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PARKING DEMAND ANALYSIS

MIDDLE BEACH
MIAMI BEACH, FLORIDA

Prepared for:
CITY OF MIAMI BEACH

JULY 10, 2015

FINAL REPORT



WALKER
PARKING CONSULTANTS

PROJECT NO. 15-1988.00

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EXECUTIVE SUMMARY

The City of Miami Beach engaged Walker Parking Consultants to analyze the current and future parking conditions within key portions of the City. The focus of this report is Middle Beach, including the 41st Street Corridor. The following provides an executive summary of the findings. The full report provides a detailed analysis.

CURRENT CONDITIONS

A total of 20,478± spaces were inventoried within the overall study area. Private off-street parking accounts for roughly 83 percent of the overall parking supply; on-street and City owned off-street parking accounts for 14 percent; and the remaining 3 percent is public paid parking. Inventory of restricted parking areas that could not be directly observed are based on the size of the development and required parking ratio or actual numbers provided by the City Planning department.

Summary of Parking Inventory

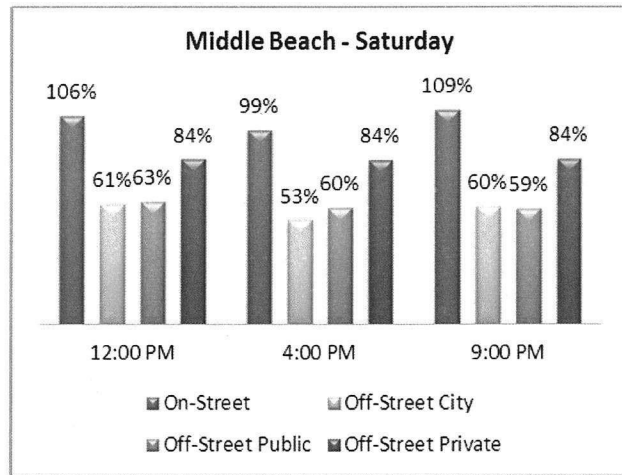
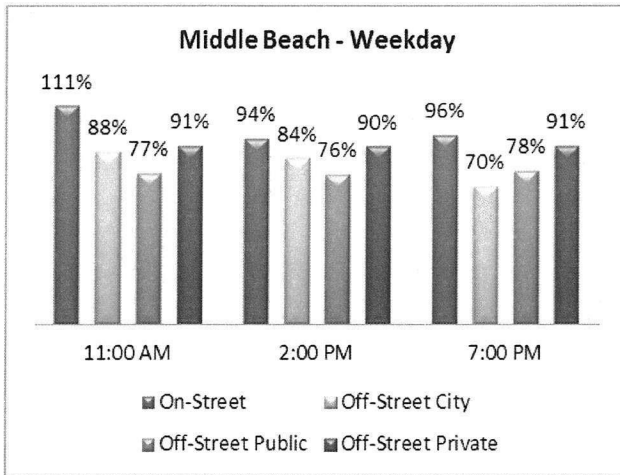
	On-Street	Off-Street			Private	Total:
		City Garage	City Lot	Public Garage		
Middle Beach	668	-	771	672	15,962	18,073
41st Street Corridor	377	620	492	-	916	2,405
Totals:	1,045	620	1,263	672	16,878	20,478
	5.1%	3.0%	6.2%	3.3%	82.4%	

Source: Walker Parking Consultants

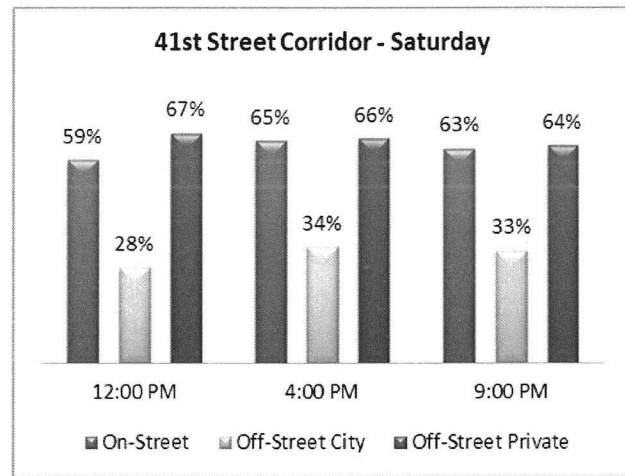
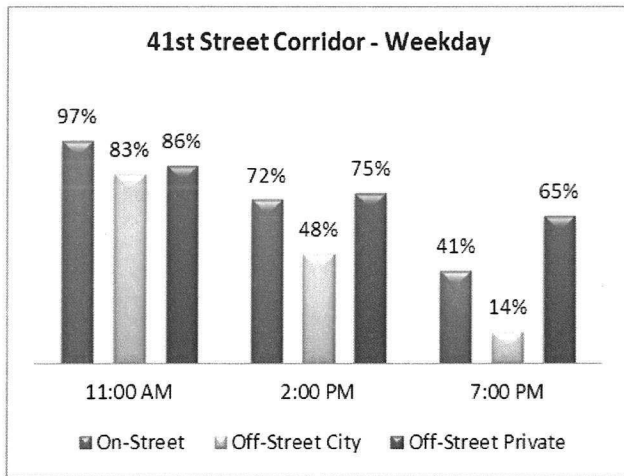
The overall peak parking demand observation for both areas was recorded during the noon weekday count. When considering parking demand by type of parking, on-street parking was consistently the highest, often exceeding 100 percent of the supply due to vehicles parked in non-parking areas or double parking in the street.

The following graphs illustrate the parking occupancy for each time period by type and area. Parking demand within Middle Beach was fairly consistent, while parking demand along the 41st Street Corridor dropped during the evenings and weekends.

Middle Beach Weekday and Saturday Occupancy



41st Street Corridor Weekday and Saturday Occupancy



HEAT MAP

The following maps show parking demand for both areas during the peak weekday observation using colors to indicate parking demand. Red indicates parking was at or above 85 percent, which tends to be when users feel it is difficult to locate an available parking space. These maps only use the data from spaces that were observable during our observations so they are not influenced by the assumed demand from private parking that was not directly observable. The maps start at the northern area and proceed to the southern areas.

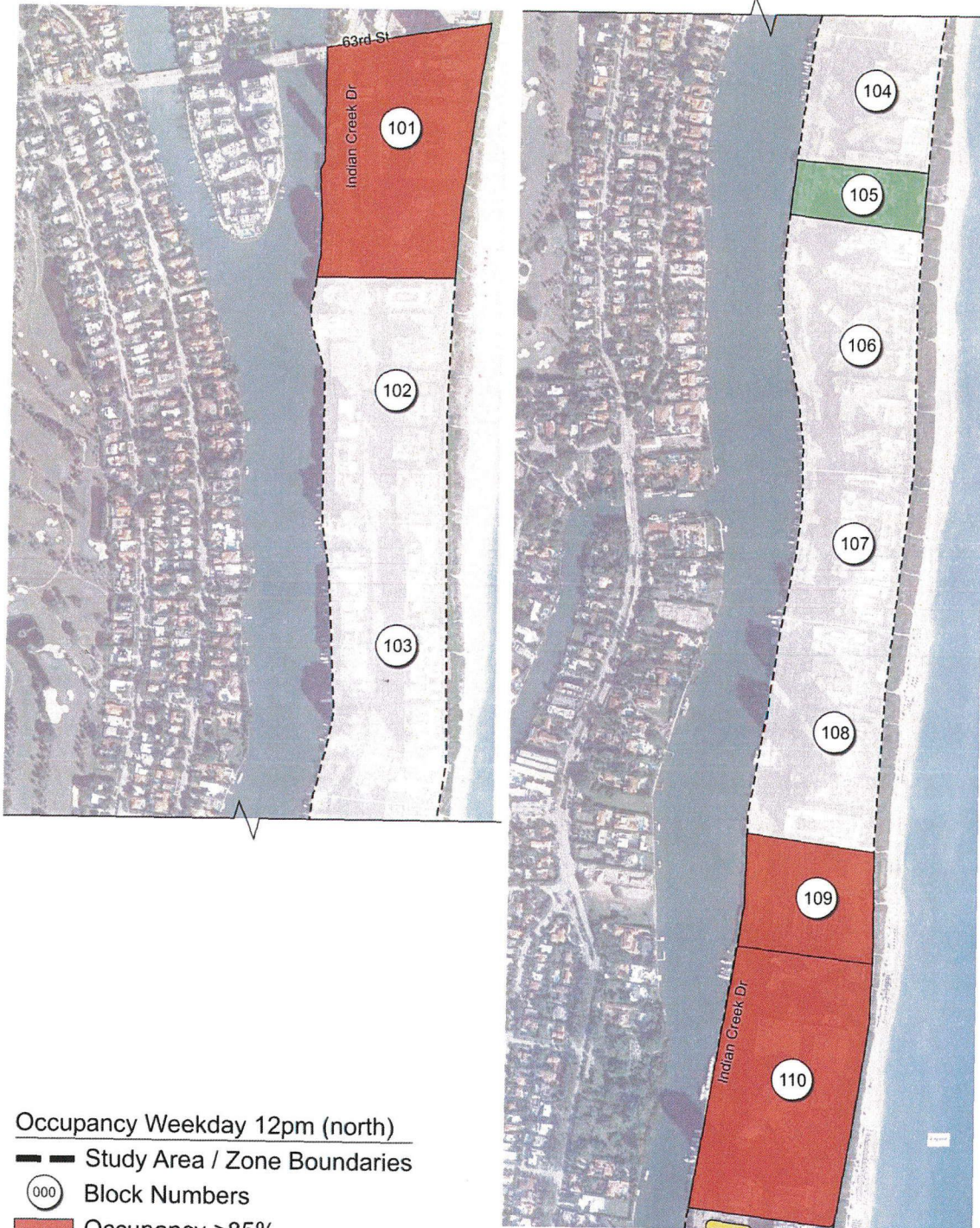
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- Occupancy Weekday 12pm (north)
- Study Area / Zone Boundaries
 - ⊙ Block Numbers
 - █ Occupancy $\geq 85\%$
 - █ Occupancy 70% - 84%
 - █ Occupancy $\leq 69\%$
- N

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FUTURE CONDITIONS

Three potential growth scenarios are provided based on the *Economic Conditions* report data specific to Middle Beach and the overall area, compiled and provided by the Tourism, Cultural & Economic Development Department. The three annual growth scenarios used to project the overall change in the parking demand are shown in the table below.

Annual Growth Scenarios

Scenario 1 (Smallest annual jobs growth)	1.0%	Annual Growth
Scenario 2 (Average annual jobs growth)	2.8%	Annual Growth
Scenario 3 (Smallest annual average growth)	6.5%	Annual Growth

Source: Select data from the Current Economic Conditions Report and Walker Parking Consultants

The projected parking adequacy is shown in the following tables using the growth scenario assumptions applied to the observed peak parking demand for Middle Beach and the 41st Street Corridor.

Projected Future Parking Adequacy – Middle Beach

Year	EPS	Scenario 1		Scenario 2		Scenario 3	
		Demand	Adequacy	Demand	Adequacy	Demand	Adequacy
2015	17,035	16,406	629	16,453	582	16,547	488
2016	17,035	16,431	604	16,527	508	16,724	311
2017	17,035	16,456	579	16,603	432	16,913	122
2018	17,035	16,482	553	16,681	354	17,114	(79)
2019	17,035	16,508	527	16,762	273	17,328	(293)
2020	17,035	16,534	501	16,845	190	17,556	(521)
2021	17,035	16,560	475	16,930	105	17,798	(763)
2022	17,035	16,587	448	17,018	17	18,056	(1,021)
2023	17,035	16,614	421	17,108	(73)	18,331	(1,296)
2024	17,035	16,641	394	17,201	(166)	18,624	(1,589)

Source: Walker Parking Consultants

Projected Future Parking Adequacy – 41st Street Corridor

Year	EPS	Scenario 1		Scenario 2		Scenario 3	
		Demand	Adequacy	Demand	Adequacy	Demand	Adequacy
2015	2,191	2,129	62	2,152	39	2,197	(6)
2016	2,191	2,141	50	2,188	3	2,282	(91)
2017	2,191	2,153	38	2,225	(34)	2,373	(182)
2018	2,191	2,165	26	2,263	(72)	2,470	(279)
2019	2,191	2,178	13	2,302	(111)	2,573	(382)
2020	2,191	2,191	0	2,342	(151)	2,683	(492)
2021	2,191	2,204	(13)	2,383	(192)	2,800	(609)
2022	2,191	2,217	(26)	2,425	(234)	2,925	(734)
2023	2,191	2,230	(39)	2,468	(277)	3,058	(867)
2024	2,191	2,243	(52)	2,513	(322)	3,199	(1,008)

Source: Walker Parking Consultants

FUTURE PARKING NEEDS SUMMARY

Although the overall projected demand within Middle Beach does not indicate a direct deficit of parking as a whole, there are several blocks with parking adequacy issues that should be addressed. In addition, demand was consistently high over the course of each counting period.

The 41st Street Corridor indicates potential parking adequacy issues in the future; however, compared to Middle Beach and other areas, this area seems to be well established and will likely not experience growth in demand at the higher scenario levels. The observations were consistently lower during evenings and weekends compared to the weekday peak which lessens the overall usefulness of any new parking assets within this area.

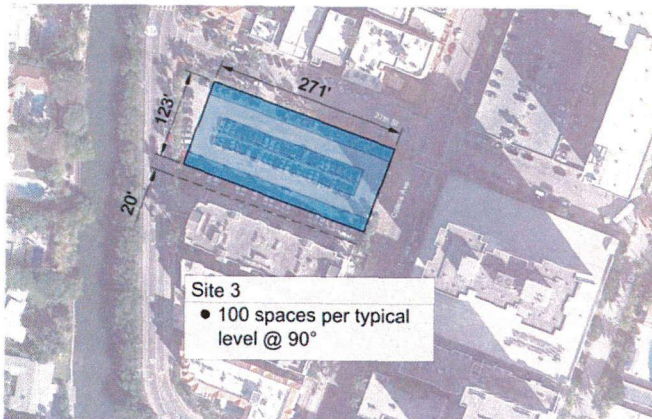
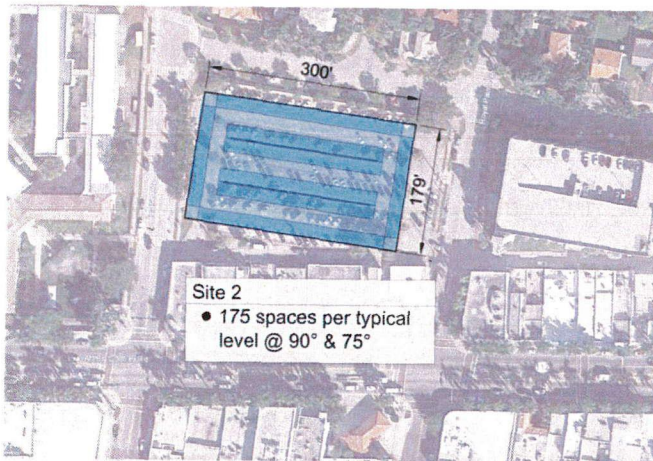
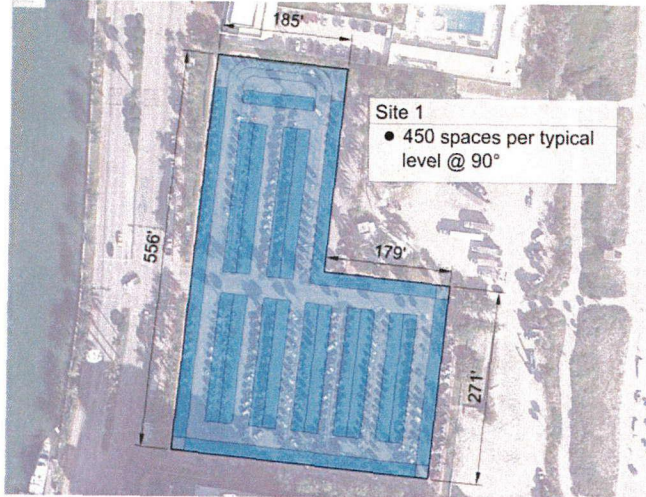
OPPORTUNITIES TO ADD STRUCTURED PARKING

The City should consider its options to increase parking supply by adding structured parking on existing surface parking lots. On a conceptual basis our report outlines three potential sites for transforming existing City surface lots into parking structures. Key points considered in our evaluation are existing demand, location, and size of the parcel for an efficient layout.

The sites include the following lot numbers with illustrations on the following page:

1. MB 71 (46th Street)
2. MB 55 (27th Street)
3. MB 63 (41st Street Corridor)

Conceptual Parking Structure Layouts



Notes:

Conceptual layouts for sizing purposes only.

Dimensions based on scaled Google Earth Pro image.

Impacts to capacity include:

- Ground/roof levels
- Commercial space at grade
- Set-back requirements
- Ingress/egress points
- Height restrictions


Other layout options may be feasible and further developed if site development is pursued.

Site 1 is very large with multiple options to consider beyond what is shown.

Site 2 is considered a potential replacement for the existing 42nd Street garage which is aging and can be a confusing to users. The location may also benefit potential redevelopment of the Roosevelt Theater, which is located about a block to the southwest.

Site 3 is a good location on the existing Miami Beach #55 lot along 27th Street. The site has sufficient width for a two-bay structure with the potential to include commercial space on the ground level along Collins Avenue. The total capacity will vary based on the number of floors and if commercial space is included.

Recommend an in-depth site analysis for any preferred sites to include design options, sizing, market and preliminary financial analysis.

Miami Middle Beach Parking Options 

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PARKING MANAGEMENT STRATEGIES

Beyond adding additional parking supply to improve current and future parking conditions, several parking management strategies are provided in the report, including:

- Encouraging car sharing services geared toward residents;
- Implementing a residential parking permit program to ensure local residents are given priority parking where issues exist;
- Increased branding and promotion of public parking; and
- Implementing dynamic pricing based on seasonality and occupancy surveys.

PARKING DEMAND ANALYSIS



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INTRODUCTION

The City of Miami Beach ("the City") engaged Walker Parking Consultants ("Walker") to conduct a parking supply and demand analysis for various areas of the City. The focus of this report is the Middle Beach area, including the 41st Street Corridor. The purpose of the study is to quantify current and future parking conditions based on various development scenarios to assist in the overall parking management plan of the City. Walker had previously completed a large scale supply/demand analysis in selected areas of Miami Beach in 2004. While the study areas are not an exact match, several of the areas overlap and assist in quantifying the parking supply, demand, and unique challenges in managing public parking for the City.

KEY OBJECTIVES

- Update the physical inventory of parking spaces within the study area.
- Project future demand based on planned projects within the study area and potential future growth.

STUDY AREA

The complete Middle Beach study area generally follows Collins Avenue starting at 23rd Street to the south to 63rd Street to the north, and along the 41st Street Corridor one block to the north and south to Alton Road.

The entire study area is broken into two maps to show additional detail, with the northern area including only Middle Beach and the southern area showing both Middle Beach and the 41st Street Corridor. Each block is uniquely numbered to allow the data to be further analyzed in detail.

The study areas are outlined in the following maps.

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Figure 1: Study Area Map – Overall Middle Beach Area



Source: Google Earth Pro and Walker Parking Consultants

Figure 2: Study Area Map – North Middle Beach Area



Source: Google Earth Pro and Walker Parking Consultants

Figure 3: Study Area Map – South Middle Beach and 41st Street Corridor Areas



Source: Google Earth Pro and Walker Parking Consultants

DEFINITION OF TERMS

Several terms used in this summary have unique meanings when used in the parking industry. To help clarify these terms and enhance understanding by the reader, definitions for some of these terms are presented below.

- **Demand** – The number of parking spaces recommended to satisfy the visitor, employee and resident demand on a given day.
- **Demand Generator** – Any building, structure, business, or attraction that brings individuals into the study area, thereby increasing parking demand and occupancy.
- **Effective Parking Supply (EPS)** – The actual inventory adjusted to provide the optimum number of parking spaces before parking is typically perceived as being insufficient. This “cushion” in the parking inventory accounts for some spaces lost due vehicles parked in two spaces, spaces lost for repair or temporary blockage and for the time needed for patrons to locate the last few available spaces. The cushion also accounts for the dynamics of vehicles moving in and out of spaces which can lead to “cruising” for the last few open spaces.
- **Effective Supply Factor (ESF)** – The adjustment factor used to calculate the Effective Parking Supply.
- **Inventory** – The total number of parking spaces identified and counted during survey day observations. The intent of this study is to account for all parking within defined geographical areas of study.
- **Occupancy (Counts)** – The number of vehicles observed parked on each survey day.
- **Parking Adequacy** – The difference between the effective parking supply and demand.
- **Private Parking** – A parking space that is restricted from public access and reserved for private use, regardless of ownership.
- **Public Parking** – A parking space that is available for use by the general public on an hourly, daily and/or monthly basis.
- **Survey Days** – The days that the parking occupancy counts were conducted in the study areas.
- **Survey Times** – The time of the survey on the Survey Day. The time generally represents the start time of the data collection

SUMMARY OF INVENTORY

Parking within the defined area was inventoried and classified as either on-street, off-street public, or off-street private. The off-street public parking facilities were further classified as a City owned and operated parking garage or lot; public garage or public lot. Private parking is any parking restricted for a particular user, such as employee, resident or specific business. Only patrons of that particular venue are permitted to park in that parking facility during their visit to the business. The primary source of private parking areas is condominiums, apartments, and hotels with private gated parking that is not open to the public.

PARKING INVENTORY

A total of 20,478± spaces were inventoried within the overall study area. Private off-street parking accounts for roughly 83 percent of the overall parking supply; on-street and City owned off-street parking accounts for 14 percent; and the remaining 3 percent is public paid parking. Inventory of restricted parking areas that could not be directly observed are based on the size of the development and required parking ratio or actual numbers provided by the City Planning department. Table 1 depicts a summary of the total parking inventory by area.

Type of Parking

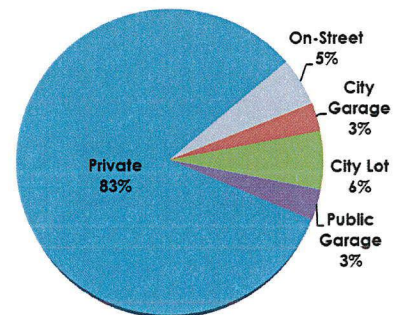


Table 1: Summary of Parking Inventory (sub-totaled by area)

	On-Street	Off-Street			Private	Total:
		City Garage	City Lot	Public Garage		
Middle Beach	668	-	771	672	15,962	18,073
41st Street Corridor	377	620	492	-	916	2,405
Totals:	1,045	620	1,263	672	16,878	20,478
	5.1%	3.0%	6.2%	3.3%	82.4%	

Source: Walker Parking Consultants

OBSERVATION PERIODS

Weekday parking occupancy counts for all areas were made during the week of November 17th, on a Thursday, at 12:00 p.m., 5:00 p.m., and 10:00 p.m. Weekend counts were made on a Saturday, at 10:00 a.m., 4:00 p.m., and 10:00 p.m. for the Middle Beach areas and 9:00 a.m., 3:00 p.m., and 7:00 p.m. for the 41st Street Corridor.

The observation periods were agreed upon at the start of the project during a meeting with the City.

EFFECTIVE PARKING SUPPLY

The inventory of parking within the study area is adjusted to allow for a cushion necessary for vehicles moving in and out of spaces, reduce the time necessary to find the last few remaining spaces when the parking supply is nearly full, spaces lost due to mis-parked vehicles, temporary construction, and restricted spaces. To account for this cushion, the parking inventory is adjusted to reflect the *Effective Parking Supply* ("EPS"). We derive the EPS by deducting this cushion from the total parking capacity.

A parking system operates at peak efficiency when parking occupancy is at 85 to 95 percent of the supply. When occupancy exceeds this level, patrons may experience delays and frustration while searching for a space; moreover, the parking supply may be perceived as inadequate, even though spaces are available within the parking system. As a result, we use the effective supply when analyzing the adequacy of the parking system, rather than the total supply or inventory of spaces. The following factors affect the efficiency of a parking system:

- Capacity – Large, scattered surface lots operate less efficiently than a more compact facility, such as a double-threaded helix parking structure, which offers one-way traffic that passes each available parking space one time. Moreover, it is difficult to find the available spaces in a widespread parking area rather than in a centralized parking area.
- Type of users – Monthly or regular parking patrons can find the available spaces more efficiently than infrequent visitors because they are familiar with the location of the parking options and typically know where the spaces will be available before they park.
- On-street vs. Off-street – On-street parking is less efficient than off-street due to the time it takes patrons to find the last few vacant on-street spaces. In addition, patrons are typically limited to using one side of the street at a time and often must parallel park in traffic to use an on-street space.

For this analysis, we applied a general *Effective Supply Factor* ("ESF") of 85% for the on-street spaces, 90% for off-street public spaces and 95% for off-street private spaces. The total EPS is calculated at 19,226 spaces, as shown in the following table.

Table 2: Effective Parking Supply by Area

ESF	On-Street	Garage	Off-Street			Total:
			City Lot	Garage	Private	
	0.85	0.90	0.90	0.90	0.95	
Middle Beach	571	-	694	605	15,165	17,035
41st Street Corridor	319	558	444	-	870	2,191
Totals:	890	558	1,138	605	16,035	19,226

* EPS calculated by block and rounded

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CURRENT CONDITIONS

Observations were conducted at three intervals on a Weekday and Saturday of all inventoried parking spaces within the study area. Weekday observations were made on Thursday, November 20, 2014 and the Saturday observations were made on Saturday November 22, 2014. Weather conditions during the observations were very good with sunny and warm temperatures. The following sections provide a summary of the observations for both the weekday and Saturday periods with the overall peak observation period.

MIDDLE BEACH OBSERVATIONS

The overall observed occupancy levels were high, with weekday occupancy consistently at 90 to 91 percent (peak observation at 12:00 p.m.) and Saturday occupancy at 82 to 83 percent (peak observation at 10:00 p.m.). On-street parking occupancy exceeded the actual number of spaces due to vehicles parked in non-spaces, double parking, or parking in no parking areas during both the weekday and Saturday observations. The following table provides a summary of the observations for both the weekday and Saturday periods with the peak observation times identified at the top of the table.

Table 3: Middle Beach Occupancy Observations

Middle Beach	Inventory	PEAK HOUR			SATURDAY	Inventory	PEAK HOUR		
		WEEKDAY	12:00 PM	5:00 PM			10:00 PM	10:00 AM	4:00 PM
On-Street	668	741	630	643	On-Street	668	709	661	730
Occupancy Rate		111%	94%	96%	Occupancy Rate		106%	99%	109%
Unoccupied Spaces		-73	38	25	Unoccupied Spaces		-41	7	-62
Public City Lot	771	677	650	539	Public City Lot	771	472	410	464
Occupancy Rate		88%	84%	70%	Occupancy Rate		61%	53%	60%
Unoccupied Spaces		94	121	232	Unoccupied Spaces		299	361	307
Public Garage	672	515	510	525	Public Garage	672	421	400	397
Occupancy Rate		77%	76%	78%	Occupancy Rate		63%	60%	59%
Unoccupied Spaces		157	162	147	Unoccupied Spaces		251	272	275
Off-Street Private	15,962	14,448	14,424	14,493	Off-Street Private	15,962	13,432	13,408	13,448
Occupancy Rate		91%	90%	91%	Occupancy Rate		84%	84%	84%
Unoccupied Spaces		1,514	1,538	1,469	Unoccupied Spaces		2,530	2,554	2,514
Total	18,073	16,381	16,214	16,200	Total	18,073	15,034	14,879	15,039
Occupancy Rate		91%	90%	90%	Occupancy Rate		83%	82%	83%
Unoccupied Spaces		1,692	1,859	1,873	Unoccupied Spaces		3,039	3,194	3,034

Source: Walker Parking Consultants

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PUBLIC CITY PARKING

When considering only public parking provided by the City, Middle Beach occupancy reached 99 percent during the peak weekday observation at noon. This includes on-street occupancy at 111 percent and 88 percent off-street occupancy available within a few off-street surface lots. Saturday occupancy peaked at 83 percent during the 10:00 p.m. observation, with 109 percent of on-street and 60 percent off-street spaces being occupied. During both periods several areas were observed to have vehicles parked along the street where parking is not intended.

41ST STREET CORRIDOR OBSERVATIONS

The overall peak observation within the 41st Street Corridor occurred during the 12:00 p.m. weekday observation, with 88 percent of the spaces being occupied. Saturday occupancy peaked during the 3:00 p.m. observation with only 53 percent of the spaces being occupied. On-street parking occupancy peaked at 97 percent during the 12:00 p.m. weekday observation. The following table provides the details of the observation periods.

Table 4: 41st Street Corridor Occupancy Observations

41st Street Corridor		PEAK HOUR			PEAK HOUR				
WEEKDAY	Inventory	12:00 PM	5:00 PM	10:00 PM	SATURDAY	Inventory	9:00 AM	3:00 PM	7:00 PM
On-Street	377	367	270	153	On-Street	377	224	245	236
Occupancy Rate		97%	72%	41%	Occupancy Rate		59%	65%	63%
Unoccupied Spaces		10	107	224	Unoccupied Spaces		153	132	141
Public City Garage	620	550	288	100	Public City Garage	620	230	250	240
Occupancy Rate		89%	46%	16%	Occupancy Rate		37%	40%	39%
Unoccupied Spaces		70	332	520	Unoccupied Spaces		390	370	380
Public City Lot	492	408	236	68	Public City Lot	492	138	167	161
Occupancy Rate		83%	48%	14%	Occupancy Rate		28%	34%	33%
Unoccupied Spaces		84	256	424	Unoccupied Spaces		354	325	331
Off-Street Private	916	792	683	591	Off-Street Private	916	617	602	582
Occupancy Rate		86%	75%	65%	Occupancy Rate		67%	66%	64%
Unoccupied Spaces		124	233	325	Unoccupied Spaces		299	314	334
Total	2,405	2,117	1,477	912	Total	2,405	1,209	1,264	1,219
Occupancy Rate		88%	61%	38%	Occupancy Rate		50%	53%	51%
Unoccupied Spaces		288	928	1,493	Unoccupied Spaces		1,196	1,141	1,186

Source: Walker Parking Consultants

PUBLIC CITY PARKING

When considering only public parking provided by the City, the 41st Street Corridor occupancy reached 89 percent during the peak weekday observation at noon. Occupancy dropped off considerably in the evenings and Saturday, with a low of 22 percent during the 10:00 p.m. weekday observation and Saturday occupancy ranging from 40 to 44 percent.

PARKING OCCUPANCY HEAT MAPS

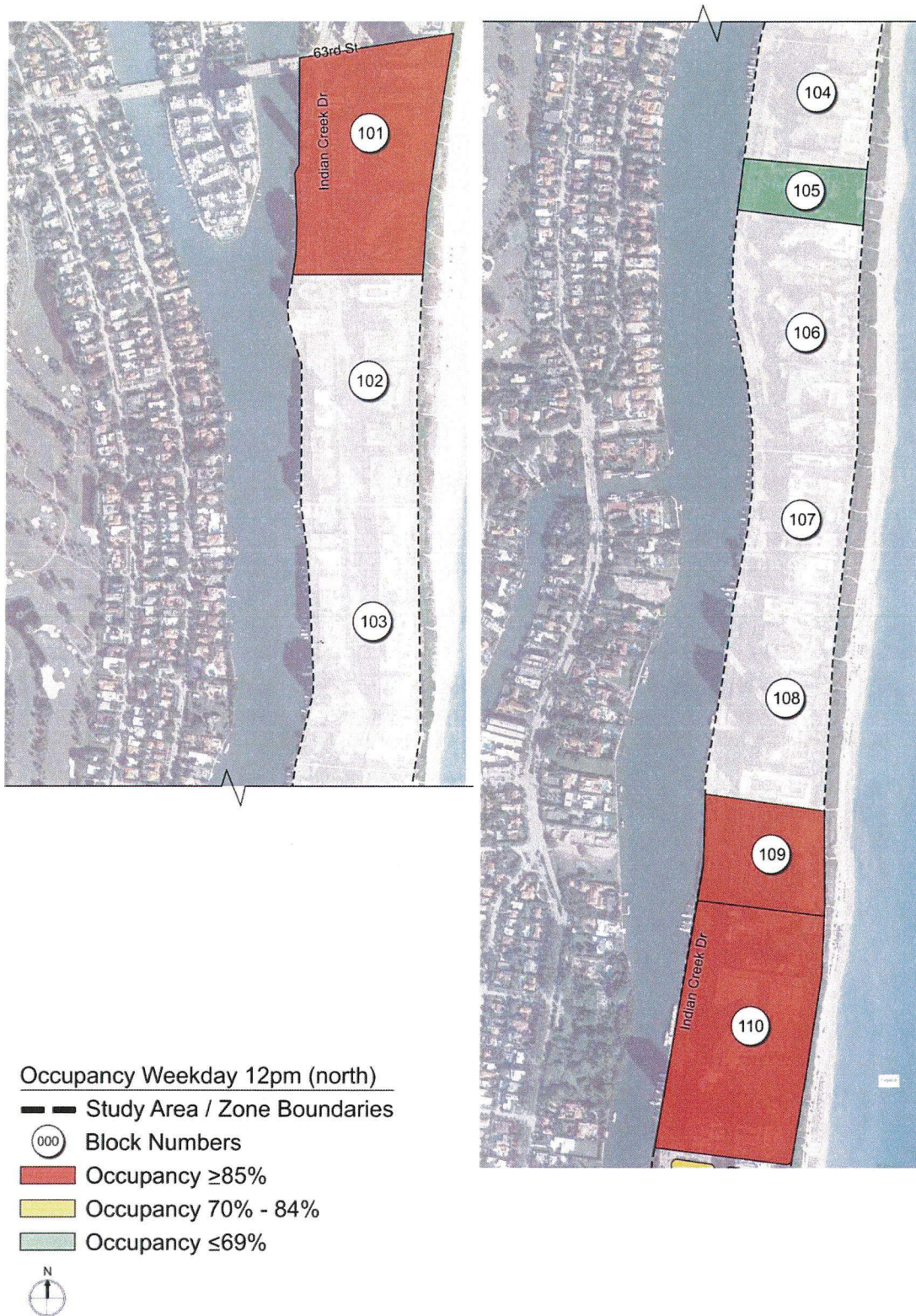
To illustrate parking occupancy in greater detail, heat maps were developed to depict the parking demand observed during the overall peak Weekday and Saturday counts. The maps provided detail only the actual observed parking occupancy and do not include the impact of counting the private parking areas that were inaccessible, but counted in the occupancy numbers as being full.

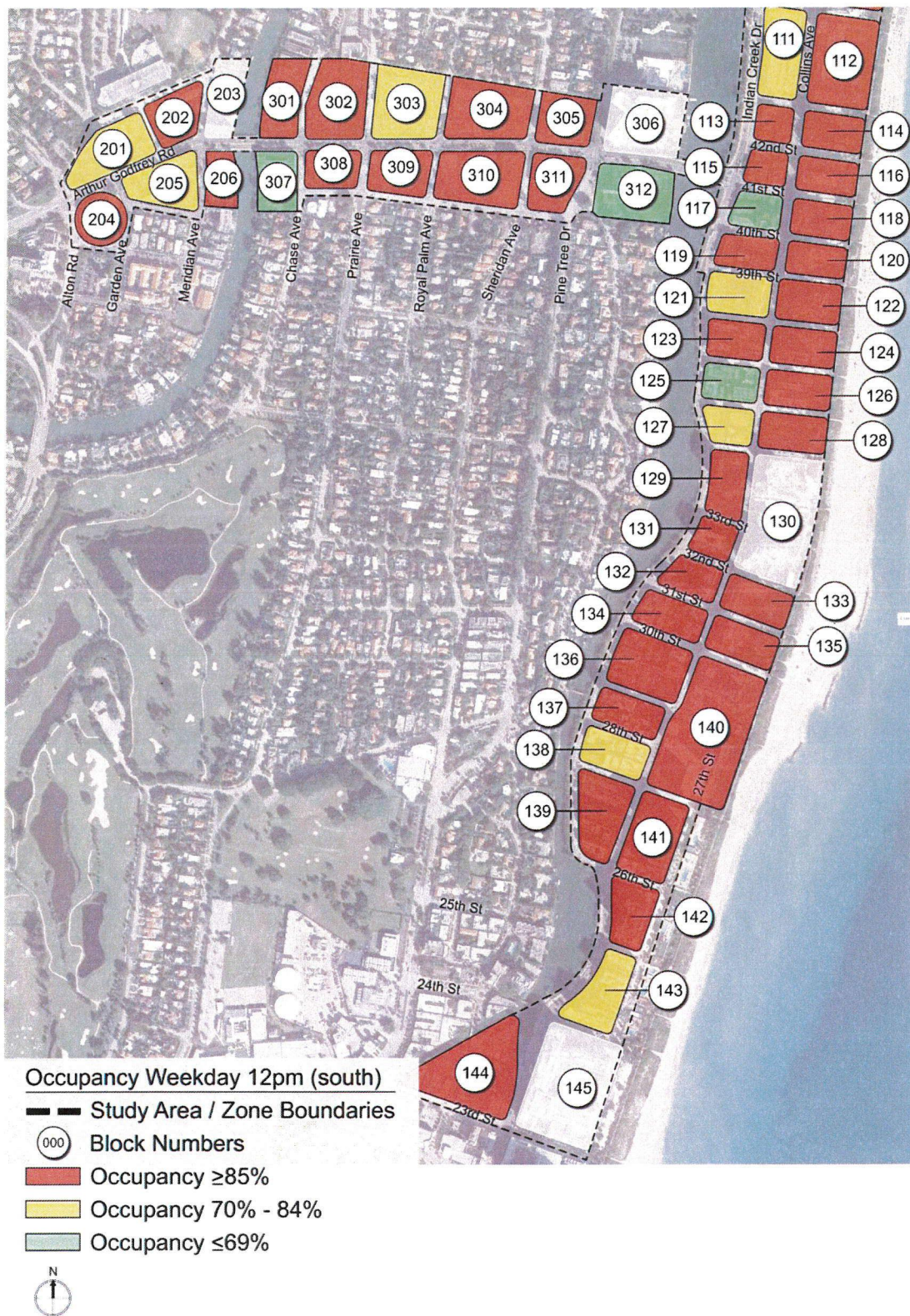
The first set of maps show the weekday peak observation for both Middle Beach and the 41st Street Corridor, which were both observed during the 12:00 p.m. observation. These maps show that most areas exceed the level that users can easily find a parking space.

Blocks that are greyed out did not have any public or private parking directly observable, although private gated parking was available and counted in the overall analysis as being full.

The second set of maps show the peak Saturday count with the Middle Beach area shown during the 10:00 p.m. count (with the 41st Street Corridor shown during the 7:00 p.m. count) and the 41st Street Corridor map showing the peak observation that occurred during the 3:00 p.m. count. The variation in count times is noted on the map. The maps show that the 41st Street Corridor experienced a dramatic reduction in parking demand during the Saturday observations. The Middle Beach area continued to experience high demand within several blocks.

Figure 4: Heat Maps of Peak Weekday Parking Occupancy

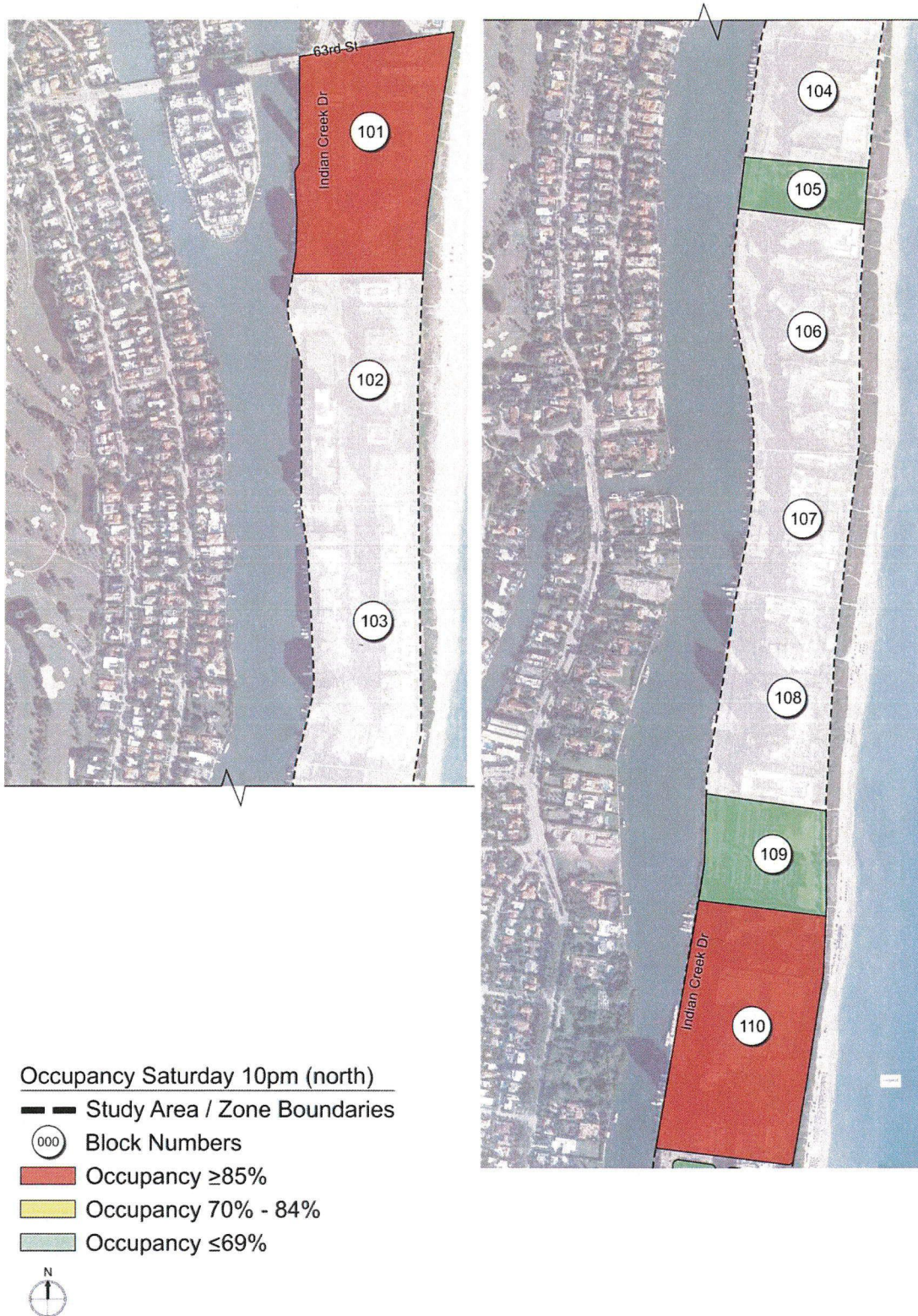


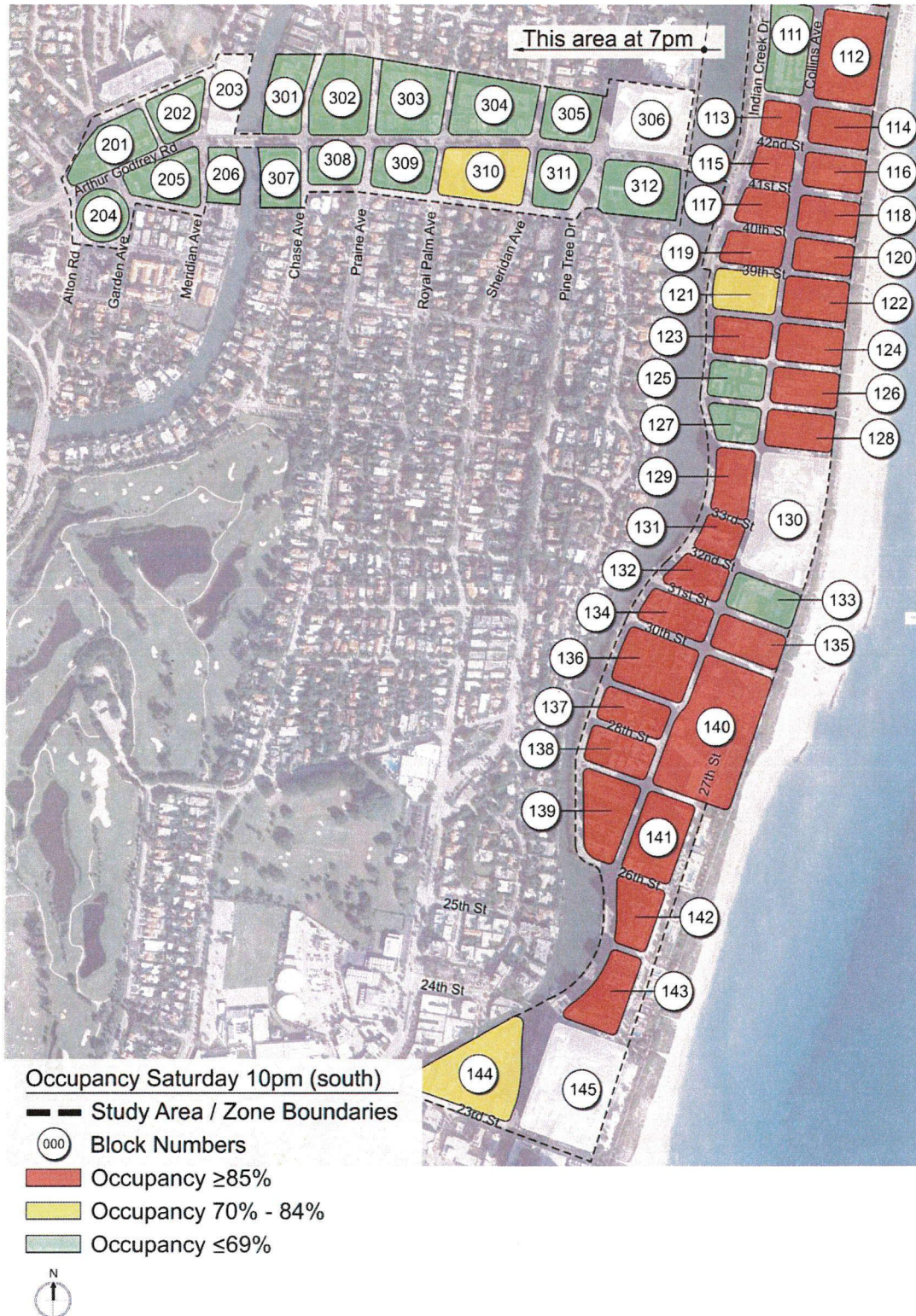


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Figure 5: Heat Maps of Peak Saturday Parking Occupancy (Middle Beach 10:00 pm)





Source: Walker Parking Consultants

Figure 6: Heat Map of Peak Saturday Parking Occupancy (41st Street Corridor – 3:00 pm)



Source: Walker Parking Consultants

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PARKING ADEQUACY

Parking adequacy is defined as the ability of the parking supply to accommodate the demand. The parking demand can vary throughout the year due to seasonality, weather, and local events. For comparison purposes, our analysis considers the observed peak conditions as representative of the parking demand for the area. The observed demand is subtracted from the effective parking supply to provide our opinion of the parking adequacy within the area. The following is an evaluation of the overall parking adequacy for each area.

MIDDLE BEACH PARKING ADEQUACY

Considering Middle Beach as a whole, on-street parking was operating at a 170 space deficit level during the peak observation. The following table shows the overall parking adequacy (surplus or deficit) of parking spaces within the study area.

Table 5: Middle Beach - Parking Adequacy

	On-Street	Off-Street			Total:
		City Lot	Public Garage	Private	
Effective Supply	571	694	605	15,165	17,035
Demand	741	677	515	14,448	16,381
Adequacy	(170)	17	90	717	654

Source: Walker Parking Consultants

To illustrate this data on a block-by-block basis, the following table provides the data by block.

Table 6: Middle Beach - Parking Adequacy by Block

Block	On-Street	Public City Lot	Public Garage	Off-Street Private	Total	Effective Supply	Surplus/ (Deficit)
101	32	0	0	1193	1225	1221	(4)
102	3	0	0	1837	1840	1837	(3)
103	0	0	0	1710	1710	1710	0
104	0	0	0	983	983	983	0
105	0	74	0	9	83	161	78
106	4	0	0	1639	1643	1639	(4)
107	2	0	0	865	867	865	(2)
108	9	0	0	1728	1737	1728	(9)
109	5	418	0	0	423	385	(38)
110	43	0	0	1098	1141	1120	(21)
111	26	0	515	160	701	785	84

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Block	On-Street	Public City Lot	Public Garage	Off-Street Private	Total	Effective Supply	Surplus/ (Deficit)
112	5	0	0	0	5	3	(2)
113	23	0	0	0	23	34	11
114	13	0	0	64	77	75	(2)
115	12	0	0	42	54	52	(2)
116	17	0	0	31	48	43	(5)
117	12	0	0	18	30	66	36
118	19	0	0	0	19	9	(10)
119	23	0	0	48	71	70	(1)
120	28	0	0	0	28	16	(12)
121	30	0	0	161	191	194	3
122	16	0	0	244	260	252	(8)
123	24	0	0	56	80	80	0
124	15	0	0	102	117	114	(3)
125	17	0	0	12	29	42	13
126	9	0	0	0	9	7	(2)
127	20	0	0	8	28	31	3
128	15	76	0	0	91	75	(16)
129	4	0	0	50	54	53	(1)
130	6	0	0	0	6	0	(6)
131	24	0	0	91	115	109	(6)
132	24	0	0	48	72	68	(4)
133	16	0	0	0	16	11	(5)
134	40	0	0	0	40	31	(9)
135	14	0	0	0	14	8	(6)
136	30	0	0	49	79	85	6
137	26	0	0	143	169	164	(5)
138	30	0	0	0	30	31	1
139	14	109	0	0	123	171	48
140	17	0	0	819	836	825	(11)
141	21	0	0	239	260	258	(2)
142	8	0	0	295	303	303	0
143	30	0	0	326	356	358	2
144	15	0	0	80	95	100	5
145	0	0	0	300	300	863	563

Source: Walker Parking Consultants

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41ST STREET CORRIDOR PARKING ADEQUACY

The 41st Street Corridor peak observation indicates a deficit of 48 spaces for on-street parking, but a small surplus overall. The peak observation was during peak business hours during a weekday. Observations later during the weekday and all day Saturday were much lower and did not indicate parking issues as a whole. The following table shows the overall parking adequacy (surplus or deficit) of parking spaces within the study area.

Table 7: 41st Street Corridor - Parking Adequacy

	On-Street	City Garage	Off-Street		Total:
			City Lot	Private	
Effective Supply	319	558	444	870	2,191
Demand	367	550	408	792	2,117
Adequacy	(48)	8	36	78	74

Source: Walker Parking Consultants

To illustrate this data on a block-by-block basis, the following table provides the data by block.

Table 8: 41st Street Corridor - Parking Adequacy by Block

Block	On-Street	Public City Garage	Public City Lot	Off-Street Private	Total	Effective Supply	Surplus/ (Deficit)
201	34	0	49	115	198	205	7
202	24	0	18	46	88	96	8
203	5	0	0	0	5	0	(5)
204	16	0	0	0	16	26	10
205	26	0	0	0	26	55	29
206	6	0	0	0	6	12	6
301	29	0	0	17	46	40	(6)
302	32	0	0	0	32	27	(5)
303	26	0	175	0	201	215	14
304	40	550	0	0	590	595	5
305	13	0	0	55	68	58	(10)
306	0	0	0	428	428	428	0
307	5	0	55	0	60	85	25
308	20	0	0	30	50	46	(4)
309	23	0	66	0	89	85	(4)

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Block	On-Street	Public City Garage	Public City Lot	Off-Street Private	Total	Effective Supply	Surplus/ (Deficit)
310	30	0	45	11	86	87	1
311	38	0	0	61	99	89	(10)
312	0	0	0	29	29	42	13

Source: Walker Parking Consultants

PARKING TURNOVER

Walker conducted a parking turnover analysis using a sample of parking spaces within the study area. Spaces were observed on an hourly basis over the course of a day, and each space was noted as being empty or with a portion of parked vehicle's license plate number on a weekday and a weekend. The data allows the average length of stay to be calculated as well as the parking utilization of the sample.

The weekday sample includes a portion of Miami Beach Indian Beach lot and an on-street area of Collins Avenue with meters. Occupancy was at or near 100 percent for most of the day, as shown in the following table.

Table 9: Weekday Occupancy Sample

LPI Occupancy Results					Hourly Occupancies								Peak Hour
Area	Street:	Type:	Street/Lot:	Total Inventory	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	9 am - 2 pm
Middle Beach	Lot	Lot	Indian Beach	17	17	17	17	17	17	17	17	17	17
Middle Beach	Collins	Metered	43rd	16	16	16	16	16	16	16	15	15	16
Total Occupancies				33	33	33	33	33	33	33	32	32	33
% Occupied					100%	100%	100%	100%	100%	100%	97%	97%	100%

Source: Walker Parking Consultants

The average length of stay during the observations for the surface lot was 4.5 hours and the metered area was 4.3 hours. The overall average of the areas combined was 4.4 hours. Proportionally, short-term parking (two hours or less) was more prevalent at the metered spaces. The data is provided in the following table.

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Table 10: Weekday Length of Stay

LPI Length of Stay Results				Length of Stay								Average
Area	Street:	Location:	Sample	1 hr	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	
Middle Beach	Lot	Indian Beach	17	3	6	4	1	4	5	1	6	4.5
Middle Beach	Collins	43rd	16	8	5	0	0	1	8	1	6	4.3
Totals:			33	11	11	4	1	5	13	2	12	4.4
Total Hours:				11	22	12	4	25	78	14	96	

Source: Walker Parking Consultants

The Saturday sample was expanded to include residential parking areas and metered areas within the 41st Street Corridor area. Occupancy within the survey sample was high, ranging from 93 to 100 percent occupied. The overall occupancy data is provided in the following table.

Table 11: Weekend Occupancy Sample

LPI Occupancy Results					Hourly Occupancies								Peak Hour
Area	Street:	Type:	Street/Lot:	Total Inventory	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	12:00 PM
Middle Beach	Lot	MB 71	Lot	17	17	17	17	16	16	15	13	13	17
Middle Beach	Collins	Meters	43rd - 44th	16	16	16	16	16	16	16	16	16	16
41st St Corridor	40th Street	Residential	Meridian	20	20	20	20	20	20	20	18	19	20
41st St Corridor	42nd Street	Metered	Pine	29	26	28	29	29	29	28	29	29	29
Total Occupancies				82	79	81	82	81	81	79	76	77	82
% Occupied					96%	99%	100%	99%	99%	96%	93%	94%	100%

Source: Walker Parking Consultants

The average length of stay for the surfaced parking lot increased to 5.6 hours, while the metered areas decreased to 3.7 hours along Collins. The 41st Street Corridor areas averaged 4.2 hours duration for both the residential and metered areas.

Table 12: Weekend Length of Stay

LPI Length of Stay Results				Length of Stay								Average
Area	Street:	Location:	Sample	1 hr	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	
Middle Beach	Lot	MB 71	17	2	1	2	2	2	3	2	8	5.6
Middle Beach	Collins	Meters	16	8	5	6	4	6	0	2	4	3.7
41st St Corridor	40th Street	Residential	20	8	7	2	7	0	1	1	11	4.2
41st St Corridor	42nd Street	Metered	29	15	9	3	3	2	3	7	12	4.2
Totals:			82	33	22	13	16	10	7	12	35	4.3
Total Hours:				33	44	39	64	50	42	84	280	

Source: Walker Parking Consultants

FUTURE CONDITIONS

Redevelopment activity within portions of the Middle Beach area is strong, with several areas under construction during the observation phase. Specific project data for on-going and planned projects was not available at the time of this report; however, it is assumed that each new project will provide its own parking to some degree and the remaining increase in demand be included by using an annual increase in demand based on historical growth patterns.

HISTORICAL GROWTH

The annual growth rates for several key criteria were analyzed to project three potential future growth scenarios for the Middle Beach study area. The basis of the data is the *Economic Conditions* report compiled and provided by the Tourism, Cultural & Economic Development Department. Factors considered include North Beach annual hospitality sales; average daily population statistics; hotel occupancy rate; and Middle Beach jobs. Annual growth rates are calculated for each period covering 2007 – 2012 as shown in the following table. The criteria for all periods generate positive growth, ranging from 0.2 to 14.7 percent annual growth.

Table 13: Historical Annual Growth Data

Annual Periods	5	4	3	2	1
Criteria	'07-'12	'08-'12	'09-'12	'10-'12	'11-'12
Middle Beach Hotel Room Sales	20.0%	22.5%	18.3%	16.1%	19.3%
Food Sales	23.8%	27.2%	13.3%	10.1%	6.5%
Alcohol Sales	40.8%	48.6%	27.0%	19.5%	11.8%
Hospitality Sales	23.2%	26.5%	18.2%	15.1%	14.7%
Jobs	4.8%	5.5%	1.3%	1.5%	1.0%
Average Daily Population	4.3%	5.7%	4.9%	5.2%	10.1%
Hotel Occupancy	0.6%	1.1%	5.1%	5.3%	0.2%
Average Annual Growth	8.2%	9.7%	7.4%	6.8%	6.5%

Source: Select data from the Current Economic Conditions Report and Walker Parking Consultants

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GROWTH SCENARIOS

Based on the historical data shown in the previous table and our understanding of the potential for development within the selected study area, three annual growth scenarios were developed to project the overall change in the parking demand. The annual growth rate percentage scenarios are shown below.

Table 14: Annual Growth Scenarios

Scenario 1 (Smallest annual jobs growth)	1.0%	Annual Growth
Scenario 2 (Average annual jobs growth)	2.8%	Annual Growth
Scenario 3 (Smallest annual average growth)	6.5%	Annual Growth

Source: Select data from the Current Economic Conditions Report and Walker Parking Consultants

FUTURE PARKING ADEQUACY

The projected parking adequacy over the next ten years is provided for both the Middle Beach and 41st Street Corridor using each of the three annual growth rate scenarios. The projections shown apply the annual growth rate scenario to the observed peak occupancy to project future parking demand and adequacy. The portion of private parking that was not directly observable is excluded from the impact of the annual growth rate, as these areas are already counted as being fully occupied.

Table 15: Projected Future Parking Adequacy – Middle Beach

Year	EPS	Scenario 1		Scenario 2		Scenario 3	
		Demand	Adequacy	Demand	Adequacy	Demand	Adequacy
2015	17,035	16,406	629	16,453	582	16,547	488
2016	17,035	16,431	604	16,527	508	16,724	311
2017	17,035	16,456	579	16,603	432	16,913	122
2018	17,035	16,482	553	16,681	354	17,114	(79)
2019	17,035	16,508	527	16,762	273	17,328	(293)
2020	17,035	16,534	501	16,845	190	17,556	(521)
2021	17,035	16,560	475	16,930	105	17,798	(763)
2022	17,035	16,587	448	17,018	17	18,056	(1,021)
2023	17,035	16,614	421	17,108	(73)	18,331	(1,296)
2024	17,035	16,641	394	17,201	(166)	18,624	(1,589)

Source: Walker Parking Consultants

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Table 16: Projected Future Parking Adequacy – 41st Street Corridor

Year	EPS	Scenario 1		Scenario 2		Scenario 3	
		Demand	Adequacy	Demand	Adequacy	Demand	Adequacy
2015	2,191	2,129	62	2,152	39	2,197	(6)
2016	2,191	2,141	50	2,188	3	2,282	(91)
2017	2,191	2,153	38	2,225	(34)	2,373	(182)
2018	2,191	2,165	26	2,263	(72)	2,470	(279)
2019	2,191	2,178	13	2,302	(111)	2,573	(382)
2020	2,191	2,191	0	2,342	(151)	2,683	(492)
2021	2,191	2,204	(13)	2,383	(192)	2,800	(609)
2022	2,191	2,217	(26)	2,425	(234)	2,925	(734)
2023	2,191	2,230	(39)	2,468	(277)	3,058	(867)
2024	2,191	2,243	(52)	2,513	(322)	3,199	(1,008)

Source: Walker Parking Consultants

Land uses within the Middle Beach area vary significantly from the south end to the north end, with the north end consisting of primarily high rise condominiums and resort hotels. The southern end includes these uses as well as a mix of entertainment, low-rise apartments, and some retail uses. Although the overall projected demand does not indicate a direct deficit of parking as a whole within the next few years, there are already several blocks with parking adequacy issues that should be addressed.

The 41st Street Corridor indicates potential parking adequacy issues in the future; however, compared to Middle Beach and other areas, this area seems to be well established and will likely not experience growth in demand at the higher scenario levels. The observations were consistently lower for evenings and weekends compared to the weekday peak.

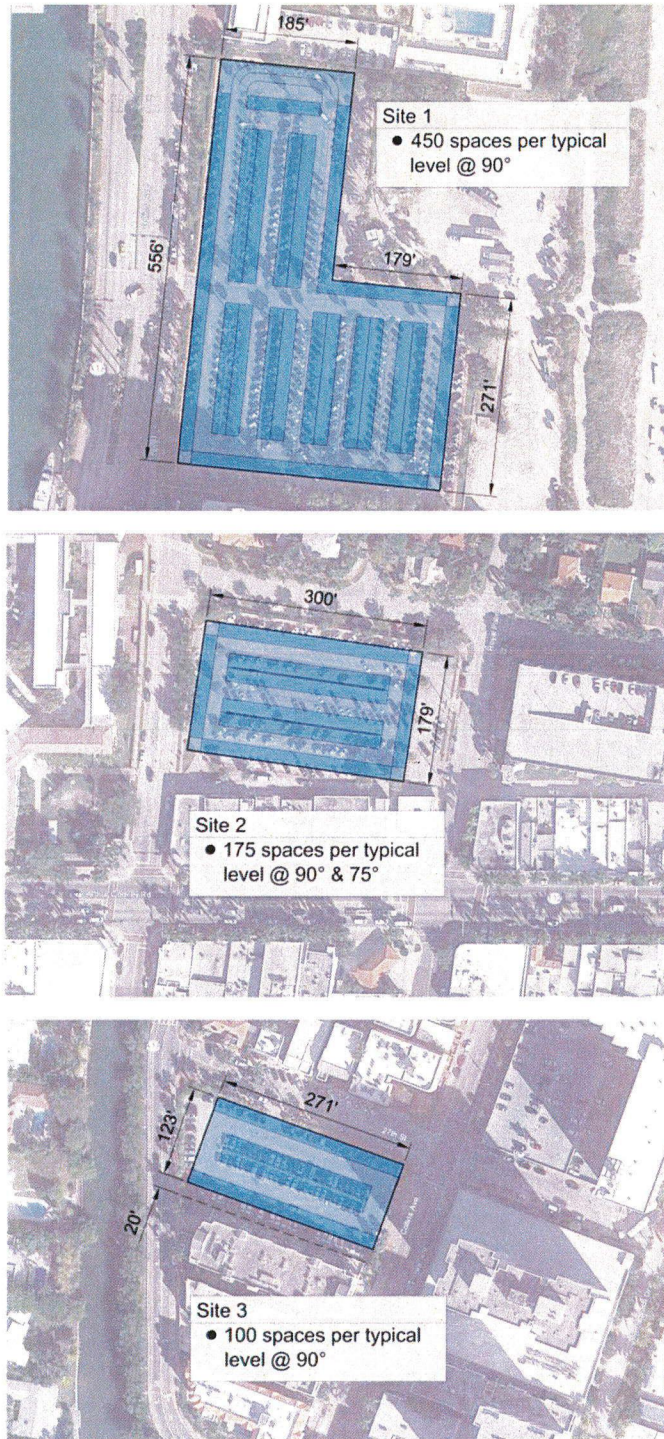
OPPORTUNITIES TO EXPAND PARKING

The City should consider its options to increase parking supply by adding structured parking on existing surface parking lots. On a conceptual basis our report outlines three potential sites for transforming existing City surface lots into parking structures. Key points considered in our evaluation are existing demand, location, and size of the parcel for an efficient layout.

The sites include the following lot numbers with illustrations on the following page:

1. MB 71 (46th Street)
2. MB 55 (27th Street)
3. MB 63 (41st Street Corridor)

Figure 7: Conceptual Parking Structure Layouts



Site 1 is located on the MB71 surface lot located at 46th and Collins Avenue (Indian Beach Park). This is a very large lot with multiple options to consider beyond what is shown when configured as a parking structure.

Site 2 is located on the MB63 surface lot located at 42nd Street and Royal Palm Avenue along the 41st Street Corridor. This site is considered a potential replacement for the existing 42nd Street garage which is aging and features a somewhat confusing functional design to users unfamiliar with the design. This site may also benefit potential redevelopment of the Roosevelt Theater which is located about a block to the southwest.

Site 3 is located on the MB55 surface lot located at 27th Street and Collins Avenue. The site can accommodate a two-bay structure and could allow commercial space along Collins Avenue. The total added capacity will depend on the overall height of the structure and if there is commercial space on the ground level.

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The three designs are conceptual layouts for sizing feasibility purposes only. The typical number of spaces per floor shown will vary for the ground and roof level based on the final design. Other factors impacting the final capacity numbers include:

- Commercial space at grade
- Set-back requirements
- Ingress/egress points
- Height restrictions
- Addition of below grade parking
- Displacement of existing parking

Other layout options may be feasible and further developed if further site development is pursued.

We recommend an in-depth site analysis for any preferred sites be conducted to include design options, sizing, market and preliminary financial analysis.



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PARKING MANAGEMENT STRATEGIES

Besides adding parking within the study area to increase capacity, we offer the following strategies to improve the parking experience and/or reduce parking demand within the study area in addition to adding parking capacity.

CAR SHARING PROGRAMS

Car sharing was noted as available in at least one location in Miami Beach at the 500 Collins garage as well as in the adjacent cities of Miami and Surfside. Car sharing can reduce parking demand by providing a network of privately owned vehicles that are rented by the hour or day to registered users. Costs for using a vehicle include all typical ownership costs, including gas and insurance. By having a car share service available, participants can have use of a vehicle when needed without having to actually own a vehicle. Studies and surveys indicate each car share vehicle in service can be used by 6 to 10 households, thus reducing parking and traffic congestion where successfully implemented.

- 2005 Transportation Research Board reported 21 percent of car share members gave up a vehicle after joining.
- 2006 survey by Flexcar and Zipcar in Washington DC indicated 30 percent of car share members gave up a vehicle after joining and 61 percent postponed purchasing another vehicle.



Some cities assist in promoting car sharing by providing strategically reserved parking spaces to store vehicles when not in use. Vendors include Car2Go, Zipcar, Hertz Connect, U-Haul Car Share, and Enterprise Car Share.

The large number of residential units in the study area could allow car sharing to reduce parking demand and give residents a viable option to vehicle ownership. At this time the City is working with a vendor to offer this service as an option to Miami Beach.

RESIDENTIAL PARKING ZONES

The City of Miami Beach currently provides residential parking zones in several areas of South Beach. Residential parking zones allow the on-street parking located in residential area to be used by legitimate residents located within the zone. Establishing a residential parking zone requires a majority of the local residents within the specific zone to vote and approve the parking zone. Once established, only residents within the area qualify to obtain a residential parking permit. This allows normally unrestricted parking to be reserved for residents and a limited number of guests to ensure non-residents do not park within the residential parking zone during the posted restricted time periods.



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OPTIONS WITHIN RESIDENTIAL PARKING ZONES

Specific Days/Hours of enforcement: This applies the restrictions during specific periods when residents are most likely in need of parking, such as in the evenings and weekends. This allows the spaces to be used by non-residents during un-restricted parking times.

Residential zones to 24/7 enforcement: While this provides a solution, it greatly reduces the availability of parking in certain areas that would otherwise benefit from sharing the parking assets when they are typically not needed by residents.

Adding paid parking for times during un-restricted parking: Parking meters are already located in some residential parking zones for use during non-restricted time periods. This can be effective, but may not be aesthetically desirable for some residential areas. In addition, the cost to install and maintain may not be justifiable as the main reason some of these un-restricted spaces are used is because there is no fee to park in these spaces.

Adding time restrictions during un-restricted parking periods: This option promotes turnover of the spaces during non-restricted time periods; however, it does require additional enforcement. It may also be a disadvantage for actual residents parking in the area.

Adding restrictions for non-residents while providing exemptions to permit holders: This option adds restrictions to non-residential permit holders during un-restricted time periods to encourage turn-over and discourages abuse of the parking during non-restricted time periods. Monterey, California allows residential permit holders to enjoy parking in their permit zones and to ignore posted time limit restrictions. In addition, registered permit holders may pay a discount for parking if payment is required.

To enforce unique restrictions within residential zones, a database of valid permit holder vehicle license plates allows mobile license plate recognition cameras to scan and identify non-registered vehicles.

BRANDING AND PROMOTING PARKING

Miami Beach has a website incorporated with the city website, as well as an App, to assist in promoting parking. Some cities have taken this a step further by branding their parking program with a unique logo and phrase. Branding examples include SF Park in San Francisco, L.A. Express Park in Los Angeles, the "Five Seasons" Transportation and Parking Department of Cedar Rapids, Iowa, and "Central City Parking" in Downtown Kalamazoo, Michigan. Branding can assist with educating the public on parking and providing a recognizable image to go to when thinking about parking.

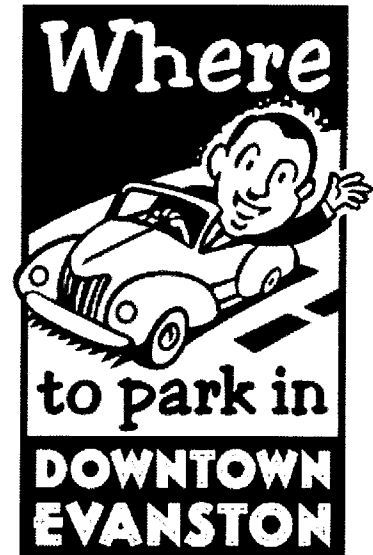
Verbal elements should include a name, style, and taglines. Visual elements include fonts, colors, shapes, and graphic elements (including logo). The elements and standards of the program should be used in a consistent manner. Ubiquity is achieved by using a full range of appropriate media.



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Actively communicating and marketing the available public parking spaces is a never ending marketing campaign. Many cities have developed brochures with a map showing public parking areas, city web-site links to a page that contains downtown parking information, and consistent signage and banners directing customers to public parking areas. The city's webpage can be linked to merchant and downtown association websites to encourage visitors to learn about parking before coming downtown. Downtown businesses and government offices should have parking brochures with maps available for the general public.



Evanston, Illinois, developed a "Where to park in Downtown Evanston" flyer and provided a copy on ticketed vehicles. The brochure includes a map of public parking options with rates designed to assist parkers so that they can avoid a ticket in the future.

DYNAMIC PRICING

Charging for parking is an effective strategy to encourage turnover and reducing parking demand. Some cities have effectively instituted dynamic pricing to further manage parking demand based the actual parking demand. Los Angeles, Seattle, and San Francisco all use parking occupancy to adjust on-street parking rates. Generally, occupancy greater than 85 percent results in a higher price. Occupancy levels below 85 percent result in a lower parking rate. Over time, this approach has been shown to spread parking demand to underutilized areas. Occupancy can be measured with sensors or regular visual counts. Changes to parking rates are typically subject to a maximum adjustment amount, frequency, and advance notification of changes.

Los Angeles California uses variable pricing by time of day, to reduce prices during known low demand periods and increase rates during known peak demand periods.

This strategy may be useful in Miami Beach during peak weekends or in season demand periods. Increases in funds may be used to add additional parking or features to the system. The popularity of the area may limit the effectiveness of the program in Miami Beach, as there are limited areas in the study area to redistribute parking demand during peak demand periods.

APPENDIX

OCCUPANCY MAPS



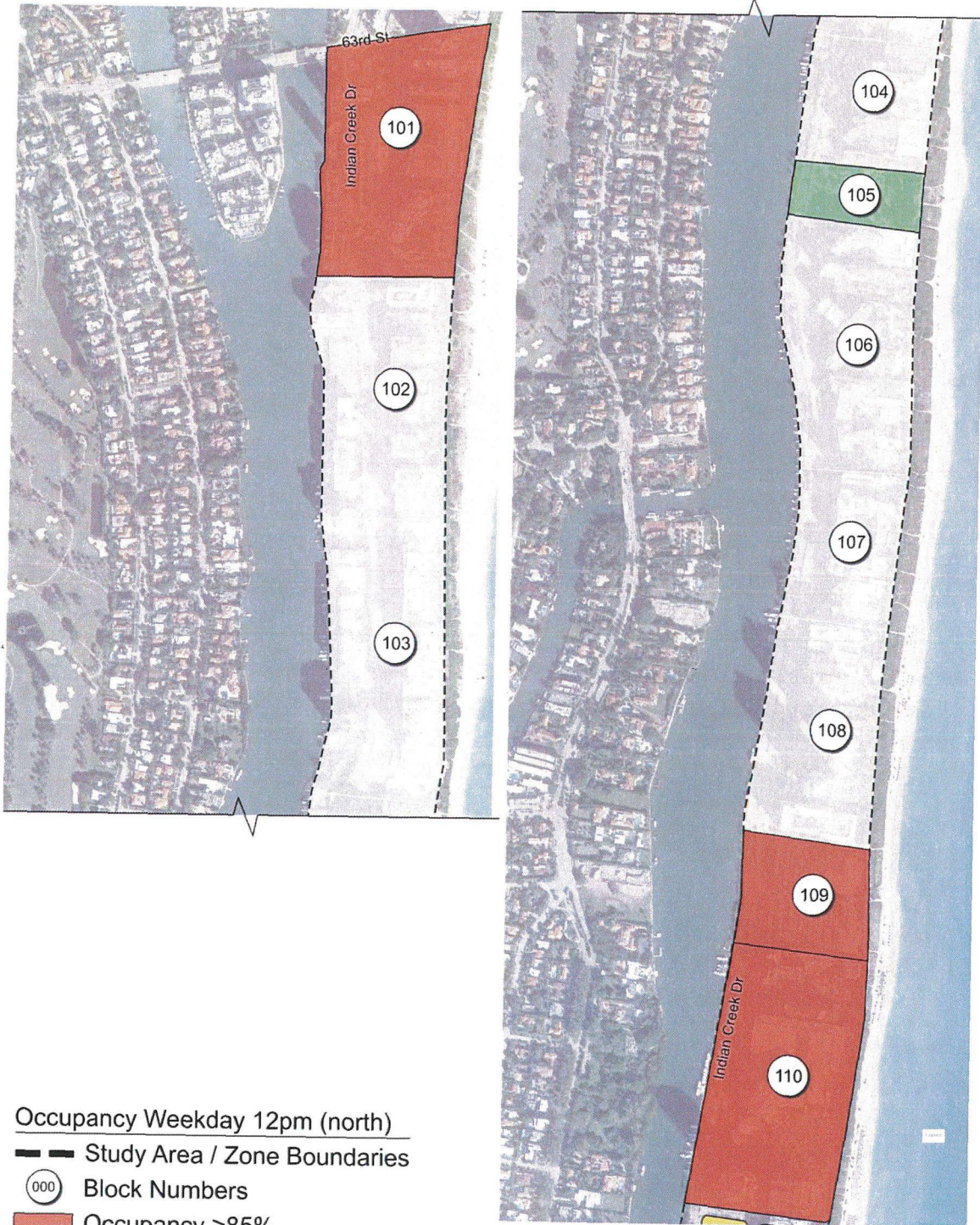
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Occupancy Weekday 12pm (north)

- Study Area / Zone Boundaries
- Block Numbers
- Occupancy $\geq 85\%$
- Occupancy 70% - 84%
- Occupancy $\leq 69\%$



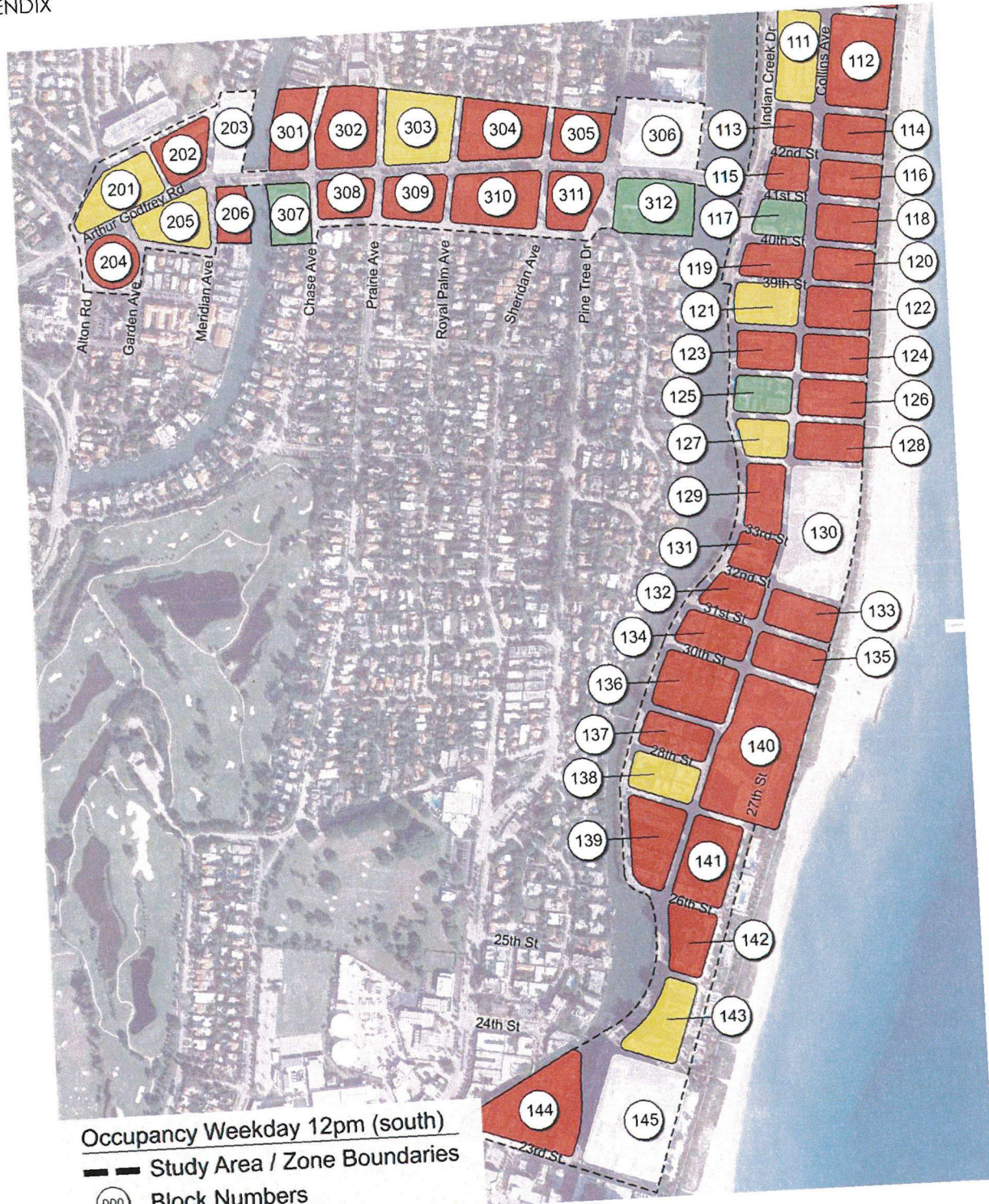
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Occupancy Weekday 12pm (south)

- Study Area / Zone Boundaries
- ⊙ Block Numbers
- █ Occupancy ≥85%
- █ Occupancy 70% - 84%
- █ Occupancy ≤69%



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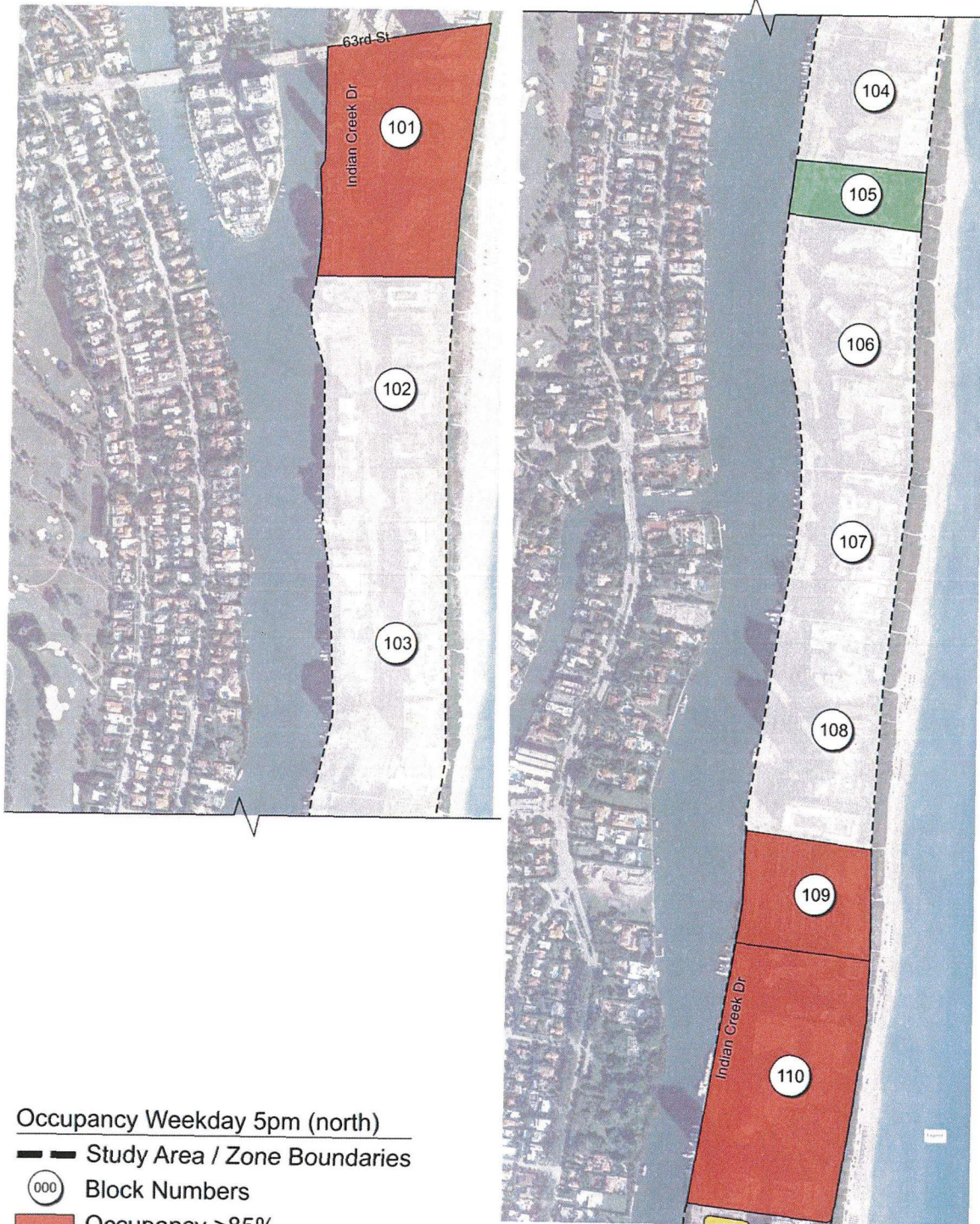
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Occupancy Weekday 5pm (north)

--- Study Area / Zone Boundaries

⊙ Block Numbers

█ Occupancy $\geq 85\%$

█ Occupancy 70% - 84%

█ Occupancy $\leq 69\%$





MIDDLE BEACH

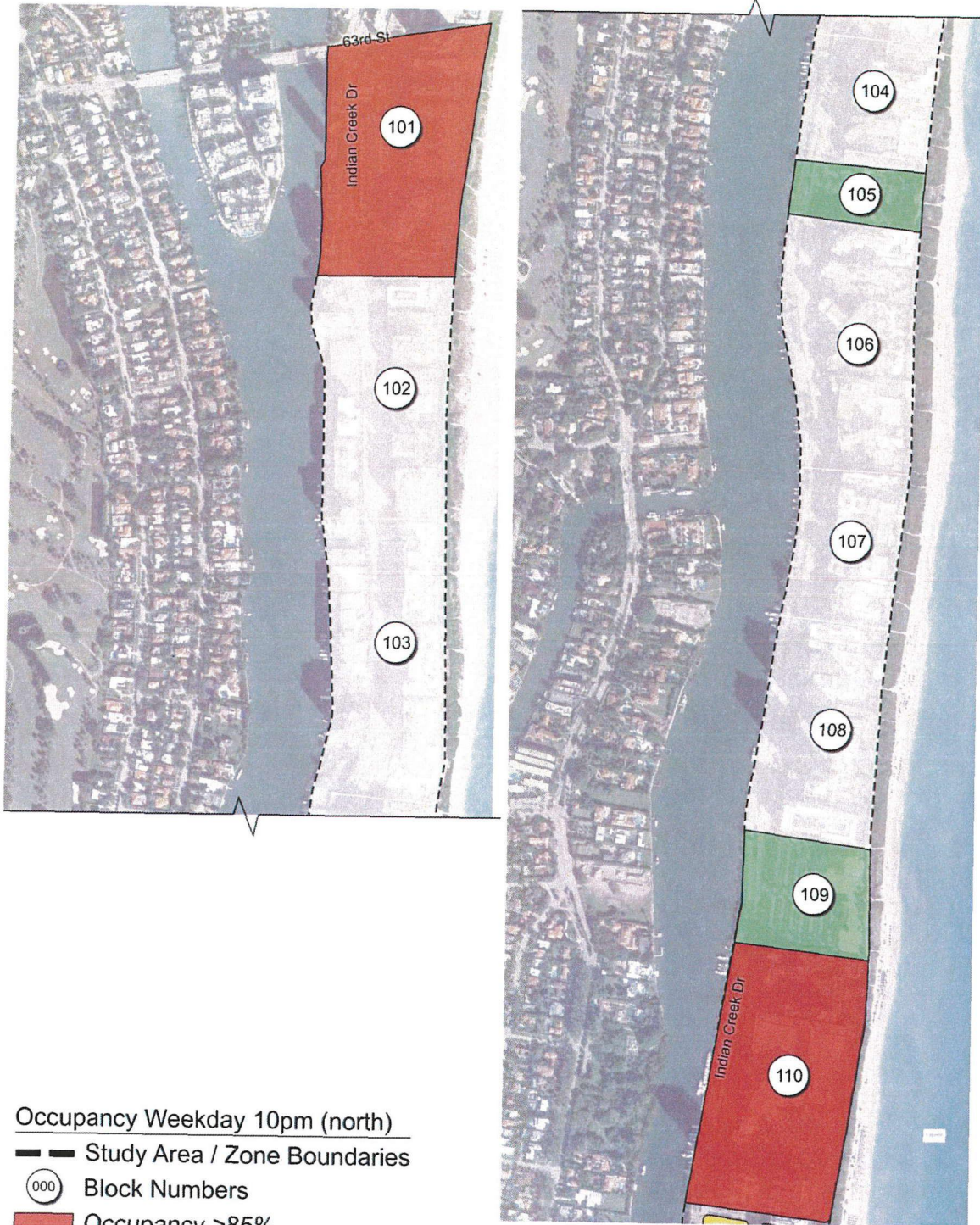
PARKING DEMAND ANALYSIS



WALKER
PARKING CONSULTANTS

APPENDIX

PROJECT # 15-1988.00



Occupancy Weekday 10pm (north)

--- Study Area / Zone Boundaries

⊙ Block Numbers

█ Occupancy $\geq 85\%$

█ Occupancy 70% - 84%

█ Occupancy $\leq 69\%$





MIDDLE BEACH

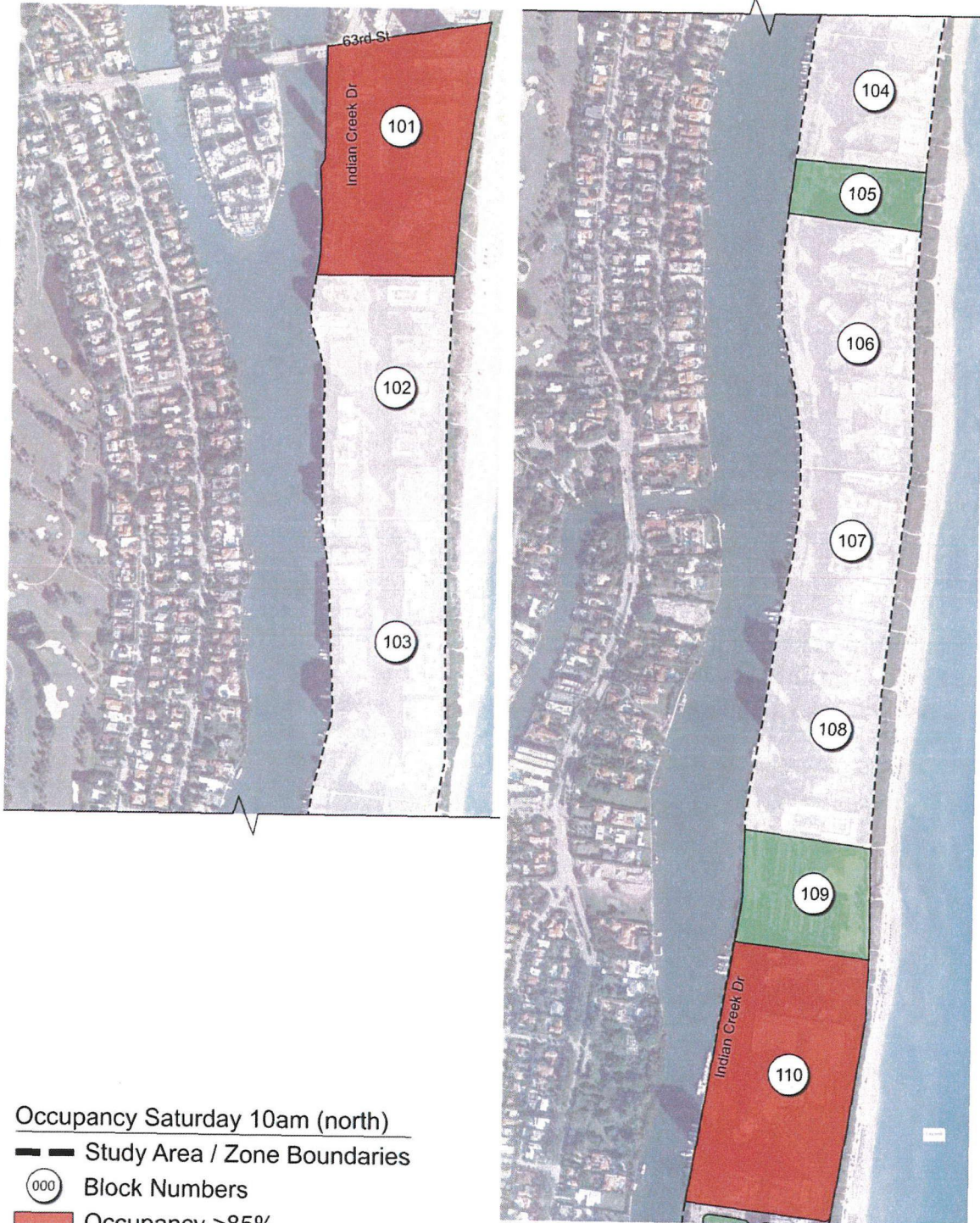
PARKING DEMAND ANALYSIS



WALKER
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APPENDIX

PROJECT # 15-1988.00



Occupancy Saturday 10am (north)

--- Study Area / Zone Boundaries

⊙ Block Numbers

█ Occupancy $\geq 85\%$

█ Occupancy 70% - 84%

█ Occupancy $\leq 69\%$



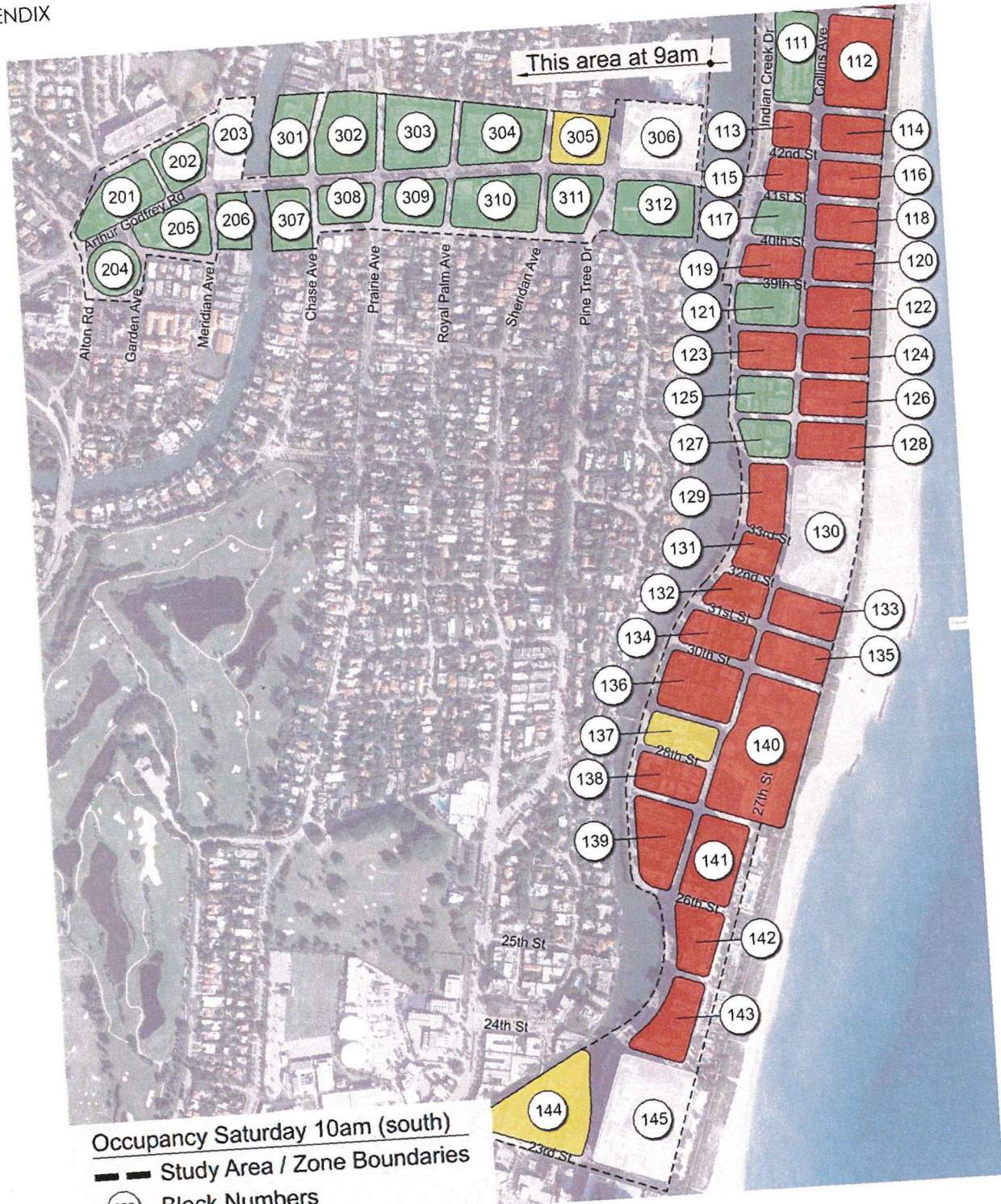
MIDDLE BEACH

PARKING DEMAND ANALYSIS



PROJECT # 15-1988.00

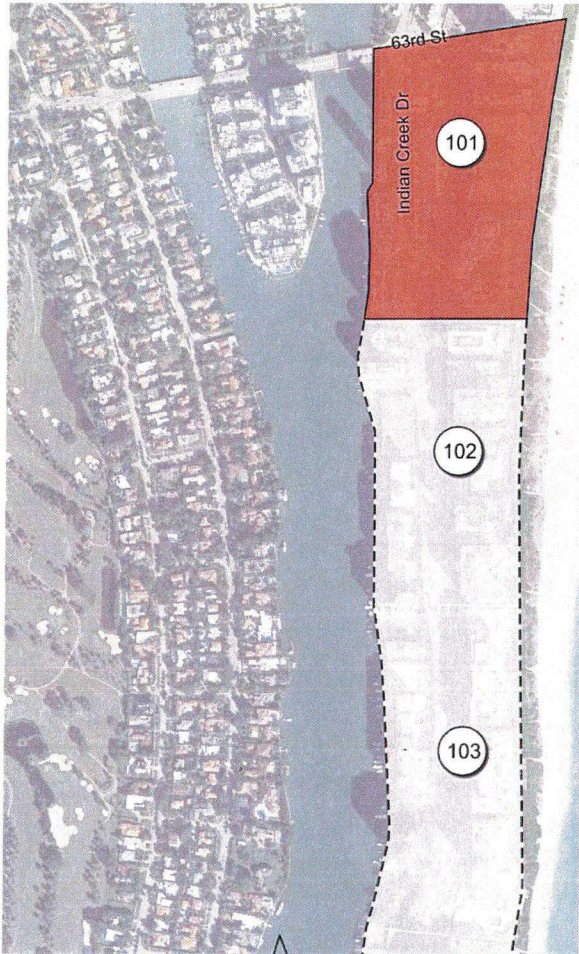
APPENDIX



Occupancy Saturday 10am (south)

- Study Area / Zone Boundaries
- Block Numbers
- Occupancy $\geq 85\%$
- Occupancy 70% - 84%
- Occupancy $\leq 69\%$





Occupancy Saturday 4pm (north)

— Study Area / Zone Boundaries

⊙ Block Numbers

█ Occupancy ≥85%

█ Occupancy 70% - 84%

█ Occupancy ≤69%





MIDDLE BEACH

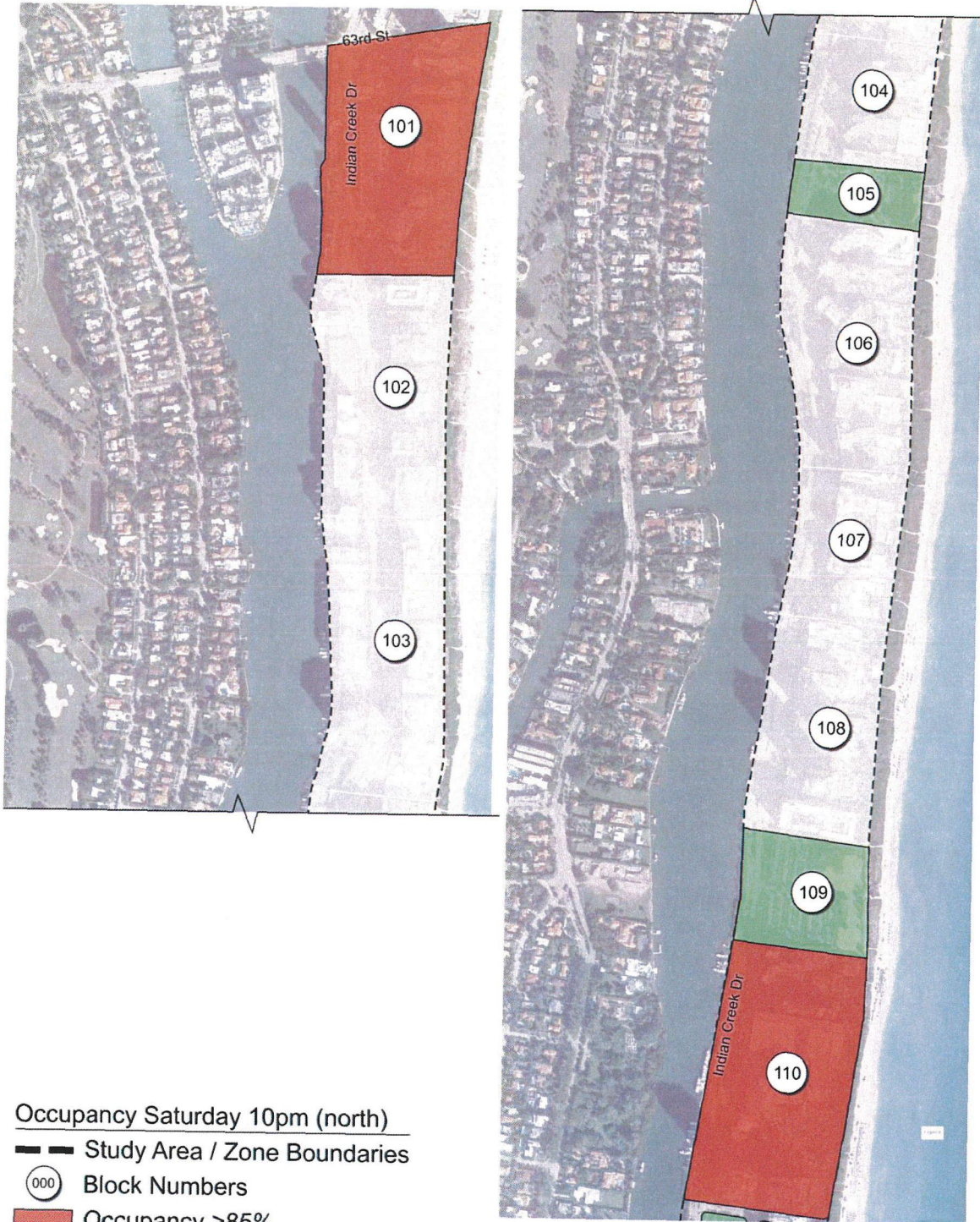
PARKING DEMAND ANALYSIS



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APPENDIX

PROJECT # 15-1988.00



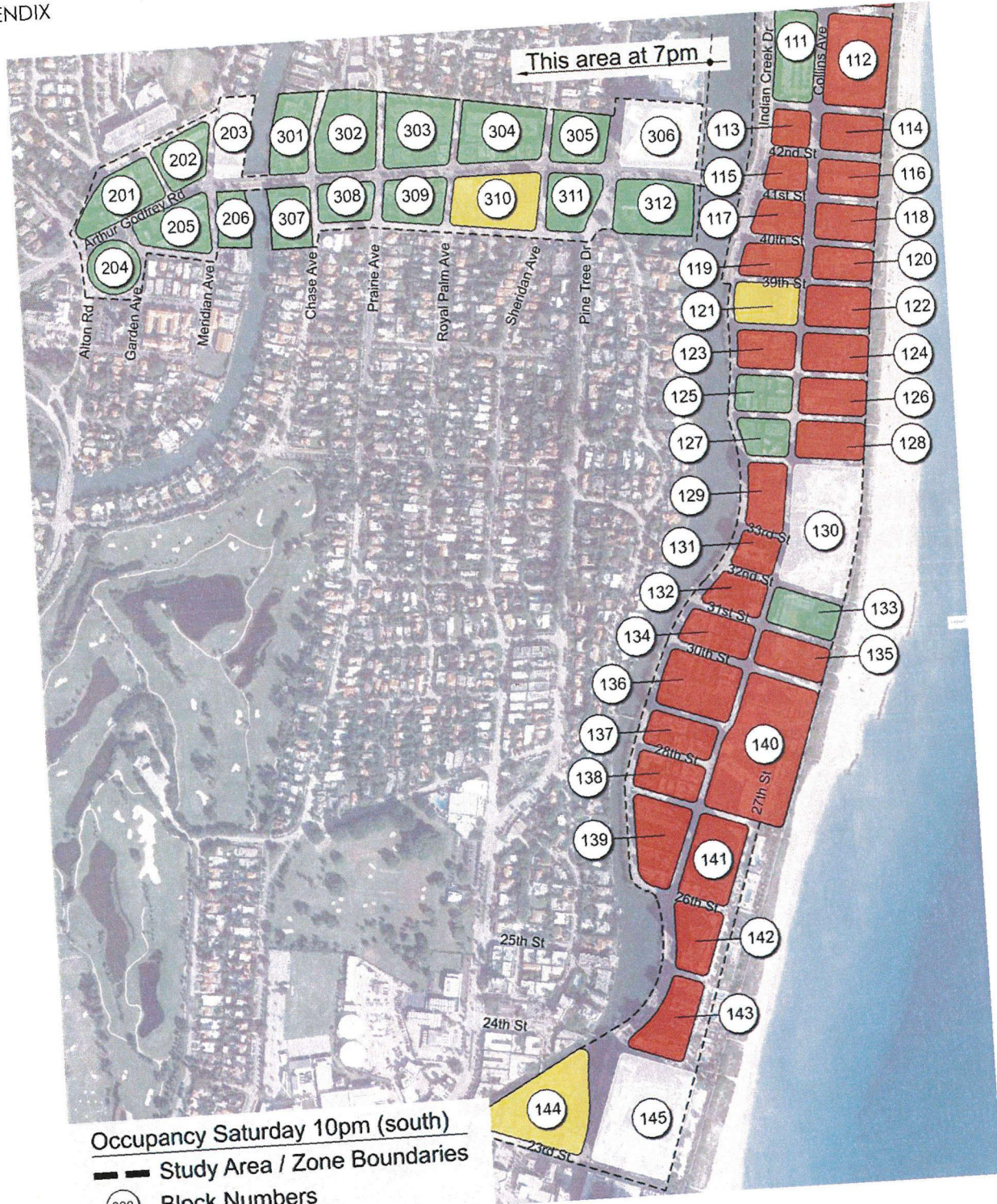
- Occupancy Saturday 10pm (north)
- Study Area / Zone Boundaries
 - Block Numbers
 - Occupancy $\geq 85\%$
 - Occupancy 70% - 84%
 - Occupancy $\leq 69\%$








MIDDLE BEACH

PARKING DEMAND ANALYSIS

APPENDIX



Occupancy Saturday 10pm (south)

-  Study Area / Zone Boundaries
-  Block Numbers
-  Occupancy ≥85%
-  Occupancy 70% - 84%
-  Occupancy ≤69%

