EXECUTIVE SUMMARY

The Traffic & Parking Analysis for the Commercial District Master Plan provides a summary of existing intersection delay and occupancy statistics for parking throughout the study area. The result of this analysis is a series of recommendations to ensure proper function of streets and adequate supply of convenient parking.

The current road network near the study area is created by four southwest to northeast streets and six perpendicular streets. Middle Street traverses the length of the island and serves as the activity center of the community commercial district. Existing data on land use, traffic, pedestrian facilities, and parking options were reviewed. Additional data collected by the project team included intersection turning movement counts and parking occupancy counts. Brief summaries of the existing conditions and recommendations are below. More detailed information can be found later in this memorandum and the Traffic & Parking Appendix.

Traffic Analysis

Four intersections were studied in detail: Station 22 1/2 Street at Jasper Boulevard, Middle Street at Station 21 Street, Middle Street at Station 22 Street, and Middle Street at Station 22 1/2 Street. The analysis of these intersections was based on turning movement counts collected during the evening peak period. Because the planning study recommends a partition on Station 22 1/2 Street between Middle Street and Ion Avenue, two scenarios were conducted. Figure 1 shows the turning movement counts for each of the four intersections in the existing conditions scenario. The level-of-service for each intersection is shown encircled in red. Figure 2 displays the same information for the build scenario.

The detailed intersection analysis indicated these intersections currently function well during the peak hour of a normal day and little change occurs following the planned improvements to Station 22 1/2 Street. The only minor street that currently fails is the eastbound approach at the intersection of Station 22 1/2 Street and Jasper Boulevard. However, the low volume of this approach (only four vehicles approached the intersection from this direction) suggests no specific action is necessary. Overall, no roadway changes are recommended at the four study intersections to improve traffic performance.

The traffic analysis focused on turning movement counts at four study area intersection during the evening peak period.

Parking Analysis

The assessment of parking conditions was the result of an inventory of hourly parking occupancy conducted on a Saturday at the end of the summer season. The results of this analysis are presented as a series of charts that illustrate percent occupancy for on-street and off-street parking. The appendix includes similar charts for each segment of on-street parking and individual off-street parking lots.

On-street parking reaches a lunchtime peak around 2:30pm and maxes out at only 60% during the evening. However, this result is slightly misleading given spaces located beyond typical walking distances to commercial establishments remain unused throughout the day while more convenient parking remains near capacity. Off-street parking also reaches its apex during the evening in part because private lots are used in the evening once on-street parking reaches capacity and relaxed nighttime enforcement.

The parking analysis consisted of hourly occupancy counts for all on-street and off-street parking in the study area.

In general, the parking assessment revealed high demand for spaces convenient to the island's commercial establishments as well as a need for improved safety for parking vehicles and traveling vehicles.

- **Recommendation:** Improve lighting, wayfinding, and continuity along paths that link parking areas to the establishments they are intended to serve.
- **Recommendation**: Replace perpendicular parking in front of businesses with reverse angle parking where possible in order to improve safety.

Some residents and visitors prefer to use alternative means of transportation on the island. For bicyclists and golf cart users, a limiting factor is often a lack of parking at their destination.

- **Recommendation**: Provide parking for bicycles and golf carts within the commercial district.

TRAFFIC ANALYSIS

Study Area Roadways

The road network on Sullivan's Island in the vicinity of the study area forms a grid system. Streets running along the length of the island run southwest to northeast, and streets running perpendicular to the length of the island run northwest to southwest. For simplicity in this analysis, these streets are referred to as east-west and north-south streets, respectively. The Community Commercial District study area includes four east-west street segments and six north-south street segments:

East-West Segments:

- Jasper Boulevard from its intersection with Station 22 Street to its intersection with Station 22 1/2 Street
- Middle Street from mid-block between Station 20 Street and Station 20 1/2 Street to its intersection with Station 23 Street
- Ion Avenue from its intersection with Atlantic Avenue to its intersection with Station 23 Street

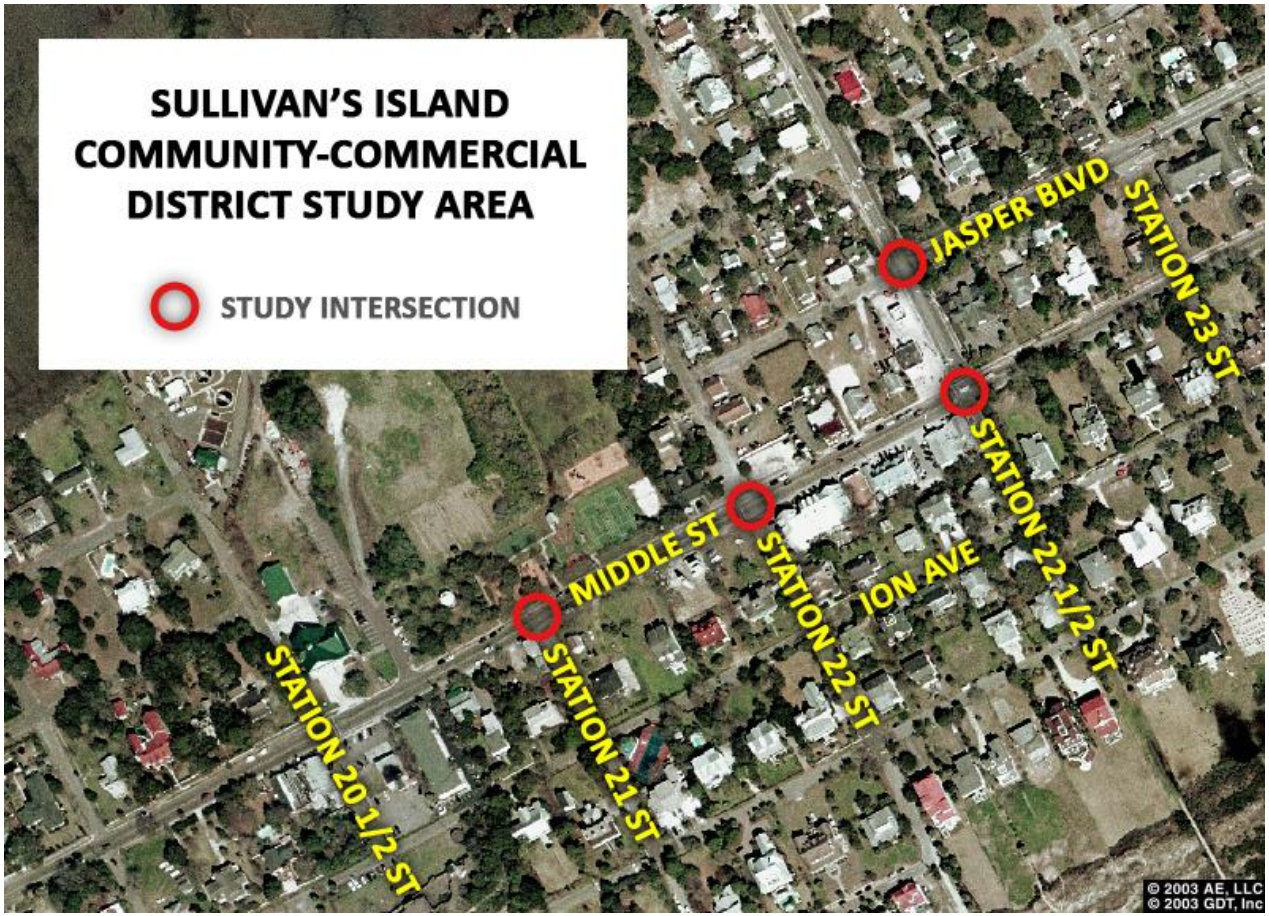
North-South Segments:

- Station 20 1/2 Street from its intersection with Middle Street to its intersection with Ion Avenue
- Station 21 Street from its intersection with Middle Street to its intersection with Ion Avenue
- Station 22 Street from its intersection with Jasper Boulevard to its intersection with Ion Avenue
- Station 22 1/2 Street (Ben Sawyer Boulevard) from the bridge entrance to the island to its intersection with Ion Avenue
- Station 23 Street from its intersection with Middle Street to its intersection with Ion Avenue

The majority of roads on the island are labeled with painted black and white sign posts such as this one, located at the study intersection of Jasper Blvd. and Station 22 ½ St.

This traffic and parking study considers the differing transportation needs of island residents and visitors. It aims to improve transportation for both groups in a way that contributes to the vibrant life of the island.

Middle Street serves as the activity center of the community commercial district. It hosts the two commercial areas, including the larger commercial area between Station 22 and Station 22 1/2 Streets and the smaller commercial area on the corner of Station 20 1/2 Street. Ion Avenue runs parallel to Middle Street just one block south and connects residential properties to a few commercial properties with rear access points.



Planning Study Recommendation

The planning study recommends a partition on Station 22 1/2 Street mid-block between Middle Street and Ion Avenue to improve visitor wayfinding and pedestrian safety by preventing through traffic. Visitors often continue on Station 22 1/2 Street when they enter the island via the bridge and become lost in the surrounding residential area. This partition will help visitors to find their way more effectively and will reduce unnecessary traffic in residential areas. Parking along this block of Station 22 1/2 Street will be retained on both sides of the partition. The recommendation creates a second scenario for traffic operational analysis due to its effect on the surrounding road network. It is referred to as the "Build Scenario".

Traffic Operations Analysis

Traffic operation at intersections depends on the number of through and turn lanes as well as the number of vehicles traveling in each direction. In order to analyze this relationship and determine how an intersection functions, intersection configurations were recorded and turning movement counts were collected. Turning movement counts catalog the direction from which vehicles approach the intersection and whether they travel through or turn.

Study Intersections

Four intersections in the community commercial district were identified as study intersections because of their high traffic volumes:

- Middle Street at Station 21 Street
- Middle Street at Station 22 Street
- Middle Street at Station 22 1/2 Street
- Jasper Street at Station 22 1/2 Street

Turning Movement Counts

Turning movement counts for the four study intersections were collected during the evening peak period on weekdays at the end of the summer season. Figure 1 presents these volumes as the existing scenario. Given the expectation that traffic will be highest on weekends during the peak summer season, these counts do not represent the highest traffic volumes encountered on the road network. Instead, they represent traffic volumes experienced on the island on a normal day.

One of the four study intersections will be revised as a result of Master Plan recommendations. Due to the improvements along Station 22 1/2 Street between Middle Street and Ion Avenue, the configuration of Station 22 1/2 Street will switch from one-way to two-way. The south leg of the intersection will serve as a driveway for vehicles visiting the nearby establishments. The existing traffic at the intersection was redistributed as a result of the change. Figure 2 presents these volumes as the build scenario.

Station 22 1/2 (Ben Sawyer Boulevard), upon entering the community commercial district, transitions from two-way into one-way configuration as it crosses Middle Street. As a primary entrance to the island from the bridge, the layout leads visitors into the residential areas instead of toward their intended destinations. A partition blocking through traffic will remedy the problem, protecting access and parking.

TABLE 1 INTERSECTION LEVELS-OF–SERVICE		
Minor Street Approach	**Level of Service**	
	Existing Scenario PM Peak	**Build Scenario PM Peak**
Station 22 1/2 St at Jasper Blvd		
EB Approach	F	F
WB Approach	C	C
Middle St at Station 21 St		
NB Approach	B	B
Middle St at Station 22 St		
NB Approach	B	B
SB Approach	B	B
Middle Street at Station 22 1/2 St		
NB Approach	N/A	C
SB Approach	B	B

Level-of-Service

Level-of-service (LOS) is a standard measure of effectiveness for traffic operation. Similar to grades assigned to assess performance in academic settings, letters A to F are assigned to evaluate traffic conditions in a particular roadway area. LOS A indicates excellent performance and corresponds to freely flowing traffic, whereas LOS F indicates poor performance and corresponds to highly congested traffic.

Traffic volumes for both the existing scenario and the build scenario were analyzed using Synchro 7 traffic analysis software. In accordance with their current traffic control, all four study intersections were analyzed as unsignalized intersections. The results of the analysis are included in Table 1, which presents the LOS for minor street approaches.

Analysis results indicate the road network functions well under current conditions on a normal day during the peak hour. It also shows the road network will function similarly with the improvements planned for Station 22 1/2 Street with current traffic volumes.

The single operational concern is the eastbound approach at the intersection of Station 22 1/2 Street and Jasper Boulevard, which operates at LOS F in both existing and build scenarios. However, only four vehicles approached the intersection from this direction when intersection movements were counted, all of which turned left. Left turns from minor streets at unsignalized intersections typically experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay.

Given the low number of vehicles trying to complete the eastbound left-turn movement and the unbalanced distribution of vehicles at this approach, the poor LOS is not indicative of a large-scale operation problem. Drivers familiar with the area can choose other routes for their trips to avoid longer delays. Since Jasper Blvd is a residential street on the west side of the intersection, drivers using the street likely are familiar with the area.

No roadway changes are recommended at the four study intersections to improve traffic performance.

Sign and Pedestrian Inventories

The sign inventory conducted includes the location and type of each sign in the study area. Signs in poor condition were noted. It is recommended that these signs be replaced during the construction phase of the project, if not sooner. The sign inventory can be found in the Traffic and Parking Appendix.

Figure 3 presents the results of the pedestrian count performed in the same time frame as the traffic volume counts.

A warning sign along Middle Street alerts drivers of pedestrians and provides a safer environment for alternative transportation modes such as bicycles and golf carts by encouraging a lower travel speed.

Middle Street provides parallel parking along the curb and perpendicular parking directly from the street, both of which are considered "on-street parking" in this analysis.

A view of Station 22 Restaurant and nearby businesses in the island's primary commercial area from the restaurant's off-street lot across the street.

PARKING ANALYSIS

Current Conditions

The Community Commercial District of Sullivan's Island provides a mix of parking spaces in its current state. Due to fast growth in recent years, parking spaces take many forms and lack consistent design. For analysis purposes, available spaces were divided into on-street and off-street categories. On-street parking in this analysis is defined as any space requiring the vehicle to pull into a travel lane in order to enter or exit the space. Current on-street parking in the study area includes the following types:

- unmarked parallel parking on the roadway along curbs
- parallel parking on shoulders beside the roadway
- perpendicular parking between commercial buildings and roadways
- diagonal parking between commercial buildings and roadways
- parking on shoulders

Conversely, off-street parking is defined as any space not requiring the vehicle to pull into a travel lane in order to enter or exit the space. Access to these spaces from the street is provided via driveways. Current off-street parking in the study area includes the following types:

- shared paved lots located between businesses in more dense areas
- designated gravel lots adjacent to and across from their respective businesses
- designated paved lots wrapping around individual businesses in less dense areas

Aerial images in the Traffic and Parking Appendix illustrate available on-street and off-street parking areas.

Parking Inventory Site Visit

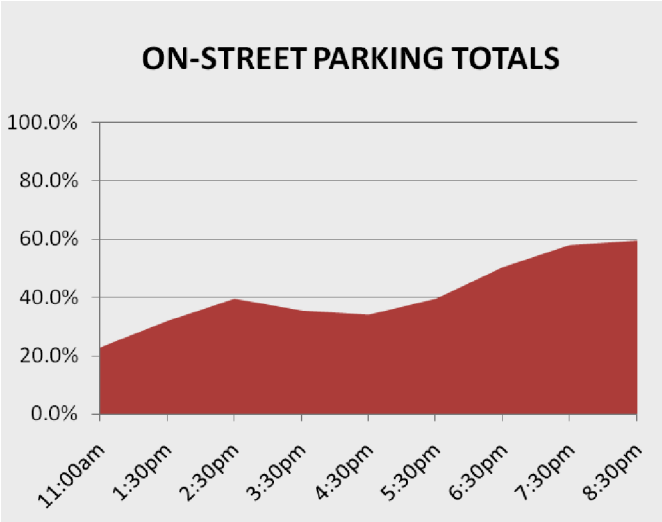
The parking inventory site visit occurred on a Saturday at the end of the summer season. Parking volumes were monitored on an approximate hourly basis between 11:00am and 8:30pm for on-street parking and between 1:30pm and 8:30pm for off-street parking. The charts to the right and on the following page illustrate changing volumes (percentage of total spaces occupied) throughout the day in the study area for on-street, off-street, and all parking spaces, respectively. Charts illustrating these changing volumes for individual sections of street and individual off-street lots can be found in the Traffic and Parking Appendix.

On-Street Parking Observations

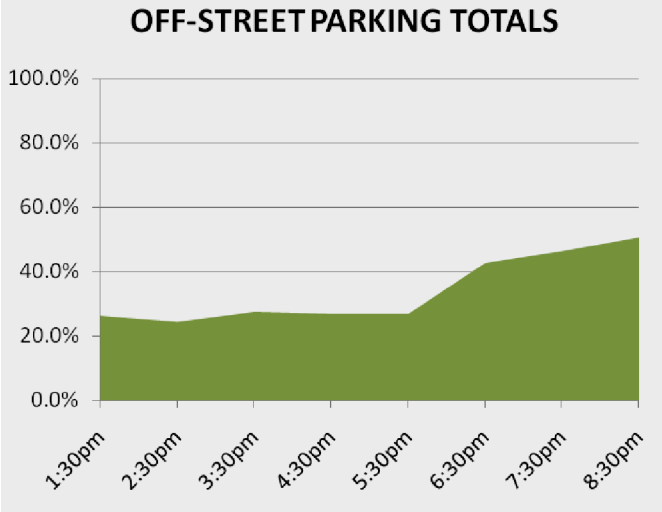
As the chart illustrates, on-street parking reaches a lunchtime peak around 2:30 pm and then dips slightly before rising to the higher nighttime peak. The chart illustrates parking volumes reaching only 60% capacity at its highest peak. The simple chart may be misleading because it considers available on-street parking spaces in the entire study area. Many of these spaces are located farther than typical walking distance from the businesses in the area and remain unused throughout the day. Conversely, as the charts in the appendix illustrate, most on-street spaces in the vicinity of commercial establishments were filled to capacity throughout the afternoon and especially in the evening.

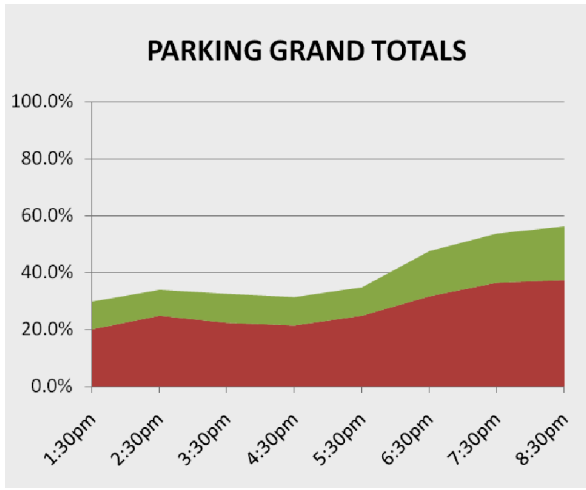
Off-Street Parking Observations

Off-street parking in the study area indicated trends similar to those of on-street parking. However, the lunchtime peak is not pronounced in off-street totals and the evening peak increases quickly between 5:30pm and 6:30pm. During the site visit, commercial district visitors generally respected parking lot regulations during the day yet disregarded them at night after normal business hours. During these hours, when on-street parking reached capacity near popular establishments, patrons would park in private lots (e.g. Post Office lot) nearby as opposed to parking a block or more away. This could be the result of relaxed nighttime enforcement patterns, local knowledge of its general acceptance, or a lack of sign visibility due to nighttime darkness.



The charts above and below show parking usage for all on-street and for all off-street spaces in the study area.





This chart presents usage of all parking spaces in the study area. It illustrates the contribution of on-street (red) and off-street (green) parking toward the total.

This photograph illustrates the limited parking at Middle Street destinations near Station 20 1/2 Street. The Post Office parking lot located on the next block serves as overflow parking at night.

Need for Improvement

The parking inventory revealed high demand for convenient spaces outside commercial establishments during lunchtime and nighttime hours. Given the full utilization of available nearby parking spaces during these peaks, it is unknown how many potential patrons chose not to visit establishments because they were unable to find acceptable parking. Although some spaces remained available throughout inventory hours within a few blocks of all establishments, drivers chose not to use them. This could be due to a variety of reasons:

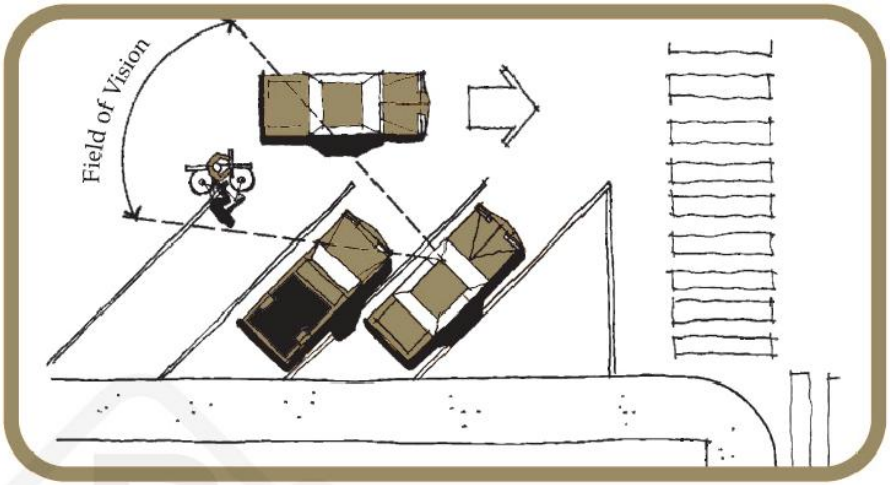
- **Lack of familiarity with local road network.**
  Many visitors use only Station 22 1/2 Street (Ben Sawyer Boulevard) and Middle Street to reach their destinations, since traveling onto side streets and residential streets is beyond their knowledge.
- **Sense of insecurity on side streets and residential streets.**
  The dim lighting and low activity on side streets and residential streets may create a sense of insecurity in visitors regardless of their actual levels of safety.
- **Disjointed general feel of Middle Street.**
  The varied streetscape that currently defines Middle Street may make walking distances seem longer to visitors than they actually are. Consistent sidewalks are located on the opposite side of the street from the majority of establishments and few safe nighttime crossings link the sidewalks to desired destinations. Sections of the street that are clearly not meant for visitors, including private property with fences and driveways, divide the street and exaggerate the distance between commercial areas.

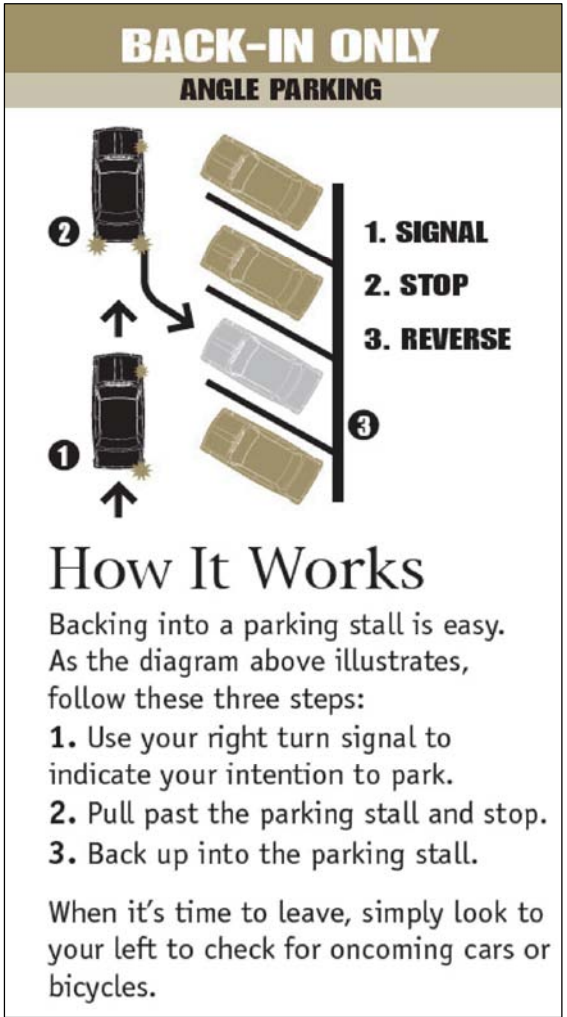
Recommendation: Improve lighting, wayfinding, and continuity along paths that link parking areas to the establishments they are intended to serve.

Beyond considerations of adequate parking, safe interactions between parking vehicles and traveling vehicles are a high priority. Perpendicular parking along business frontage creates unsafe interactions. Along Middle Street, vehicles pull directly into spaces with their front ends facing buildings and their back ends facing the street. When exiting parking spaces, vehicles must back into the travel lane, change gears, and then proceed forward with the flow of traffic. The safety concern comes with backing into the travel lane, which occurs when drivers readjust their location within parking spaces and when drivers exit parking spaces. Crashes occur when vehicles backing into the travel lane fail to yield to traveling vehicles and when traveling vehicles fail to stop for vehicles backing into the travel lane. Drivers backing their vehicles into the travel lane often have poor visibility due to nearby parked vehicles, and drivers continuing along the travel lane have little warning given the close proximity of all parked vehicles to the travel lane.

A safer parking design that serves the same purpose is called **reverse angle parking**, also known as back-in angle parking. It allows a vehicle to enter a space by coming to a complete stop in the travel lane, changing gears, and then backing into the space at an angle. It allows the vehicle to exit the space by simply proceeding forward at an angle into the flow of traffic. By completing the reverse maneuver upon entry, the vehicle has slowed down and come to a stop in the travel lane, giving other vehicles adequate visual warning. When the vehicle pulls back into the travel lane, the driver has an improved view of vehicles in the travel lane and has less maneuvering to join the flow of traffic. In addition, with the nose of the vehicle pointed toward the travel lane, vehicle doors shield children from traffic, and the trunk can loaded and unloaded from the sidewalk.

Recommendation: Replace perpendicular parking in front of businesses with reverse angle parking where possible in order to improve safety.





These excerpts from the brochure "Back-In Angle Parking" illustrate reverse angle parking (source: http://www.newwestcity.ca/cityhall/engineer/parking/back-in_angle_parking.pdf).

Bicycles provide clean local transportation and can be parked in areas with insufficient space for motor vehicles. Planning secure spaces for bicycles reduces the need for vehicle spaces and encourages bike use while adding to the island's charm.

Bicycles and Golf Carts

Bicycles and golf carts provide efficient transportation for residents and visitors staying on the island. They require less space for parking than typical motor vehicles, reduce gas emissions on the island, and add to the island charm that defines Sullivan's Island. In addition to these positives, they also create the ability for the island to structure its parking to meet the needs of residents and their guests differently than the needs of nighttime visitors.

Recommendation: In order to better accommodate residents, provide parking for bicycles and golf carts within the commercial district. Visitors who drive to the island for entertainment may be willing to walk a bit farther to venues and likely will be drawn to the small-town feel that bicycles and golf carts create.

Canine residents take a break beside the local park, enjoying the clean air protected by their alternative transportation vehicle.

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Kimley-Horn and Associates, Inc.	SULLIVANS ISLAND MASTER PLAN	EXISTING (2008) PM PEAK HOUR TRAFFIC VOLUMES COUNTED 4–6PM, WED 9/24/2008	FIGURE 1

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Kimley-Horn and Associates, Inc.	SULLIVANS ISLAND MASTER PLAN	BUILD (2008) PM PEAK HOUR TRAFFIC VOLUMES BASED ON 9/24/08 COUNTS	FIGURE 2

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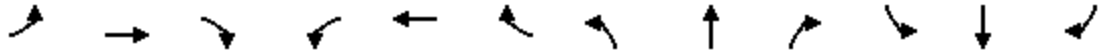
Kimley-Horn and Associates, Inc.	SULLIVANS ISLAND MASTER PLAN	EXISTING (2008) PM PEAK HOUR PEDSTRIAN VOLUMES COUNTED 4-6PM, WED 9/24/2008	FIGURE 3

Traffic & Parking Appendix

SULLIVAN'S ISLAND COMMUNITY COMMERCIAL DISTRICT MASTER PLAN

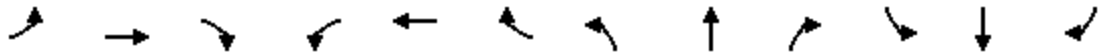


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	0	0	19	2	216	0	261	15	292	356	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	0	0	21	2	240	0	290	17	324	396	2
Pedestrians		1			2			1			1	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1579	1355	399	1346	1348	301	399			309		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1579	1355	399	1346	1348	301	399			309		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	100	100	79	98	67	100			74		
cM capacity (veh/h)	47	110	650	102	111	736	1159			1250		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	4	23	240	0	307	324	398
Volume Left	4	21	0	0	0	324	0
Volume Right	0	0	240	0	17	0	2
cSH	47	103	736	1700	1700	1250	1700
Volume to Capacity	0.09	0.23	0.33	0.00	0.18	0.26	0.23
Queue Length 95th (ft)	7	20	35	0	0	26	0
Control Delay (s)	89.8	49.9	12.2	0.0	0.0	8.9	0.0
Lane LOS	F	E	B			A	

Approach Delay (s)	89.8	15.6	0.0	4.0
Approach LOS	F	C		

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

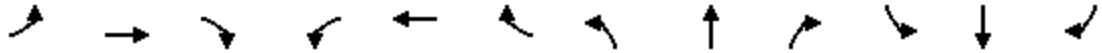


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	227	81	9	6	76	55	0	0	0	44	26	236
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	252	90	10	7	84	61	0	0	0	49	29	262
Pedestrians		3						3			7	
Lane Width (ft)		12.0						0.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		0						0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	153			103			1010	768	98	730	743	125
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	153			103			1010	768	98	730	743	125
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	82			100			100	100	100	83	90	71
cM capacity (veh/h)	1420			1489			123	270	958	288	279	918

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total	252	100	152	78	262
Volume Left	252	0	7	49	0
Volume Right	0	10	61	0	262
cSH	1420	1700	1489	285	918
Volume to Capacity	0.18	0.06	0.00	0.27	0.29
Queue Length 95th (ft)	16	0	0	27	30
Control Delay (s)	8.1	0.0	0.4	22.3	10.5
Lane LOS	A		A	C	B

Approach Delay (s)	5.8	0.4	13.2		
Approach LOS			B		

Intersection Summary			
Average Delay	7.8		
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	270	5	39	256	7	3	4	20	4	2	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	300	6	43	284	8	3	4	22	4	2	4
Pedestrians		2			7			14			15	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	307			320			706	717	324	731	716	305
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	307			320			706	717	324	731	716	305
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			99	99	97	99	99	99
cM capacity (veh/h)	1238			1226			326	333	705	303	334	724

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	309	336	30	11
Volume Left	3	43	3	4
Volume Right	6	8	22	4
cSH	1238	1226	545	404
Volume to Capacity	0.00	0.04	0.06	0.03
Queue Length 95th (ft)	0	3	4	2
Control Delay (s)	0.1	1.3	12.0	14.2
Lane LOS	A	A	B	B

Approach Delay (s)	0.1	1.3	12.0	14.2		
Approach LOS			B	B		

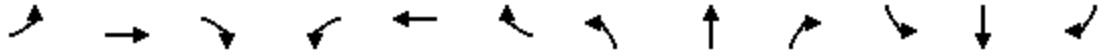
Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	232	2	14	257	8	44
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	258	2	16	286	9	49
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			261		577	260
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			261		577	260
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		98	94
cM capacity (veh/h)			1302		473	778

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	260	301	58
Volume Left	0	16	9
Volume Right	2	0	49
cSH	1700	1302	708
Volume to Capacity	0.15	0.01	0.08
Queue Length 95th (ft)	0	1	7
Control Delay (s)	0.0	0.5	10.5
Lane LOS		A	B

Approach Delay (s)	0.0	0.5	10.5		
Approach LOS			B		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		

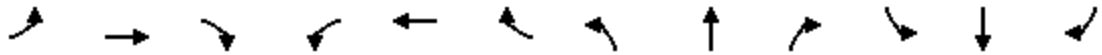


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	0	0	19	2	216	0	261	15	292	356	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	0	0	21	2	240	0	290	17	324	396	2
Pedestrians		1			2			1			1	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1579	1355	399	1346	1348	301	399			309		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1579	1355	399	1346	1348	301	399			309		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	100	100	79	98	67	100			74		
cM capacity (veh/h)	47	110	650	102	111	736	1159			1250		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	4	23	240	0	307	324	398
Volume Left	4	21	0	0	0	324	0
Volume Right	0	0	240	0	17	0	2
cSH	47	103	736	1700	1700	1250	1700
Volume to Capacity	0.09	0.23	0.33	0.00	0.18	0.26	0.23
Queue Length 95th (ft)	7	20	35	0	0	26	0
Control Delay (s)	89.8	49.9	12.2	0.0	0.0	8.9	0.0
Lane LOS	F	E	B			A	

Approach Delay (s)	89.8	15.6	0.0	4.0
Approach LOS	F	C		

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

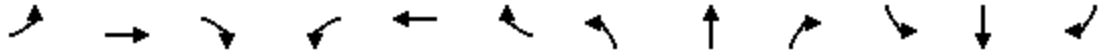


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	232	83	2	1	79	57	4	3	2	47	6	253
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	258	92	2	1	88	63	4	3	2	52	7	281
Pedestrians		3						3			7	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		0						0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	158			97			1021	772	96	740	742	129
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	158			97			1021	772	96	740	742	129
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	82			100			96	99	100	81	98	69
cM capacity (veh/h)	1413			1492			124	267	958	279	279	913

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1	SB 2
Volume Total	258	94	152	10	59	281
Volume Left	258	0	1	4	52	0
Volume Right	0	2	63	2	0	281
cSH	1413	1700	1492	198	279	913
Volume to Capacity	0.18	0.06	0.00	0.05	0.21	0.31
Queue Length 95th (ft)	17	0	0	4	20	33
Control Delay (s)	8.1	0.0	0.1	24.2	21.3	10.7
Lane LOS	A		A	C	C	B

Approach Delay (s)	5.9	0.1	24.2	12.5			
Approach LOS			C	B			

Intersection Summary			
Average Delay	7.7		
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	270	5	39	256	7	3	4	20	4	2	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	300	6	43	284	8	3	4	22	4	2	4
Pedestrians		2			7			14			15	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	307			320			706	717	324	731	716	305
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	307			320			706	717	324	731	716	305
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			99	99	97	99	99	99
cM capacity (veh/h)	1238			1226			326	333	705	303	334	724

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	309	336	30	11
Volume Left	3	43	3	4
Volume Right	6	8	22	4
cSH	1238	1226	545	404
Volume to Capacity	0.00	0.04	0.06	0.03
Queue Length 95th (ft)	0	3	4	2
Control Delay (s)	0.1	1.3	12.0	14.2
Lane LOS	A	A	B	B

Approach Delay (s)	0.1	1.3	12.0	14.2		
Approach LOS			B	B		

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	232	2	14	257	8	44
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	258	2	16	286	9	49
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			261		577	260
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			261		577	260
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		98	94
cM capacity (veh/h)			1302		473	778

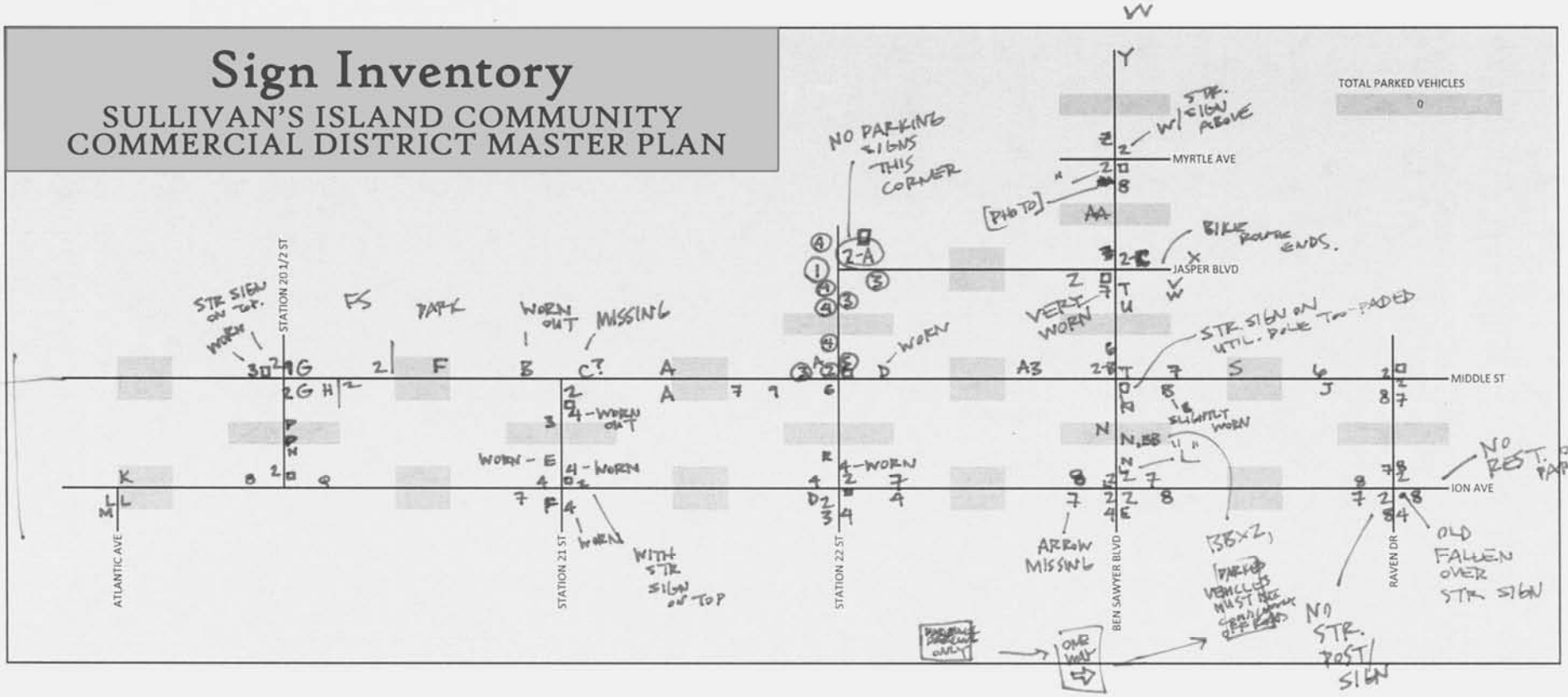
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	260	301	58
Volume Left	0	16	9
Volume Right	2	0	49
cSH	1700	1302	708
Volume to Capacity	0.15	0.01	0.08
Queue Length 95th (ft)	0	1	7
Control Delay (s)	0.0	0.5	10.5
Lane LOS		A	B

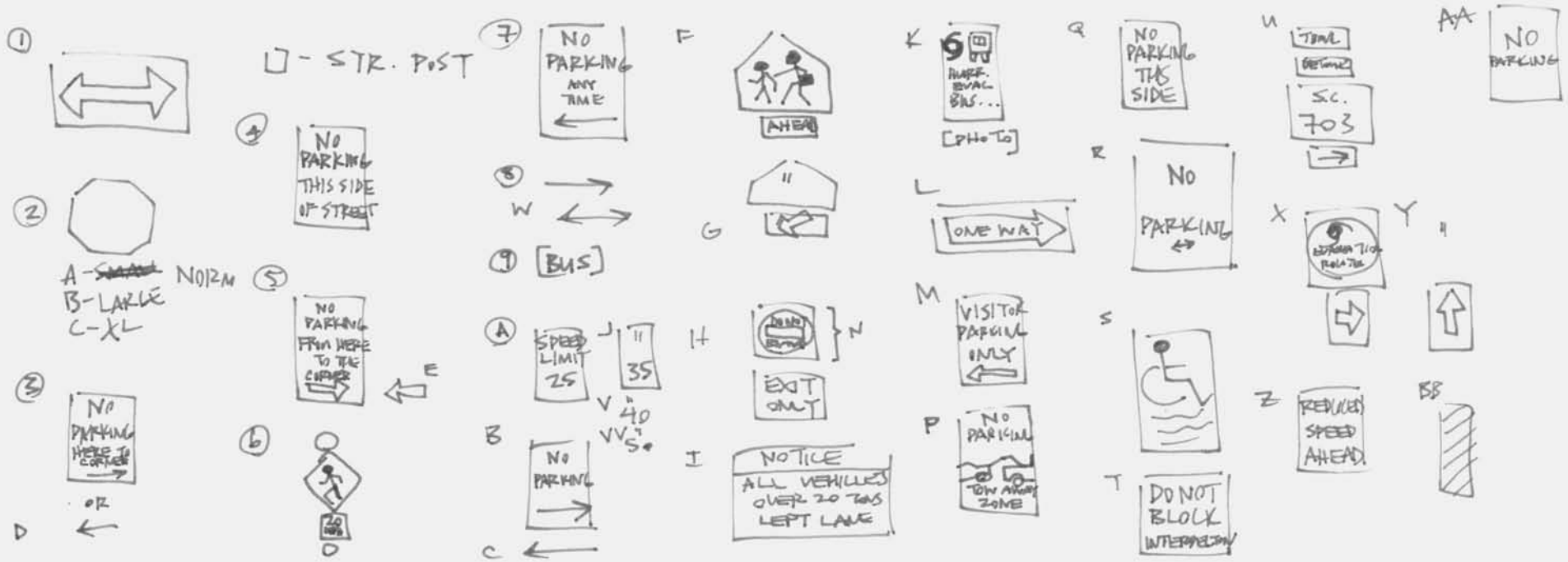
Approach Delay (s)	0.0	0.5	10.5		
Approach LOS			B		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		

Sign Inventory

SULLIVAN'S ISLAND COMMUNITY COMMERCIAL DISTRICT MASTER PLAN



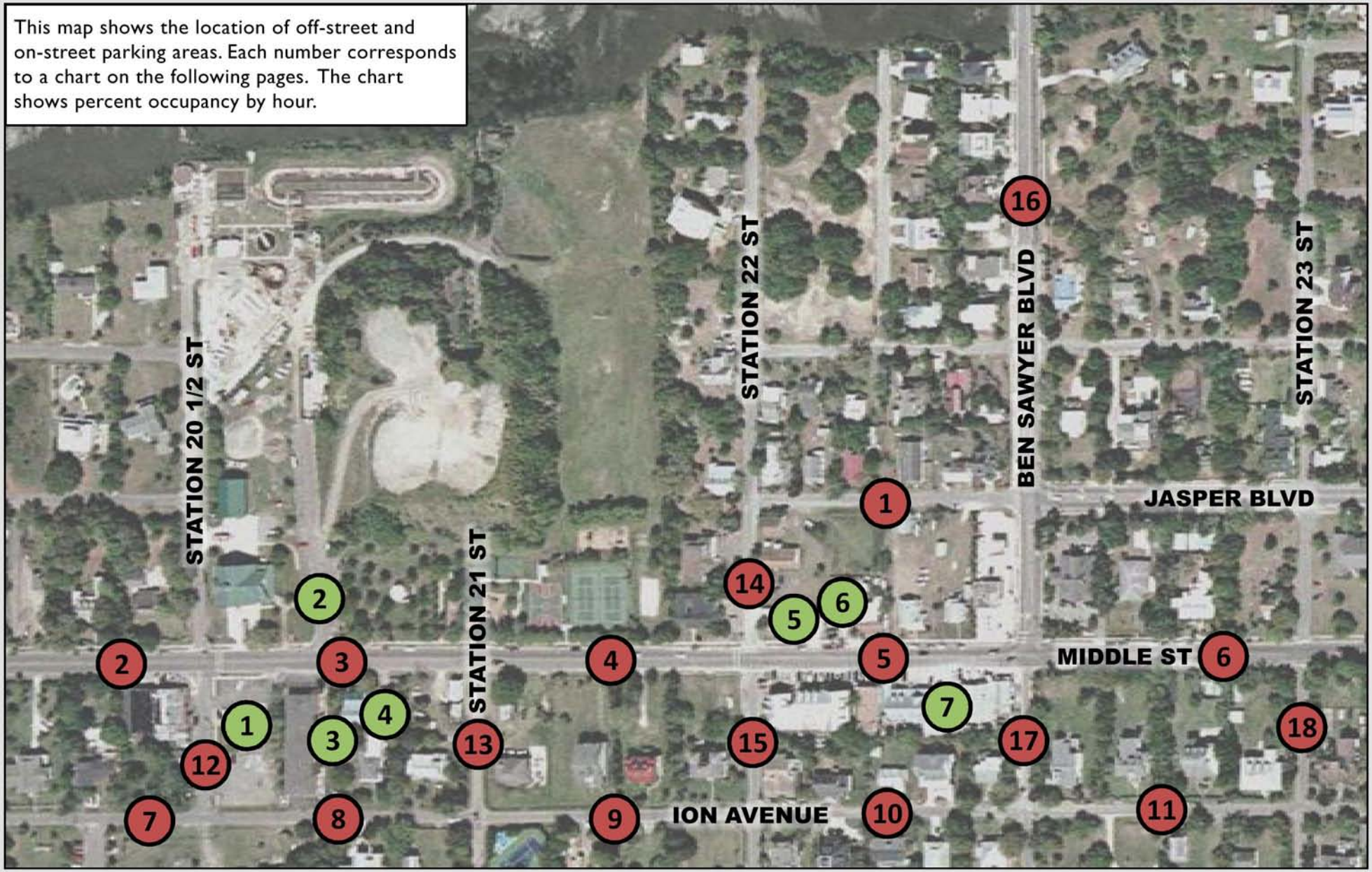


COMMUNITY COMMERCIAL DISTRICT MASTER PLAN

Parking Survey Results: Saturday, September 20, 2008

Kimley-Horn and Associates, Inc.

This map shows the location of off-street and on-street parking areas. Each number corresponds to a chart on the following pages. The chart shows percent occupancy by hour.



OFF-STREET PARKING AREA

ON-STREET PARKING AREA

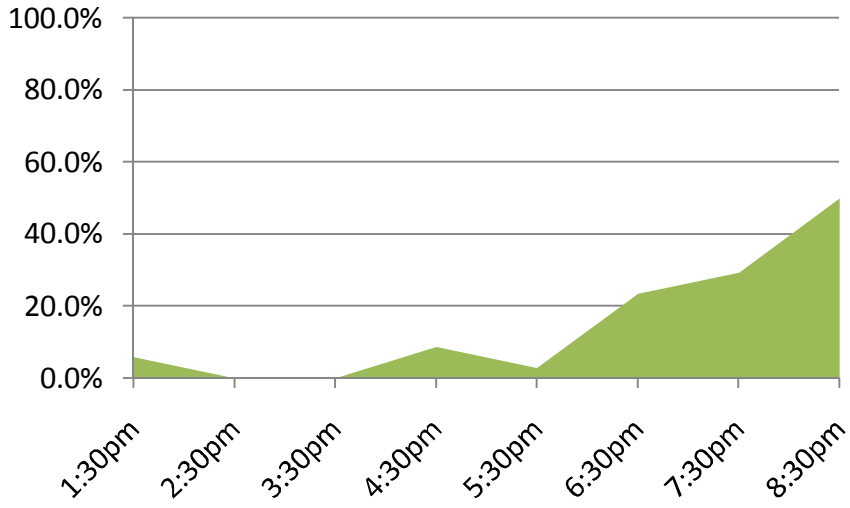
COMMUNITY COMMERCIAL DISTRICT MASTER PLAN

Parking Survey Results: Saturday, September 20, 2008

Kimley-Horn and Associates, Inc.

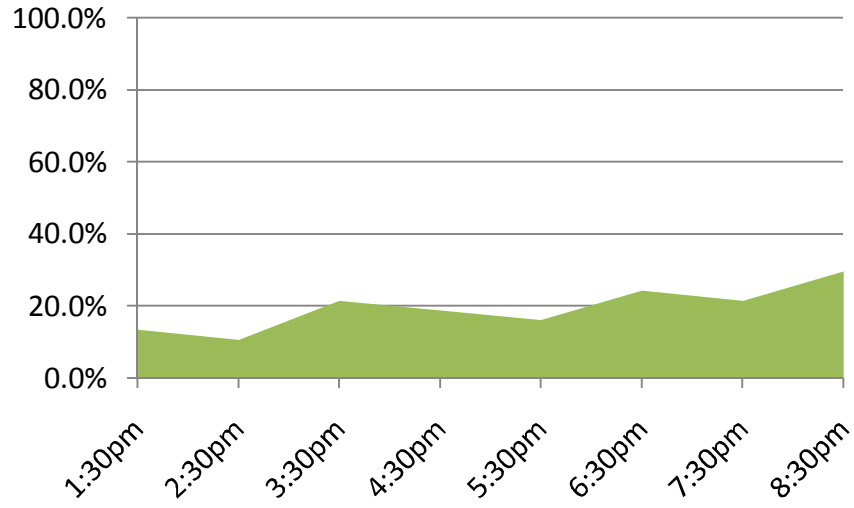
1 Post Office Lots

[OFF-STREET PARKING - 34 VEHICLE CAPACITY]



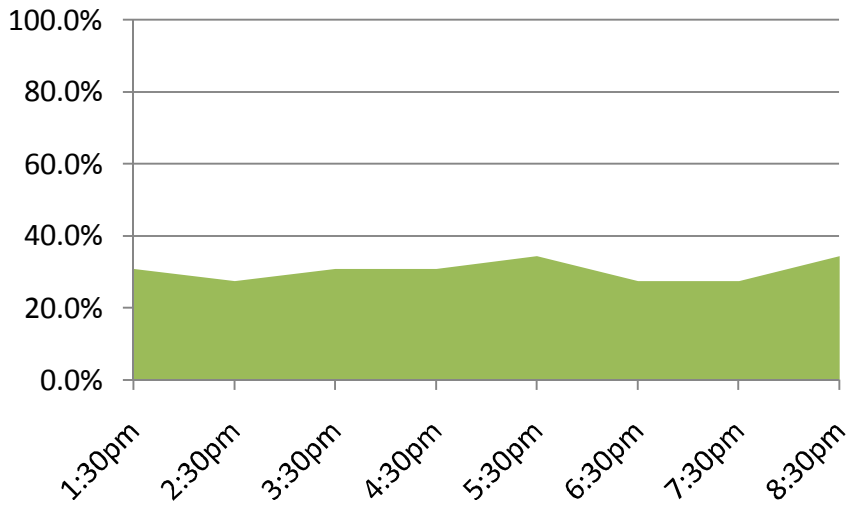
2 Fire Station/Park Lots

[OFF-STREET PARKING - 37 VEHICLE CAPACITY]



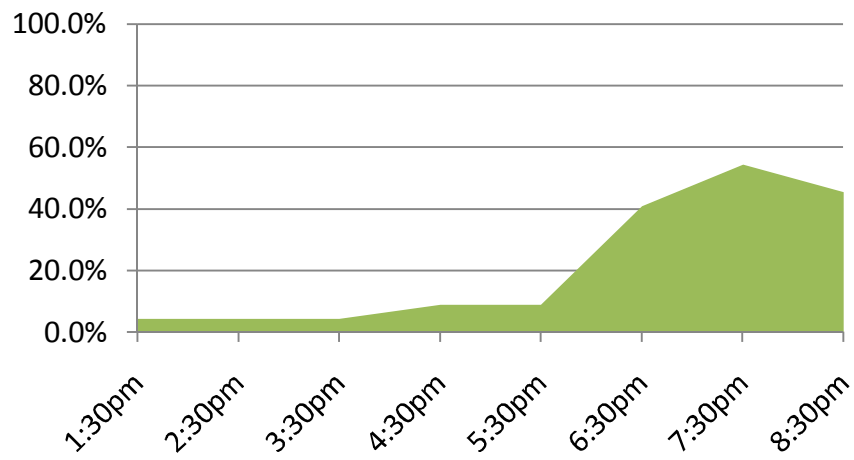
3 Condo Lot

[OFF-STREET PARKING - 29 VEHICLE CAPACITY]



4 Atlanticville Restaurant & Jones Co. Building Lots

[OFF-STREET PARKING - 22 VEHICLE CAPACITY]



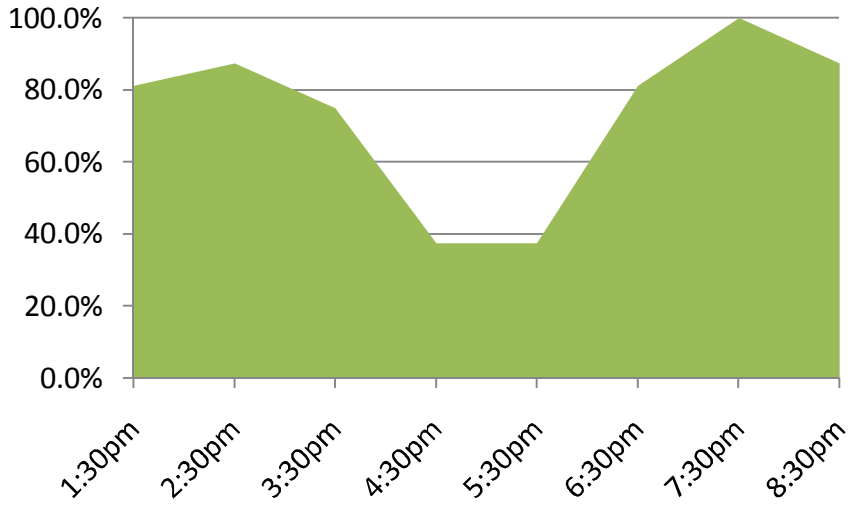
COMMUNITY COMMERCIAL DISTRICT MASTER PLAN

Parking Survey Results: Saturday, September 20, 2008

Kimley-Horn and Associates, Inc.

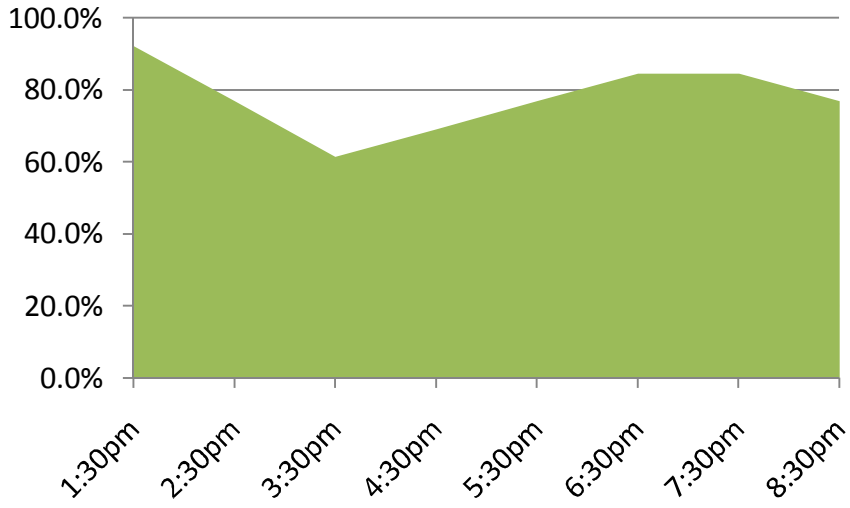
5 Station 22 Restaurant Lot

[OFF-STREET PARKING - 16 VEHICLE CAPACITY]



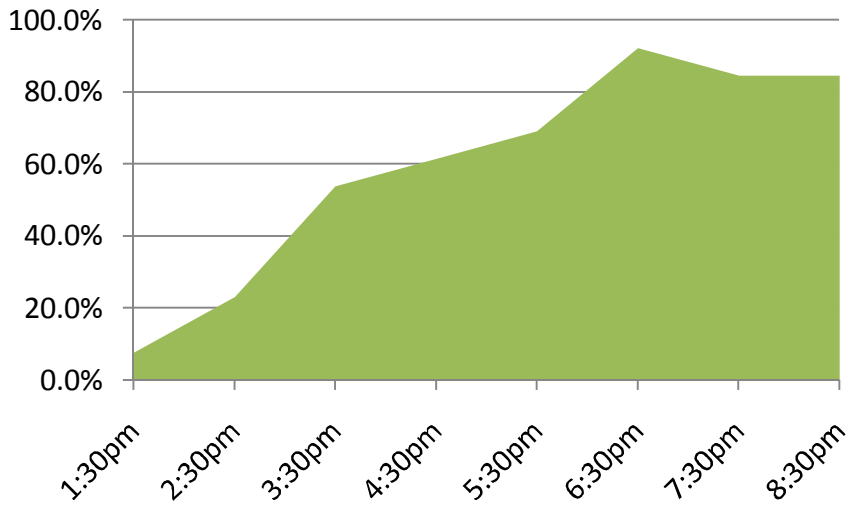
6 Poe's Tavern Lot

[OFF-STREET PARKING - 13 VEHICLE CAPACITY]

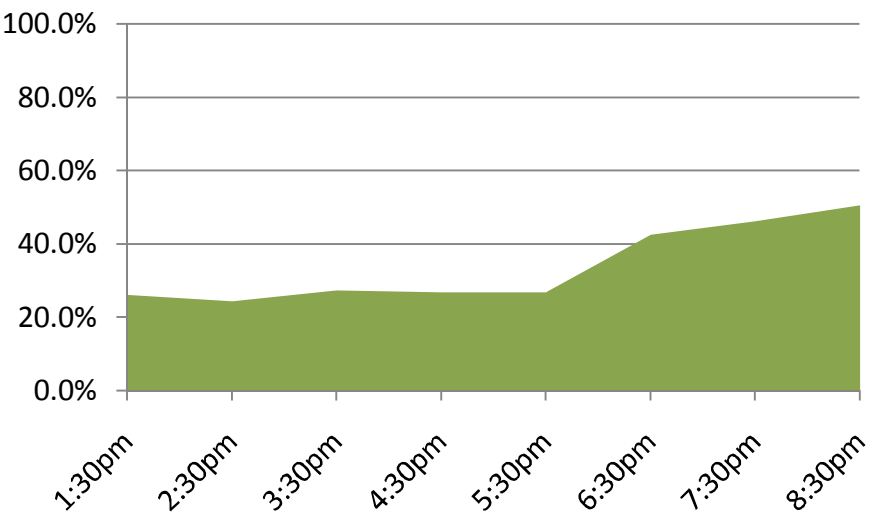


7 Off the Hook Restaurant Lot

[OFF-STREET PARKING - 13 VEHICLE CAPACITY]



OFF-STREET PARKING TOTALS

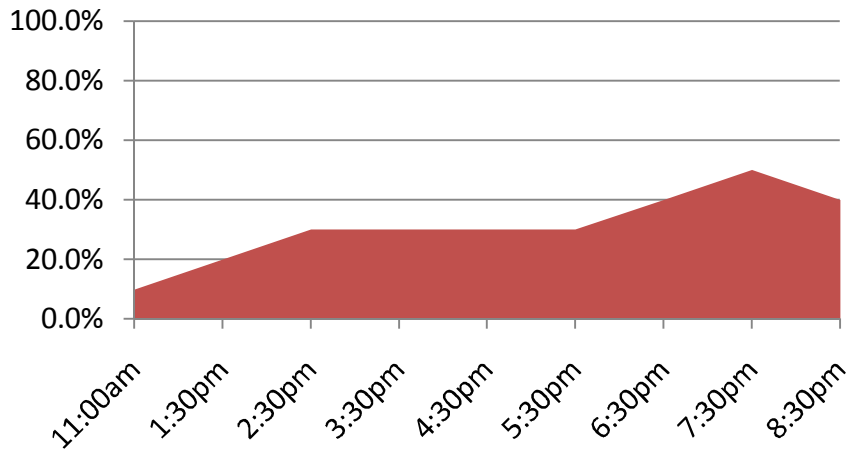


COMMUNITY COMMERCIAL DISTRICT MASTER PLAN

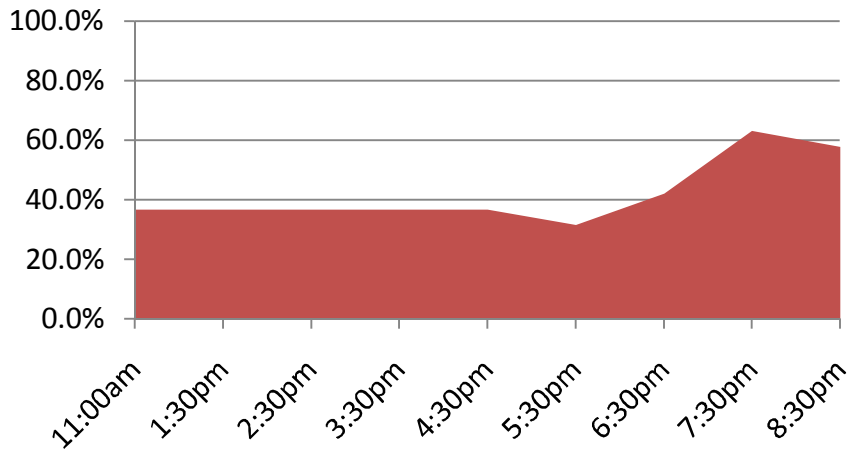
Parking Survey Results: Saturday, September 20, 2008

Kimley-Horn and Associates, Inc.

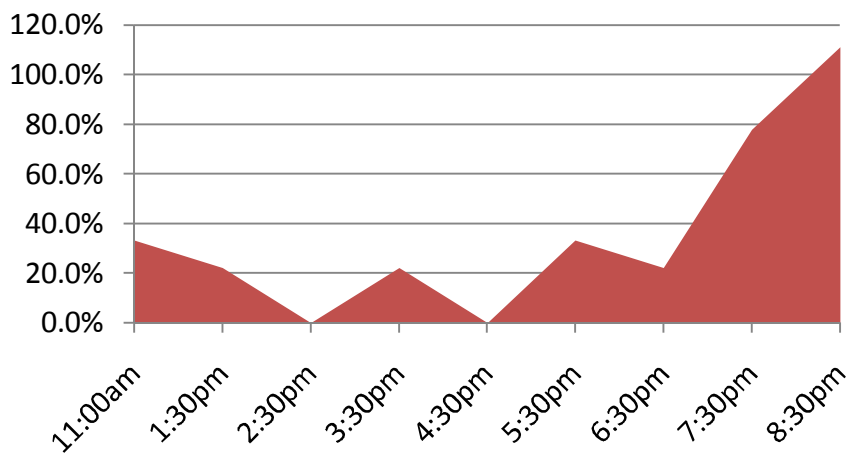
1 Jasper Boulevard
Between Station 22 & Ben Sawyer Blvd
[ON-STREET PARKING - 10 VEHICLE CAPACITY]



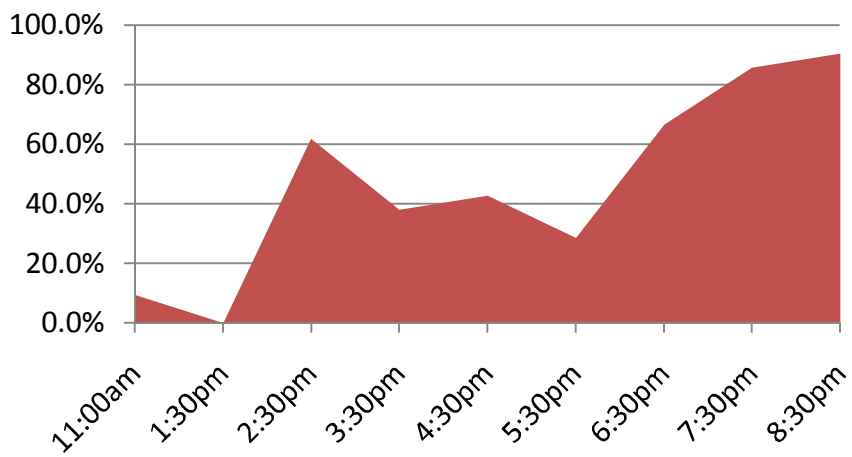
2 Middle Street
West of Station 20 1/2
[ON-STREET PARKING - 19 VEHICLE CAPACITY]



3 Middle Street
Between Station 20 1/2 & Station 21
[ON-STREET PARKING - 9 VEHICLE CAPACITY]



4 Middle Street
Between Station 21 & Station 22
[ON-STREET PARKING - 21 VEHICLE CAPACITY]

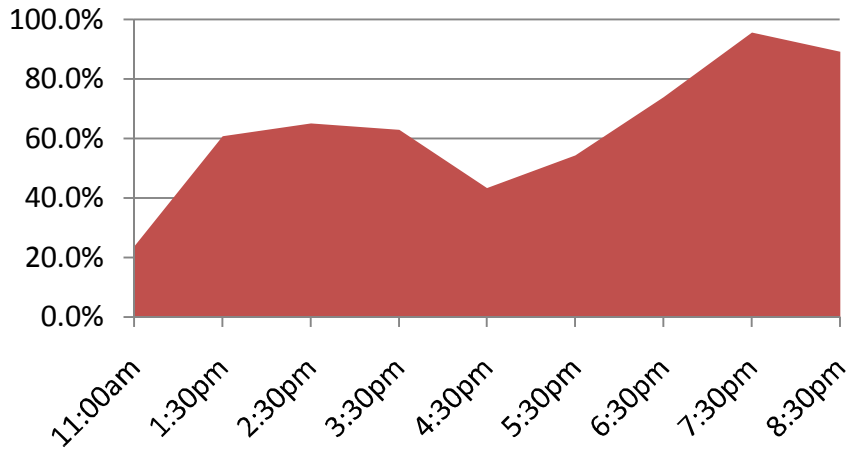


COMMUNITY COMMERCIAL DISTRICT MASTER PLAN

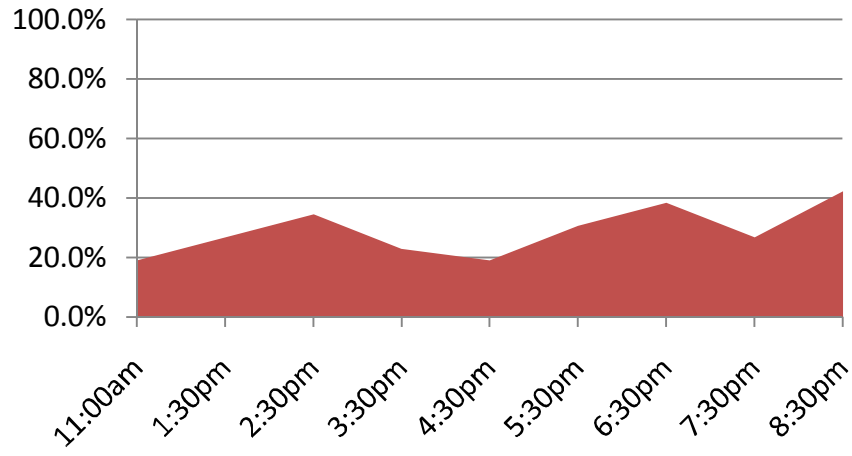
Parking Survey Results: Saturday, September 20, 2008

Kimley-Horn and Associates, Inc.

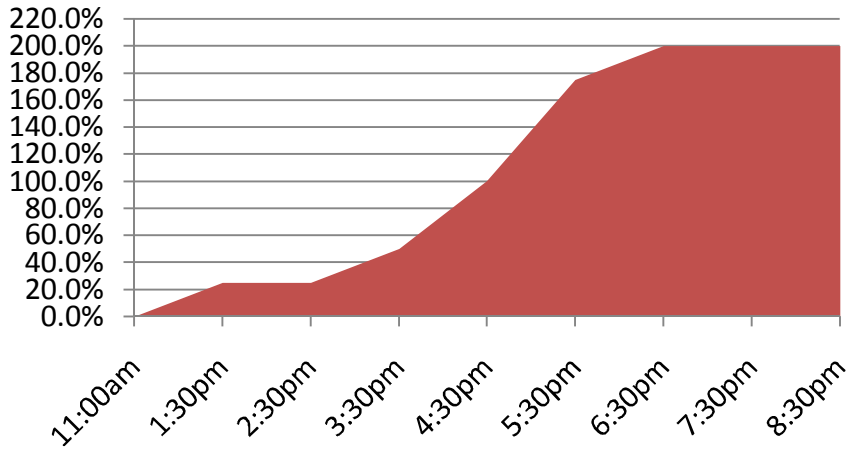
5 Middle Street
Between Station 22 & Ben Sawyer Blvd
[ON-STREET PARKING - 46 VEHICLE CAPACITY]



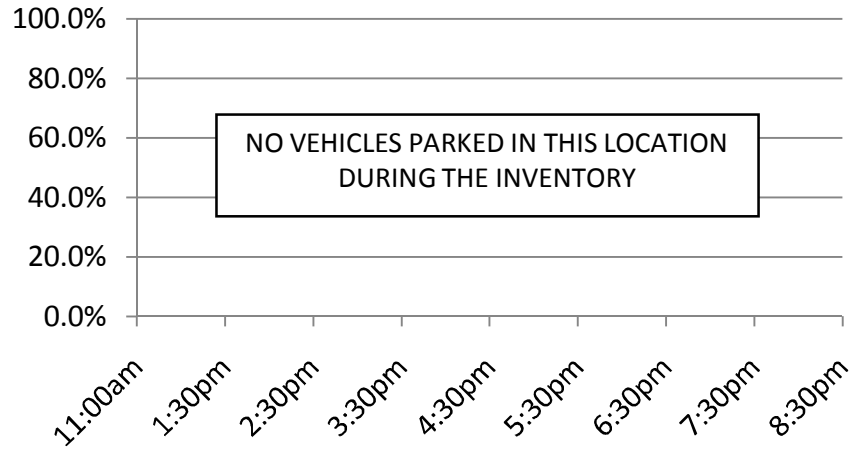
6 Middle Street
Between Ben Sawyer Blvd & Station 23
[ON-STREET PARKING - 26 VEHICLE CAPACITY]



7 Ion Avenue
West of Station 20 1/2
[ON-STREET PARKING - 4 VEHICLE CAPACITY]



8 Ion Avenue
Between Station 20 1/2 & Station 21
[ON-STREET PARKING - 8 VEHICLE CAPACITY]

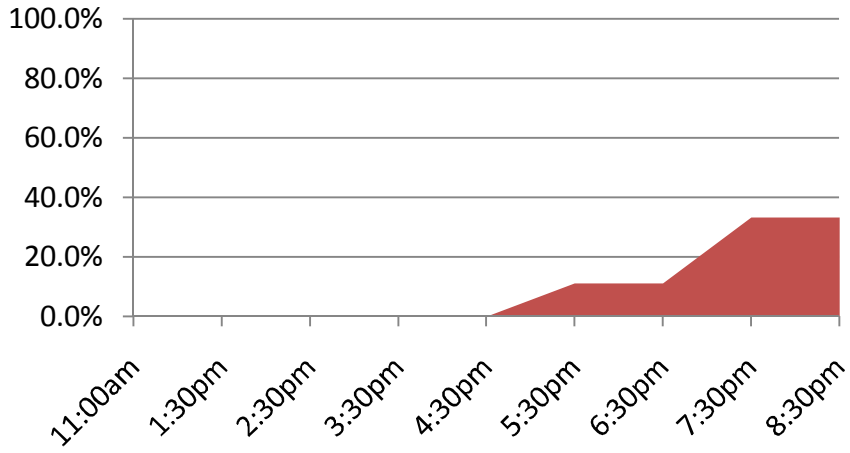


COMMUNITY COMMERCIAL DISTRICT MASTER PLAN

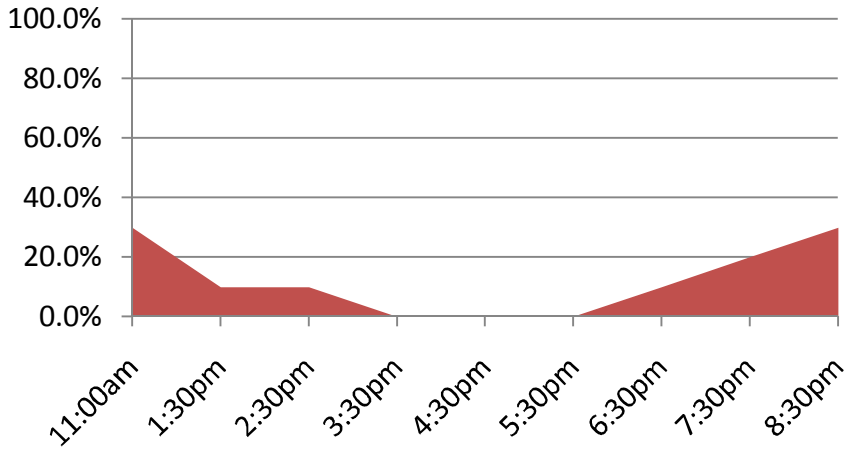
Parking Survey Results: Saturday, September 20, 2008

Kimley-Horn and Associates, Inc.

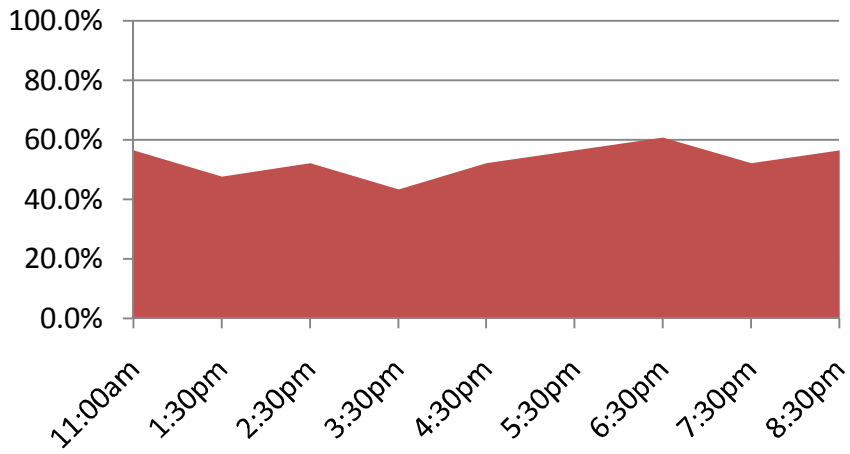
9 Ion Avenue
Between Station 21 & Station 22
[ON-STREET PARKING - 9 VEHICLE CAPACITY]



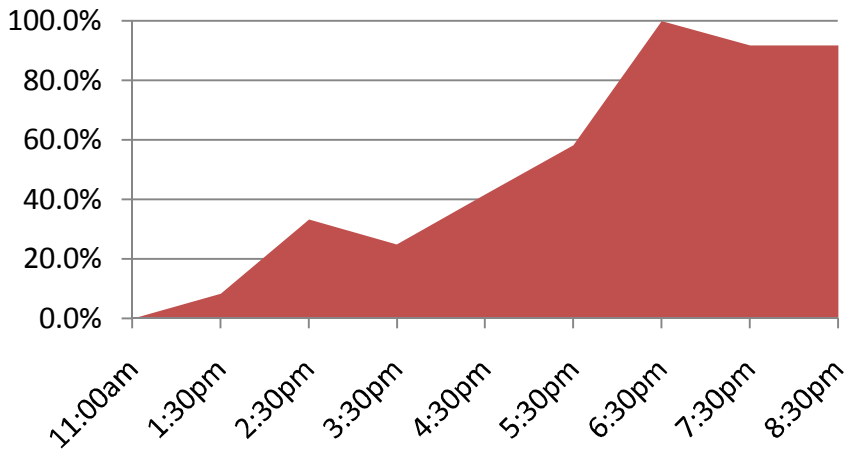
10 Ion Avenue
Between Station 22 & Ben Sawyer
[ON-STREET PARKING - 10 VEHICLE CAPACITY]



11 Ion Avenue
Between Ben Sawyer Blvd & Station 23
[ON-STREET PARKING - 23 VEHICLE CAPACITY]



12 Station 20 1/2
Between Ion Ave & Middle St
[ON-STREET PARKING - 12 VEHICLE CAPACITY]

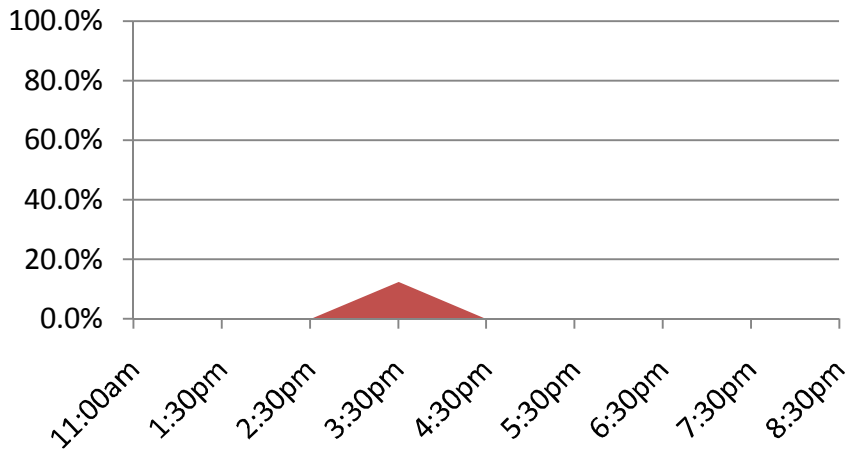


COMMUNITY COMMERCIAL DISTRICT MASTER PLAN

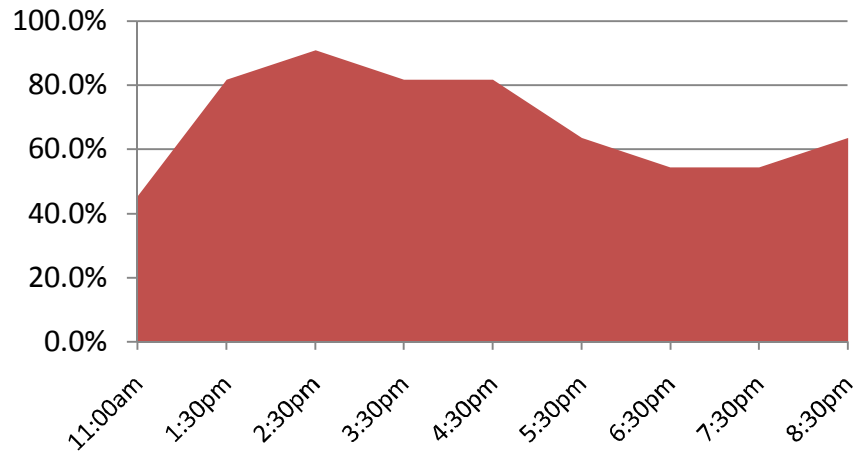
Parking Survey Results: Saturday, September 20, 2008

Kimley-Horn and Associates, Inc.

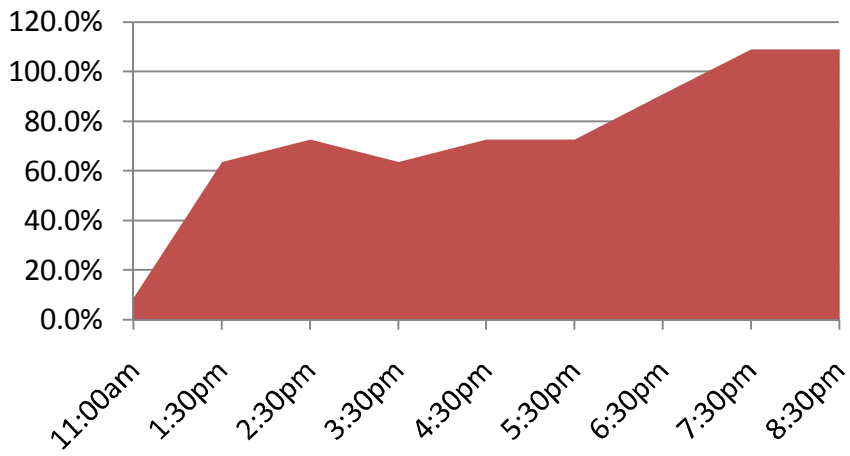
13 Station 21
Between Ion Ave & Middle St
[ON-STREET PARKING - 8 VEHICLE CAPACITY]



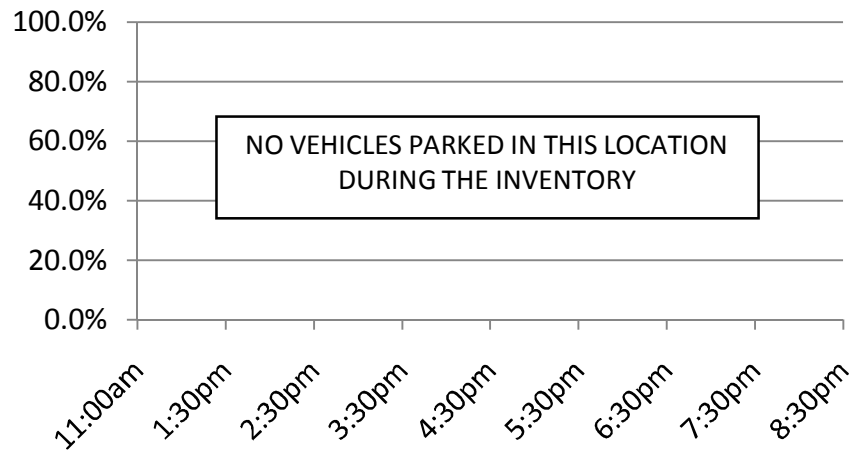
14 Station 22
Between Middle St & Jasper Blvd
[ON-STREET PARKING - 11 VEHICLE CAPACITY]



15 Station 22
Between Ion Ave & Middle St
[ON-STREET PARKING - 11 VEHICLE CAPACITY]



16 Ben Sawyer Boulevard
North of Myrtle Ave
[ON-STREET PARKING - 23 VEHICLE CAPACITY]

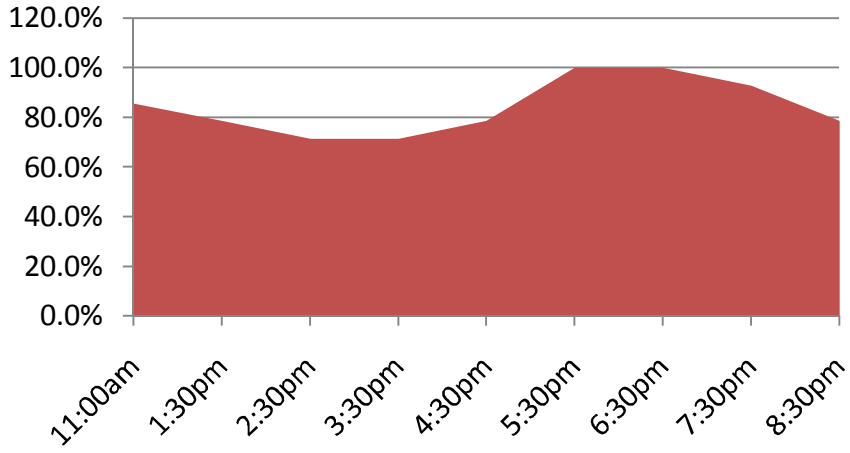


COMMUNITY COMMERCIAL DISTRICT MASTER PLAN

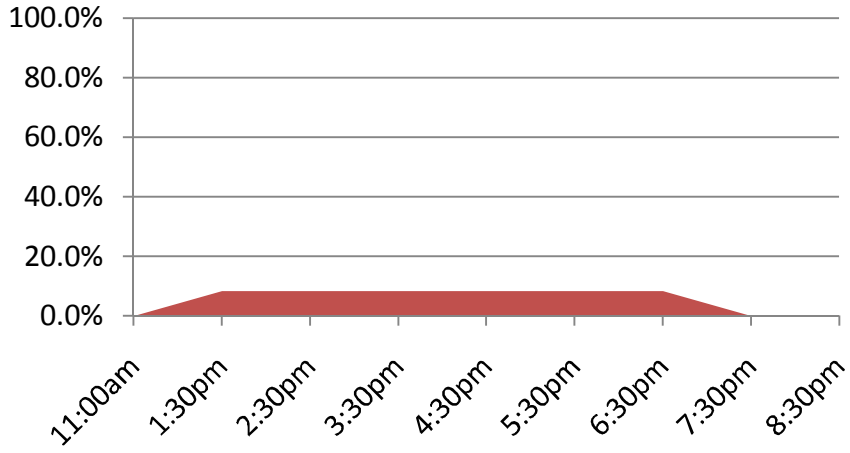
Parking Survey Results: Saturday, September 20, 2008

Kimley-Horn and Associates, Inc.

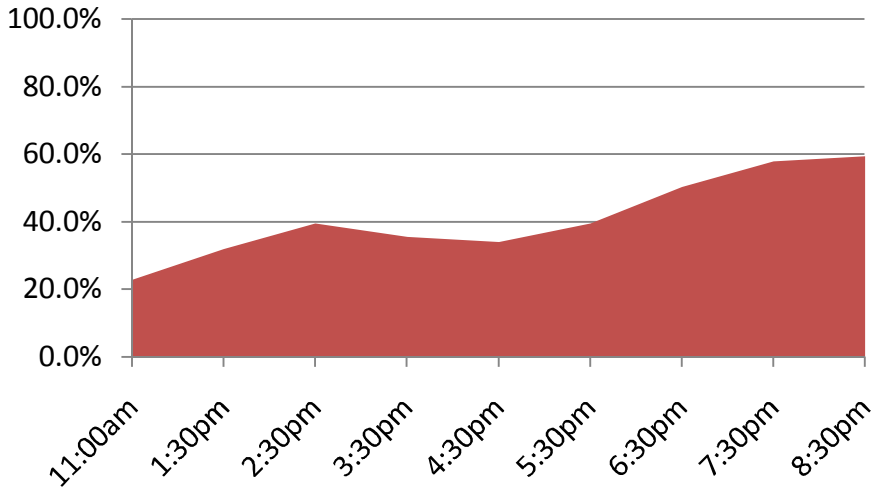
17 Ben Sawyer Boulevard
Between Ion Ave & Middle St
[ON-STREET PARKING - 14 VEHICLE CAPACITY]



18 Station 23
Between Ion Ave & Middle St
[ON-STREET PARKING - 12 VEHICLE CAPACITY]



ON-STREET PARKING TOTALS



PARKING GRAND TOTALS