.6%	266.7	435.0
9:00 PM	12.5%	5.6%	296.7	465.0
9:30 PM	9.7%	5.6%	390.0	495.0
10:00 PM	9.7%	5.6%	420.0	525.0
Average Parking Duration Per Parking Spot (min/veh)			179.4	100.9
Maximum Parking Duration Among All Spots (min/veh)			810.0	540.0

Apex Community Center Overflow (10.04) – 73 Parking Spaces



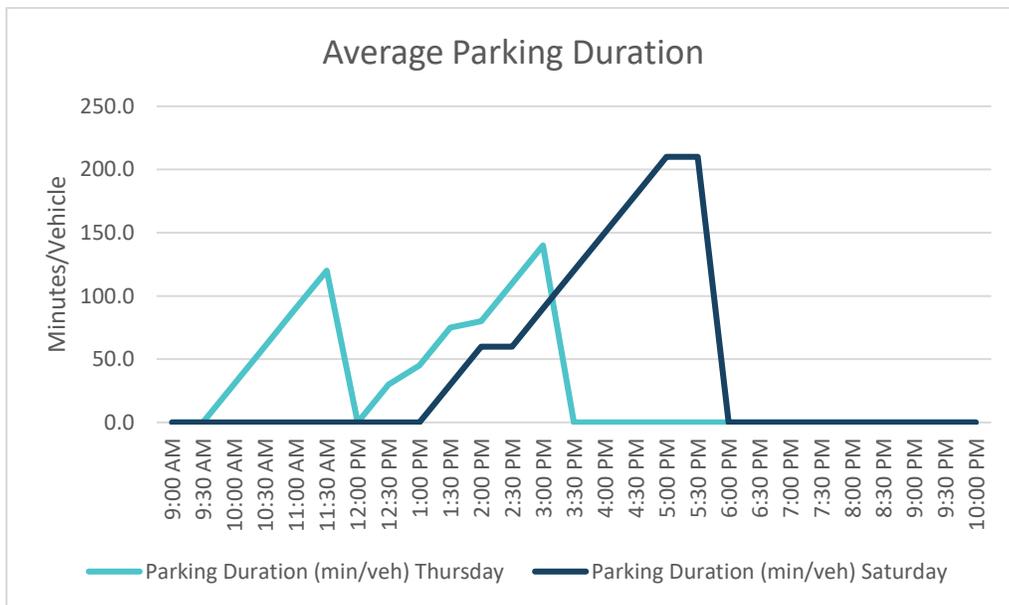
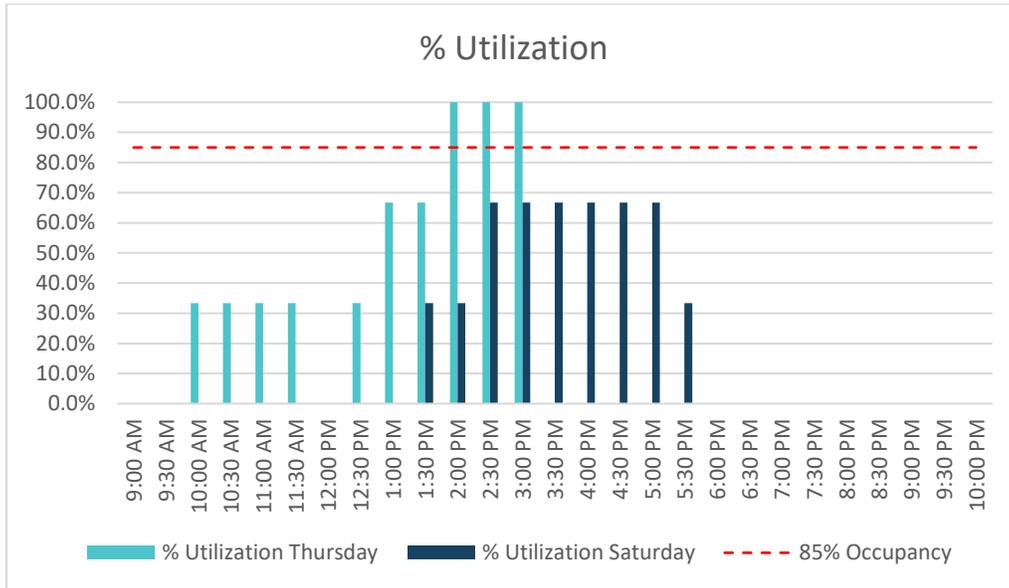
The collected data for Apex Community Center Overflow Lot shows that there was available parking on both Thursday and Saturday. Data indicates that this parking area is underutilized. The average parking duration per parking spot was 179.4 minutes per vehicle on Thursday, and 100.9 minutes per vehicle on Saturday. Since the parking supply was greater than the parking demand, there are no turnover or enforcement recommendations for Apex Community Center Overflow Lot.

Since data shows that there is available parking in the Apex Community Center Overflow lot on both Thursday and Saturday, it is recommended to encourage use of this lot during peak occupancy periods. As described in other sections, it is recommended to provide additional signage to this lot from the Saunders Lot, Depot Lot, and Seaboard Lot.

Apex Senior Center Accessible Spaces (10.05) – 3 Parking Spaces

Senior Center Lot, Accessible Spaces - 10.05				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	0.0%	0.0%	-	-
9:30 AM	0.0%	0.0%	-	-
10:00 AM	33.3%	0.0%	30.0	-
10:30 AM	33.3%	0.0%	60.0	-
11:00 AM	33.3%	0.0%	90.0	-
11:30 AM	33.3%	0.0%	120.0	-
12:00 PM	0.0%	0.0%	-	-
12:30 PM	33.3%	0.0%	30.0	-
1:00 PM	66.7%	0.0%	45.0	-
1:30 PM	66.7%	33.3%	75.0	30.0
2:00 PM	100.0%	33.3%	80.0	60.0
2:30 PM	100.0%	66.7%	110.0	60.0
3:00 PM	100.0%	66.7%	140.0	90.0
3:30 PM	0.0%	66.7%	-	120.0
4:00 PM	0.0%	66.7%	-	150.0
4:30 PM	0.0%	66.7%	-	180.0
5:00 PM	0.0%	66.7%	-	210.0
5:30 PM	0.0%	33.3%	-	210.0
6:00 PM	0.0%	0.0%	-	-
6:30 PM	0.0%	0.0%	-	-
7:00 PM	0.0%	0.0%	-	-
7:30 PM	0.0%	0.0%	-	-
8:00 PM	0.0%	0.0%	-	-
8:30 PM	0.0%	0.0%	-	-
9:00 PM	0.0%	0.0%	-	-
9:30 PM	0.0%	0.0%	-	-
10:00 PM	0.0%	0.0%	-	-
Average Parking Duration Per Parking Spot (min/veh)			145.0	225.0
Maximum Parking Duration Among All Spots (min/veh)			180.0	240.0

Apex Senior Center Accessible Spaces (10.05) – 3 Parking Spaces

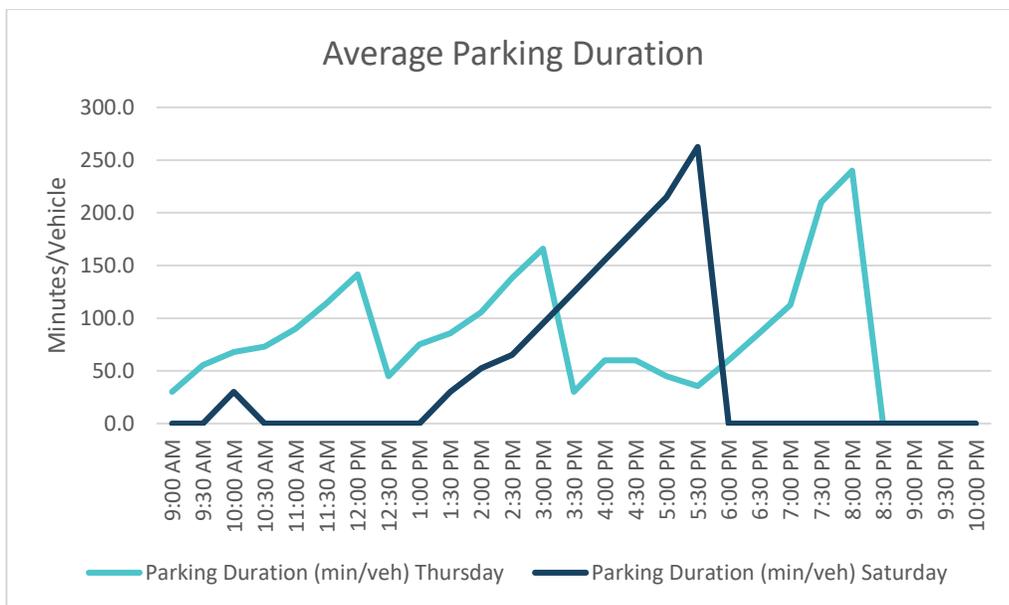
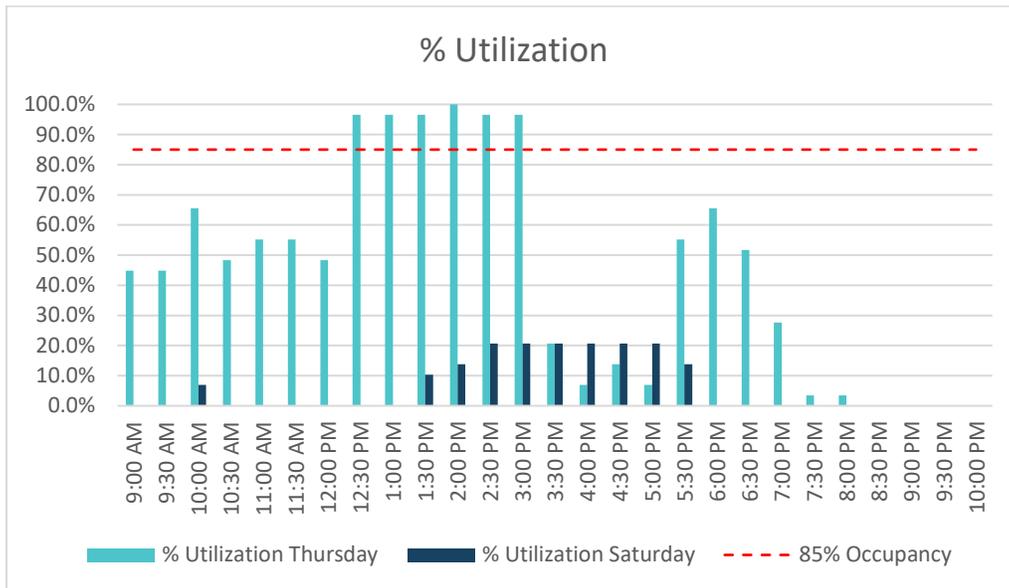


The collected data for the accessible spaces in the Senior Center Lot shows that it was at capacity between 2:00 PM and 3:30 PM on Thursday, and there was available parking all day on Saturday. The average parking duration per parking spot was 145.0 minutes per vehicle on Thursday, and 225.0 minutes per vehicle on Saturday. There are no turnover or enforcement recommendations for Apex Senior Center accessible spaces.

Apex Senior Center (10.06) – 29 Parking Spaces

Senior Center Lot, General Spaces - 10.06				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	44.8%	0.0%	30.0	-
9:30 AM	44.8%	0.0%	55.4	-
10:00 AM	65.5%	6.9%	67.9	30.0
10:30 AM	48.3%	0.0%	72.9	-
11:00 AM	55.2%	0.0%	90.0	-
11:30 AM	55.2%	0.0%	114.4	-
12:00 PM	48.3%	0.0%	141.4	-
12:30 PM	96.6%	0.0%	45.0	-
1:00 PM	96.6%	0.0%	75.0	-
1:30 PM	96.6%	10.3%	85.7	30.0
2:00 PM	100.0%	13.8%	105.5	52.5
2:30 PM	96.6%	20.7%	138.2	65.0
3:00 PM	96.6%	20.7%	166.1	95.0
3:30 PM	20.7%	20.7%	30.0	125.0
4:00 PM	6.9%	20.7%	60.0	155.0
4:30 PM	13.8%	20.7%	60.0	185.0
5:00 PM	6.9%	20.7%	45.0	215.0
5:30 PM	55.2%	13.8%	35.6	262.5
6:00 PM	65.5%	0.0%	60.0	-
6:30 PM	51.7%	0.0%	86.0	-
7:00 PM	27.6%	0.0%	112.5	-
7:30 PM	3.4%	0.0%	210.0	-
8:00 PM	3.4%	0.0%	240.0	-
8:30 PM	0.0%	0.0%	-	-
9:00 PM	0.0%	0.0%	-	-
9:30 PM	0.0%	0.0%	-	-
10:00 PM	0.0%	0.0%	-	-
Average Parking Duration Per Parking Spot (min/veh)			121.3	188.6
Maximum Parking Duration Among All Spots (min/veh)			330.0	270.0

Apex Senior Center (10.06) – 29 Parking Spaces

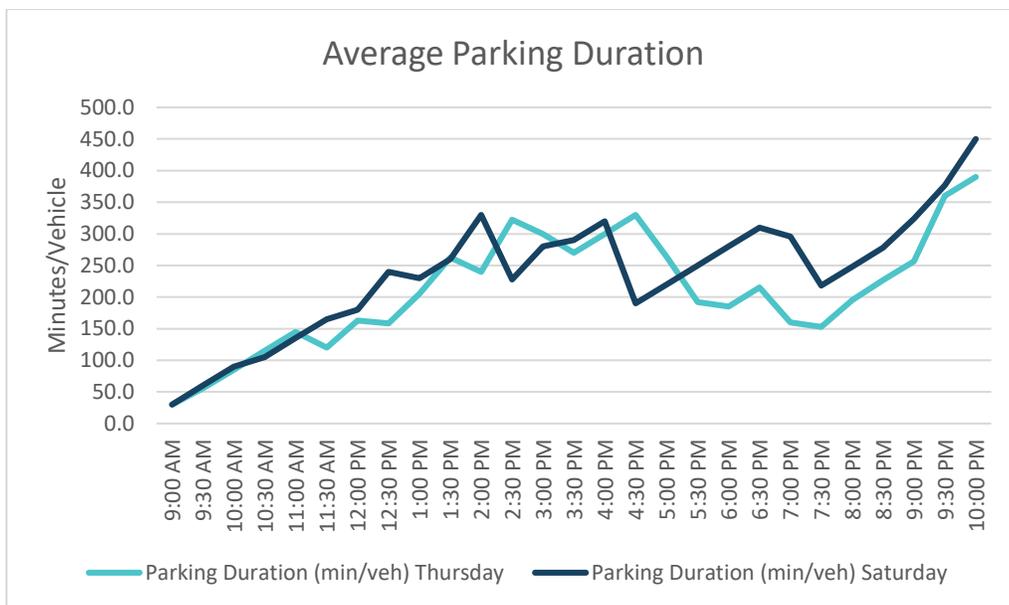
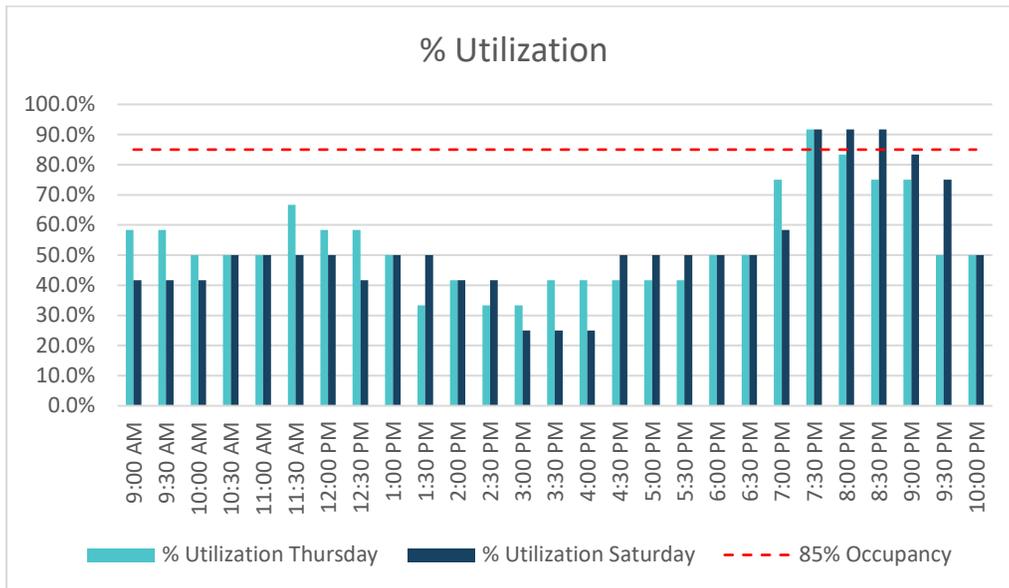


The collected data for the general spaces in the Senior Center Lot shows that it was at or near capacity between 12:30 PM and 3:30 PM on Thursday, and there was available parking all day on Saturday. The average parking duration per parking spot was 121.3 minutes per vehicle on Thursday, and 188.6 minutes per vehicle on Saturday. Since there is available parking during these times in the Apex Community Center and Apex Community Center Overflow Lots, it is recommended to provide signage to these additional parking areas. There are no turnover or enforcement recommendations for Apex Senior Center Lot.

Saunders Street, North Side (2.04) – 13 Parking Spaces

Saunders Street, North Side - 2.04				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	58.3%	41.7%	30.0	30.0
9:30 AM	58.3%	41.7%	55.7	60.0
10:00 AM	50.0%	41.7%	85.0	90.0
10:30 AM	50.0%	50.0%	115.0	105.0
11:00 AM	50.0%	50.0%	145.0	135.0
11:30 AM	66.7%	50.0%	120.0	165.0
12:00 PM	58.3%	50.0%	162.9	180.0
12:30 PM	58.3%	41.7%	158.6	240.0
1:00 PM	50.0%	50.0%	205.0	230.0
1:30 PM	33.3%	50.0%	262.5	260.0
2:00 PM	41.7%	41.7%	240.0	330.0
2:30 PM	33.3%	41.7%	322.5	228.0
3:00 PM	33.3%	25.0%	300.0	280.0
3:30 PM	41.7%	25.0%	270.0	290.0
4:00 PM	41.7%	25.0%	300.0	320.0
4:30 PM	41.7%	50.0%	330.0	190.0
5:00 PM	41.7%	50.0%	264.0	220.0
5:30 PM	41.7%	50.0%	192.0	250.0
6:00 PM	50.0%	50.0%	185.0	280.0
6:30 PM	50.0%	50.0%	215.0	310.0
7:00 PM	75.0%	58.3%	160.0	295.7
7:30 PM	91.7%	91.7%	152.7	218.2
8:00 PM	83.3%	91.7%	195.0	248.2
8:30 PM	75.0%	91.7%	226.7	278.2
9:00 PM	75.0%	83.3%	256.7	324.0
9:30 PM	50.0%	75.0%	360.0	376.7
10:00 PM	50.0%	50.0%	390.0	450.0
Average Parking Duration Per Parking Spot (min/veh)			229.7	328.0
Maximum Parking Duration Among All Spots (min/veh)			810.0	810.0

Saunders Street, North Side (2.04) – 13 Parking Spaces

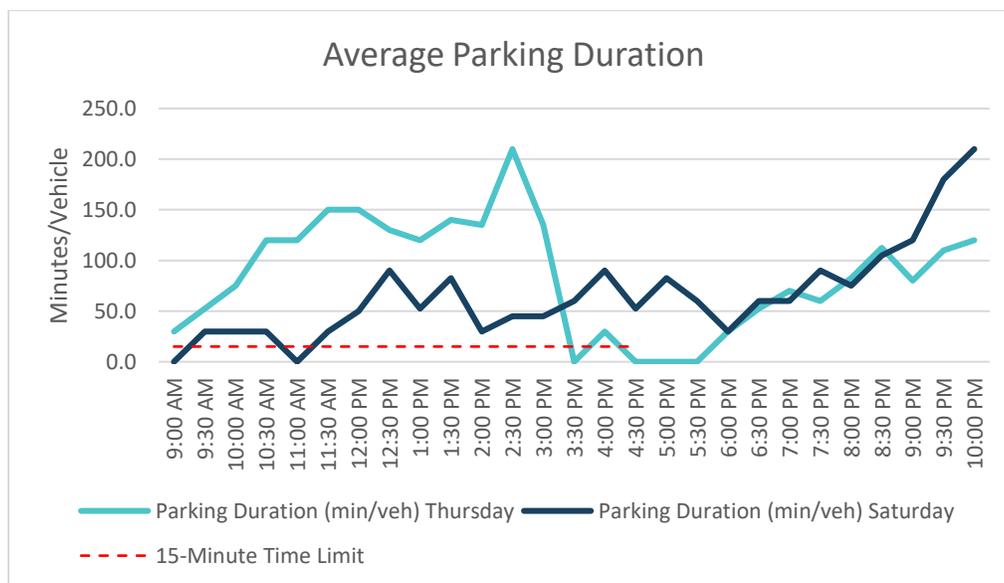
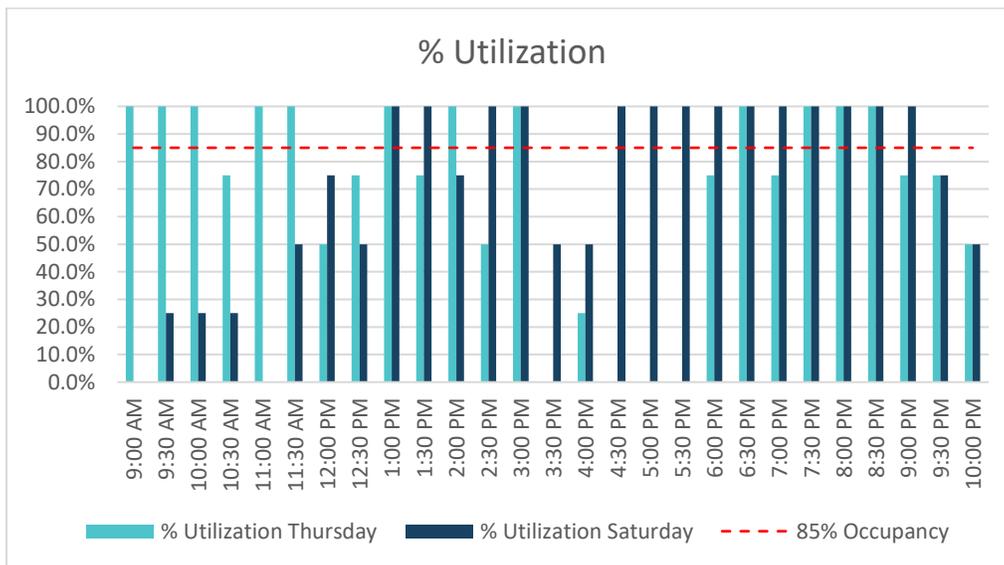


The collected data for Saunders Street, North Side, shows that there was available parking on both Thursday and Saturday. However, the data does indicate that this parking area was over 85% occupied around dinner time on both Thursday and Saturday. The average parking duration per parking spot was 229.7 minutes per vehicle on Thursday, and 328.0 minutes per vehicle on Saturday. Since this is a highly utilized area, it is recommended to encourage turnover by implementing and enforcing a 3-hour time restriction with mobile ALPR, as described in the recommendations section of this technical memorandum.

Saunders Street, North Side, Loading (2.06) – 4 Parking Spaces

Saunders Street, North Side, Loading - 2.06				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	100.0%	0.0%	30.0	-
9:30 AM	100.0%	25.0%	52.5	30.0
10:00 AM	100.0%	25.0%	75.0	30.0
10:30 AM	75.0%	25.0%	120.0	30.0
11:00 AM	100.0%	0.0%	120.0	-
11:30 AM	100.0%	50.0%	150.0	30.0
12:00 PM	50.0%	75.0%	150.0	50.0
12:30 PM	75.0%	50.0%	130.0	90.0
1:00 PM	100.0%	100.0%	120.0	52.5
1:30 PM	75.0%	100.0%	140.0	82.5
2:00 PM	100.0%	75.0%	135.0	30.0
2:30 PM	50.0%	100.0%	210.0	45.0
3:00 PM	100.0%	100.0%	135.0	45.0
3:30 PM	0.0%	50.0%	-	60.0
4:00 PM	25.0%	50.0%	30.0	90.0
4:30 PM	0.0%	100.0%	-	52.5
5:00 PM	0.0%	100.0%	-	82.5
5:30 PM	0.0%	100.0%	-	60.0
6:00 PM	75.0%	100.0%	30.0	30.0
6:30 PM	100.0%	100.0%	52.5	60.0
7:00 PM	75.0%	100.0%	70.0	60.0
7:30 PM	100.0%	100.0%	60.0	90.0
8:00 PM	100.0%	100.0%	82.5	75.0
8:30 PM	100.0%	100.0%	112.5	105.0
9:00 PM	75.0%	100.0%	80.0	120.0
9:30 PM	75.0%	75.0%	110.0	180.0
10:00 PM	50.0%	50.0%	120.0	210.0
Average Parking Duration Per Parking Spot (min/veh)			111.6	82.5
Maximum Parking Duration Among All Spots (min/veh)			390.0	270.0

Saunders Street, North Side, Loading (2.06) – 4 Parking Spaces



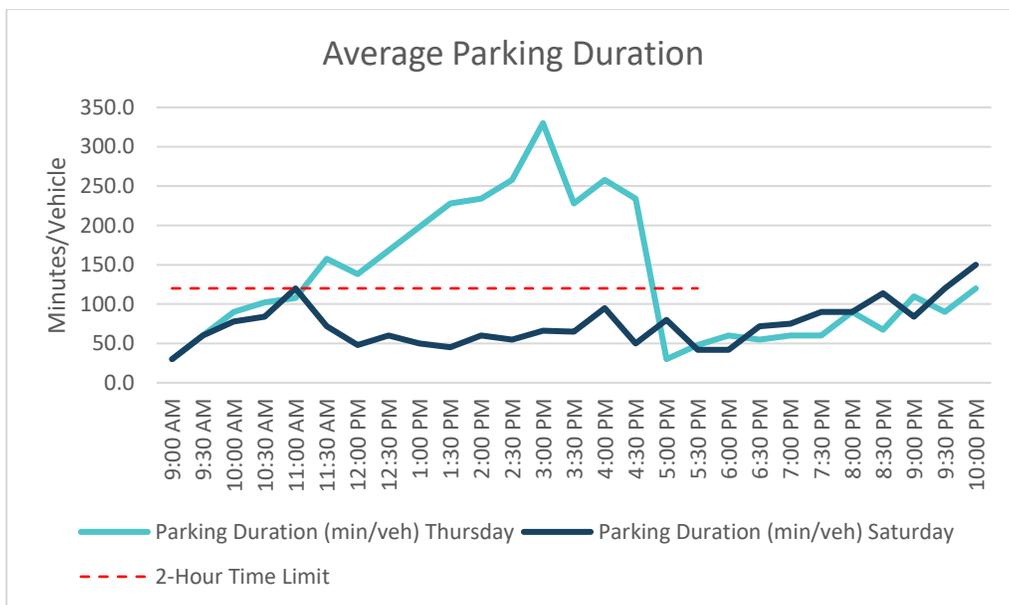
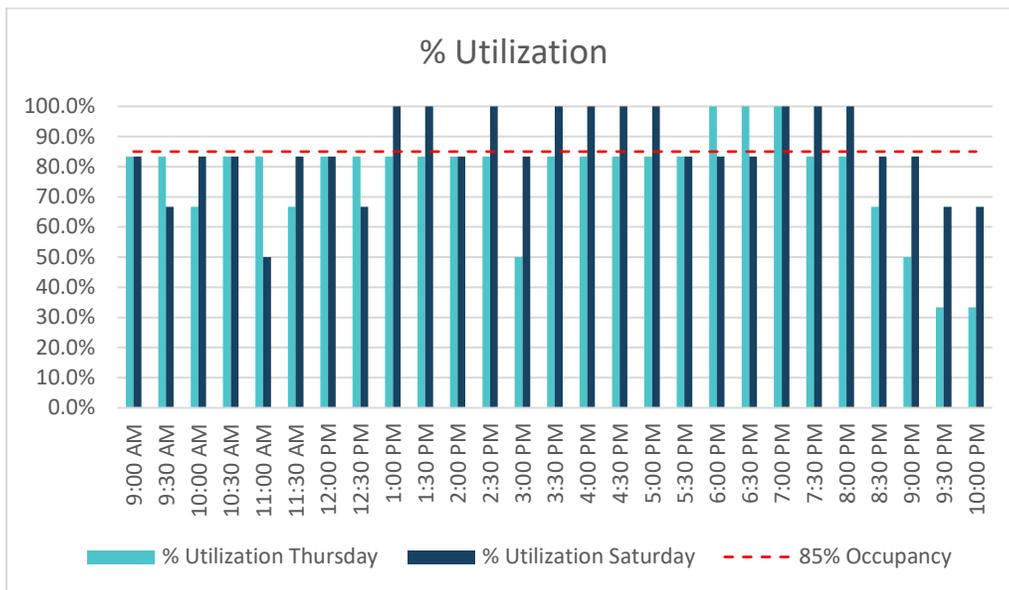
The collected data for Saunders Street, North Side, Loading, shows that there was available parking for 54% of the day on Thursday, and 52% of the day on Saturday. There is currently a 15-minute time restriction from 6:00 AM to 5:00 PM on Monday through Friday. Since data was collected every 30 minutes, it's not clear if the 15-minute time restriction was followed, but data indicates that this time restriction was likely adhered to for 14% of the day on Thursday.

The average parking duration per parking spot was 111.6 minutes per vehicle on Thursday, and 82.5 minutes per vehicle on Saturday. If the Town would like these to remain loading spaces, it is recommended to encourage turnover by enforcing the 15-minute time restriction with mobile ALPR, as described in the recommendations section of this technical memorandum. Since this is a highly utilized area, it is also recommended to encourage turnover by implementing and enforcing a 3-hour time restriction outside of the loading zone hours with mobile ALPR.

Saunders Street, South Side (3.02) – 6 Parking Spaces

Saunders Street, South Side - 3.02				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	83.3%	83.3%	30.0	30.0
9:30 AM	83.3%	66.7%	60.0	60.0
10:00 AM	66.7%	83.3%	90.0	78.0
10:30 AM	83.3%	83.3%	102.0	84.0
11:00 AM	83.3%	50.0%	108.0	120.0
11:30 AM	66.7%	83.3%	157.5	72.0
12:00 PM	83.3%	83.3%	138.0	48.0
12:30 PM	83.3%	66.7%	168.0	60.0
1:00 PM	83.3%	100.0%	198.0	50.0
1:30 PM	83.3%	100.0%	228.0	45.0
2:00 PM	83.3%	83.3%	234.0	60.0
2:30 PM	83.3%	100.0%	258.0	55.0
3:00 PM	50.0%	83.3%	330.0	66.0
3:30 PM	83.3%	100.0%	228.0	65.0
4:00 PM	83.3%	100.0%	258.0	95.0
4:30 PM	83.3%	100.0%	234.0	50.0
5:00 PM	83.3%	100.0%	30.0	80.0
5:30 PM	83.3%	83.3%	48.0	42.0
6:00 PM	100.0%	83.3%	60.0	42.0
6:30 PM	100.0%	83.3%	55.0	72.0
7:00 PM	100.0%	100.0%	60.0	75.0
7:30 PM	83.3%	100.0%	60.0	90.0
8:00 PM	83.3%	100.0%	90.0	90.0
8:30 PM	66.7%	83.3%	67.5	114.0
9:00 PM	50.0%	83.3%	110.0	84.0
9:30 PM	33.3%	66.7%	90.0	120.0
10:00 PM	33.3%	66.7%	120.0	150.0
Average Parking Duration Per Parking Spot (min/veh)			133.6	82.0
Maximum Parking Duration Among All Spots (min/veh)			480.0	270.0

Saunders Street, South Side (3.02) – 6 Parking Spaces



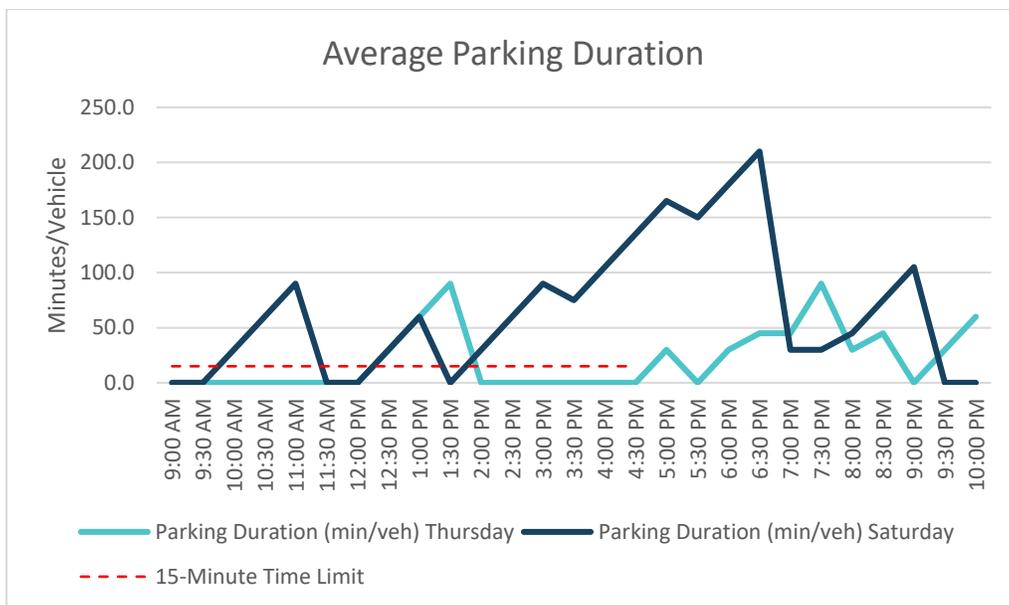
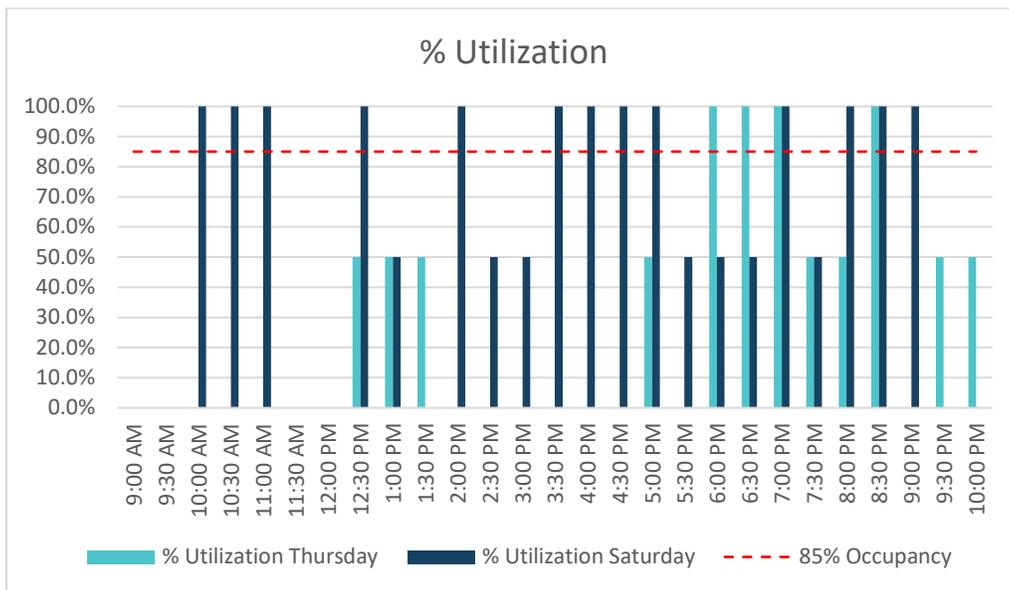
The collected data for Saunders Street, South Side, shows that there was available parking for 89% of the day on Thursday, and 63% of the day on Saturday. There is currently 2-hour time restriction from 8:00 AM to 6:00 PM. Data indicates that this time restriction was adhered to for 39% of the day on Thursday, and 100% of the day on Saturday.

The average parking duration per parking spot was 133.6 minutes per vehicle on Thursday, and 82.0 minutes per vehicle on Saturday. It is recommended to encourage turnover by enforcing the 2-hour time restriction with mobile ALPR, as described in the recommendations section of this technical memorandum.

West Chatham Street, North Side, Loading (4.04) – 2 Parking Spaces

W Chatham Street, North Side, Loading - 4.04				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	0.0%	0.0%	-	-
9:30 AM	0.0%	0.0%	-	-
10:00 AM	0.0%	100.0%	-	30.0
10:30 AM	0.0%	100.0%	-	60.0
11:00 AM	0.0%	100.0%	-	90.0
11:30 AM	0.0%	0.0%	-	-
12:00 PM	0.0%	0.0%	-	-
12:30 PM	50.0%	100.0%	30.0	30.0
1:00 PM	50.0%	50.0%	60.0	60.0
1:30 PM	50.0%	0.0%	90.0	-
2:00 PM	0.0%	100.0%	-	30.0
2:30 PM	0.0%	50.0%	-	60.0
3:00 PM	0.0%	50.0%	-	90.0
3:30 PM	0.0%	100.0%	-	75.0
4:00 PM	0.0%	100.0%	-	105.0
4:30 PM	0.0%	100.0%	-	135.0
5:00 PM	50.0%	100.0%	30.0	165.0
5:30 PM	0.0%	50.0%	-	150.0
6:00 PM	100.0%	50.0%	30.0	180.0
6:30 PM	100.0%	50.0%	45.0	210.0
7:00 PM	100.0%	100.0%	45.0	30.0
7:30 PM	50.0%	50.0%	90.0	30.0
8:00 PM	50.0%	100.0%	30.0	45.0
8:30 PM	100.0%	100.0%	45.0	75.0
9:00 PM	0.0%	100.0%	-	105.0
9:30 PM	50.0%	0.0%	30.0	-
10:00 PM	50.0%	0.0%	60.0	-
Average Parking Duration Per Parking Spot (min/veh)			52.5	90.0
Maximum Parking Duration Among All Spots (min/veh)			90.0	210.0

West Chatham Street, North Side, Loading (4.04) – 2 Parking Spaces

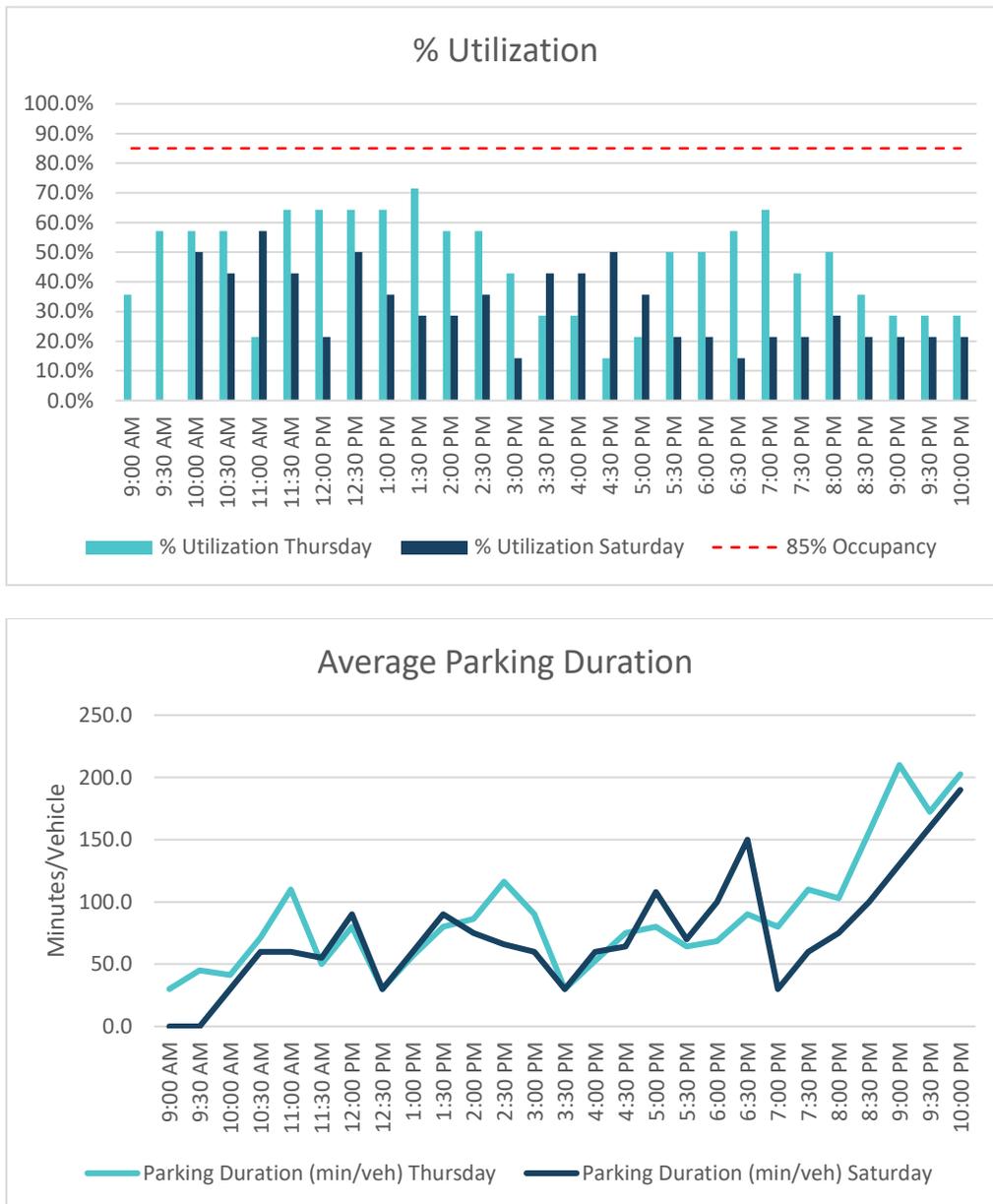


The collected data for the loading spots on West Chatham Street, North Side, shows that there was available parking for 85% of the day on Thursday, and 52% of the day on Saturday. There is currently a 15-minute parking restriction for the loading spots from 6:00 AM to 5:00 PM from Monday through Friday. Since data was collected every 30 minutes, it's not clear if the 15-minute time restriction was followed. At least one vehicle on Thursday exceeded the 15-minute time restriction. It is recommended to encourage turnover by enforcing the 15-minute time limit with mobile ALPR, as described in the recommendations section of this technical memorandum. Since this is a highly utilized area, it is also recommended to encourage turnover by implementing and enforcing a 3-hour time restriction outside of the loading zone hours with mobile ALPR.

West Chatham Street, North Side (4.05) – 14 Parking Spaces

W Chatham Street, North Side - 4.05				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	35.7%	0.0%	30.0	-
9:30 AM	57.1%	0.0%	45.0	-
10:00 AM	57.1%	50.0%	41.3	30.0
10:30 AM	57.1%	42.9%	71.3	60.0
11:00 AM	21.4%	57.1%	110.0	60.0
11:30 AM	64.3%	42.9%	50.0	55.0
12:00 PM	64.3%	21.4%	80.0	90.0
12:30 PM	64.3%	50.0%	30.0	30.0
1:00 PM	64.3%	35.7%	56.7	60.0
1:30 PM	71.4%	28.6%	80.0	90.0
2:00 PM	57.1%	28.6%	86.3	75.0
2:30 PM	57.1%	35.7%	116.3	66.0
3:00 PM	42.9%	14.3%	90.0	60.0
3:30 PM	28.6%	42.9%	30.0	30.0
4:00 PM	28.6%	42.9%	52.5	60.0
4:30 PM	14.3%	50.0%	75.0	64.3
5:00 PM	21.4%	35.7%	80.0	108.0
5:30 PM	50.0%	21.4%	64.3	70.0
6:00 PM	50.0%	21.4%	68.6	100.0
6:30 PM	57.1%	14.3%	90.0	150.0
7:00 PM	64.3%	21.4%	80.0	30.0
7:30 PM	42.9%	21.4%	110.0	60.0
8:00 PM	50.0%	28.6%	102.9	75.0
8:30 PM	35.7%	21.4%	156.0	100.0
9:00 PM	28.6%	21.4%	210.0	130.0
9:30 PM	28.6%	21.4%	172.5	160.0
10:00 PM	28.6%	21.4%	202.5	190.0
Average Parking Duration Per Parking Spot (min/veh)			91.6	81.8
Maximum Parking Duration Among All Spots (min/veh)			390.0	210.0

West Chatham Street, North Side (4.05) – 14 Parking Spaces

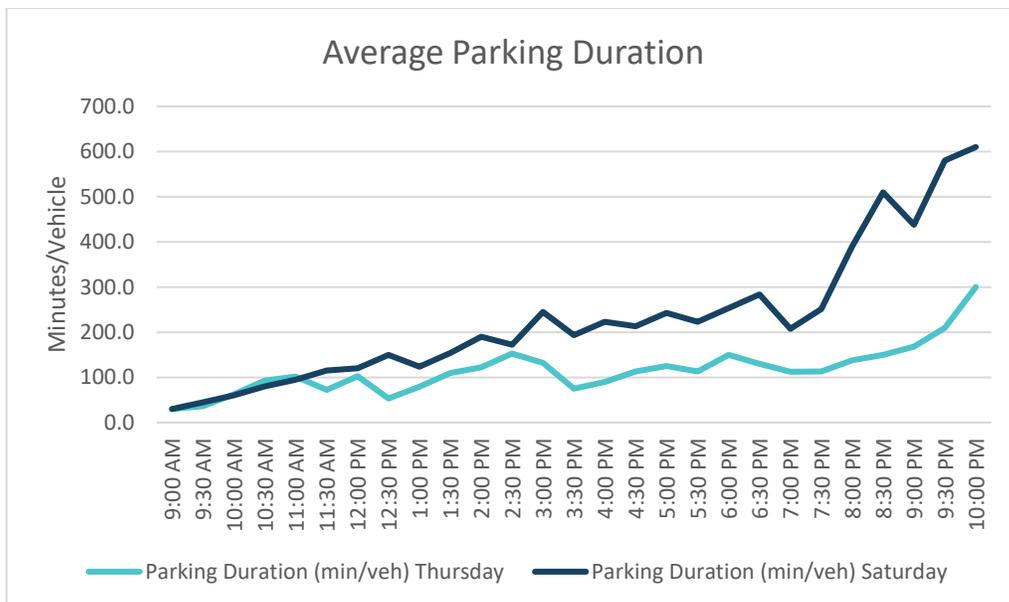
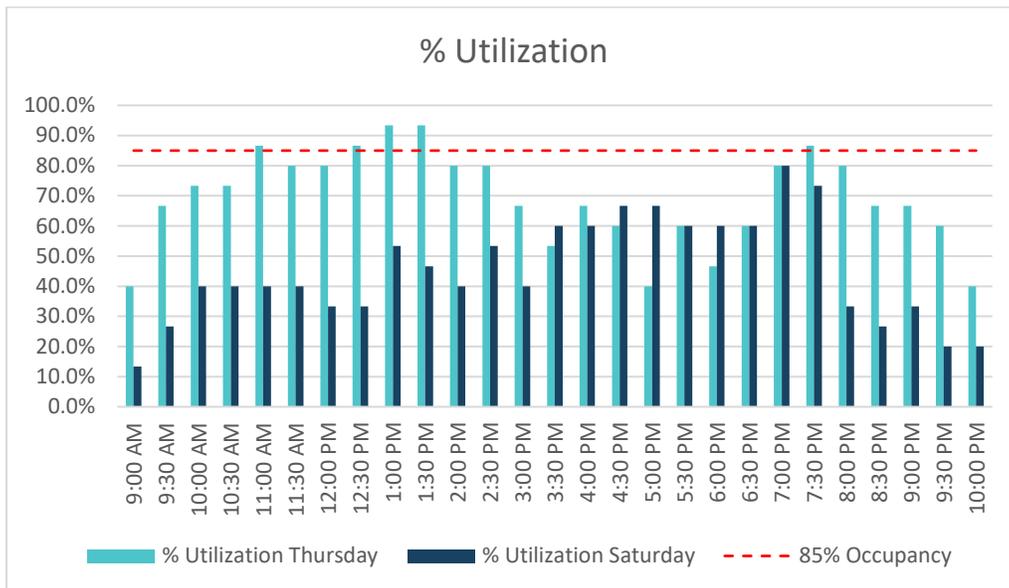


The collected data for West Chatham Street, North Side, shows that there was available parking on both Thursday and Saturday. The average parking duration per parking spot was 91.6 minutes per vehicle on Thursday, and 81.8 minutes per vehicle on Saturday. Since the parking supply was greater than the parking demand, there are no turnover or enforcement recommendations for West Chatham Street, North Side.

West Chatham Street, South Side (4.06) – 15 Parking Spaces

W Chatham Street, South Side - 4.06				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	40.0%	13.3%	30.0	30.0
9:30 AM	66.7%	26.7%	36.0	45.0
10:00 AM	73.3%	40.0%	62.7	60.0
10:30 AM	73.3%	40.0%	92.7	80.0
11:00 AM	86.7%	40.0%	101.5	95.0
11:30 AM	80.0%	40.0%	72.5	115.0
12:00 PM	80.0%	33.3%	102.5	120.0
12:30 PM	86.7%	33.3%	53.1	150.0
1:00 PM	93.3%	53.3%	79.3	123.8
1:30 PM	93.3%	46.7%	109.3	154.3
2:00 PM	80.0%	40.0%	122.5	190.0
2:30 PM	80.0%	53.3%	152.5	172.5
3:00 PM	66.7%	40.0%	132.0	245.0
3:30 PM	53.3%	60.0%	75.0	193.3
4:00 PM	66.7%	60.0%	90.0	223.3
4:30 PM	60.0%	66.7%	113.3	213.0
5:00 PM	40.0%	66.7%	125.0	243.0
5:30 PM	60.0%	60.0%	113.3	223.3
6:00 PM	46.7%	60.0%	150.0	253.3
6:30 PM	60.0%	60.0%	130.0	283.3
7:00 PM	80.0%	80.0%	112.5	207.5
7:30 PM	86.7%	73.3%	113.1	250.9
8:00 PM	80.0%	33.3%	137.5	390.0
8:30 PM	66.7%	26.7%	150.0	510.0
9:00 PM	66.7%	33.3%	168.0	438.0
9:30 PM	60.0%	20.0%	210.0	580.0
10:00 PM	40.0%	20.0%	300.0	610.0
Average Parking Duration Per Parking Spot (min/veh)			139.8	216.1
Maximum Parking Duration Among All Spots (min/veh)			600.0	810.0

West Chatham Street, South Side (4.06) – 15 Parking Spaces

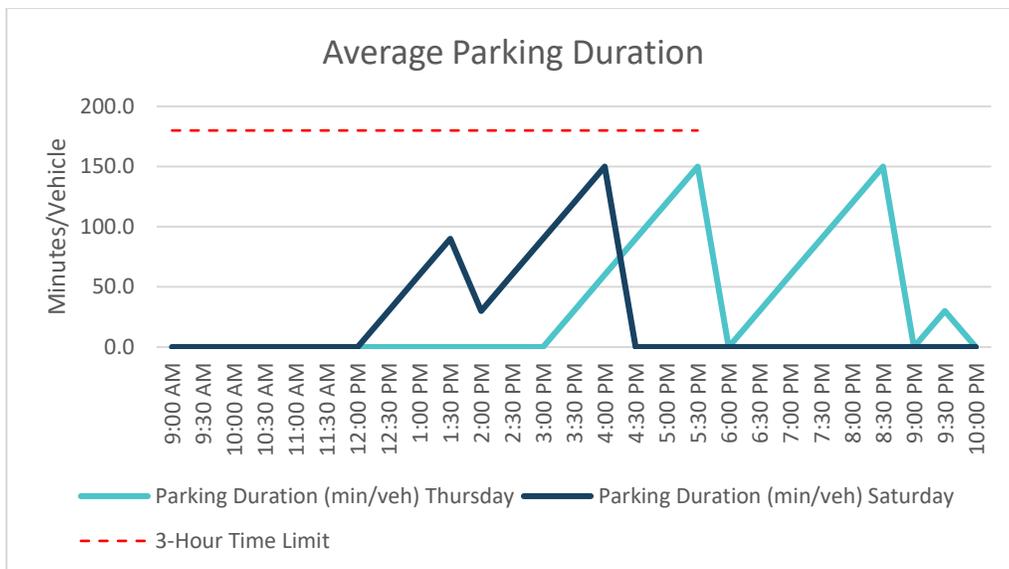
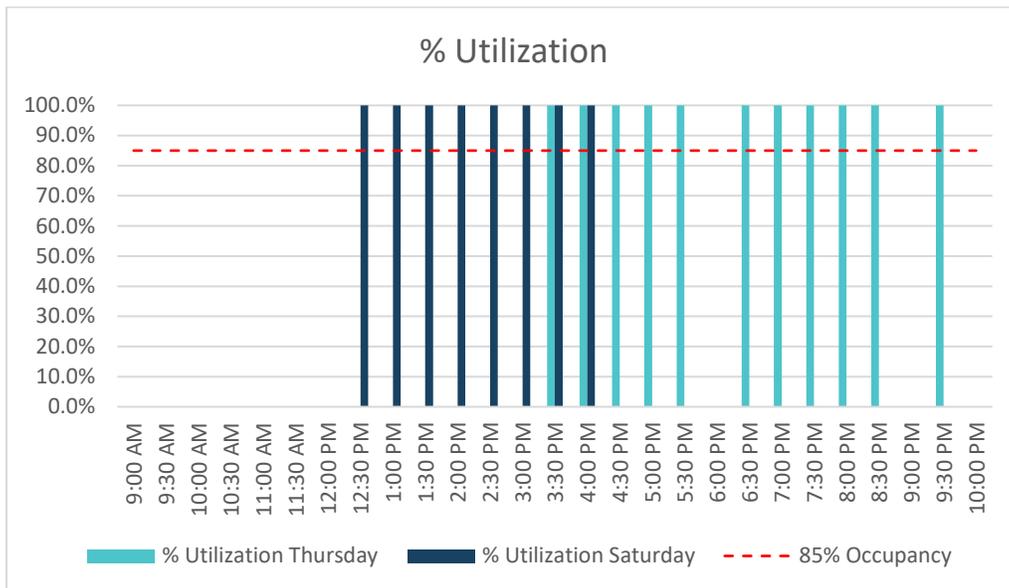


The collected data for West Chatham Street, South Side, shows that there was available parking on both Thursday and Saturday. However, data did indicate that this parking lot was over 85% occupied around lunch time and dinner time on Thursday. The average parking duration per parking spot was 139.8 minutes per vehicle on Thursday, and 216.1 minutes per vehicle on Saturday. Since this is a residential area, there are no turnover or enforcement restrictions recommended for West Chatham Street, South Side.

West Chatham Street, South Side (4.07) – 1 Parking Space

W Chatham Street, South Side - 4.07				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	0.0%	0.0%	-	-
9:30 AM	0.0%	0.0%	-	-
10:00 AM	0.0%	0.0%	-	-
10:30 AM	0.0%	0.0%	-	-
11:00 AM	0.0%	0.0%	-	-
11:30 AM	0.0%	0.0%	-	-
12:00 PM	0.0%	0.0%	-	-
12:30 PM	0.0%	100.0%	-	30.0
1:00 PM	0.0%	100.0%	-	60.0
1:30 PM	0.0%	100.0%	-	90.0
2:00 PM	0.0%	100.0%	-	30.0
2:30 PM	0.0%	100.0%	-	60.0
3:00 PM	0.0%	100.0%	-	90.0
3:30 PM	100.0%	100.0%	30.0	120.0
4:00 PM	100.0%	100.0%	60.0	150.0
4:30 PM	100.0%	0.0%	90.0	-
5:00 PM	100.0%	0.0%	120.0	-
5:30 PM	100.0%	0.0%	150.0	-
6:00 PM	0.0%	0.0%	-	-
6:30 PM	100.0%	0.0%	30.0	-
7:00 PM	100.0%	0.0%	60.0	-
7:30 PM	100.0%	0.0%	90.0	-
8:00 PM	100.0%	0.0%	120.0	-
8:30 PM	100.0%	0.0%	150.0	-
9:00 PM	0.0%	0.0%	-	-
9:30 PM	100.0%	0.0%	30.0	-
10:00 PM	0.0%	0.0%	-	-
Average Parking Duration Per Parking Spot (min/veh)			110.0	120.0
Maximum Parking Duration Among All Spots (min/veh)			150.0	150.0

West Chatham Street, South Side (4.07) – 1 Parking Space

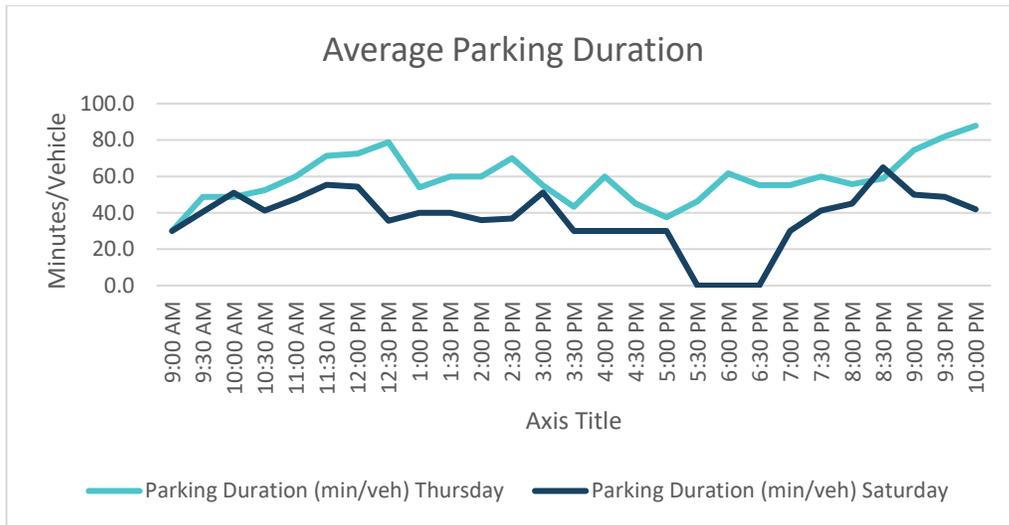
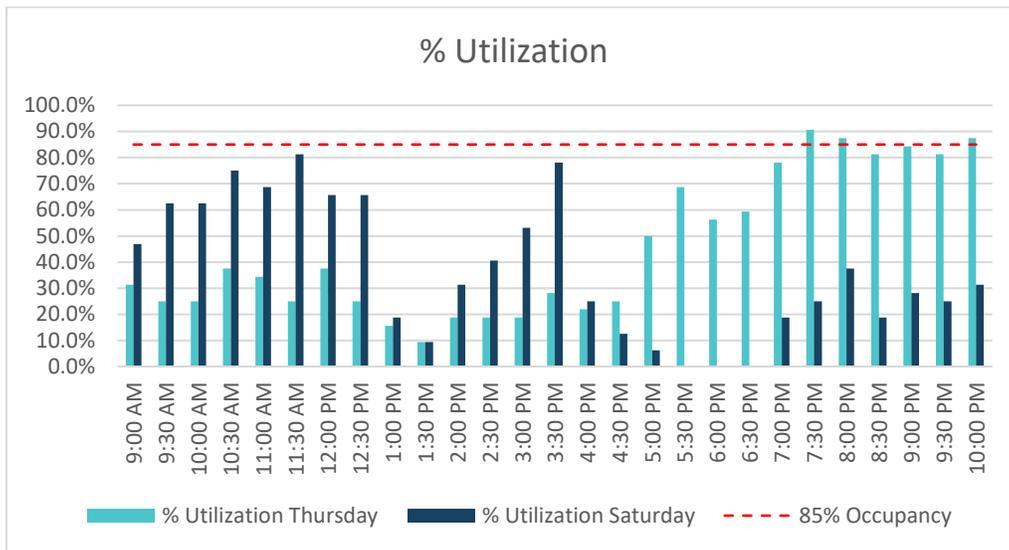


The collected data for West Chatham Street, South Side, shows that there were three vehicles parked here on Thursday, and one vehicle parked here on Saturday. There is currently a 3-hour time restriction for this spot from 8:00 AM to 6:00 PM on Monday through Saturday. All of the parked vehicles adhered to the time limit. The average parking duration for the parking spot was 110.0 minutes per vehicle on Thursday, and 120.0 minutes per vehicle on Saturday. It is recommended to encourage turnover by enforcing the 3-hour restriction with mobile ALPR, as described in the recommendations section of this technical memorandum.

Ambergate Station, East Side (6.01) – 32 Parking Spaces

Ambergate Station from Hunter Street to Platform Drive (East Side) - 6.01				
Time	% Utilization		Average Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	31.3%	46.9%	30.0	30.0
9:30 AM	25.0%	62.5%	48.8	40.5
10:00 AM	25.0%	62.5%	48.8	51.0
10:30 AM	37.5%	75.0%	52.5	41.3
11:00 AM	34.4%	68.8%	60.0	47.7
11:30 AM	25.0%	81.3%	71.3	55.4
12:00 PM	37.5%	65.6%	72.5	54.3
12:30 PM	25.0%	65.6%	78.8	35.7
1:00 PM	15.6%	18.8%	54.0	40.0
1:30 PM	9.4%	9.4%	60.0	40.0
2:00 PM	18.8%	31.3%	60.0	36.0
2:30 PM	18.8%	40.6%	70.0	36.9
3:00 PM	18.8%	53.1%	55.0	51.2
3:30 PM	28.1%	78.1%	43.3	30.0
4:00 PM	21.9%	25.0%	60.0	30.0
4:30 PM	25.0%	12.5%	45.0	30.0
5:00 PM	50.0%	6.3%	37.5	30.0
5:30 PM	68.8%	0.0%	46.4	-
6:00 PM	56.3%	0.0%	61.7	-
6:30 PM	59.4%	0.0%	55.3	-
7:00 PM	78.1%	18.8%	55.2	30.0
7:30 PM	90.6%	25.0%	60.0	41.3
8:00 PM	87.5%	37.5%	55.7	45.0
8:30 PM	81.3%	18.8%	58.8	65.0
9:00 PM	84.4%	28.1%	74.4	50.0
9:30 PM	81.3%	25.0%	81.9	48.8
10:00 PM	87.5%	31.3%	87.9	42.0
Average Parking Duration Per Parking Spot (min/veh)			68.9	44.1
Maximum Parking Duration Among All Spots (min/veh)			180.0	120.0

Ambergate Station, East Side (6.01) – 32 Parking Spaces



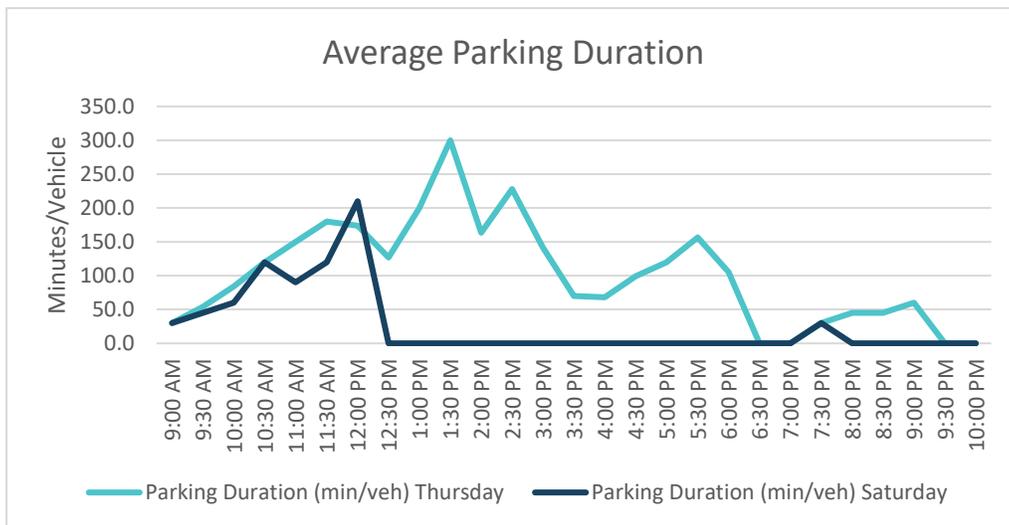
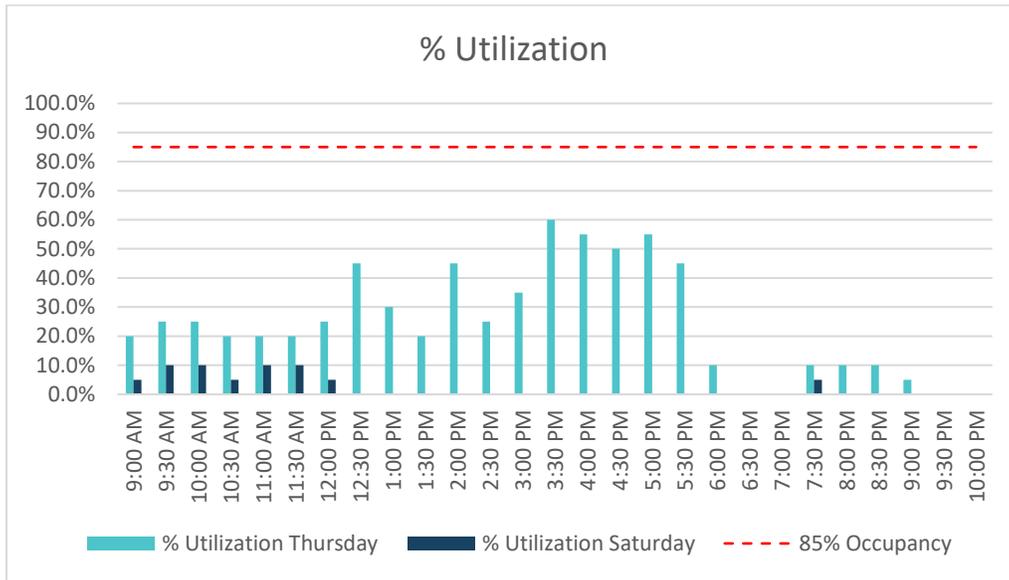
The collected data for Ambergate Station, East Side shows that there was available parking on both Thursday and Saturday. However, data did indicate that this parking lot was over 85% occupied around 7:30 PM to 8:30 PM on Thursday.

It is important to note that a brief storm occurred on Saturday evening that caused the parking vacancies from 5:30-6:30pm. Data indicates that this parking area is utilized most often on weekday evenings and weekend mornings and afternoons. The average parking duration per parking spot was 68.9 minutes per vehicle on Thursday, and 44.1 minutes per vehicle on Saturday. Since the parking supply was greater than the parking demand, and there is available parking nearby on the west side of Ambergate Station, there are no turnover or enforcement recommendations for Ambergate Station, East Side.

Ambergate Station, West Side (6.03) – 20 Parking Spaces

Ambergate Station from Hunter Street to Platform Drive (West Side) - 6.03				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	20.0%	5.0%	30.0	30.0
9:30 AM	25.0%	10.0%	54.0	45.0
10:00 AM	25.0%	10.0%	84.0	60.0
10:30 AM	20.0%	5.0%	120.0	120.0
11:00 AM	20.0%	10.0%	150.0	90.0
11:30 AM	20.0%	10.0%	180.0	120.0
12:00 PM	25.0%	5.0%	174.0	210.0
12:30 PM	45.0%	0.0%	126.7	-
1:00 PM	30.0%	0.0%	200.0	-
1:30 PM	20.0%	0.0%	300.0	-
2:00 PM	45.0%	0.0%	163.3	-
2:30 PM	25.0%	0.0%	228.0	-
3:00 PM	35.0%	0.0%	141.4	-
3:30 PM	60.0%	0.0%	70.0	-
4:00 PM	55.0%	0.0%	68.2	-
4:30 PM	50.0%	0.0%	99.0	-
5:00 PM	55.0%	0.0%	120.0	-
5:30 PM	45.0%	0.0%	156.7	-
6:00 PM	10.0%	0.0%	105.0	-
6:30 PM	0.0%	0.0%	-	-
7:00 PM	0.0%	0.0%	-	-
7:30 PM	10.0%	5.0%	30.0	30.0
8:00 PM	10.0%	0.0%	45.0	-
8:30 PM	10.0%	0.0%	45.0	-
9:00 PM	5.0%	0.0%	60.0	-
9:30 PM	0.0%	0.0%	-	-
10:00 PM	0.0%	0.0%	-	-
Average Parking Duration Per Parking Spot (min/veh)			145.6	72.0
Maximum Parking Duration Among All Spots (min/veh)			420.0	210.0

Ambergate Station, West Side (6.03) – 20 Parking Spaces

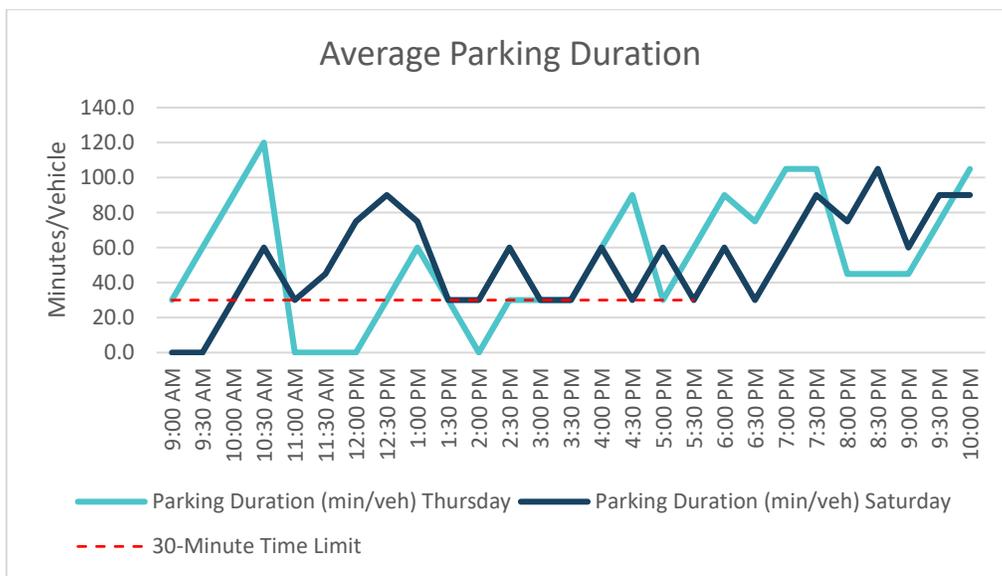
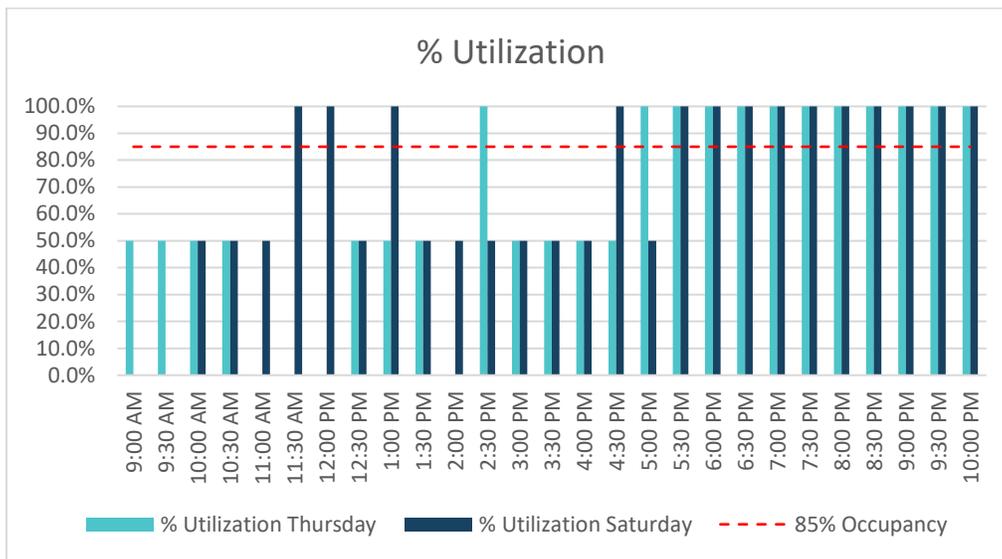


The collected data for Ambergate Station, West Side shows that there was available parking on both Thursday and Saturday. Data indicates that this parking area is utilized most often on weekday afternoons. The average parking duration per parking spot was 145.6 minutes per vehicle on Thursday, and 72.0 minutes per vehicle on Saturday. Since the parking supply was greater than the parking demand, there are no turnover or enforcement recommendations for Ambergate Station, West Side.

North Salem Street, West Side (Center to Seaboard) (8.01) – 2 Parking Spaces

North Salem Street, West Side, Center to Seaboard - 8.01				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	50.0%	0.0%	30.0	-
9:30 AM	50.0%	0.0%	60.0	-
10:00 AM	50.0%	50.0%	90.0	30.0
10:30 AM	50.0%	50.0%	120.0	60.0
11:00 AM	0.0%	50.0%	-	30.0
11:30 AM	0.0%	100.0%	-	45.0
12:00 PM	0.0%	100.0%	-	75.0
12:30 PM	50.0%	50.0%	30.0	90.0
1:00 PM	50.0%	100.0%	60.0	75.0
1:30 PM	50.0%	50.0%	30.0	30.0
2:00 PM	0.0%	50.0%	-	30.0
2:30 PM	100.0%	50.0%	30.0	60.0
3:00 PM	50.0%	50.0%	30.0	30.0
3:30 PM	50.0%	50.0%	30.0	30.0
4:00 PM	50.0%	50.0%	60.0	60.0
4:30 PM	50.0%	100.0%	90.0	30.0
5:00 PM	100.0%	50.0%	30.0	60.0
5:30 PM	100.0%	100.0%	60.0	30.0
6:00 PM	100.0%	100.0%	90.0	60.0
6:30 PM	100.0%	100.0%	75.0	30.0
7:00 PM	100.0%	100.0%	105.0	60.0
7:30 PM	100.0%	100.0%	105.0	90.0
8:00 PM	100.0%	100.0%	45.0	75.0
8:30 PM	100.0%	100.0%	45.0	105.0
9:00 PM	100.0%	100.0%	45.0	60.0
9:30 PM	100.0%	100.0%	75.0	90.0
10:00 PM	100.0%	100.0%	105.0	90.0
Average Parking Duration Per Parking Spot (min/veh)			73.8	72.5
Maximum Parking Duration Among All Spots (min/veh)			180.0	150

North Salem Street, West Side (Center to Seaboard) (8.01) – 2 Parking Spaces



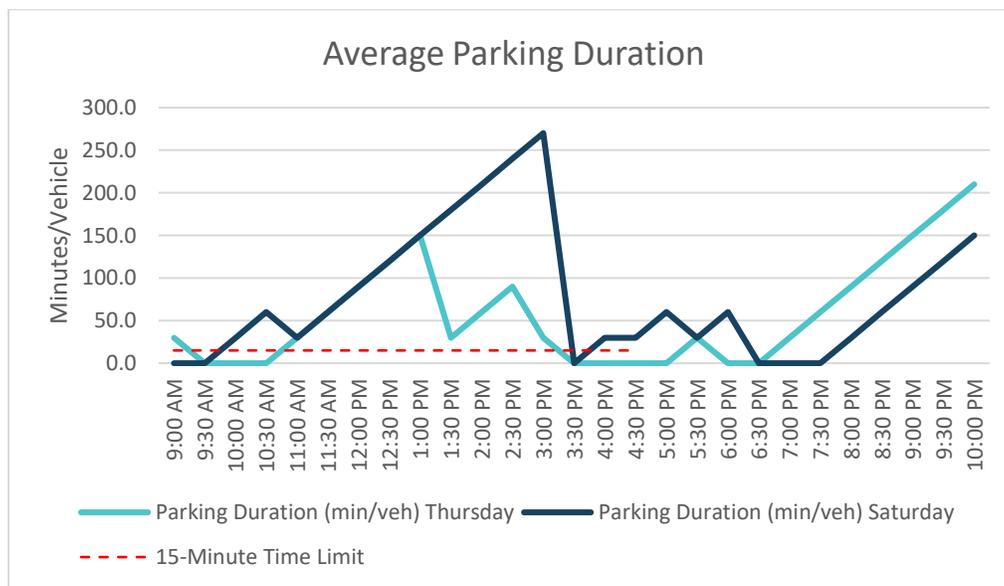
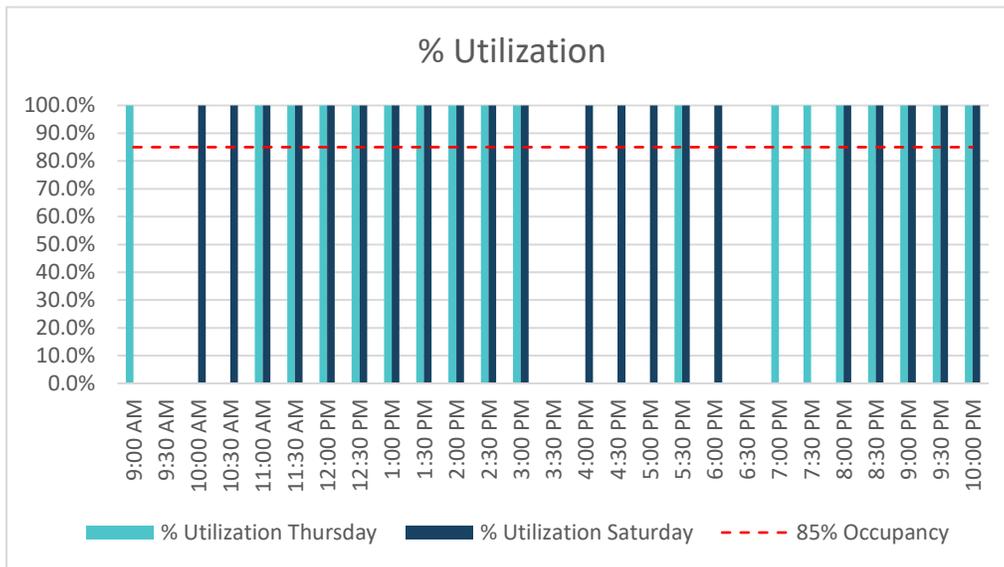
The collected data for North Salem Street, West Side, between Center and Seaboard, shows that this parking area was at full occupancy for 44% of the day on Thursday, and 52% of the day on Saturday. There is currently a 30-minute time restriction from 8:00 AM to 6:00 PM from Monday to Saturday. Data indicates that this time restriction was adhered to less than half of the day on both Thursday and Saturday.

The average parking duration for this parking area was 73.8 minutes per vehicle on Thursday, and 72.5 minutes per vehicle on Saturday. It is recommended to encourage turnover by enforcing the 30-minute time restriction with mobile ALPR, as described in the recommendations section of this technical memorandum. Since this is a highly utilized parking area, it is also recommended to encourage turnover by implementing and enforcing a 90-minute time restriction after 6:00 PM with mobile ALPR.

North Salem Street, West Side, Loading (Center to Seaboard) (8.02) – 1 Parking Space

North Salem Street, West Side, Loading, Center to Seaboard - 8.02				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	100.0%	0.0%	30.0	-
9:30 AM	0.0%	0.0%	-	-
10:00 AM	0.0%	100.0%	-	30.0
10:30 AM	0.0%	100.0%	-	60.0
11:00 AM	100.0%	100.0%	30.0	30.0
11:30 AM	100.0%	100.0%	60.0	60.0
12:00 PM	100.0%	100.0%	90.0	90.0
12:30 PM	100.0%	100.0%	120.0	120.0
1:00 PM	100.0%	100.0%	150.0	150.0
1:30 PM	100.0%	100.0%	30.0	180.0
2:00 PM	100.0%	100.0%	60.0	210.0
2:30 PM	100.0%	100.0%	90.0	240.0
3:00 PM	100.0%	100.0%	30.0	270.0
3:30 PM	0.0%	0.0%	-	-
4:00 PM	0.0%	100.0%	-	30.0
4:30 PM	0.0%	100.0%	-	30.0
5:00 PM	0.0%	100.0%	-	60.0
5:30 PM	100.0%	100.0%	30.0	30.0
6:00 PM	0.0%	100.0%	-	60.0
6:30 PM	0.0%	0.0%	-	-
7:00 PM	100.0%	0.0%	30.0	-
7:30 PM	100.0%	0.0%	60.0	-
8:00 PM	100.0%	100.0%	90.0	30.0
8:30 PM	100.0%	100.0%	120.0	60.0
9:00 PM	100.0%	100.0%	150.0	90.0
9:30 PM	100.0%	100.0%	180.0	120.0
10:00 PM	100.0%	100.0%	210.0	150.0
Average Parking Duration Per Parking Spot (min/veh)			90.0	105.0
Maximum Parking Duration Among All Spots (min/veh)			210.0	270.0

North Salem Street, West Side, Loading (Center to Seaboard) (8.02) – 1 Parking Space



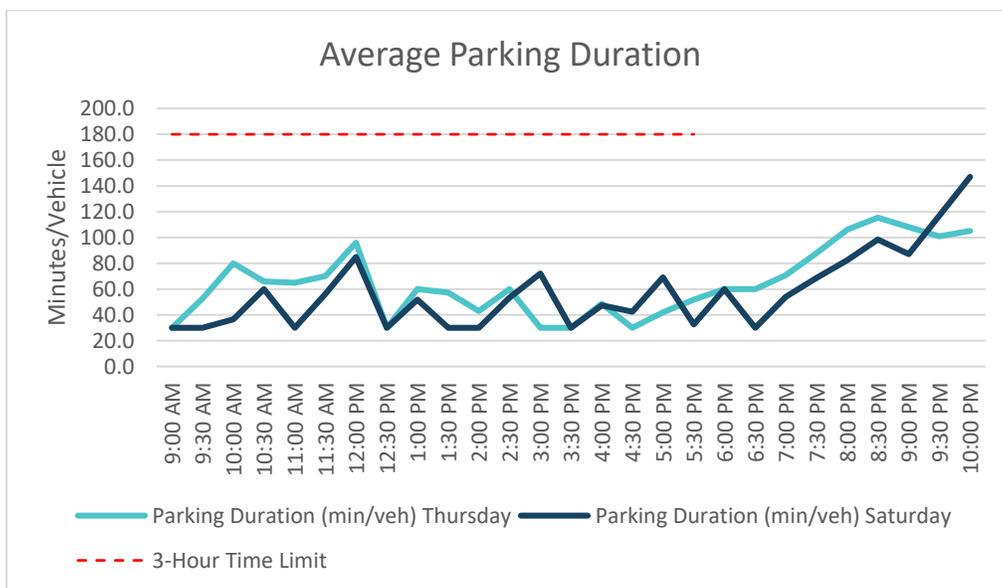
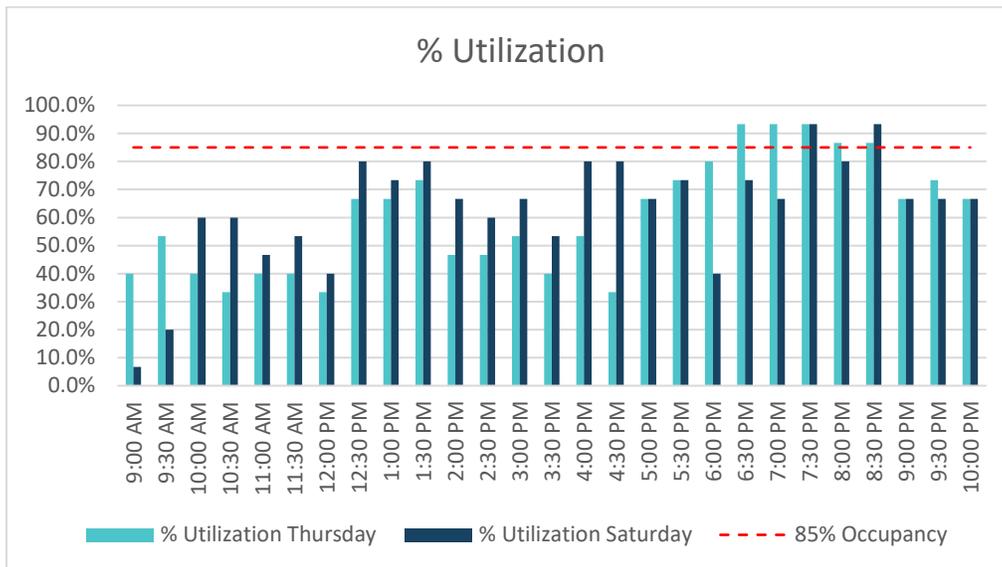
The collected data for the loading spot on North Salem Street, West Side, between Center and Seaboard, shows that the loading spot was occupied for 49% of the day on Thursday, and 57% of the day on Saturday. There is currently a 15-minute time restriction from 6:00 AM to 5:00 PM from Monday to Friday. Since data was collected every 30 minutes, it's not clear if the 15-minute time restriction was followed. Data indicates that this time restriction was may have been adhered to 38% to the day on Thursday.

The average parking duration for the parking spot was 90 minutes per vehicle on Thursday, and 105 minutes per vehicle on Saturday. Since this is a loading zone, it is recommended to encourage turnover by enforcing the 15-minute time restriction with mobile ALPR, as described in the recommendations section of this technical memorandum. Since this is a highly utilized parking area, it is also recommended to encourage turnover by implementing and enforcing a 90-minute time restriction outside of the loading zone hours with mobile ALPR.

North Salem Street, West Side (Saunders Street to Chatham Street) (8.03) – 15 Parking Spaces

North Salem Street, West Side, Saunders to Chatham - 8.03				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	40.0%	6.7%	30.0	30.0
9:30 AM	53.3%	20.0%	52.5	30.0
10:00 AM	40.0%	60.0%	80.0	36.7
10:30 AM	33.3%	60.0%	66.0	60.0
11:00 AM	40.0%	46.7%	65.0	30.0
11:30 AM	40.0%	53.3%	70.0	56.3
12:00 PM	33.3%	40.0%	96.0	85.0
12:30 PM	66.7%	80.0%	30.0	30.0
1:00 PM	66.7%	73.3%	60.0	51.8
1:30 PM	73.3%	80.0%	57.3	30.0
2:00 PM	46.7%	66.7%	42.9	30.0
2:30 PM	46.7%	60.0%	60.0	53.3
3:00 PM	53.3%	66.7%	30.0	72.0
3:30 PM	40.0%	53.3%	30.0	30.0
4:00 PM	53.3%	80.0%	48.8	47.5
4:30 PM	33.3%	80.0%	30.0	42.5
5:00 PM	66.7%	66.7%	42.0	69.0
5:30 PM	73.3%	73.3%	51.8	32.7
6:00 PM	80.0%	40.0%	60.0	60.0
6:30 PM	93.3%	73.3%	60.0	30.0
7:00 PM	93.3%	66.7%	70.7	54.0
7:30 PM	93.3%	93.3%	87.9	68.6
8:00 PM	86.7%	80.0%	106.2	82.5
8:30 PM	86.7%	93.3%	115.4	98.6
9:00 PM	66.7%	66.7%	108.0	87.0
9:30 PM	73.3%	66.7%	100.9	117.0
10:00 PM	66.7%	66.7%	105.0	147.0
Average Parking Duration Per Parking Spot (min/veh)			73.4	64.8
Maximum Parking Duration Among All Spots (min/veh)			300.0	240.0

North Salem Street, West Side (Saunders Street to Chatham Street) (8.03) – 15 Parking Spaces



The collected data for North Salem Street, West Side, between Saunders and Chatham, shows that there was available parking all day on Thursday and Saturday. However, data did indicate that this parking lot was over 85% occupied around dinner time on Thursday and Saturday. There is currently a 3-hour time restriction from 8:00 AM to 6:00 PM from Monday to Saturday. Data indicates that this time restriction was adhered to 100% to the day on both Thursday and Saturday.

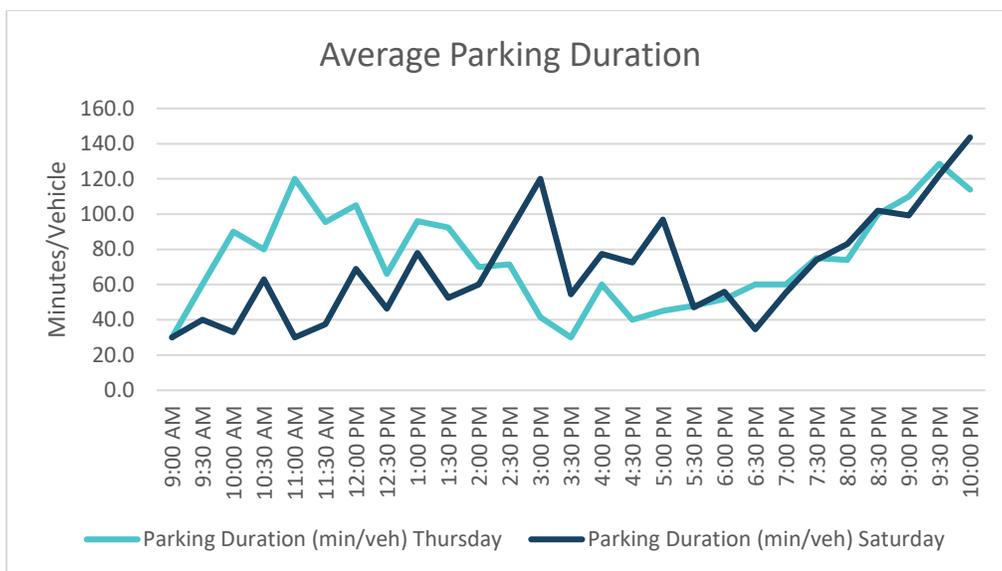
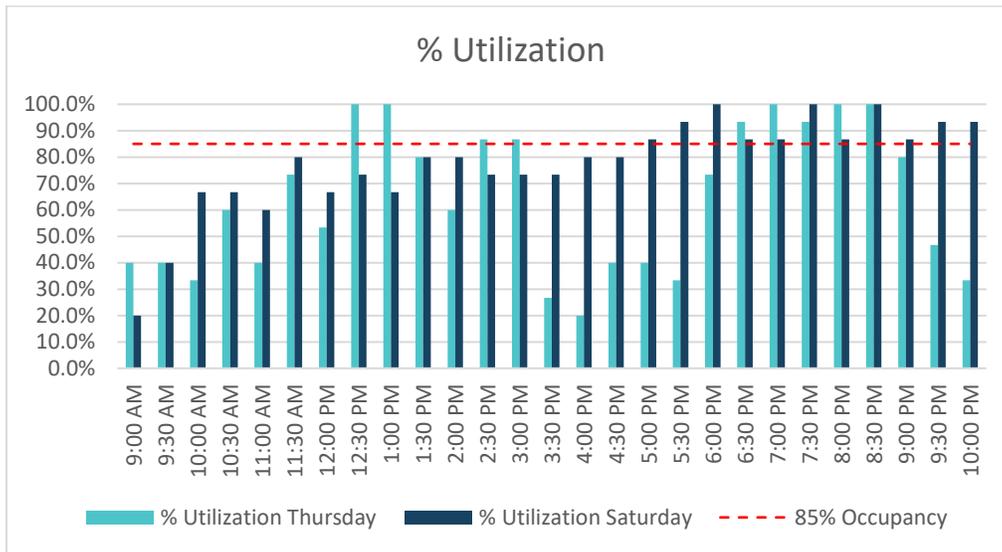
The average parking duration for this parking area was 73.6 minutes per vehicle on Thursday, and 64.8 minutes per vehicle on Saturday. It is recommended to encourage turnover by enforcing the 3-hour time restriction from 8:00 AM to 6:00 PM from Monday to Saturday with mobile ALPR, as described in the recommendations section of this technical memorandum.

Since this is a highly utilized parking area during the evening peak hours, it is also recommended to implement and enforce a 90-minute time restriction from 6:00 PM to 9:00 PM from Monday to Saturday to encourage more turnover during the peak evening period. It is recommended to enforce this time restriction with mobile ALPR, as described in the recommendations section of this technical memorandum.

North Salem Street, East Side (Saunders to Chatham) (8.09) – 15 Parking Spaces

North Salem Street, East Side, Saunders to Chatham - 8.09				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	40.0%	20.0%	30.0	30.0
9:30 AM	40.0%	40.0%	60.0	40.0
10:00 AM	33.3%	66.7%	90.0	33.0
10:30 AM	60.0%	66.7%	80.0	63.0
11:00 AM	40.0%	60.0%	120.0	30.0
11:30 AM	73.3%	80.0%	95.5	37.5
12:00 PM	53.3%	66.7%	105.0	69.0
12:30 PM	100.0%	73.3%	66.0	46.4
1:00 PM	100.0%	66.7%	96.0	78.0
1:30 PM	80.0%	80.0%	92.5	52.5
2:00 PM	60.0%	80.0%	70.0	60.0
2:30 PM	86.7%	73.3%	71.5	90.0
3:00 PM	86.7%	73.3%	41.5	120.0
3:30 PM	26.7%	73.3%	30.0	54.5
4:00 PM	20.0%	80.0%	60.0	77.5
4:30 PM	40.0%	80.0%	40.0	72.5
5:00 PM	40.0%	86.7%	45.0	96.9
5:30 PM	33.3%	93.3%	48.0	47.1
6:00 PM	73.3%	100.0%	51.8	56.0
6:30 PM	93.3%	86.7%	60.0	34.6
7:00 PM	100.0%	86.7%	60.0	55.4
7:30 PM	93.3%	100.0%	75.0	74.0
8:00 PM	100.0%	86.7%	74.0	83.1
8:30 PM	100.0%	100.0%	100.0	102.0
9:00 PM	80.0%	86.7%	110.0	99.2
9:30 PM	46.7%	93.3%	128.6	122.1
10:00 PM	33.3%	93.3%	114.0	143.6
Average Parking Duration Per Parking Spot (min/veh)			80.1	76.7
Maximum Parking Duration Among All Spots (min/veh)			300.0	390.0

North Salem Street, East Side (Saunders to Chatham) (8.09) – 15 Parking Spaces



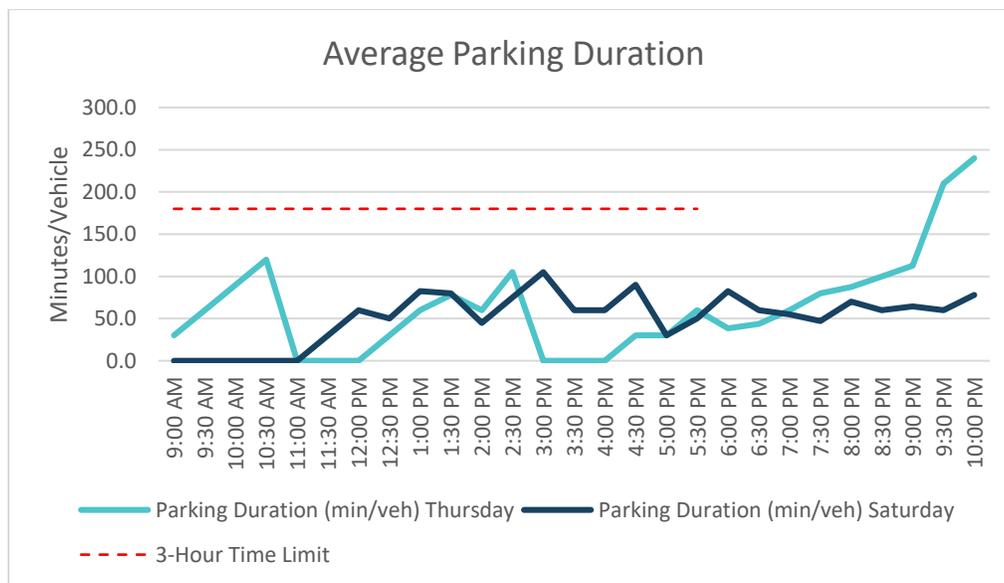
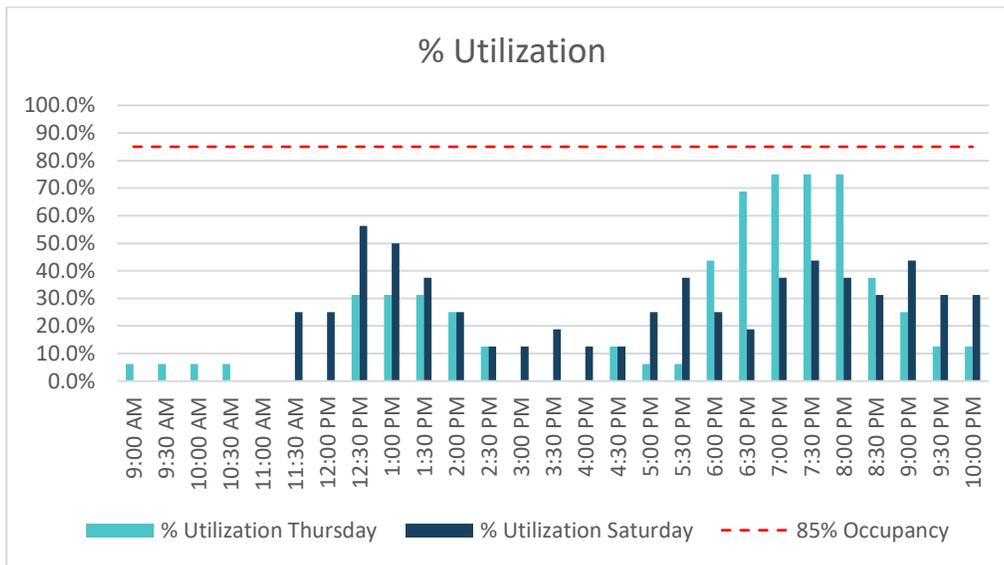
The collected data for North Salem Street, East Side, Saunders to Chatham, shows that there was available parking for 67% of the day on Thursday, and 41% of the day on Saturday. There are currently no parking restrictions for this parking area. The average parking duration per parking spot was 80.1 minutes per vehicle on Thursday, and 76.7 minutes per vehicle on Saturday.

Since this is a highly utilized parking area, it is recommended to encourage turnover by implementing and enforcing a 3-hour time restriction from 8:00 AM to 6:00 PM from Monday to Saturday with mobile ALPR, as described in the recommendations section of this technical memorandum. It is also recommended to implement and enforce a 90-minute time restriction from 6:00 PM to 9:00 PM from Monday to Saturday to encourage more turnover during the peak evening period. It is recommended to enforce this time restriction with mobile ALPR, as described in the recommendations section of this technical memorandum.

South Salem Street, West Side (Holleman to Chatham) (9.01) – 16 Parking Spaces

South Salem Street, West Side, Holleman to Chatham - 9.01				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	6.3%	0.0%	30.0	-
9:30 AM	6.3%	0.0%	60.0	-
10:00 AM	6.3%	0.0%	90.0	-
10:30 AM	6.3%	0.0%	120.0	-
11:00 AM	0.0%	0.0%	-	-
11:30 AM	0.0%	25.0%	-	30.0
12:00 PM	0.0%	25.0%	-	60.0
12:30 PM	31.3%	56.3%	30.0	50.0
1:00 PM	31.3%	50.0%	60.0	82.5
1:30 PM	31.3%	37.5%	78.0	80.0
2:00 PM	25.0%	25.0%	60.0	45.0
2:30 PM	12.5%	12.5%	105.0	75.0
3:00 PM	0.0%	12.5%	-	105.0
3:30 PM	0.0%	18.8%	-	60.0
4:00 PM	0.0%	12.5%	-	60.0
4:30 PM	12.5%	12.5%	30.0	90.0
5:00 PM	6.3%	25.0%	30.0	30.0
5:30 PM	6.3%	37.5%	60.0	50.0
6:00 PM	43.8%	25.0%	38.6	82.5
6:30 PM	68.8%	18.8%	43.6	60.0
7:00 PM	75.0%	37.5%	60.0	55.0
7:30 PM	75.0%	43.8%	80.0	47.1
8:00 PM	75.0%	37.5%	87.5	70.0
8:30 PM	37.5%	31.3%	100.0	60.0
9:00 PM	25.0%	43.8%	112.5	64.3
9:30 PM	12.5%	31.3%	210.0	60.0
10:00 PM	12.5%	31.3%	240.0	78.0
Average Parking Duration Per Parking Spot (min/veh)			93.1	80.8
Maximum Parking Duration Among All Spots (min/veh)			240.0	150.0

South Salem Street, West Side (Holleman to Chatham) (9.01) – 16 Parking Spaces

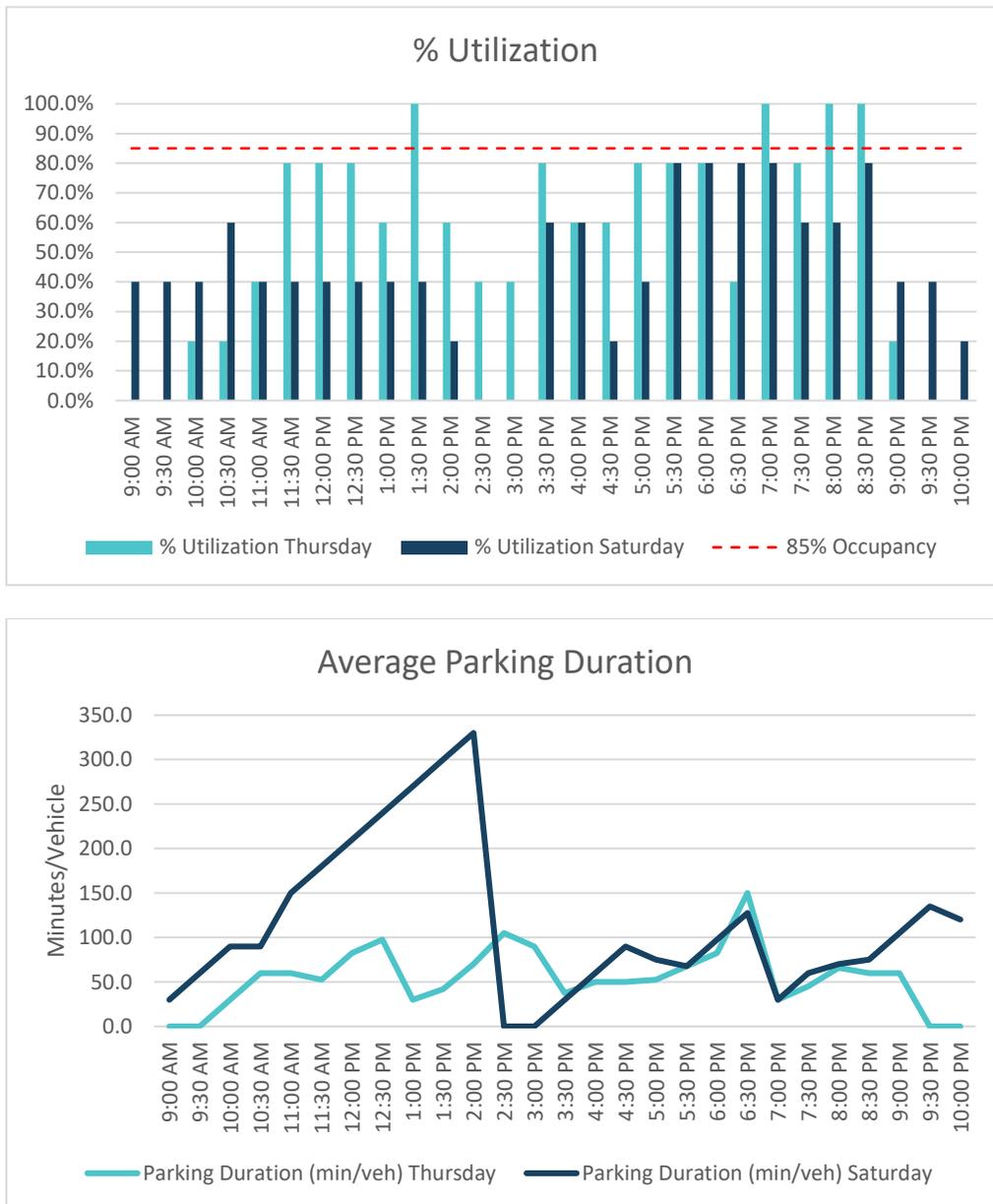


The collected data for South Salem Street, West Side, Holleman to Chatham, shows that there was available parking on both Thursday and Saturday. There is currently a 3-hour parking restriction from 8:00 AM to 6:00 PM on Monday through Saturday, that was adhered to 100% of the time. The average parking duration per parking spot was 93.1 minutes per vehicle on Thursday, and 80.8 minutes per vehicle on Saturday. The data shows that South Salem Street was approaching or was at full occupancy on Thursday evening, but Town Staff indicated that this is likely because of a new restaurant that recently opened and that parking along South Salem Street was abnormally high during data collection. Therefore, it is recommended to maintain the 3-hour time restriction, but to encourage turnover by enforcing this 3-hour time restriction with mobile ALPR, as described in the recommendations section of this technical memorandum.

East Chatham Street, North Side (Salem Street to Seaboard Street) (9.05) – 5 Parking Spaces

E Chatham Street, North Side (Salem Street to Seaboard Street) - 9.05				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	0.0%	40.0%	-	30.0
9:30 AM	0.0%	40.0%	-	60.0
10:00 AM	20.0%	40.0%	30.0	90.0
10:30 AM	20.0%	60.0%	60.0	90.0
11:00 AM	40.0%	40.0%	60.0	150.0
11:30 AM	80.0%	40.0%	52.5	180.0
12:00 PM	80.0%	40.0%	82.5	210.0
12:30 PM	80.0%	40.0%	97.5	240.0
1:00 PM	60.0%	40.0%	30.0	270.0
1:30 PM	100.0%	40.0%	42.0	300.0
2:00 PM	60.0%	20.0%	70.0	330.0
2:30 PM	40.0%	0.0%	105.0	-
3:00 PM	40.0%	0.0%	90.0	-
3:30 PM	80.0%	60.0%	37.5	30.0
4:00 PM	60.0%	60.0%	50.0	60.0
4:30 PM	60.0%	20.0%	50.0	90.0
5:00 PM	80.0%	40.0%	52.5	75.0
5:30 PM	80.0%	80.0%	67.5	67.5
6:00 PM	80.0%	80.0%	82.5	97.5
6:30 PM	40.0%	80.0%	150.0	127.5
7:00 PM	100.0%	80.0%	30.0	30.0
7:30 PM	80.0%	60.0%	45.0	60.0
8:00 PM	100.0%	60.0%	66.0	70.0
8:30 PM	100.0%	80.0%	60.0	75.0
9:00 PM	20.0%	40.0%	60.0	105.0
9:30 PM	0.0%	40.0%	-	135.0
10:00 PM	0.0%	20.0%	-	120.0
Average Parking Duration Per Parking Spot (min/veh)			67.9	117.5
Maximum Parking Duration Among All Spots (min/veh)			210.0	330.0

East Chatham Street, North Side (Salem Street to Seaboard Street) (9.05) – 5 Parking Spaces

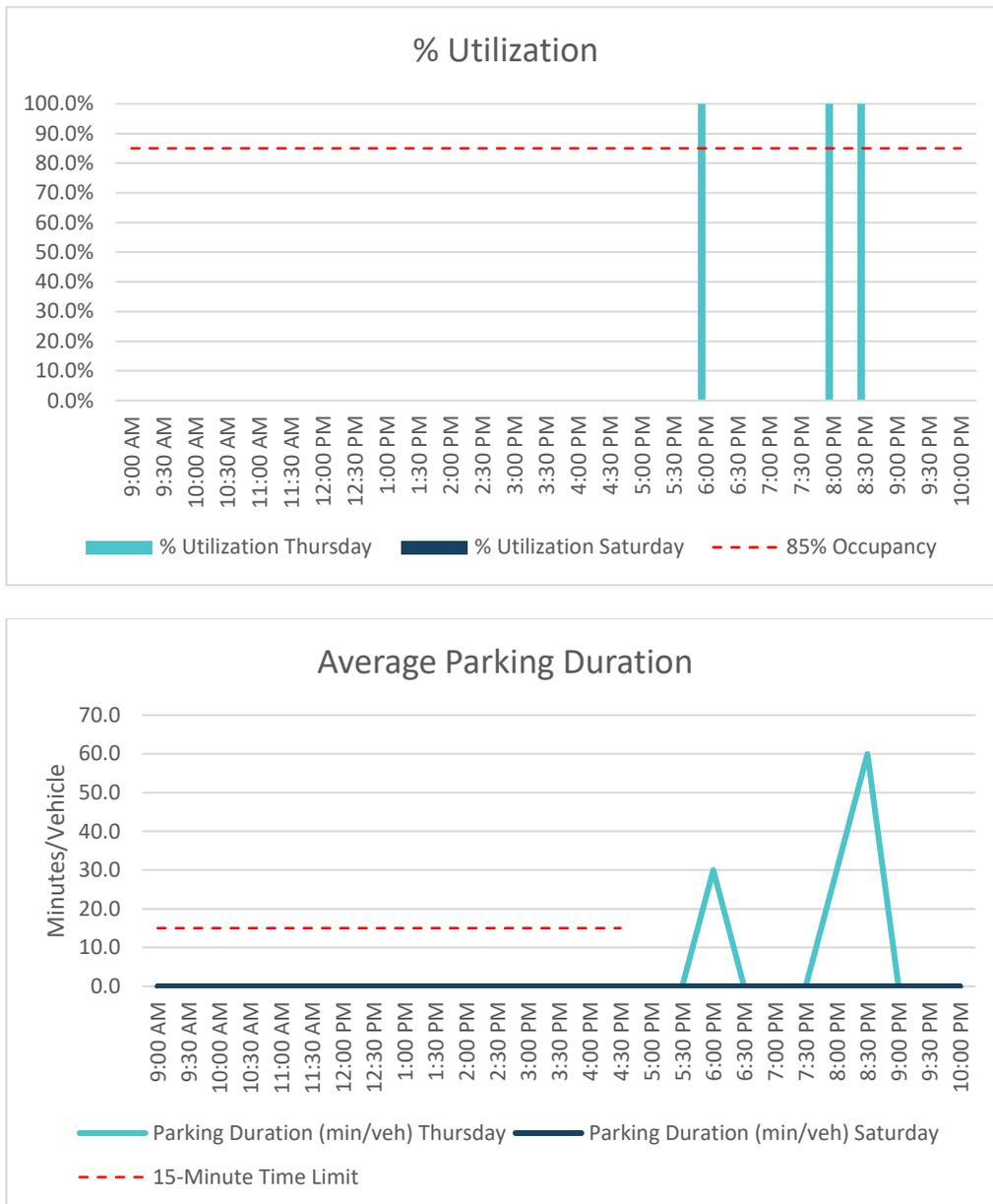


The collected data for East Chatham Street, North Side, Salem to Seaboard, shows that there was available parking for 85% of the day on Thursday, and 100% of the day on Saturday. There are no current parking restrictions in this area. The average parking duration per parking spot was 67.9 minutes per vehicle on Thursday, and 117.5 minutes per vehicle on Saturday. Since this is a heavily utilized parking area, it is recommended to encourage turnover by implementing and enforcing a 3-hour time restriction with mobile ALPR, as described in the recommendations section of this technical memorandum.

East Chatham Street, North Side, Loading (9.06) – 1 Parking Space

E Chatham Street, North Side, Loading - 9.06				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	0.0%	0.0%	-	-
9:30 AM	0.0%	0.0%	-	-
10:00 AM	0.0%	0.0%	-	-
10:30 AM	0.0%	0.0%	-	-
11:00 AM	0.0%	0.0%	-	-
11:30 AM	0.0%	0.0%	-	-
12:00 PM	0.0%	0.0%	-	-
12:30 PM	0.0%	0.0%	-	-
1:00 PM	0.0%	0.0%	-	-
1:30 PM	0.0%	0.0%	-	-
2:00 PM	0.0%	0.0%	-	-
2:30 PM	0.0%	0.0%	-	-
3:00 PM	0.0%	0.0%	-	-
3:30 PM	0.0%	0.0%	-	-
4:00 PM	0.0%	0.0%	-	-
4:30 PM	0.0%	0.0%	-	-
5:00 PM	0.0%	0.0%	-	-
5:30 PM	0.0%	0.0%	-	-
6:00 PM	100.0%	0.0%	30.0	-
6:30 PM	0.0%	0.0%	-	-
7:00 PM	0.0%	0.0%	-	-
7:30 PM	0.0%	0.0%	-	-
8:00 PM	100.0%	0.0%	30.0	-
8:30 PM	100.0%	0.0%	60.0	-
9:00 PM	0.0%	0.0%	-	-
9:30 PM	0.0%	0.0%	-	-
10:00 PM	0.0%	0.0%	-	-
Average Parking Duration Per Parking Spot (min/veh)			45.0	0.0
Maximum Parking Duration Among All Spots (min/veh)			60.0	0.0

East Chatham Street, North Side, Loading (9.06) – 1 Parking Space

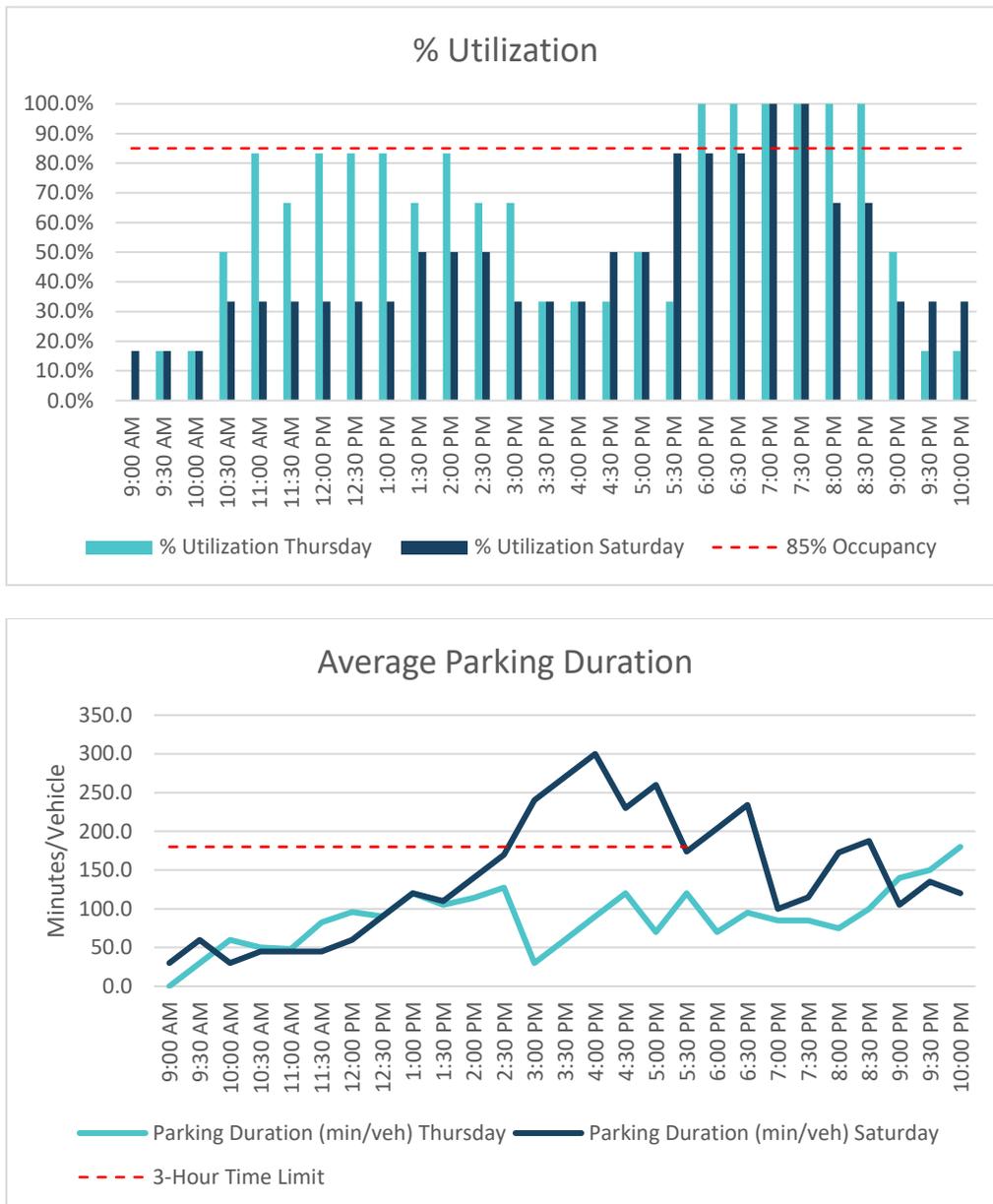


The collected data for the loading spot on East Chatham Street, North Side, shows that only two vehicles parked there on Thursday, and no vehicles parked there on Saturday. There is currently a 15-minute parking restriction for the loading spot from 6:00 AM to 5:00 PM from Monday through Friday. Since data was collected every 30 minutes, it's not clear if the 15-minute time restriction was followed. At least one vehicle on Thursday exceeded the 15-minute time restriction. It is recommended to encourage turnover by enforcing the 15-minute time limit with mobile ALPR, as described in the recommendations section of this technical memorandum. Since this is a highly utilized area, it is also recommended to encourage turnover by implementing and enforcing a 3-hour time restriction outside of the loading zone hours with mobile ALPR.

East Chatham Street, South Side (Salem Street to Seaboard Street) (9.07) – 6 Parking Spaces

E Chatham Street, South Side, Salem Street to Seaboard Street - 9.07				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	0.0%	16.7%	-	30.0
9:30 AM	16.7%	16.7%	30.0	60.0
10:00 AM	16.7%	16.7%	60.0	30.0
10:30 AM	50.0%	33.3%	50.0	45.0
11:00 AM	83.3%	33.3%	48.0	45.0
11:30 AM	66.7%	33.3%	82.5	45.0
12:00 PM	83.3%	33.3%	96.0	60.0
12:30 PM	83.3%	33.3%	90.0	90.0
1:00 PM	83.3%	33.3%	120.0	120.0
1:30 PM	66.7%	50.0%	105.0	110.0
2:00 PM	83.3%	50.0%	114.0	140.0
2:30 PM	66.7%	50.0%	127.5	170.0
3:00 PM	66.7%	33.3%	30.0	240.0
3:30 PM	33.3%	33.3%	60.0	270.0
4:00 PM	33.3%	33.3%	90.0	300.0
4:30 PM	33.3%	50.0%	120.0	230.0
5:00 PM	50.0%	50.0%	70.0	260.0
5:30 PM	33.3%	83.3%	120.0	174.0
6:00 PM	100.0%	83.3%	70.0	204.0
6:30 PM	100.0%	83.3%	95.0	234.0
7:00 PM	100.0%	100.0%	85.0	100.0
7:30 PM	100.0%	100.0%	85.0	115.0
8:00 PM	100.0%	66.7%	75.0	172.5
8:30 PM	100.0%	66.7%	100.0	187.5
9:00 PM	50.0%	33.3%	140.0	105.0
9:30 PM	16.7%	33.3%	150.0	135.0
10:00 PM	16.7%	33.3%	180.0	120.0
Average Parking Duration Per Parking Spot (min/veh)			88.3	136.8
Maximum Parking Duration Among All Spots (min/veh)			330.0	540.0

East Chatham Street, South Side (Salem Street to Seaboard Street) (9.07) – 6 Parking Spaces

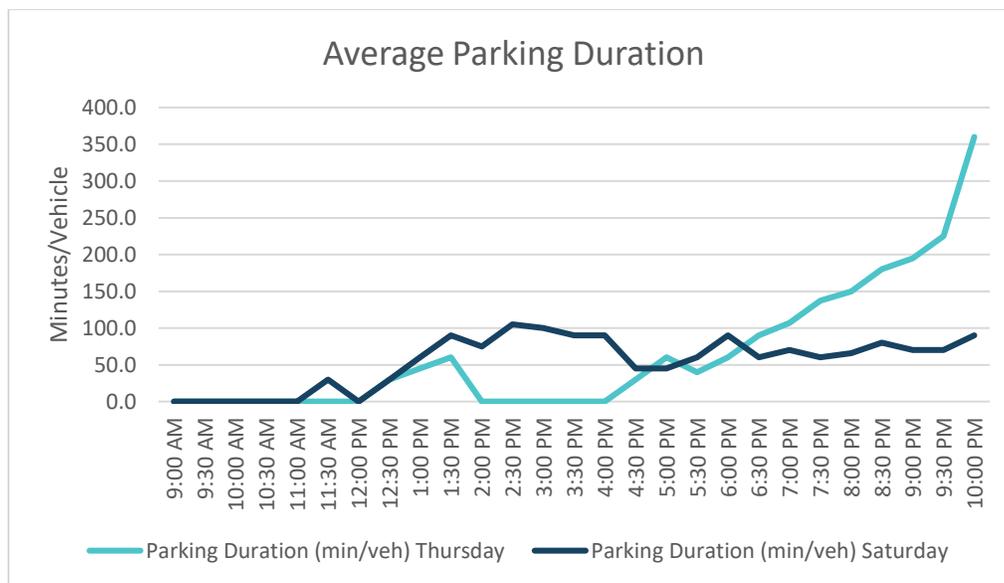
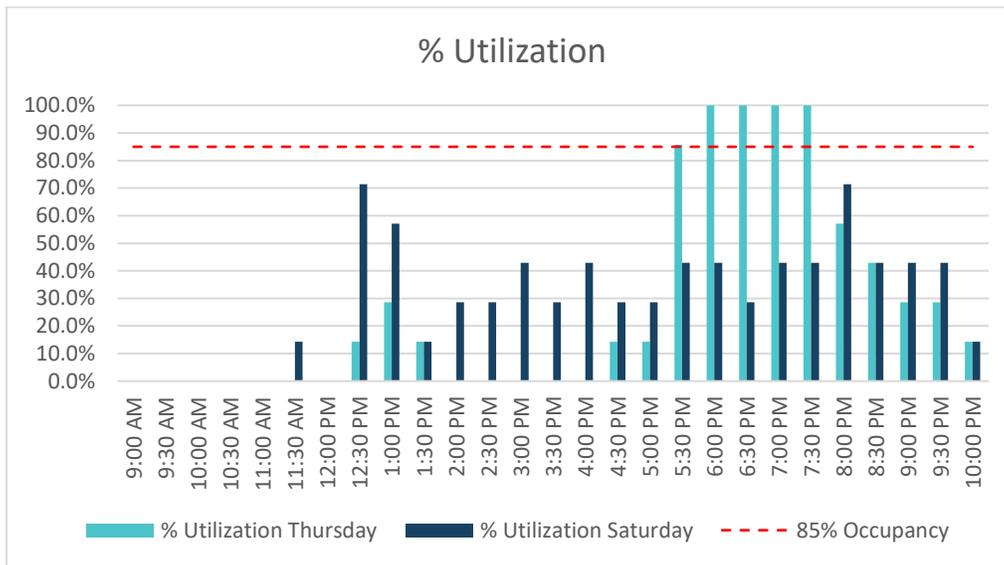


The collected data for East Chatham Street, South Side, Salem to Seaboard, shows that parking was available for 78% of Thursday, and 93% of Saturday. There is currently a 3-hour time restriction for this spot from 8:00 AM to 6:00 PM on Monday through Saturday. All of the parked vehicles on Thursday adhered to the time limit, and the time limit was adhered to 72% of the time on Saturday. The average parking duration for this parking area was 88.3 minutes per vehicle on Thursday, and 136.8 minutes per vehicle on Saturday. It is recommended to encourage turnover by enforcing the 3-hour restriction with mobile ALPR, as described in the recommendations section of this technical memorandum.

South Salem Street, West Side (Moore to Holleman) (9.08) – 7 Parking Spaces

South Salem Street, West Side, Moore to Holleman - 9.08				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	0.0%	0.0%	-	-
9:30 AM	0.0%	0.0%	-	-
10:00 AM	0.0%	0.0%	-	-
10:30 AM	0.0%	0.0%	-	-
11:00 AM	0.0%	0.0%	-	-
11:30 AM	0.0%	14.3%	-	30.0
12:00 PM	0.0%	0.0%	-	-
12:30 PM	14.3%	71.4%	30.0	30.0
1:00 PM	28.6%	57.1%	45.0	60.0
1:30 PM	14.3%	14.3%	60.0	90.0
2:00 PM	0.0%	28.6%	-	75.0
2:30 PM	0.0%	28.6%	-	105.0
3:00 PM	0.0%	42.9%	-	100.0
3:30 PM	0.0%	28.6%	-	90.0
4:00 PM	0.0%	42.9%	-	90.0
4:30 PM	14.3%	28.6%	30.0	45.0
5:00 PM	14.3%	28.6%	60.0	45.0
5:30 PM	85.7%	42.9%	40.0	60.0
6:00 PM	100.0%	42.9%	60.0	90.0
6:30 PM	100.0%	28.6%	90.0	60.0
7:00 PM	100.0%	42.9%	107.1	70.0
7:30 PM	100.0%	42.9%	137.1	60.0
8:00 PM	57.1%	71.4%	150.0	66.0
8:30 PM	42.9%	42.9%	180.0	80.0
9:00 PM	28.6%	42.9%	195.0	70.0
9:30 PM	28.6%	42.9%	225.0	70.0
10:00 PM	14.3%	14.3%	360.0	90.0
Average Parking Duration Per Parking Spot (min/veh)			155.7	80.0
Maximum Parking Duration Among All Spots (min/veh)			360.0	180.0

South Salem Street, West Side (Moore to Holleman) (9.08) – 7 Parking Spaces

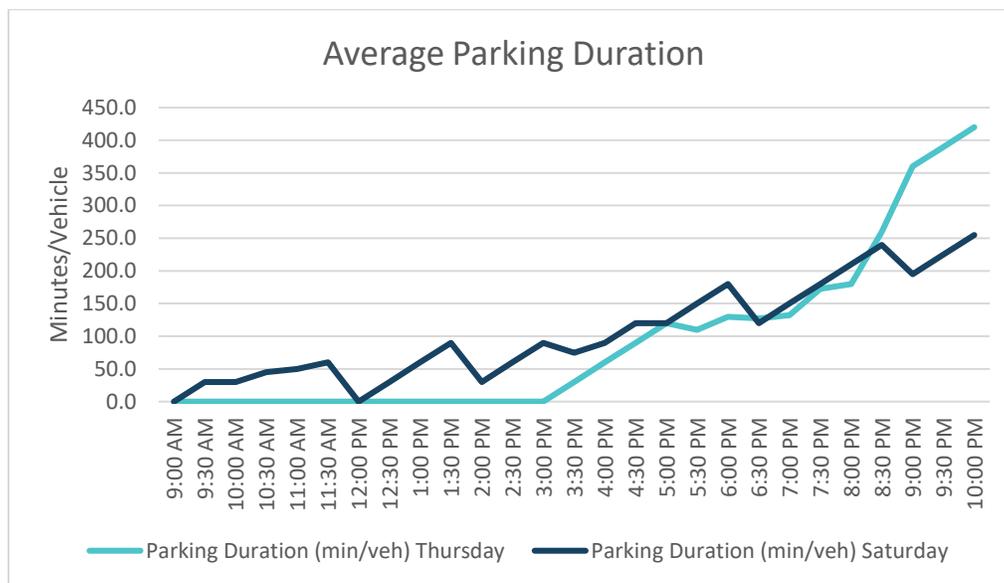
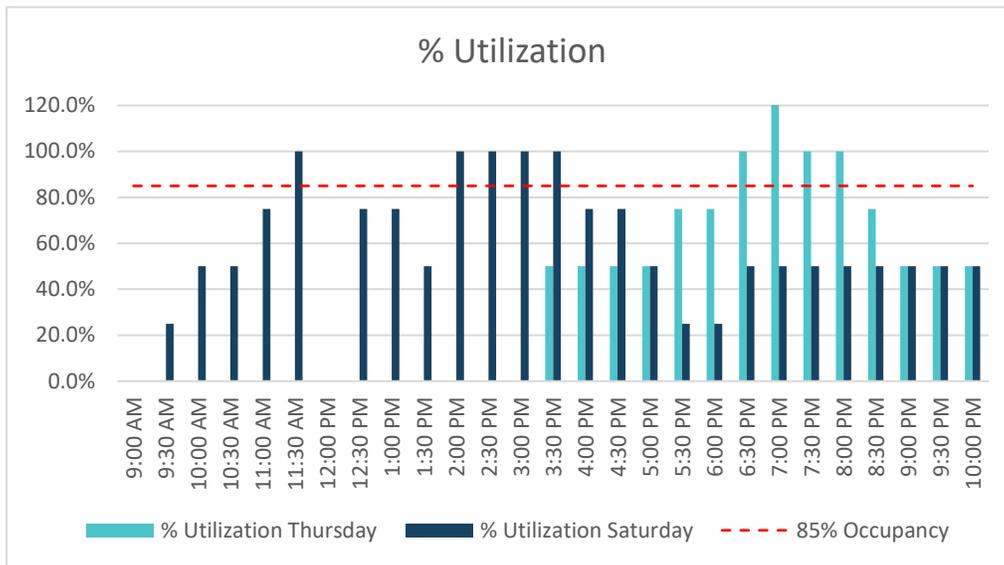


The collected data for South Salem Street, West Side, Moore to Holleman, shows that there was available parking for 81% of the day on Thursday, and 100% of the day on Saturday. There are currently no parking restrictions for this parking area. The average parking duration per parking spot was 155.7 minutes per vehicle on Thursday, and 80.0 minutes per vehicle on Saturday. Since data shows that South Salem Street is approaching or at full occupancy on Thursday evening, it is recommended to encourage turnover by implementing and enforcing a 3-hour time restriction with mobile ALPR, as described in the recommendations section of this technical memorandum.

South Salem Street, West Side (NC 55 to Moore) (9.09) – 4 Parking Spaces

South Salem Street, West Side, NC 55 to Moore - 9.09				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	0.0%	0.0%	-	-
9:30 AM	0.0%	25.0%	-	30.0
10:00 AM	0.0%	50.0%	-	30.0
10:30 AM	0.0%	50.0%	-	45.0
11:00 AM	0.0%	75.0%	-	50.0
11:30 AM	0.0%	100.0%	-	60.0
12:00 PM	0.0%	0.0%	-	-
12:30 PM	0.0%	75.0%	-	30.0
1:00 PM	0.0%	75.0%	-	60.0
1:30 PM	0.0%	50.0%	-	90.0
2:00 PM	0.0%	100.0%	-	30.0
2:30 PM	0.0%	100.0%	-	60.0
3:00 PM	0.0%	100.0%	-	90.0
3:30 PM	50.0%	100.0%	30.0	75.0
4:00 PM	50.0%	75.0%	60.0	90.0
4:30 PM	50.0%	75.0%	90.0	120.0
5:00 PM	50.0%	50.0%	120.0	120.0
5:30 PM	75.0%	25.0%	110.0	150.0
6:00 PM	75.0%	25.0%	130.0	180.0
6:30 PM	100.0%	50.0%	127.5	120.0
7:00 PM	125.0%	50.0%	132.0	150.0
7:30 PM	100.0%	50.0%	172.5	180.0
8:00 PM	100.0%	50.0%	180.0	210.0
8:30 PM	75.0%	50.0%	260.0	240.0
9:00 PM	50.0%	50.0%	360.0	195.0
9:30 PM	50.0%	50.0%	390.0	225.0
10:00 PM	50.0%	50.0%	420.0	255.0
Average Parking Duration Per Parking Spot (min/veh)			220.0	103.1
Maximum Parking Duration Among All Spots (min/veh)			420.0	420.0

South Salem Street, West Side (NC 55 to Moore) (9.09) – 4 Parking Spaces

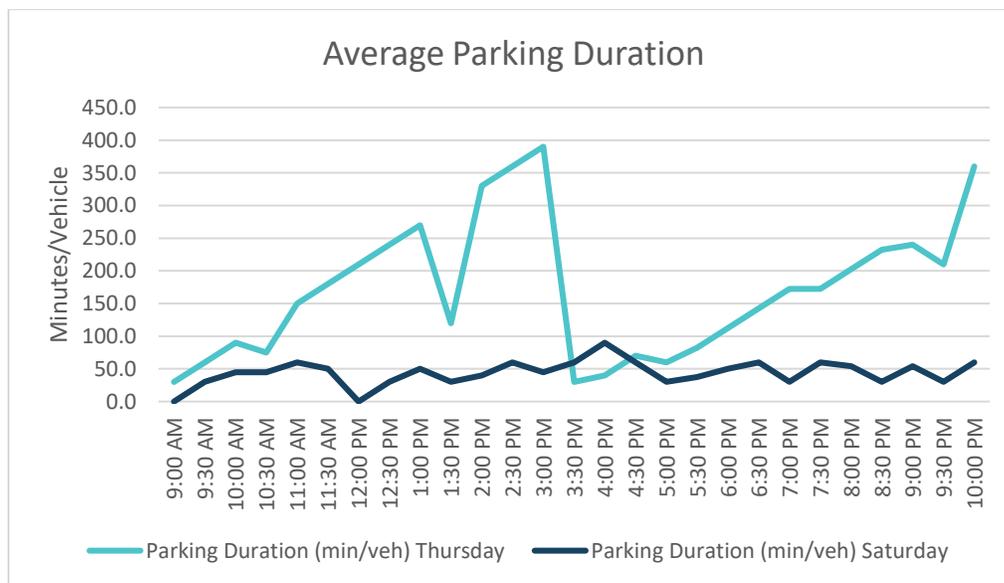
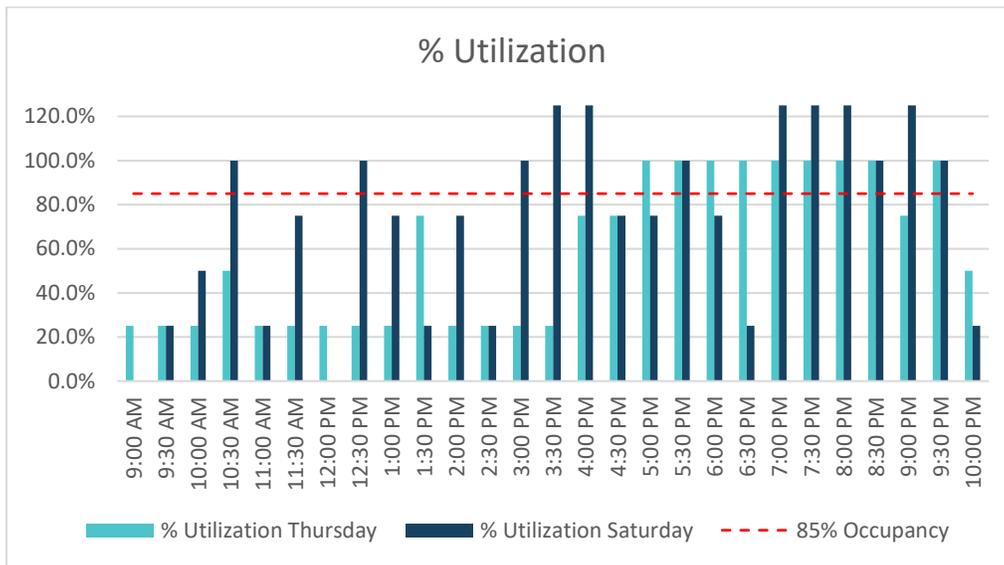


The collected data for South Salem Street, West Side, NC 55 to Moore, shows that there was available parking for 85% of the day on Thursday, and 81% of the day on Saturday. There are currently no parking restrictions for this parking area. The data collectors did indicate that during one 30-minute count timeframe, there was a vehicle parked outside of a marked spot, shown by the occupancy greater than 100%. The average parking duration per parking spot was 220.0 minutes per vehicle on Thursday, and 103.1 minutes per vehicle on Saturday. Since data shows that South Salem Street is approaching or at full occupancy on Thursday evening, it is recommended to encourage turnover by implementing and enforcing a 3-hour time restriction with mobile ALPR, as described in the recommendations section of this technical memorandum.

South Salem Street, East Side (NC 55 to Moore) (9.10) – 4 Parking Spaces

South Salem Street, East Side, NC 55 to Moore - 9.10				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	25.0%	0.0%	30.0	-
9:30 AM	25.0%	25.0%	60.0	30.0
10:00 AM	25.0%	50.0%	90.0	45.0
10:30 AM	50.0%	100.0%	75.0	45.0
11:00 AM	25.0%	25.0%	150.0	60.0
11:30 AM	25.0%	75.0%	180.0	50.0
12:00 PM	25.0%	0.0%	210.0	-
12:30 PM	25.0%	100.0%	240.0	30.0
1:00 PM	25.0%	75.0%	270.0	50.0
1:30 PM	75.0%	25.0%	120.0	30.0
2:00 PM	25.0%	75.0%	330.0	40.0
2:30 PM	25.0%	25.0%	360.0	60.0
3:00 PM	25.0%	100.0%	390.0	45.0
3:30 PM	25.0%	125.0%	30.0	60.0
4:00 PM	75.0%	125.0%	40.0	90.0
4:30 PM	75.0%	75.0%	70.0	60.0
5:00 PM	100.0%	75.0%	60.0	30.0
5:30 PM	100.0%	100.0%	82.5	37.5
6:00 PM	100.0%	75.0%	112.5	50.0
6:30 PM	100.0%	25.0%	142.5	60.0
7:00 PM	100.0%	125.0%	172.5	30.0
7:30 PM	100.0%	125.0%	172.5	60.0
8:00 PM	100.0%	125.0%	202.5	54.0
8:30 PM	100.0%	100.0%	232.5	30.0
9:00 PM	75.0%	125.0%	240.0	54.0
9:30 PM	100.0%	100.0%	210.0	30.0
10:00 PM	50.0%	25.0%	360.0	60.0
Average Parking Duration Per Parking Spot (min/veh)			172.5	53.3
Maximum Parking Duration Among All Spots (min/veh)			390.0	150.0

South Salem Street, East Side (NC 55 to Moore) (9.10) – 4 Parking Spaces

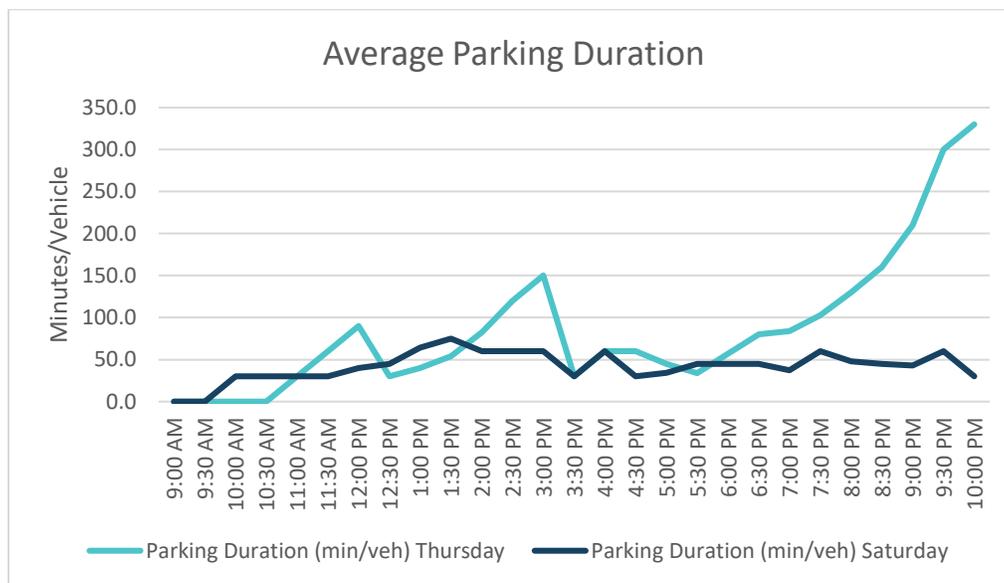
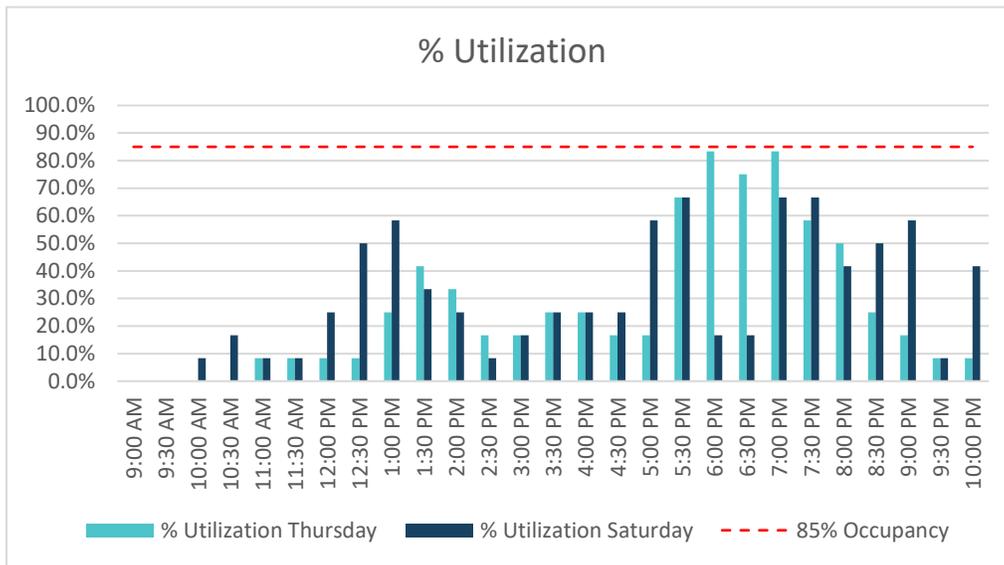


The collected data for South Salem Street, East Side, NC 55 to Moore, shows that there was available parking for 2/3 of the day on Thursday, and 44% of the day on Saturday. There are currently no parking restrictions for this parking area. The data collectors did indicate that 22% of the time, there was a vehicle parked outside of a marked spot, shown by the occupancy greater than 100%. The average parking duration per parking spot was 172.5 minutes per vehicle on Thursday, and 53.3 minutes per vehicle on Saturday. Since data shows that South Salem Street is approaching or at full occupancy on Thursday evening, it is recommended to encourage turnover by implementing and enforcing a 3-hour time restriction with mobile ALPR, as described in the recommendations section of this technical memorandum.

South Salem Street, East Side (Moore to Holleman) (9.11) – 12 Parking Spaces

South Salem Street, East Side, Moore to Holleman - 9.11				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	0.0%	0.0%	-	-
9:30 AM	0.0%	0.0%	-	-
10:00 AM	0.0%	8.3%	-	30.0
10:30 AM	0.0%	16.7%	-	30.0
11:00 AM	8.3%	8.3%	30.0	30.0
11:30 AM	8.3%	8.3%	60.0	30.0
12:00 PM	8.3%	25.0%	90.0	40.0
12:30 PM	8.3%	50.0%	30.0	45.0
1:00 PM	25.0%	58.3%	40.0	64.3
1:30 PM	41.7%	33.3%	54.0	75.0
2:00 PM	33.3%	25.0%	82.5	60.0
2:30 PM	16.7%	8.3%	120.0	60.0
3:00 PM	16.7%	16.7%	150.0	60.0
3:30 PM	25.0%	25.0%	30.0	30.0
4:00 PM	25.0%	25.0%	60.0	60.0
4:30 PM	16.7%	25.0%	60.0	30.0
5:00 PM	16.7%	58.3%	45.0	34.3
5:30 PM	66.7%	66.7%	33.8	45.0
6:00 PM	83.3%	16.7%	57.0	45.0
6:30 PM	75.0%	16.7%	80.0	45.0
7:00 PM	83.3%	66.7%	84.0	37.5
7:30 PM	58.3%	66.7%	102.9	60.0
8:00 PM	50.0%	41.7%	130.0	48.0
8:30 PM	25.0%	50.0%	160.0	45.0
9:00 PM	16.7%	58.3%	210.0	42.9
9:30 PM	8.3%	8.3%	300.0	60.0
10:00 PM	8.3%	41.7%	330.0	30.0
Average Parking Duration Per Parking Spot (min/veh)			124.8	50.6
Maximum Parking Duration Among All Spots (min/veh)			330.0	120.0

South Salem Street, East Side (Moore to Holleman) (9.11) – 12 Parking Spaces

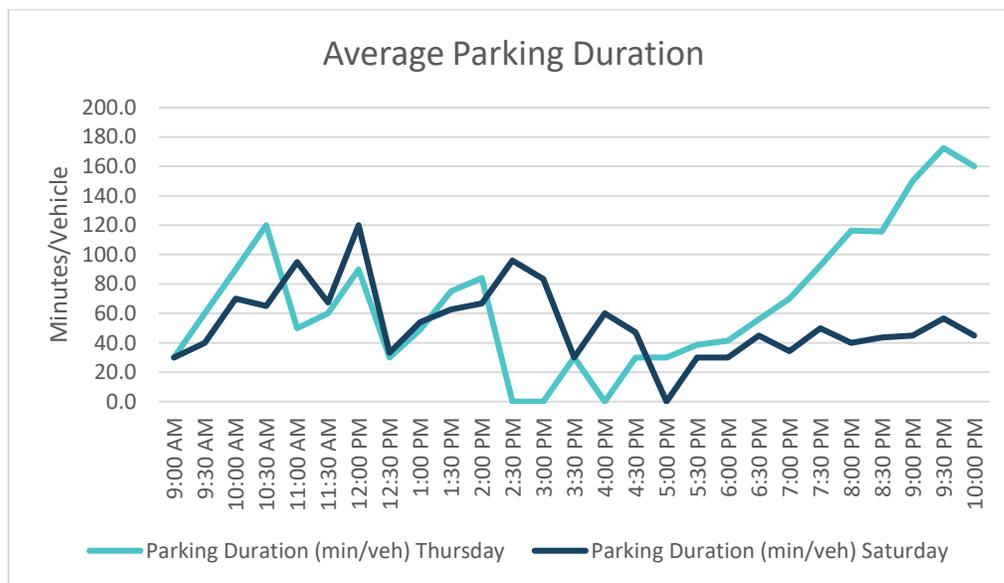
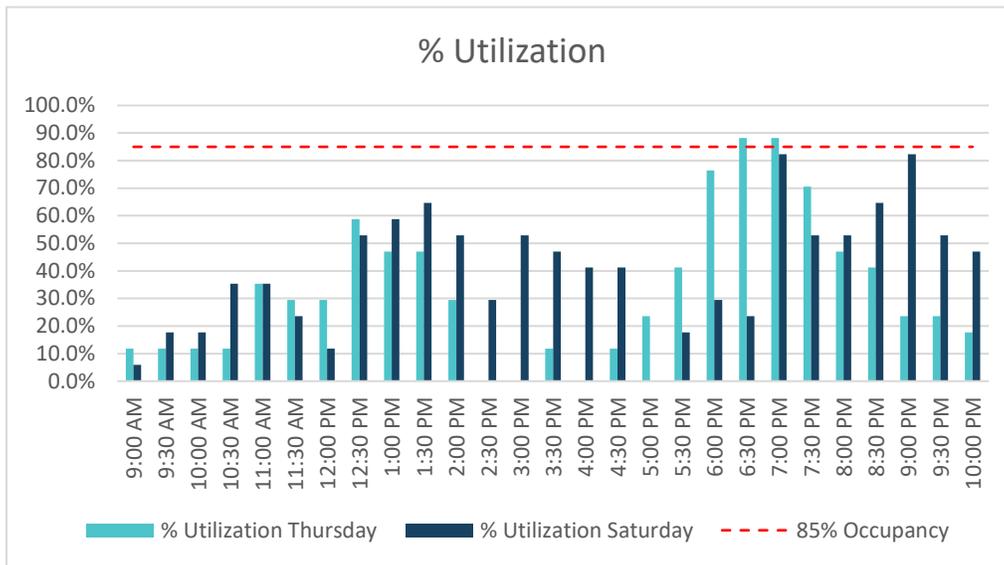


The collected data for South Salem Street, East Side, Moore to Holleman, shows that there was available parking on both Thursday and Saturday. There are currently no parking restrictions for this parking area. The average parking duration per parking spot was 124.8 minutes per vehicle on Thursday, and 50.6 minutes per vehicle on Saturday. Since data shows that South Salem Street is approaching or at full occupancy on Thursday evening, it is recommended to encourage turnover by implementing and enforcing a 3-hour time restriction with mobile ALPR, as described in the recommendations section of this technical memorandum.

South Salem Street, East Side (Holleman to Chatham) (9.12) – 14 Parking Spaces

South Salem Street, East Side, Holleman to Chatham - 9.12				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	11.8%	5.9%	30.0	30.0
9:30 AM	11.8%	17.6%	60.0	40.0
10:00 AM	11.8%	17.6%	90.0	70.0
10:30 AM	11.8%	35.3%	120.0	65.0
11:00 AM	35.3%	35.3%	50.0	95.0
11:30 AM	29.4%	23.5%	60.0	67.5
12:00 PM	29.4%	11.8%	90.0	120.0
12:30 PM	58.8%	52.9%	30.0	33.3
1:00 PM	47.1%	58.8%	48.8	54.0
1:30 PM	47.1%	64.7%	75.0	62.7
2:00 PM	29.4%	52.9%	84.0	66.7
2:30 PM	0.0%	29.4%	-	96.0
3:00 PM	0.0%	52.9%	-	83.3
3:30 PM	11.8%	47.1%	30.0	30.0
4:00 PM	0.0%	41.2%	-	60.0
4:30 PM	11.8%	41.2%	30.0	47.1
5:00 PM	23.5%	0.0%	30.0	-
5:30 PM	41.2%	17.6%	38.6	30.0
6:00 PM	76.5%	29.4%	41.5	30.0
6:30 PM	88.2%	23.5%	56.0	45.0
7:00 PM	88.2%	82.4%	70.0	34.3
7:30 PM	70.6%	52.9%	92.5	50.0
8:00 PM	47.1%	52.9%	116.3	40.0
8:30 PM	41.2%	64.7%	115.7	43.6
9:00 PM	23.5%	82.4%	150.0	45.0
9:30 PM	23.5%	52.9%	172.5	56.7
10:00 PM	17.6%	47.1%	160.0	45.0
Average Parking Duration Per Parking Spot (min/veh)			83.3	56.0
Maximum Parking Duration Among All Spots (min/veh)			300.0	210.0

South Salem Street, East Side (Holleman to Chatham) (9.12) – 14 Parking Spaces

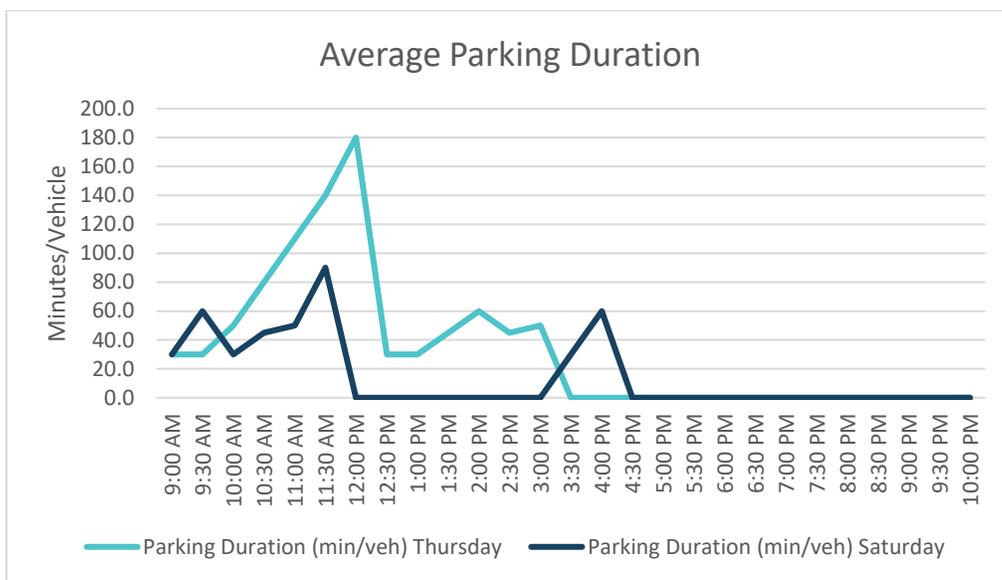
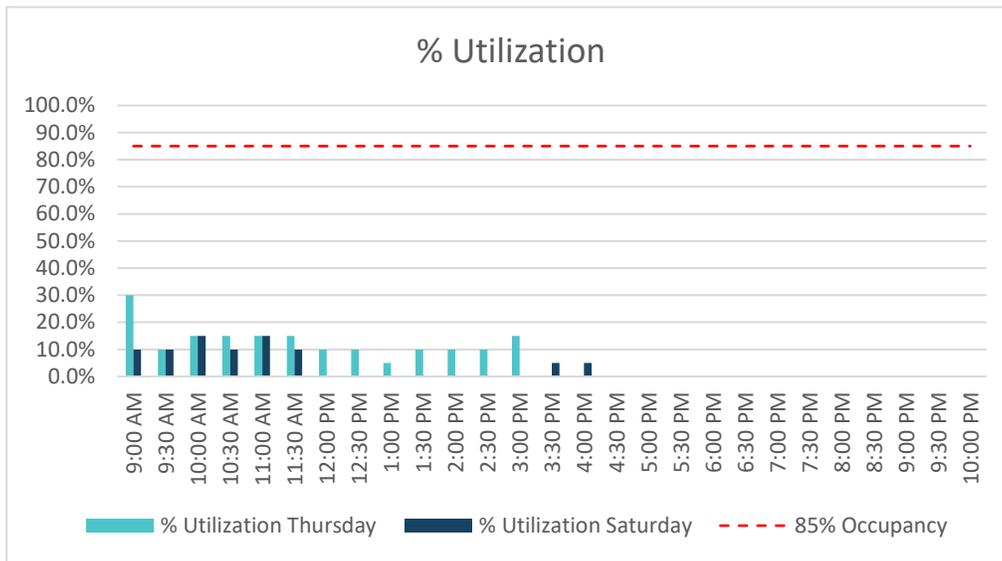


The collected data for South Salem Street, East Side, Holleman to Chatham, shows that there was available parking on both Thursday and Saturday. There are currently no parking restrictions for this parking area. The average parking duration per parking spot was 83.3 minutes per vehicle on Thursday, and 56.0 minutes per vehicle on Saturday. Since data shows that South Salem Street is approaching or at full occupancy on Thursday evening, it is recommended to encourage turnover by implementing and enforcing a 3-hour time restriction with mobile ALPR, as described in the recommendations section of this technical memorandum.

Hunter Street, South Side, West of Town Campus (10.07) – 20 Parking Spaces

Hunter Street South Side, West of Town Campus - 10.07				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	30.0%	10.0%	30.0	30.0
9:30 AM	10.0%	10.0%	30.0	60.0
10:00 AM	15.0%	15.0%	50.0	30.0
10:30 AM	15.0%	10.0%	80.0	45.0
11:00 AM	15.0%	15.0%	110.0	50.0
11:30 AM	15.0%	10.0%	140.0	90.0
12:00 PM	10.0%	0.0%	180.0	-
12:30 PM	10.0%	0.0%	30.0	-
1:00 PM	5.0%	0.0%	30.0	-
1:30 PM	10.0%	0.0%	45.0	-
2:00 PM	10.0%	0.0%	60.0	-
2:30 PM	10.0%	0.0%	45.0	-
3:00 PM	15.0%	0.0%	50.0	-
3:30 PM	0.0%	5.0%	-	30.0
4:00 PM	0.0%	5.0%	-	60.0
4:30 PM	0.0%	0.0%	-	-
5:00 PM	0.0%	0.0%	-	-
5:30 PM	0.0%	0.0%	-	-
6:00 PM	0.0%	0.0%	-	-
6:30 PM	0.0%	0.0%	-	-
7:00 PM	0.0%	0.0%	-	-
7:30 PM	0.0%	0.0%	-	-
8:00 PM	0.0%	0.0%	-	-
8:30 PM	0.0%	0.0%	-	-
9:00 PM	0.0%	0.0%	-	-
9:30 PM	0.0%	0.0%	-	-
10:00 PM	0.0%	0.0%	-	-
Average Parking Duration Per Parking Spot (min/veh)			63.6	61.7
Maximum Parking Duration Among All Spots (min/veh)			180.0	120.0

Hunter Street, South Side, West of Town Campus (10.07) – 20 Parking Spaces

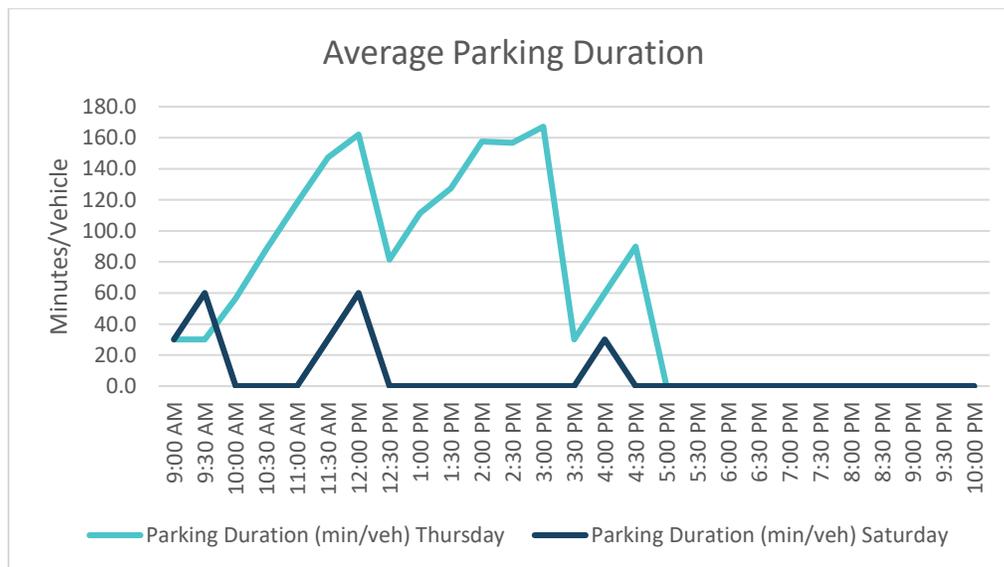
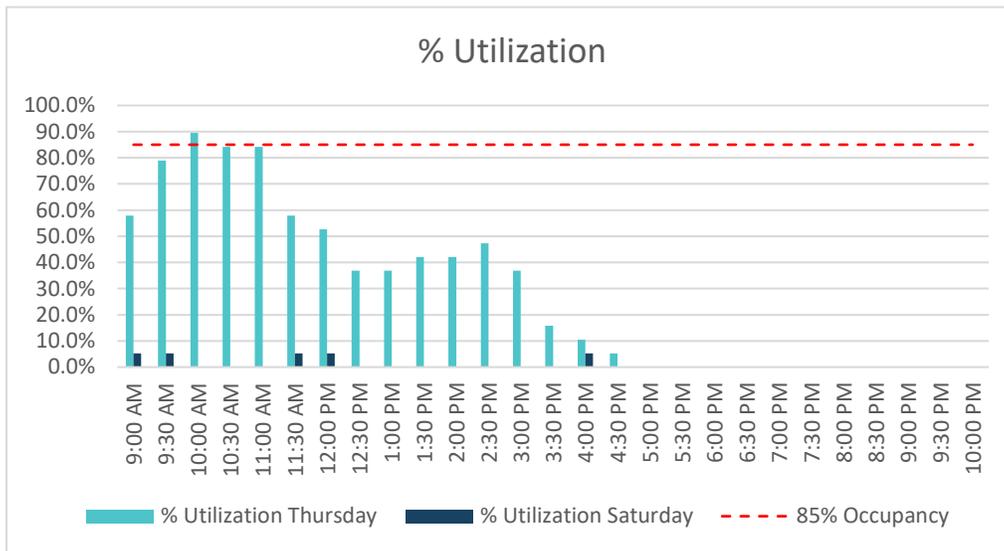


The collected data for Hunter Street, South Side, West of Town Campus shows that there was available parking on both Thursday and Saturday. Data indicates that this parking area was only utilized before 3:00 PM on Thursday and 4:00 on Saturday. The average parking duration per parking spot was 63.6 minutes per vehicle on Thursday, and 61.7 minutes per vehicle on Saturday. Since the parking supply was greater than the parking demand, there are no turnover or enforcement recommendations for Hunter Street, South Side, West of Town Campus.

Hunter Street, South Side, East of Town Campus (10.08) – 19 Parking Spaces

Hunter Street South Side, East of Campus - 10.08				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	57.9%	5.3%	30.0	30.0
9:30 AM	78.9%	5.3%	30.0	60.0
10:00 AM	89.5%	0.0%	56.5	-
10:30 AM	84.2%	0.0%	88.1	-
11:00 AM	84.2%	0.0%	118.1	-
11:30 AM	57.9%	5.3%	147.3	30.0
12:00 PM	52.6%	5.3%	162.0	60.0
12:30 PM	36.8%	0.0%	81.4	-
1:00 PM	36.8%	0.0%	111.4	-
1:30 PM	42.1%	0.0%	127.5	-
2:00 PM	42.1%	0.0%	157.5	-
2:30 PM	47.4%	0.0%	156.7	-
3:00 PM	36.8%	0.0%	167.1	-
3:30 PM	15.8%	0.0%	30.0	-
4:00 PM	10.5%	5.3%	60.0	30.0
4:30 PM	5.3%	0.0%	90.0	-
5:00 PM	0.0%	0.0%	-	-
5:30 PM	0.0%	0.0%	-	-
6:00 PM	0.0%	0.0%	-	-
6:30 PM	0.0%	0.0%	-	-
7:00 PM	0.0%	0.0%	-	-
7:30 PM	0.0%	0.0%	-	-
8:00 PM	0.0%	0.0%	-	-
8:30 PM	0.0%	0.0%	-	-
9:00 PM	0.0%	0.0%	-	-
9:30 PM	0.0%	0.0%	-	-
10:00 PM	0.0%	0.0%	-	-
Average Parking Duration Per Parking Spot (min/veh)			114.7	50.0
Maximum Parking Duration Among All Spots (min/veh)			360.0	60.0

Hunter Street, South Side, East of Town Campus (10.08) – 19 Parking Spaces

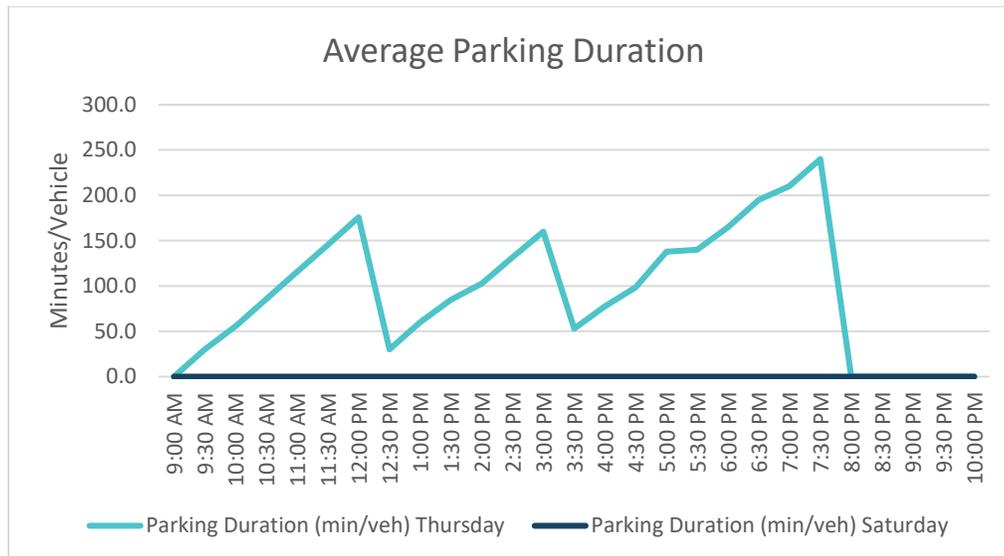
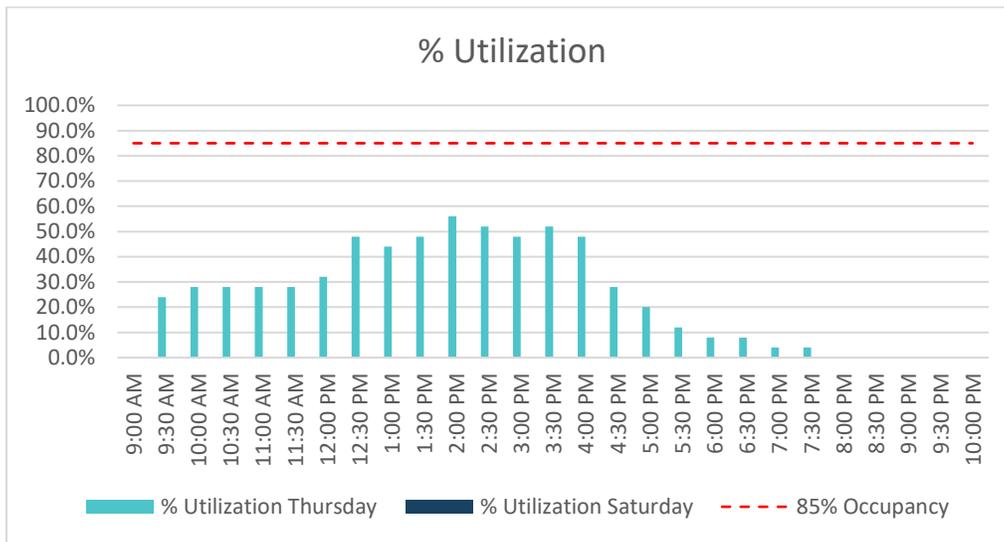


The collected data for Hunter Street, South Side, East of Town Campus shows that there was available parking on both Thursday and Saturday. Data indicates that this parking area was only utilized before 4:30 PM on Thursday, and rarely utilized on Saturday. The average parking duration per parking spot was 114.7 minutes per vehicle on Thursday, and 50.0 minutes per vehicle on Saturday. Since the parking supply was greater than the parking demand, there are no turnover or enforcement recommendations for Hunter Street, South Side, East of Town Campus.

Hunter Street, North Side, East of Town Campus (10.09) – 25 Parking Spaces

Hunter Street North Side, East of Campus - 10.09				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	0.0%	0.0%	-	-
9:30 AM	24.0%	0.0%	30.0	-
10:00 AM	28.0%	0.0%	55.7	-
10:30 AM	28.0%	0.0%	85.7	-
11:00 AM	28.0%	0.0%	115.7	-
11:30 AM	28.0%	0.0%	145.7	-
12:00 PM	32.0%	0.0%	175.7	-
12:30 PM	48.0%	0.0%	30.0	-
1:00 PM	44.0%	0.0%	60.0	-
1:30 PM	48.0%	0.0%	85.0	-
2:00 PM	56.0%	0.0%	102.9	-
2:30 PM	52.0%	0.0%	131.5	-
3:00 PM	48.0%	0.0%	160.0	-
3:30 PM	52.0%	0.0%	53.1	-
4:00 PM	48.0%	0.0%	77.5	-
4:30 PM	28.0%	0.0%	98.6	-
5:00 PM	20.0%	0.0%	138.0	-
5:30 PM	12.0%	0.0%	140.0	-
6:00 PM	8.0%	0.0%	165.0	-
6:30 PM	8.0%	0.0%	195.0	-
7:00 PM	4.0%	0.0%	210.0	-
7:30 PM	4.0%	0.0%	240.0	-
8:00 PM	0.0%	0.0%	-	-
8:30 PM	0.0%	0.0%	-	-
9:00 PM	0.0%	0.0%	-	-
9:30 PM	0.0%	0.0%	-	-
10:00 PM	0.0%	0.0%	-	-
Average Parking Duration Per Parking Spot (min/veh)			135.0	0.0
Maximum Parking Duration Among All Spots (min/veh)			240.0	0.0

Hunter Street, North Side, East of Town Campus (10.09) – 25 Parking Spaces

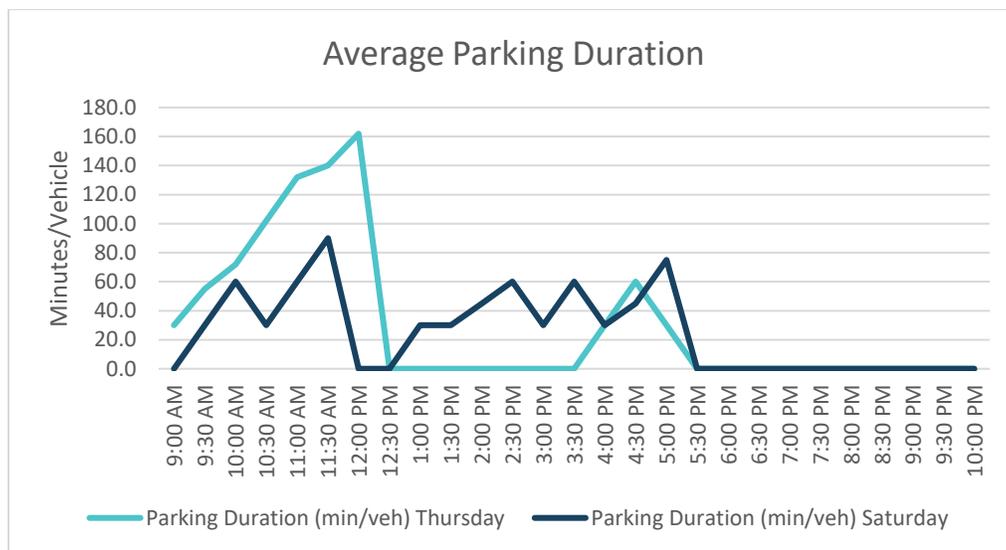
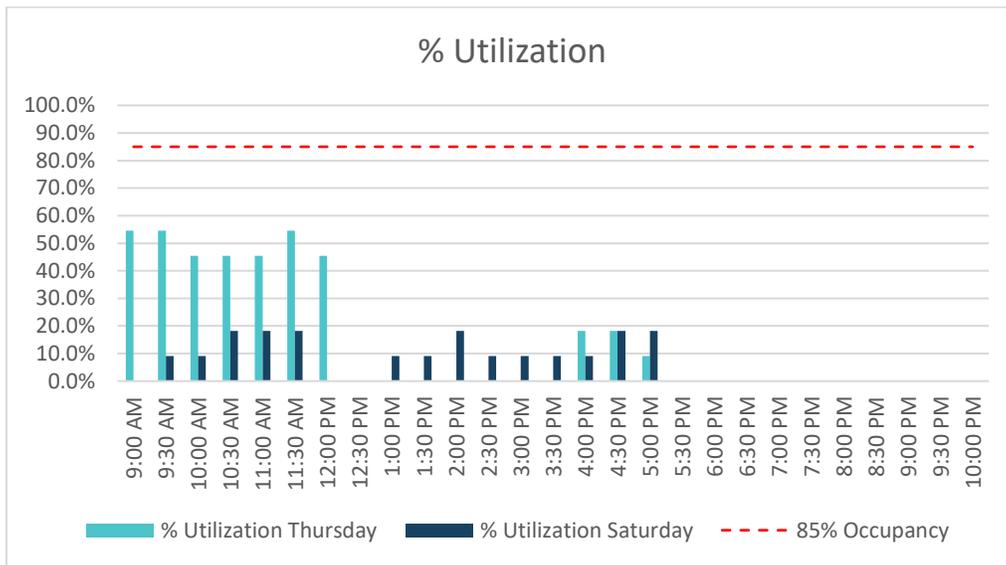


The collected data for Hunter Street, North Side, East of Town Campus shows that there was available parking on both Thursday and Saturday. Data indicates that this parking area was only utilized before 4:30 PM on Thursday, and not utilized on Saturday. The average parking duration per parking spot was 135.0 minutes per vehicle on Thursday. Since the parking supply was greater than the parking demand, there are no turnover or enforcement recommendations for Hunter Street, North Side, East of Town Campus.

South Elm Street, East Side (Olive Street to East Moore Street) (13.01) – 11 Parking Spaces

South Elm Street, East Side, Olive Street to Moore Street - 13.01				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	54.5%	0.0%	30.0	-
9:30 AM	54.5%	9.1%	55.0	30.0
10:00 AM	45.5%	9.1%	72.0	60.0
10:30 AM	45.5%	18.2%	102.0	30.0
11:00 AM	45.5%	18.2%	132.0	60.0
11:30 AM	54.5%	18.2%	140.0	90.0
12:00 PM	45.5%	0.0%	162.0	-
12:30 PM	0.0%	0.0%	-	-
1:00 PM	0.0%	9.1%	-	30.0
1:30 PM	0.0%	9.1%	-	30.0
2:00 PM	0.0%	18.2%	-	45.0
2:30 PM	0.0%	9.1%	-	60.0
3:00 PM	0.0%	9.1%	-	30.0
3:30 PM	0.0%	9.1%	-	60.0
4:00 PM	18.2%	9.1%	30.0	30.0
4:30 PM	18.2%	18.2%	60.0	45.0
5:00 PM	9.1%	18.2%	30.0	75.0
5:30 PM	0.0%	0.0%	-	-
6:00 PM	0.0%	0.0%	-	-
6:30 PM	0.0%	0.0%	-	-
7:00 PM	0.0%	0.0%	-	-
7:30 PM	0.0%	0.0%	-	-
8:00 PM	0.0%	0.0%	-	-
8:30 PM	0.0%	0.0%	-	-
9:00 PM	0.0%	0.0%	-	-
9:30 PM	0.0%	0.0%	-	-
10:00 PM	0.0%	0.0%	-	-
Average Parking Duration Per Parking Spot (min/veh)			128.6	66.4
Maximum Parking Duration Among All Spots (min/veh)			210.0	90.0

South Elm Street, East Side (Olive Street to East Moore Street) (13.01) – 11 Parking Spaces

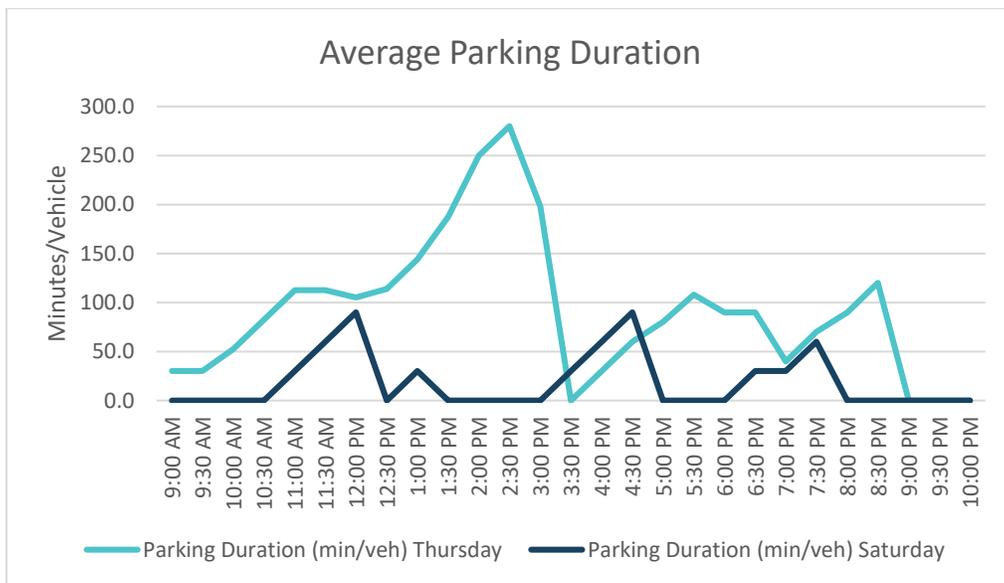
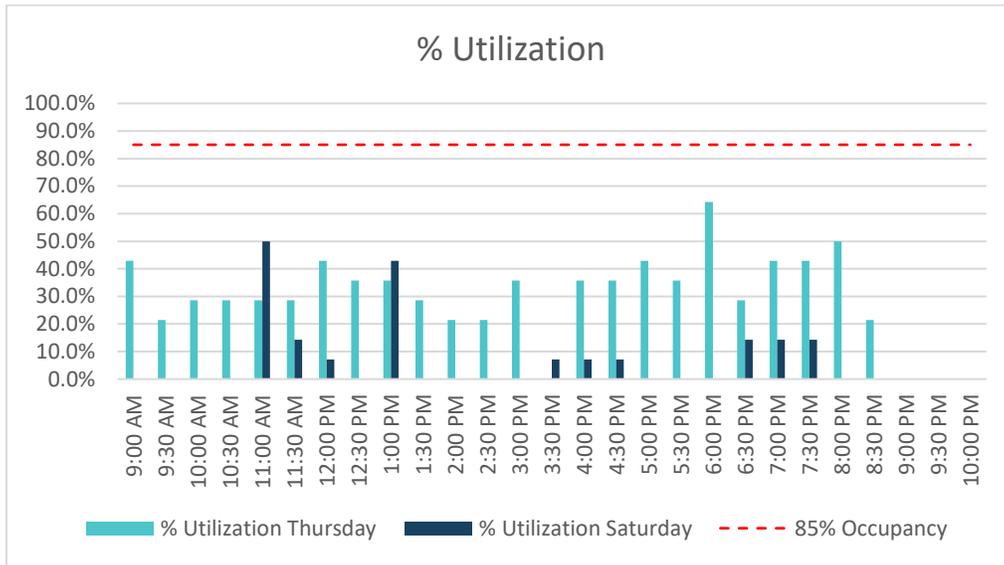


The collected data for South Elm Street, East Side, Olive to Moore, shows that there was available parking on both Thursday and Saturday. Data indicates that this parking area is mostly utilized on weekday mornings. The average parking duration per parking spot was 128.6 minutes per vehicle on Thursday, and 66.4 minutes per vehicle on Saturday. Since the parking supply was greater than the parking demand, there are no turnover or enforcement recommendations for South Elm Street, East Side, Olive to Moore.

South Elm Street, East Side (East Chatham Street to Olive Street) (13.02) – 14 Parking Spaces

South Elm Street, East Side, E Chatham Street to Olive Street - 13.02				
Time	% Utilization		Parking Duration (min/veh)	
	Thursday	Saturday	Thursday	Saturday
9:00 AM	42.9%	0.0%	30.0	-
9:30 AM	21.4%	0.0%	30.0	-
10:00 AM	28.6%	0.0%	52.5	-
10:30 AM	28.6%	0.0%	82.5	-
11:00 AM	28.6%	50.0%	112.5	30.0
11:30 AM	28.6%	14.3%	112.5	60.0
12:00 PM	42.9%	7.1%	105.0	90.0
12:30 PM	35.7%	0.0%	114.0	-
1:00 PM	35.7%	42.9%	144.0	30.0
1:30 PM	28.6%	0.0%	187.5	-
2:00 PM	21.4%	0.0%	250.0	-
2:30 PM	21.4%	0.0%	280.0	-
3:00 PM	35.7%	0.0%	198.0	-
3:30 PM	0.0%	7.1%	-	30.0
4:00 PM	35.7%	7.1%	30.0	60.0
4:30 PM	35.7%	7.1%	60.0	90.0
5:00 PM	42.9%	0.0%	80.0	-
5:30 PM	35.7%	0.0%	108.0	-
6:00 PM	64.3%	0.0%	90.0	-
6:30 PM	28.6%	14.3%	90.0	30.0
7:00 PM	42.9%	14.3%	40.0	30.0
7:30 PM	42.9%	14.3%	70.0	60.0
8:00 PM	50.0%	0.0%	90.0	-
8:30 PM	21.4%	0.0%	120.0	-
9:00 PM	0.0%	0.0%	-	-
9:30 PM	0.0%	0.0%	-	-
10:00 PM	0.0%	0.0%	-	-
Average Parking Duration Per Parking Spot (min/veh)			102.6	38.6
Maximum Parking Duration Among All Spots (min/veh)			360.0	90.0

South Elm Street, East Side (East Chatham Street to Olive Street) (13.02) – 14 Parking Spaces



The collected data for South Elm Street, East Side, Chatham to Olive, shows that there was available parking on both Thursday and Saturday. Data indicates that this parking area was rarely utilized on Saturday. The average parking duration per parking spot was 102.6 minutes per vehicle on Thursday, and 38.6 minutes per vehicle on Saturday. Since the parking supply was greater than the parking demand, there are no turnover or enforcement recommendations for South Elm Street, East Side, Chatham to Olive.

Parking Enforcement Strategies – Automatic License Plate Recognition (ALPR)

The use of advanced parking enforcement technology can have a great impact on the effectiveness and efficiency of a parking enforcement program. The use of Automatic License Plate Recognition (ALPR) systems to automate the enforcement of time-restricted parking areas improves the accuracy and efficiency of enforcement efforts. The ALPR system utilizes GPS locators and can generate real-time lists of the vehicles that have exceeded the time-restriction.

ALPR Overview

ALPR is a technology that uses optical character recognition (OCR) to automatically read license plate characters. There are two types of ALPR – stationary and mobile. Stationary, which uses infrared cameras at high fixed points, and mobile, which uses vehicle-mounted cameras. Stationary cameras can be mounted on signs, street lights, or buildings as a cost-effective way to monitor parked vehicles. Camera software is able to identify the pixel patterns that make up a license plate and translate the letters and numbers on the plate to a digital format. The plate data is then sent to a database where it can be compared in real-time to a list of plate numbers that were previously parked in a certain parking space. Mobile ALPR can use one or more cameras mounted on a vehicle. These systems can be mounted on the parking enforcer's vehicle. As the vehicle moves, it photographs license plates and transmits plate data to a database. The database can be created at the local level and downloaded into the vehicle's onboard computer. If the system detects a match, the enforcer receives an alert on their computer. A mobile ALPR can read up to 1,000 plates per hour and cover two or more lanes of traffic at once.

Benefits of ALPR for Parking Management and Enforcement

- **Parking Enforcement:** The ALPR system can help staff manage permit and time limit regulations and alerts them to infractions. The system can automatically select enforcement zones and rules based on GPS coordinates.
- **Parking Occupancy:** The ALPR system can help you track parking occupancy in real-time. With this data, you can also guide drivers to parking areas with available spaces.
- **Parking Duration:** You can get information on length of stay, what zones are busiest during the day, and how many vehicles are parked during events. This data can be used to justify improvements and inform other decisions.
- **Cost Effectiveness:** The ALPR system can reduce the need for and optimize human parking resources because everything is done automatically. The staff member driving the ALPR vehicle has the ability to create a ticket in their vehicle and place it on a vehicle when notified of an infraction. The ability to automatically track length of stay data and create tickets on the spot can reduce staff overhead and can make parking management and enforcement operations more cost-effective. The ALPR solution can increase revenue through improved parking experience, detailed parking data and statistics, and easier violation identification in real time.

Recommended ALPR Products

Genetec (<https://www.genetec.com/>) is a cutting edge company in the ALPR industry used by many municipalities. Genetic has the AutoVu Sharp Z3 – mobile automatic license plate recognition device to consider. Other companies to consider for ALPR include but are not limited to:

- Passport ([Parking Enforcement Software with LPR Technology \(passportinc.com\)](http://passportinc.com))
- Operations Commander ([Parking control, parking enforcement, and security management platform \(ops-com.com\)](http://ops-com.com))

Based on the number of parking areas with recommended enforcement, one mobile ALPR system can cover the enforcement area. Stationary systems are not likely needed at this time. For planning purposes, the Town can expect

systems to range in cost from \$10,000 - \$22,000 per device, depending on the manufacturer and the specific configuration.

Summary and Recommendations

The scope of this study included providing recommendations for technology that would aid in enforcement of time-restricted parking when parking does not require payment. Based on the results presented herein, the Town should consider the following recommendations, as shown on Figures 7 and 8:

It is recommended to encourage turnover by implementing and/or enforcing a 3-Hour Parking Limit with mobile ALPR at the following locations:

- Saunders Lot parking spaces identified in Figure 7 (2.02, 2.03, 2.05)
- Saunders Street, North Side (2.04)
- Saunders Street, North Side, Loading (2.06) (during non-loading hours)
- West Chatham Street, South Side (4.07)
- West Chatham Street, North Side, Loading (4.04) (during non-loading hours)
- East Chatham Street, North Side (Salem Street to Seaboard Street) (9.05)
- East Chatham Street, North Side, Loading (9.06) (during non-loading hours)
- East Chatham Street, South Side (Salem Street to Seaboard Street) (9.07)
- South Salem Street, West Side (Holleman to Chatham) (9.01)
- South Salem Street, West Side (Moore to Holleman) (9.08)
- South Salem Street, West Side (NC 55 to Moore) (9.09)
- South Salem Street, East Side (NC 55 to Moore) (9.10)
- South Salem Street, East Side (Moore to Holleman) (9.11)
- South Salem Street, East Side (Holleman to Chatham) (9.12)
- Seaboard Lot (8.05)

It is recommended to encourage turnover by implementing and/or enforcing a 2-Hour Parking Limit with mobile ALPR at the following locations:

- Depot Lot (8.08)
- Saunders Street, South Side (3.02)
- North Salem Street, West Side (Saunders Street to Chatham Street) (8.03) (before 6:00 PM)
- North Salem Street, East Side (Saunders to Chatham) (8.09) (before 6:00 PM)

It is recommended to encourage turnover by implementing and/or enforcing a 90-Minute Parking Limit with mobile ALPR at the following locations:

- North Salem Street, West Side (Saunders Street to Chatham Street) (8.03) (after 6:00 PM)
- North Salem Street, East Side (Saunders to Chatham) (8.09) (after 6:00 PM)
- North Salem Street, West Side (Center to Seaboard) (8.01) (after 6:00 PM)
- North Salem Street, West Side, Loading (Center to Seaboard) (8.02) (during non-loading hours)

It is recommended to encourage turnover by implementing and/or enforcing a 30-Minute Parking Limit with mobile ALPR at the following locations:

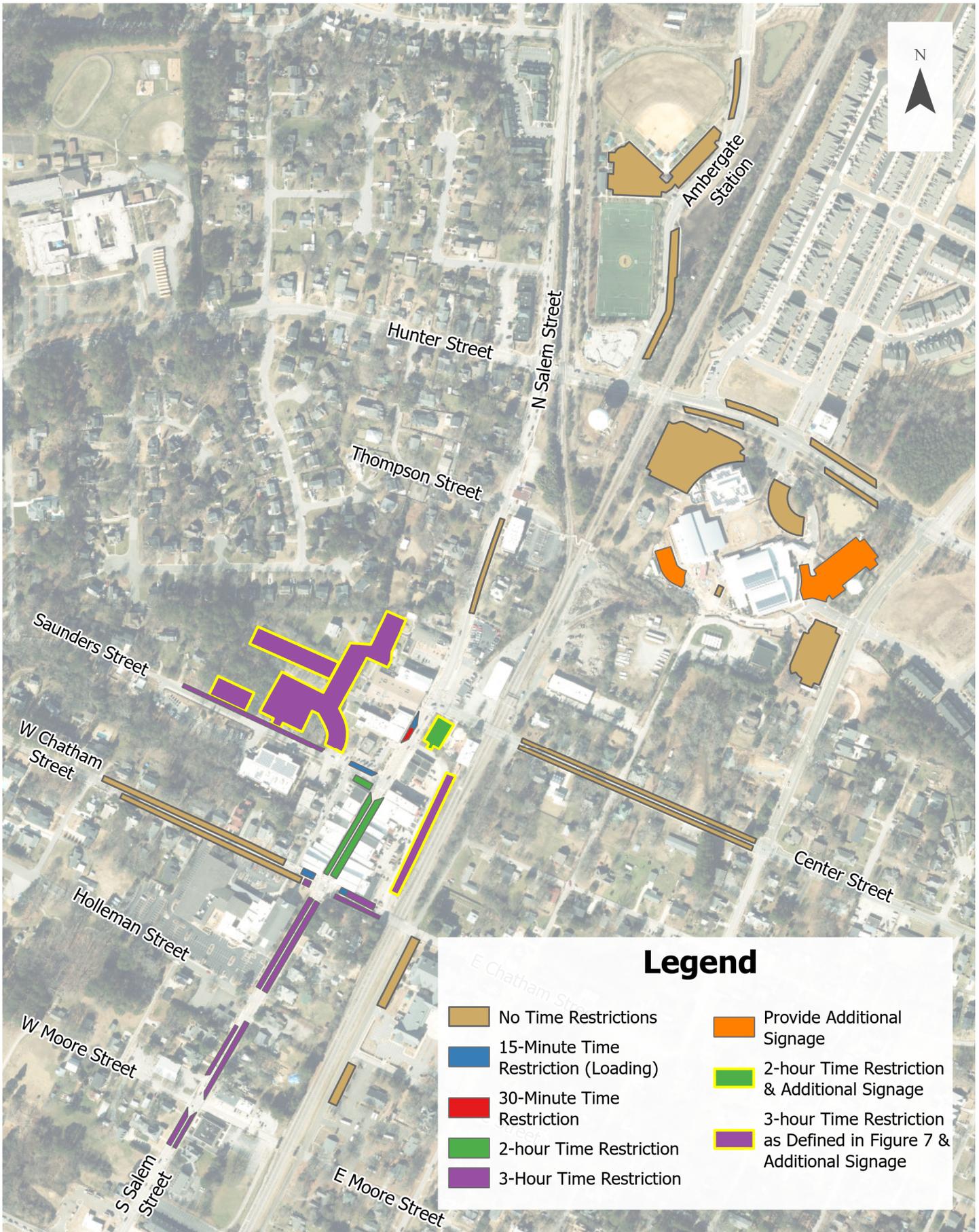
- North Salem Street, West Side (Center to Seaboard) (8.01) (8:00 AM – 6:00 PM)

It is recommended to encourage turnover by implementing and/or enforcing a 15-Minute Parking Limit with mobile ALPR at the following locations:

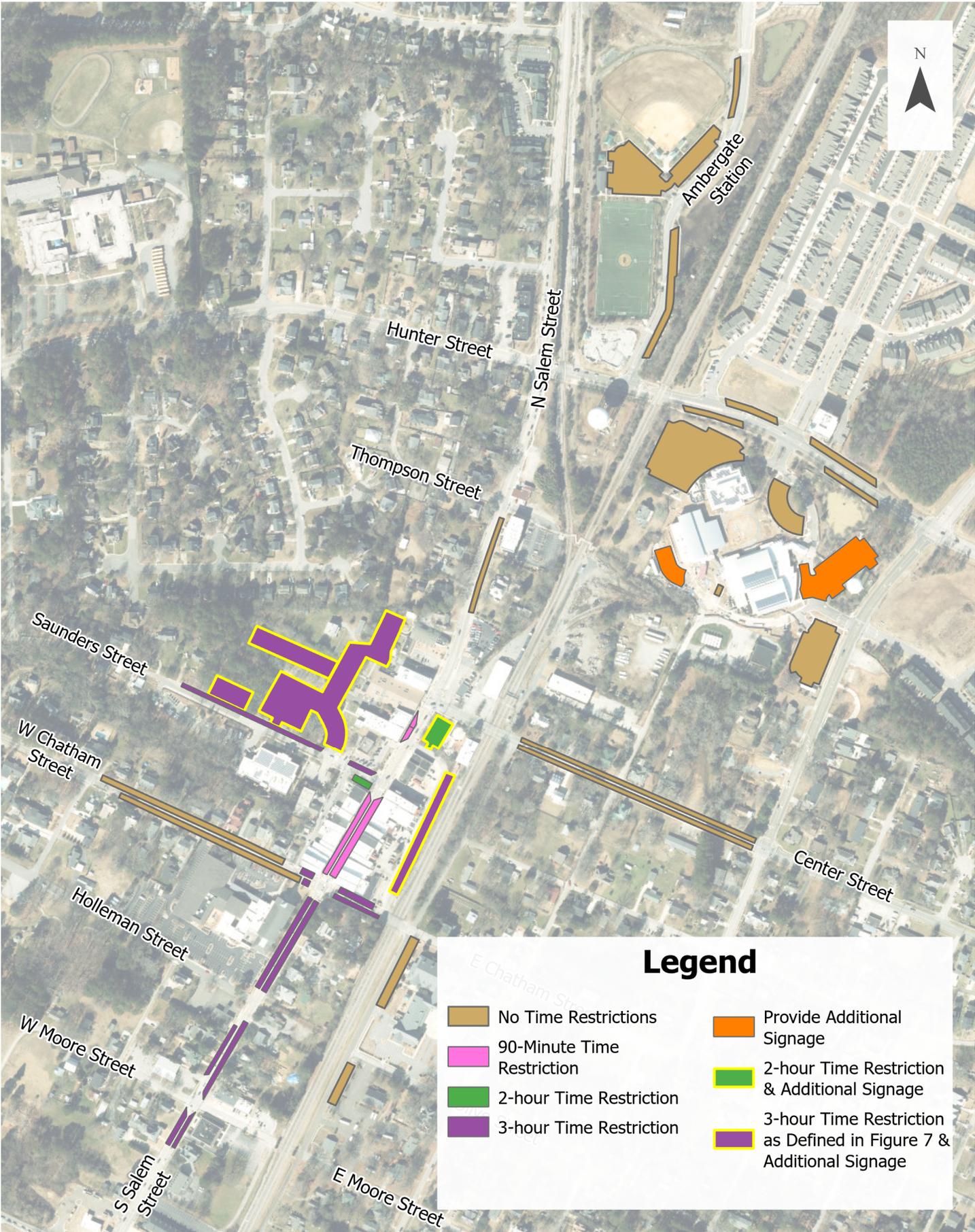
- Saunders Street, North Side, Loading (2.06) (during loading hours)
- West Chatham Street, North Side, Loading (4.04) (during loading hours)
- North Salem Street, West Side, Loading (Center to Seaboard) (8.02) (during loading hours)
- East Chatham Street, North Side, Loading (9.06) (during loading hours)

It is recommended to provide additional signage to identify other parking opportunities at the following locations:

- Apex Community Center (10.03)
- Apex Senior Center (10.06)
- Saunders Lot (2.02, 2.03, 2.05)
- Depot Lot (8.08)
- Seaboard Lot (8.05)



Downtown Apex Parking Length of Stay Study
 Figure 8: Recommended Daytime Parking Restrictions



Downtown Apex Parking Length of Stay Study
 Figure 9: Recommended Evening Parking Restrictions