



WALKER
PARKING CONSULTANTS

DOWNTOWN AREA PARKING NEEDS
ASSESSMENT

CITY OF
MARSHALL/OAKLAWN
HOSPITAL
MARSHALL, MICHIGAN



July 18, 2011

Final Report



WALKER
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June 15, 2011
Revised July 18, 2011

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Re: Final Report
Walker Project # 20-1158.00

Gentlemen:

We are pleased to submit the enclosed final report entitled: Downtown Area Parking Needs Assessment. This document was prepared in accordance with our Professional Services Agreement with the City of Marshall and Oaklawn Hospital.

Regards,

WALKER PARKING CONSULTANTS

R. Jake Jeppeson
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Enclosure



WALKER
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DOWNTOWN AREA PARKING
NEEDS ASSESSMENT

CITY OF
MARSHALL/
OAKLAWN
HOSPITAL

MARSHALL, MICHIGAN

FINAL REPORT

20-1158.00

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**CITY OF MARSHALL/OAKLAWN HOSPITAL
DOWNTOWN AREA PARKING NEEDS ASSESSMENT**



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EXECUTIVE SUMMARY

The executive summary is provided to assist the reader in understanding key points within this report. The body of the report contains specific details of the project assumptions, analysis, and conclusions.

Walker Parking Consultants (“Walker”) was retained to conduct a parking needs assessment of the existing and future parking conditions at Oaklawn Hospital and downtown Marshall, Michigan. The purpose of the study is to provide the client with a clear understanding of the current and future parking needs along with alternative strategies that will help prepare the client to address future parking challenges. This included a review of the current parking supply, evaluation of current and future parking demand, and provided an evaluation of alternatives to increase the future parking supply to meet any anticipated future parking space shortfall.

The study area consists of 20 city blocks in the downtown Central Business District (CBD). The study area contains approximately 1,804± parking spaces, which is comprised of 677± public off-street spaces, 840± private off-street spaces and 287± on-street spaces.

The observed peak parking occupancy for the entire area was approximately 65 percent of the parking supply. While the occupancy level as a whole does not indicate a lack of parking supply, there are areas within the study area that experience high parking occupancy, particularly in Zone 3.

Zone 3, which contains the Oaklawn Hospital, currently operates with a 93-space parking deficit. Future projections, based on hospital growth data, indicate that by Year 4, the Zone will have an additional 119-space deficit, and by Year 20 an additional 230-space deficit will exist.

CONCLUSIONS/RECOMMENDATIONS

- A 20-block study area, divided into four zones was established for this analysis. The study area and zones are similar to the ones used in the 1996 Walker parking study.
- The study area contains 1,804 parking spaces, with an effective supply of 1,655 spaces.
- The peak parking occupancy observed was 1,164 cars, which is 65% of the total supply.
- While certain local blocks of downtown experience a deficit of parking supply during peak conditions, the overall supply appears to be sufficient and available in adjacent areas to offset any inconvenience that might exist, except in Zone 3.

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- Zone 3, containing Oaklawn Hospital currently is experiencing a 93 space parking deficit, when adjusted to the 95th percentile demand event. Walker recommends additional parking in the form of new or additions to existing surface parking are required in this zone.
- Additional immediate solutions recommended to help alleviate parking pressures in Zone 3 include
 - Continue to assign hospital employees to areas of the city with surplus parking (south of Michigan)
 - Continue to enforce designated parking areas
 - Encourage and promote ridesharing/carpooling, etc. for hospital employees
- When evaluating the future parking needs in Zone 3, the Year 4 demand creates a parking deficit of an additional 119 spaces. Walker recommends additional parking in the form of structured or additional surface parking is required in this zone to satisfy the demand.
- Zone 3 parking demand for Year 20 creates a parking deficit of an additional 230 spaces. Walker recommends additional parking in the form of additional surface or additions to the existing parking structure to satisfy the demand.

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INTRODUCTION

Marshall is a vibrant Midwestern town with a resident population that is proud of and active in their community. A significant feature in the community is Marshall's National Historic Landmark District. For many years, this collection of distinct residences and buildings have been celebrated annually through tours and supporting events, drawing significant numbers of tourists to Marshall. Another significant element is Marshall's community hospital. Unlike many other community hospitals in Michigan and throughout the country, Marshall's Oaklawn Hospital remains viable and is the largest employer in the community. The Hospital has maintained its viability through carefully managed growth; growth that was (and will remain) necessary for continued success.

A number of factors related to the Hospital's continuing need to grow are causing concern among residents. One factor in particular, parking, has become a key concern. Two recent projects have focused a spotlight on the parking challenges that face the Hospital. The Ricketson project expanded the Hospital's footprint to the west across Madison Street and included the relocation of two single-family homes to make room for parking that serves the expansion. That project, coupled with the new surgery project and loss of street parking from the Ricketson project, reduced by over 50 spaces the number of Hospital parking spaces available on-site or on North Madison across from the Hospital. The Hospital is currently facing a parking shortage for the Emergency Department and front entrance due to the recent loss of spaces because of expansion coupled with a significant increase in ED volume. In addition to these projects, the Hospital is considering further expansion in the future.

Responding to resident's concerns, Mayor Bruce Smith created the Hospital and Neighborhood Committee. This committee is comprised of a cross section of city residents and is charged with examining and evaluating both the residents' and the Hospital's concerns, issues, needs and wants. Ultimately, the committee is charged with developing consensus solutions that will address residents and Hospital concerns and needs.

The City of Marshall ("City") and Oaklawn Hospital ("Hospital") retained Walker Parking Consultants ("Walker") to conduct a parking needs assessment of the existing and future market conditions in downtown Marshall, Michigan. The purpose of the study is to provide the client with a clear understanding of the current and future parking needs along with alternative strategies that will help prepare the City to address future downtown parking

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challenges. This report outlines the key methods, research, analysis, findings and recommendations associated with the study.

REPORT ORGANIZATION

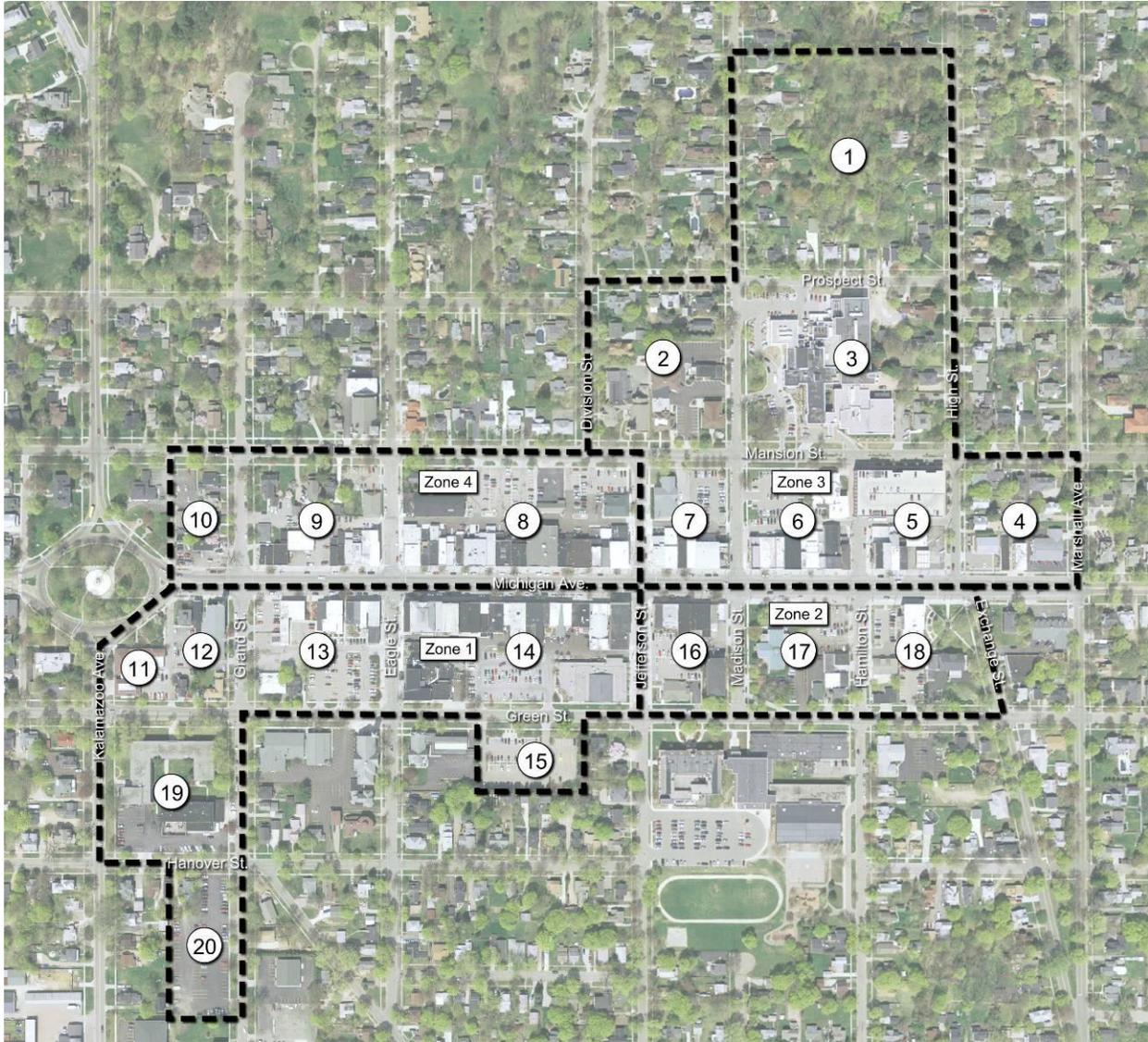
This report provides an orderly presentation of the project information available at the time the study was conducted. This organizational method was implemented to aid the reader in comprehending the analysis supporting all recommendations within this report. Key analysis components of this study include: (1) a detailed evaluation of existing and future parking inventory, occupancy and adequacy; and (2) an assessment of potential alternatives to address existing and future parking needs. The Zone 3 parking analysis is separated from the rest of the CBD study area in this report to better understand the hospital parking impact and needs.

STUDY AREA

The study area encompassed 20 city blocks. The study area was divided into four zones, so that localized parking surpluses and shortages can be evaluated more effectively. (see figure 1)

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Figure 1: Study Area



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This section of the report deals with Zone 3 of the study area which is where Oaklawn Hospital is located.

**ZONE 3
PARKING INVENTORY AND
UTILIZATION**

STUDY METHODOLOGY

Walker conducted parking occupancy counts on December 15, 2010. These occupancy counts were collected hourly between 8:00 a.m., and 5:00 p.m.

The statistics and information used in this report (daily bed census, outpatient visits, and ER admissions) were provided by the client.

The information provided by the client was compared to the peak number of occupied spaces to determine parking demand ratios. These demand ratios were then used to project the current demand for each type of parking patron. Finally, the demand was compared to the existing parking supply to determine the current parking adequacy.

In order to determine future parking demand, the demand ratios calibrated from the occupancy counts were applied to growth statistics supplied by the client. Further explanation is found in the “Future Conditions” later in this section of the report.

PARKING SUPPLY

Field research performed on December 15, 2010 identified a total physical inventory of **521±** parking spaces within zone 3. A summary of current parking inventory with user groups noted is shown in the following table. (Note: this analysis does not include the 41 spaces on block 4. That supply and subsequent demand is included in the overall report.)

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Table 1: Parking Supply – Zone 3

Block	User Type	Supply
1	ER - On-Street	10
2	MOB - Patient/ Visitor	85
3	ER	8
5	Employee	187
5	Patient/ Visitor	162
6	Patient/ Visitor	56
6	Patient/ Visitor - On-street	13
Subtotal		521

EFFECTIVE SUPPLY

Once the inventory counts were performed, Walker applied an effective supply factor to the results. This factor represents the level at which a parking area operates at peak efficiency. Depending on the intended user group, optimum efficiency occurs when occupancy is no more than 85 to 95 percent of the total supply. The excess stalls provide a "cushion" to allow for the dynamics of vehicles moving in and out of parking stalls and to reduce the time required to search for the last few available spaces. This cushion also allows for daily, weekly and seasonal variations as well as vacancies created by restricting facilities to certain users, improperly parked vehicles, trash removal, and minor construction. Effective supply factors are adjusted by the type of patron and type of facility. Employees and physicians who tend to park in the same place every day are familiar with the parking system and require only a small circulation cushion; for this population we use a 95% factor. Patients and hospital visitors who are unfamiliar with the area will require a factor of 90%. On-street parking was adjusted to reflect a 15 percent cushion.

When the effective supply factor is applied to the total parking spaces in the study area, the effective supply is rendered. The effective parking supply is 477± spaces. The following table displays the calculations used to determine the effective supply.

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Table 2: Effective Parking Supply

Block	Type	User Type	Supply	Effective Supply Factor	Effective Supply
1	On-Street	ER - On-Street	10	85%	9
2	Lot	MOB - Patient/ Visitor	85	90%	77
3	Lot	ER	8	90%	7
5	Garage	Employee	187	95%	178
5	Garage	Patient/ Visitor	162	90%	146
6	Lot	Patient/ Visitor	56	90%	50
6	On-Street	Patient/ Visitor - On-street	13	85%	11
Subtotal			521		477

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NOTE: numbers may vary due to rounding

PARKING OCCUPANCY

Walker counted the number of parked cars hourly between 8:00 a.m. and 5:00 p.m. The results of the occupancy counts are summarized and expressed in the following table.

Table 3: Parking Occupancy

Number	User Type	Supply	OCCUPANCY COUNTS										
			8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	
1	ER - On-Street	10	3	3	4	5	4	1	1	2	1	0	
2	MOB - Patient/ Visitor	85	35	43	53	56	41	29	37	36	29	18	
3	ER	8	13	11	10	20	18	4	7	10	9	10	
5	Employee	187	137	143	143	153	150	147	144	137	100	66	
5	Patient/ Visitor	162	112	115	123	133	122	113	124	132	126	100	
6	Patient/ Visitor	56	49	49	49	50	40	50	56	53	55	44	
6	Patient/ Visitor - On-street	13	6	7	5	7	9	3	8	5	11	13	
14	Employee	0	10	14	12	17	16	17	12	14	10	6	
16	Employee	0	20	20	20	20	20	16	18	19	18	16	
17	Employee	0	8	8	8	8	6	6	5	4	3	3	
18	Employee	0	26	26	27	29	28	23	23	25	19	10	
18	MOB - Patient/ Visitor	0	12	12	12	12	10	10	10	10	8	4	
Subtotal			521	431	439	466	510	464	419	445	447	389	290

Note: Supply for blocks 14, 16, 17, and 18 is provided by city parking lots and is not included in the hospital supply numbers.

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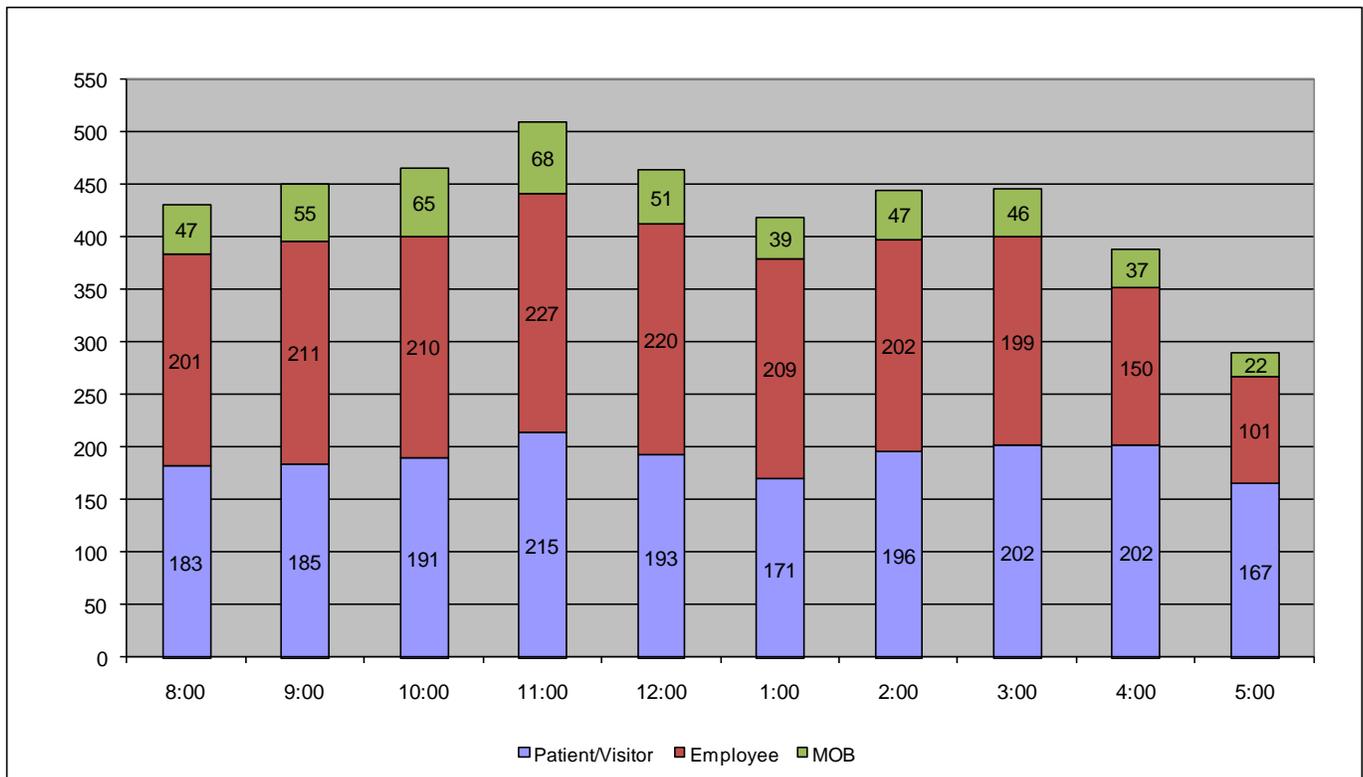
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Table 4: Peak Parking Occupancy by Group

	Supply	Current Peak Occupancy	Percent Occupied
Patients/ Visitors	249	215	86%
Employees/ Physicians	187	227	121%
<i>Subtotals</i>	<i>436</i>	<i>442</i>	<i>101%</i>
MOB	85	68	80%
Total	521	510	98%

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Figure 2: Parking Occupancy



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The peak occupancy occurred at 11:00 a.m. with a vehicle count of 510±. This represents 98% of the total supply being occupied.

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PARKING ADEQUACY

Parking adequacy is the ability of the parking supply to handle the parking demand. The following table represents the parking adequacy of the hospital under the current conditions. This calculation was made by subtracting the peak parking demand from the effective parking supply. The hospital parking system is judged to have a current parking deficit of 33± spaces, as illustrated in the following table.

Table 5: Peak Parking Adequacy by Group

	Effective Supply	Current Peak Occupancy	Percent Occupied	Adequacy
Patients/ Visitors	223	215	96%	8
Employees/ Physicians	178	198	111%	(20)
Subtotals	401	413	103%	(12)
MOB	77	97	127%	(21)
Total	477	510	107%	(33)

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NOTE: numbers may vary due to rounding

PARKING DEMAND RATIOS

The observed or allocated survey day peak parking space occupancy is compared to census data provided by the hospital to estimate the demand ratios for each user group. After the demand ratios developed by this analysis are tested for reasonableness and accuracy, these parking ratios are used to model parking demand within the Oaklawn Hospital parking system. The following table displays the group population statistics, the estimated peak hour parking occupancy by user group, and the resulting demand ratios for the survey day.

Table 6: Survey Day Demand

Patron	User Statistic	Parking Demand Ratio	Demand	Effective Supply	Adequacy
Physicians/ Employees	727	0.27 / FTE	198	178	(20)
Patients/ Visitors ¹	488	0.44 / Daily Activity Level	215	223	8
MOB	13	7.46 / Suite	97	77	(21)
Total			510	477	(33)

¹ (Average daily bed census, Outpatient visits, ED Registrations)

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NOTE: numbers may vary due to rounding

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DESIGN DAY PARKING DEMAND

Walker frequently recommends that hospitals design their parking supply to satisfy the 95th percentile level of activity. This level is usually equivalent to a very busy day that may occur once or twice a month. Designing parking to meet the absolute peak level of parking would leave many unused spaces during the majority of the year. Conversely, designing for the average level would mean inadequate parking about half the year. The 95th percentile level of parking demand is typically designated as the design day.

The day Walker conducted the counts, December 15, 2010, is referred to as the survey day. The level of activity on the survey day is then compared to 365 days of patient activity data to determine design day conditions. Therefore, Walker adjusted the level of activity on the survey day which was less than that of the 95th percentile level of activity on a design day. The level of activity on the survey day at the hospital campus was adjusted in comparison to design day levels of activity for inpatients, outpatients, and emergency room treatments.

The following table represents the parking adequacy of the hospital under the current design day conditions. This calculation was made by subtracting the estimated parking demand from the effective parking supply. The hospital parking system is judged to have a current parking deficit of 93± spaces.

Table 7: Design Day (adjusted)

Patron	User Statistic	Parking Demand Ratio	Demand	Effective Supply	Adequacy
Physicians/ Employees	727	0.27 / FTE	198	178	(20)
Patients/ Visitors ¹	624	0.44 / Daily Activity Level	275	223	(52)
MOB	13	7.46 / Suite	97	77	(21)
Total			570	477	(93)

¹ (Average daily bed census, Outpatient visits, ED Registrations)

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FUTURE CONDITIONS

Future parking conditions for Oaklawn Hospital will be most significantly influenced by planned expansions. The existing parking layout at the hospital will also change to accommodate the planned expansions on campus.

Future parking demand includes the increased parking demand associated with these improvements, as well as from general growth in hospital services and the associated medical practices. These assumptions are used to calculate the future parking shortage and the number of parking spaces to be constructed to supply the needed number of effective parking spaces.

HOSPITAL DATA

The hospital administration projects full and part-time employees, physicians, and staff (FTE's) and patient/visitor volumes to increase over the next four and 20 year planning horizons as outlined in the following table.

Table 8: Program Data

Hospital Statistics	Current	4 Year Projection	20 Year Projection
Total FTE Employees	727	875	1,100
Patients/ Visitors	624	752	963
MOB Suites	13	16	16
Auditorium (seats)	0	0	300

Oaklawn Hospital

Outpatient registrations, average daily bed census and emergency room visits are projected to increase based on the hospital's estimates. Walker calculated the daily projections for outpatients and E/D registrations by dividing the annual projections provided by Oaklawn Hospital by 260 days and 365 days, respectively.

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Table 9: Comparison of Statistics

Hospital Statistics:	Survey Day	Latest	4 year	20 year
		Fiscal Year		
Average Daily Bed Census	44	44.6	48	61
Outpatient Visits	386	147,438	159,700	202,538
E/ D Registrations	58	20,997	23,640	33,740

Oaklawn Hospital

FUTURE DEMAND – YEAR 4

Walker analyzed the planned population and statistical changes and incorporated them into the parking demand model. The future projections provided to Walker from the hospital includes changes in the user statistics, which are the foundation of the future parking demand.

The demand model for Year 4 is displayed in the following table.

Table 10: Year 4 Parking Demand

Patron	User Statistic	Parking Demand Ratio	Demand	Effective	Adequacy
				Supply	
Physicians/ Employees	875	0.27 / FTE	238	178	(61)
Patients/ Visitors ¹	752	0.44 / Daily Activity Level	331	223	(108)
MOB	16	7.46 / Suite	119	77	(43)
Total			689	477	(212)

¹ (Average daily bed census, Outpatient visits, ED Registrations)

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The future demand for Oaklawn is projected to be 689± spaces. This represents an increase of 119± spaces over the current adjusted design day demand. A parking deficit of 212± spaces is projected for the campus. (Assumes current deficit of -93 has not been resolved)

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FUTURE DEMAND – YEAR 20

Walker analyzed the planned population and statistical changes and incorporated them into the parking demand model. The future projections provided to Walker from the hospital includes changes in the user statistics, which are the foundation of the future parking demand.

The demand model for Year 20 is displayed in the following table.

Table 11: Year 20 Parking Demand

Patron	User Statistic	Parking Demand Ratio	Demand	Effective	
				Supply	Adequacy
Physicians/ Employees	1,100	0.27 / FTE	300	178	(122)
Patients/ Visitors ¹	963	0.44 / Daily Activity Level	425	223	(202)
MOB	16	7.46 / Suite	119	77	(43)
Auditorium	300	4.00 / seat	75	0	(75)
Total			919	477	(442)

¹ (Average daily bed census, Outpatient visits, ED Registrations)

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The future demand for Oaklawn is projected to be 919± spaces. This represents an increase of 349± spaces over the current adjusted design day demand. A parking deficit of 442± spaces is projected for the campus. (Assumes previous deficit of -212 has not been resolved)

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**CBD PARKING INVENTORY
 AND UTILIZATION**

The information contained herein serves as the basis for analysis of the existing and future parking needs. Included is a discussion of current parking supply, effective supply, parking demand, and parking adequacy for the entire Central Business District (CBD), including Zone 3.

CURRENT PARKING SUPPLY

The foundation of a parking demand analysis is an inventory of the parking supply. By examining an inventory of the parking supply and comparing it to the parking demand, we quantify the parking surplus or deficit that exists or may exist due to future development. When the parking supply exceeds the demand, a surplus of parking exists. Conversely, a deficit exists when parking demand exceeds the supply.

Field research performed on December 15, 2010 identified a total physical inventory of **1,804±** parking spaces within the entire 20-block study area. A summary of current parking inventory is shown in the following table.

Table 12: Summary of Parking Inventory

Zone	Public Lot	Public Garage	Private Lot	Private Garage	On-Street Supply	Off-Street Supply	Total Supply
1	259	0	290	0	83	549	632
2	88	0	62	0	63	150	213
3	45	162	224	187	84	618	702
4	123	0	77	0	57	200	257
Totals	515	162	653	187	287	1,517	1,804

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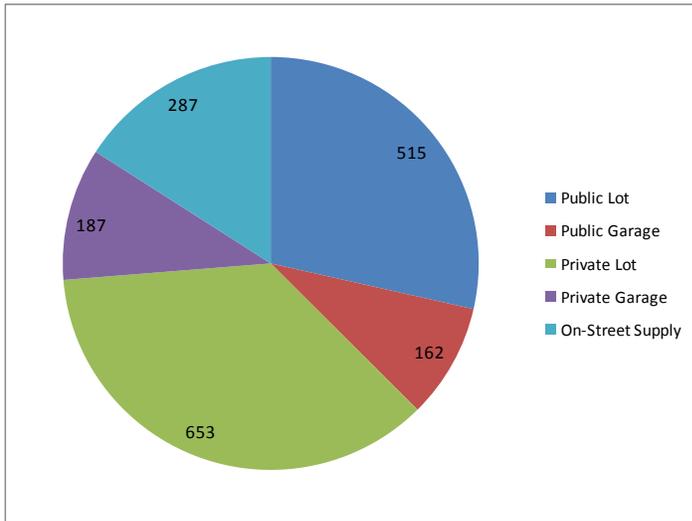
Table 13: Parking Supply

Block #	Public Lot	Public Garage	Private Lot	Private Garage	Off-Street Supply	On-Street Supply	Total Supply
1	0	0	0	0	0	10	10
2	0	0	85	0	85	21	106
3	0	0	27	0	27	0	27
4	0	0	31	0	31	10	41
5	0	162	15	187	364	8	372
6	8	0	56	0	64	13	77
7	37	0	10	0	47	22	69
8	105	0	29	0	134	36	170
9	18	0	30	0	48	19	67
10	0	0	18	0	18	2	20
11	0	0	12	0	12	9	21
12	0	0	36	0	36	10	46
13	96	0	39	0	135	13	148
14	76	0	26	0	102	17	119
15	87	0	18	0	105	16	121
16	38	0	10	0	48	22	70
17	31	0	23	0	54	21	75
18	19	0	29	0	48	20	68
19	0	0	43	0	43	18	61
20	0	0	116	0	116	0	116
Totals	515	162	653	187	1,517	287	1,804

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Figure 3: Parking Inventory by Type



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Of the total spaces available in the study area, 840 spaces, or forty-seven (47%) percent, are privately owned and accessible only to certain user groups such as employees or patrons of designated businesses. Many of the surface lots were open solely to building occupants or patrons. These spaces are categorized as *private* to reflect their non-availability to general public parkers. The physical condition of the private supply widely varies depending on owner, location, and frequency of use.

The public off-street parking supply represents 677 spaces, or thirty-eight (38%) percent of the total supply.

Public on-street parking consists of approximately 287 spaces or sixteen (16%) percent of the total downtown parking supply.

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EFFECTIVE SUPPLY

An important concept in the analysis of parking adequacy is that of the effective supply. To further analyze the inventory, Walker adjusted actual supply to reflect the *effective parking supply*. The effective parking supply represents the adjusted inventory of parking within the study area to allow for a cushion necessary for vehicles moving in and out of spaces and to reduce the time necessary to find the last few remaining spaces when the parking supply is nearly full. We derive the effective supply by deducting this cushion from the total parking capacity. The cushion allows for vacancies created by snow removal, misparked vehicles, minor construction, and storage of service vehicles and equipment. A parking supply operates at peak efficiency when parking occupancy is eighty-five (85%) to ninety-five (95%) percent of the supply. When occupancy exceeds this level, patrons are likely to experience delays and frustration while searching for a space. Therefore, the parking supply may be perceived as inadequate even though some spaces are available in the parking system. As a result, the effective parking supply is used in analyzing the adequacy of the parking system, rather than the total supply or inventory of spaces. Following are some factors that affect the efficiency of the 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, finding the available spaces is more difficult in a widespread parking area than in a centralized parking area.
- *Type of user* – Monthly or regular parking patrons can find the available spaces more efficiently than infrequent visitors because they are familiar with the layout of the parking facility and typically know where the spaces will be available when they are parking.
- *On-street vs. Off-street* – On-street parking spaces are less efficient than off-street spaces, due to the time it takes patrons to find vacant spaces and unclear signage that typically accompanies on-street parking systems. In addition, patrons are generally limited to one side of the street at a time and often must parallel park in traffic to use the space.

The calculated total effective supply cushion is approximately 149± spaces or eight (8%) percent. The effective parking supply for each zone and the study area as a whole is presented in the following table.

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Table 14: Summary of Effective Supply

Zone	Off-Street Public Supply	Effective Supply Factor	Effective Supply	Off-Street Private Supply	Effective Supply Factor	Effective Supply	On-Street Supply	Effective Supply Factor	Effective Supply	Total Effective Supply
1	259	0.90	232	290	0.95	275	83	0.85	71	578
2	88	0.90	79	62	0.95	60	63	0.85	54	193
3	207	0.90	186	411	0.95	391	84	0.85	73	650
4	123	0.90	111	77	0.95	74	57	0.85	49	234
Totals	677	0.90	608	840	0.95	800	287	0.85	247	1,655

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Table 15: Effective Supply

Block #	Off-Street Public Supply	Effective Supply Factor	Effective Supply	Off-Street Private Supply	Effective Supply Factor	Effective Supply	On-Street Supply	Effective Supply Factor	Effective Supply	Total Effective Supply
1	0	0.90	0	0	0.95	0	10	0.85	9	9
2	0	0.90	0	85	0.95	81	21	0.85	18	99
3	0	0.90	0	27	0.95	26	0	0.85	0	26
4	0	0.90	0	31	0.95	29	10	0.85	9	38
5	162	0.90	146	202	0.95	192	8	0.85	7	345
6	8	0.90	7	56	0.95	53	13	0.85	11	71
7	37	0.90	33	10	0.95	10	22	0.85	19	62
8	105	0.90	95	29	0.95	28	36	0.85	31	154
9	18	0.90	16	30	0.95	29	19	0.85	16	61
10	0	0.90	0	18	0.95	17	2	0.85	2	19
11	0	0.90	0	12	0.95	11	9	0.85	8	19
12	0	0.90	0	36	0.95	34	10	0.85	9	43
13	96	0.90	86	39	0.95	37	13	0.85	11	134
14	76	0.90	68	26	0.95	25	17	0.85	14	107
15	87	0.90	78	18	0.95	17	16	0.85	14	109
16	38	0.90	34	10	0.95	10	22	0.85	19	63
17	31	0.90	28	23	0.95	22	21	0.85	18	68
18	19	0.90	17	29	0.95	28	20	0.85	17	62
19	0	0.90	0	43	0.95	41	18	0.85	15	56
20	0	0.90	0	116	0.95	110	0	0.85	0	110
Totals	677	0.90	608	840	0.95	800	287	0.85	247	1,655

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CURRENT PARKING DEMAND

Demand for parking in downtown Marshall is a function of the relative attractiveness of the area for work, shopping, entertainment and living. Parking is not an end in of itself; rather it is a derivative of the demand for other activities and the travel characteristics of the market area. The quantity and type of activities within a market area most often determines the overall need for parking, as well as unique demand characteristics that relate to time-of-day, day-of-week and time-of-year variations.

PARKING OCCUPANCY

The methodology employed by Walker to evaluate the current parking demand is predicated on the analysis of current peak parking occupancy during a typical busy weekday. Walker evaluated the parking patterns in the study area by conducting hourly occupancy counts. Field data was collected on December 15, 2010. Parking counts were conducted by volunteers from the city and Walker staff.

The current parking occupancy rate in the study area, including all four zones, is approximately sixty-five (65%) percent during peak conditions on a typical weekday. Peak weekday conditions typically occur near the hour of 1:00 PM.

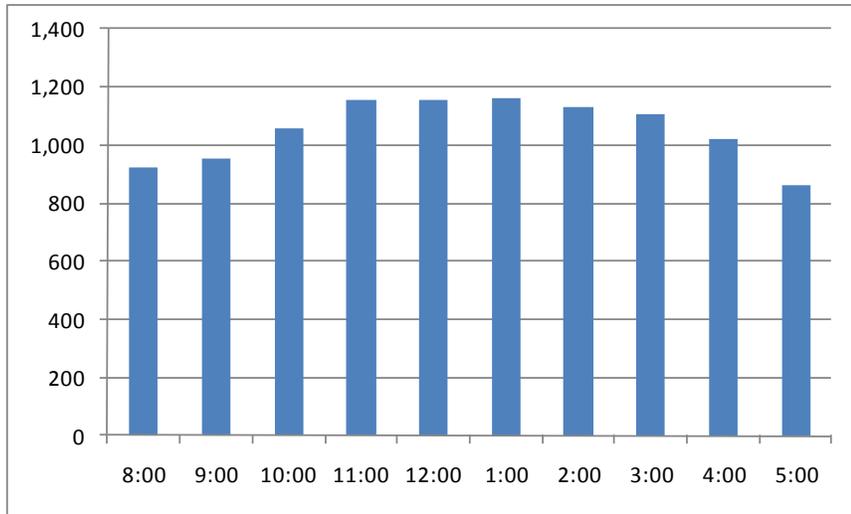
Table 16: Summary of Current Parking Occupancy

Type	Supply	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00
On-Street	287	125	115	143	164	191	188	181	175	168	138
Off-Street Public	677	322	329	391	435	473	492	457	450	438	391
Off-Street Private	840	475	509	521	559	489	484	496	484	414	334
Total	1,804	922	953	1,055	1,158	1,153	1,164	1,134	1,109	1,020	863

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Figure 4: Peak Parking Occupancy – All Zones



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The following tables highlight the peak weekday occupancy levels documented in each zone.

Table 17: Current Parking Occupancy Zone 1

Type	Supply	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00
On-Street	83	32	27	31	30	42	64	61	51	51	44
Off-Street Public	259	72	62	61	96	155	210	140	126	126	150
Off-Street Private	290	142	144	146	158	131	134	154	155	140	133
Total	632	246	233	238	284	328	408	355	332	317	327

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Parking in Zone 1 consists of a total 632 spaces. Dominate land uses are service, government, and retail. Weekday parking occupancy peaked at approximately 1:00 PM with 65% or 408 spaces occupied.

Table 18: Current Parking Occupancy Zone 2

**CITY OF MARSHALL/OAKLAWN HOSPITAL
DOWNTOWN AREA PARKING NEEDS ASSESSMENT**



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Type	Supply	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00
On-Street	63	32	32	39	50	49	49	43	41	41	21
Off-Street Public	88	72	72	74	72	58	58	60	52	54	39
Off-Street Private	62	49	49	45	42	34	34	35	36	28	20
Total	213	153	153	158	164	141	141	138	129	123	80

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Parking in Zone 2 consists of 213 spaces. Dominate land uses include retail, office, and government. Parking occupancy peaked at 11:00 AM with 77% or 164 spaces occupied. This peak is earlier than the overall study area peak of 1:00 PM.

Table 19: Current Parking Occupancy Zone 3

Type	Supply	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00
On-Street	84	24	24	39	48	55	27	33	35	40	31
Off-Street Public	207	137	141	162	172	164	151	157	169	159	127
Off-Street Private	411	267	280	292	314	276	257	257	250	202	154
Total	702	428	445	493	534	495	435	447	454	401	312

Walker Parking Consultants

Parking in Zone 3 consists of 702 spaces with a dominant presence of hospital related spaces. Land uses include health care, retail, office and residential. Weekday parking occupancy peaked at approximately 11:00 AM with 76% or 534 spaces occupied.

Table 20: Current Parking Occupancy Zone 4

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Type	Supply	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00
On-Street	57	37	32	34	36	45	48	44	48	36	42
Off-Street Public	123	41	54	94	95	96	73	100	103	99	75
Off-Street Private	77	17	36	38	45	48	59	50	43	44	27
Total	257	95	122	166	176	189	180	194	194	179	144

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Parking in Zone 4 consists of 257 spaces. Parking occupancy peaked at approximately 2:00 PM with 75% or 194 spaces occupied. The land uses in this zone include retail and office.

Even though an overall surplus of parking in downtown exists, there are localized pockets of demand that create the perception that the parking supply is inadequate.

A key area that experiences a lack of available parking is Zone 3, primarily due to the hospital demand in that zone. It should be noted that while some blocks were observed at over 100% occupancy during the peak demand period, adjacent blocks were at 50% occupancy or lower.

PARKING ADEQUACY

Parking adequacy is the ability of the parking supply to accommodate the parking demand. In the case of the Study Area, the demand is estimated based on the observed peak parking occupancy counts. The observed occupancy is subtracted from the effective parking supply to determine the adequacy for the study area. The parking adequacy for the Study Area by type is summarized in the following table.

CITY OF MARSHALL/OAKLAWN HOSPITAL
DOWNTOWN AREA PARKING NEEDS ASSESSMENT



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Table 21: Summary of Current Parking Adequacy by Zone

Zone	Off-Street			Off-Street			On-Street			Total
	Public Effective Supply	Peak Occupancy	Adequacy	Private Effective Supply	Peak Occupancy	Adequacy	Effective Supply	Peak Occupancy	Adequacy	
1	259	210	49	275	134	141	71	64	7	197
2	88	58	30	60	34	26	54	49	5	61
3	207	151	56	391	257	134	73	27	46	236
4	123	73	50	74	59	15	49	48	1	66
Totals	677	492	185	800	484	316	247	188	59	560

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Overall, the current parking system has a surplus of 501± off-street spaces and 59 on-street spaces during peak occupancy, which occurs during a weekday daytime. Note, Zone 3 adequacy numbers do not reflect adjustments for hospital peak demand, which is outlined in the previous section within this report.

The following table provides detail of the current parking adequacy by block.

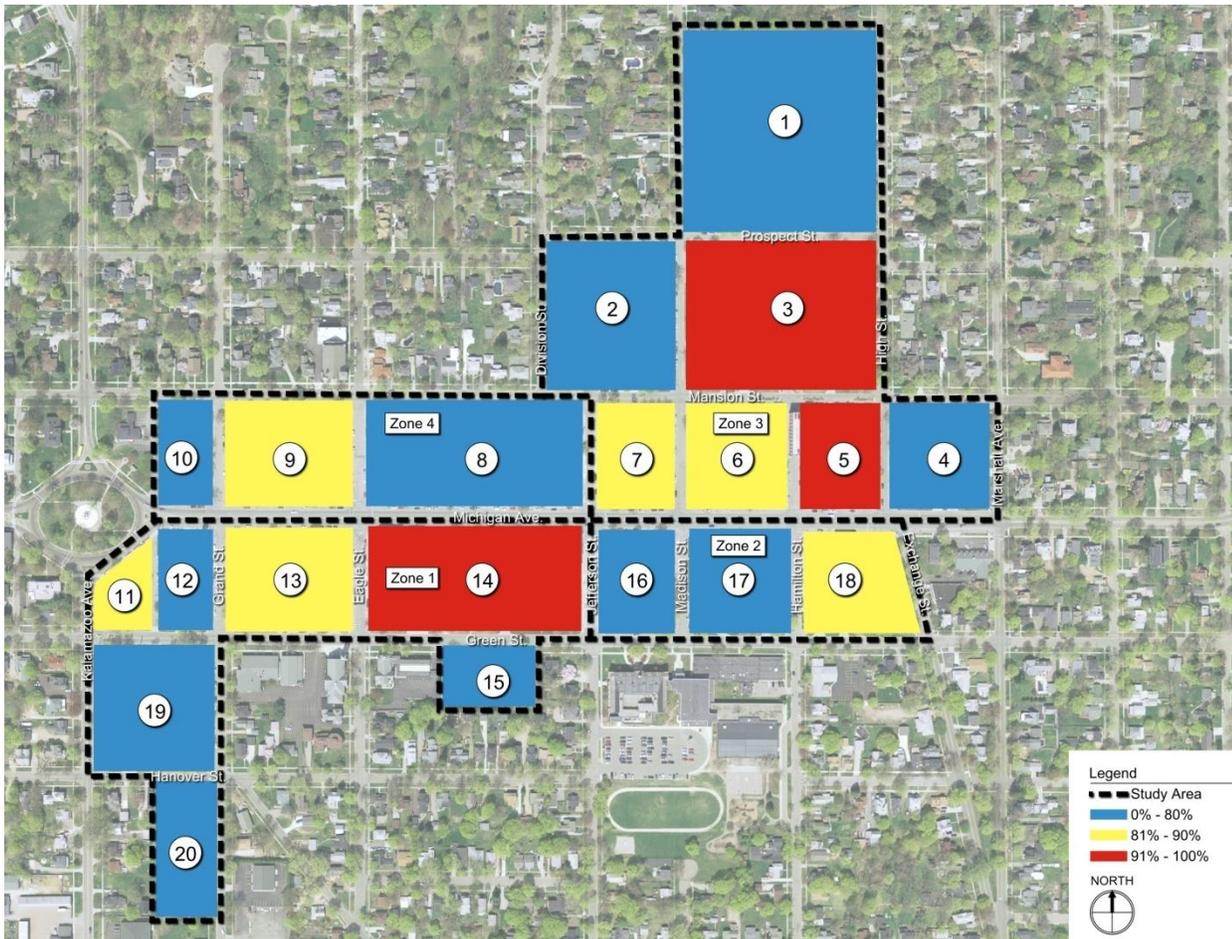
Table 22: Current Adequacy by Block

Block #	Off-Street			Off-Street			On-Street			Total
	Public Effective Supply	Peak Occupancy	Adequacy	Private Effective Supply	Peak Occupancy	Adequacy	Effective Supply	Peak Occupancy	Adequacy	
1	0	0	0	0	0	0	9	1	8	8
2	0	0	0	81	29	52	18	4	14	66
3	0	0	0	26	7	19	0	0	0	19
4	0	0	0	29	14	15	9	1	8	23
5	162	113	49	192	149	43	7	5	2	94
6	8	8	0	53	50	3	11	3	8	11
7	37	30	7	10	8	2	19	13	6	15
8	105	62	43	28	28	0	31	30	1	44
9	18	11	7	29	23	6	16	17	(1)	12
10	0	0	0	17	8	9	2	1	1	10
11	0	0	0	11	12	(1)	8	4	4	3
12	0	0	0	34	19	15	9	10	(1)	14
13	96	86	10	37	13	24	11	17	(6)	28
14	76	78	(2)	25	4	21	14	24	(10)	9
15	87	46	41	17	0	17	14	4	10	68
16	38	31	7	10	3	7	19	19	0	14
17	31	17	14	22	6	16	18	13	5	35
18	19	10	9	28	25	3	17	17	0	12
19	0	0	0	41	27	14	15	5	10	24
20	0	0	0	110	59	51	0	0	0	51
Totals	677	492	185	800	484	316	247	188	59	560

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Figure 5: Current Adequacy



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VEHICLE TURNOVER ANALYSIS

Walker completed a vehicle turnover analysis of specific on-street meter locations to evaluate turnover and duration during the hours of 8:00 AM to 5:00 PM on a weekday. The survey was completed on Wednesday, December 15, 2010. The north and south sides of Michigan Avenue, between Kalamazoo and Exchange, was selected for evaluation.

Overall, most vehicles observed the legal time limits. However, some violations of the time limit were observed, as shown in the Length of Stay table.

The average length of stay of the sample is 1.5 hours. Of the 1,979 parking stays documented in the turnover analysis, 172 stays exceeded 2-hours. This is equal to 8.7% of all stays recorded during the analysis.

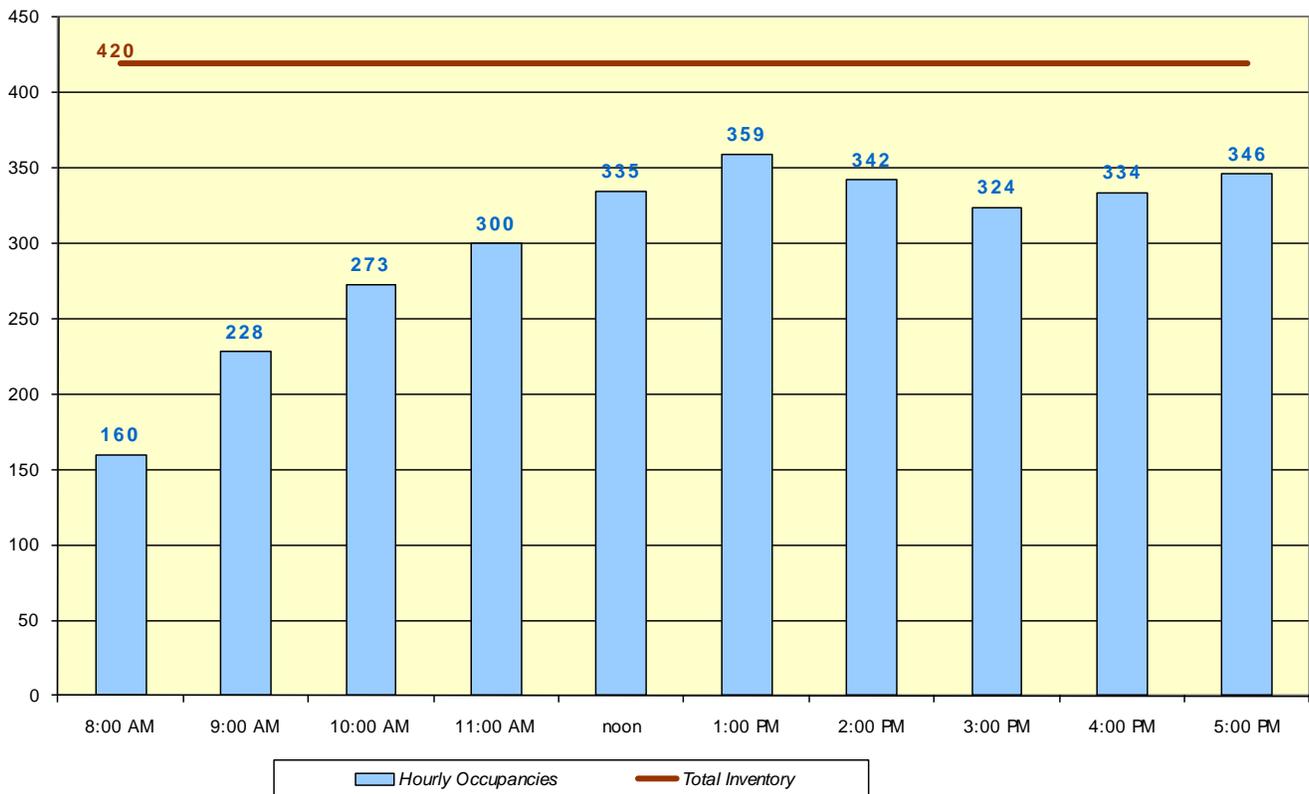
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Table 23: Vehicle Turnover Analysis Occupancy Summary

	Total Inventory	Hourly Occupancies										Peak Hour
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	noon	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	1:00 PM
Total Occupancies	420	160	228	273	300	335	359	342	324	334	346	359
% Occupied		38%	54%	65%	71%	80%	85%	81%	77%	80%	82%	85%

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Figure 6: Hourly Occupancy Summary



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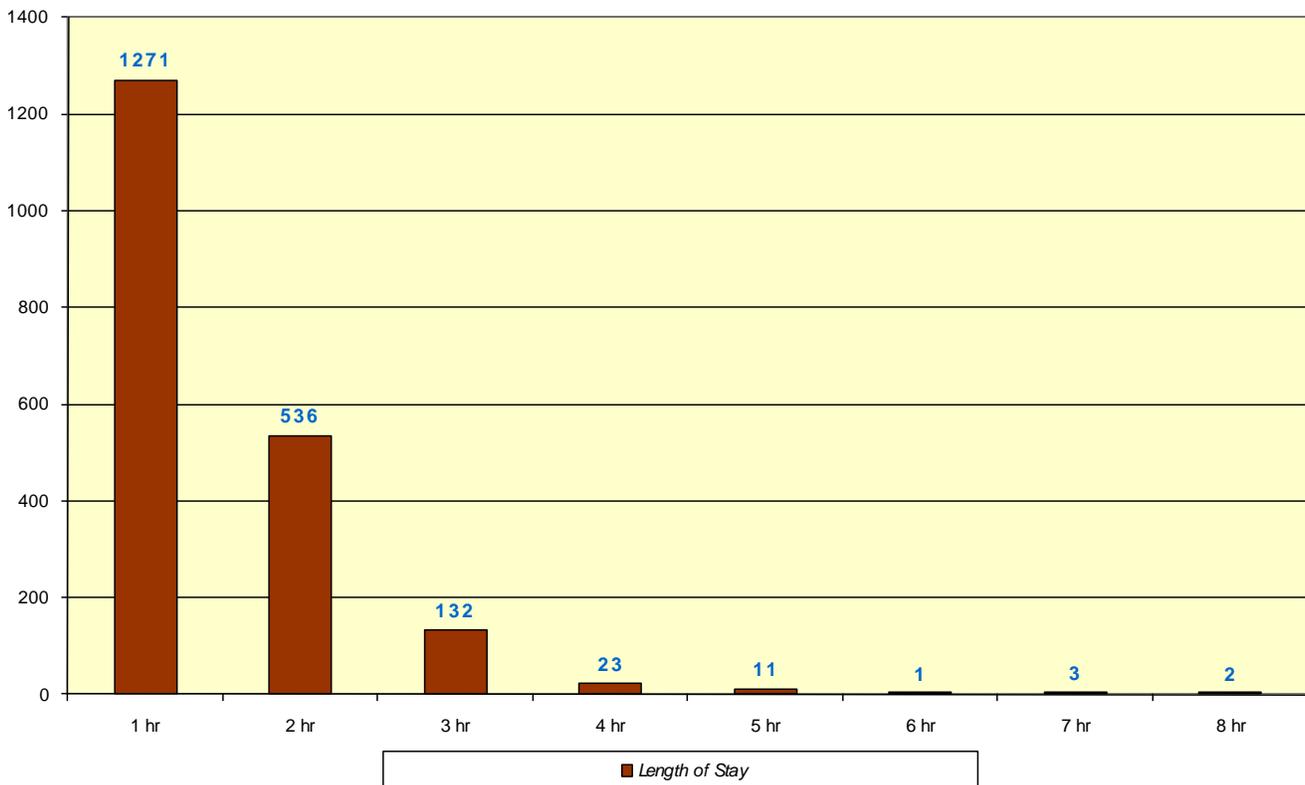
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Table 24: LPI Length of Stay

Total Inventory	Length of Stay								Average
	1 hr	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	
420	1271	536	132	23	11	1	3	2	1.5

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Figure 7: Length of Stay



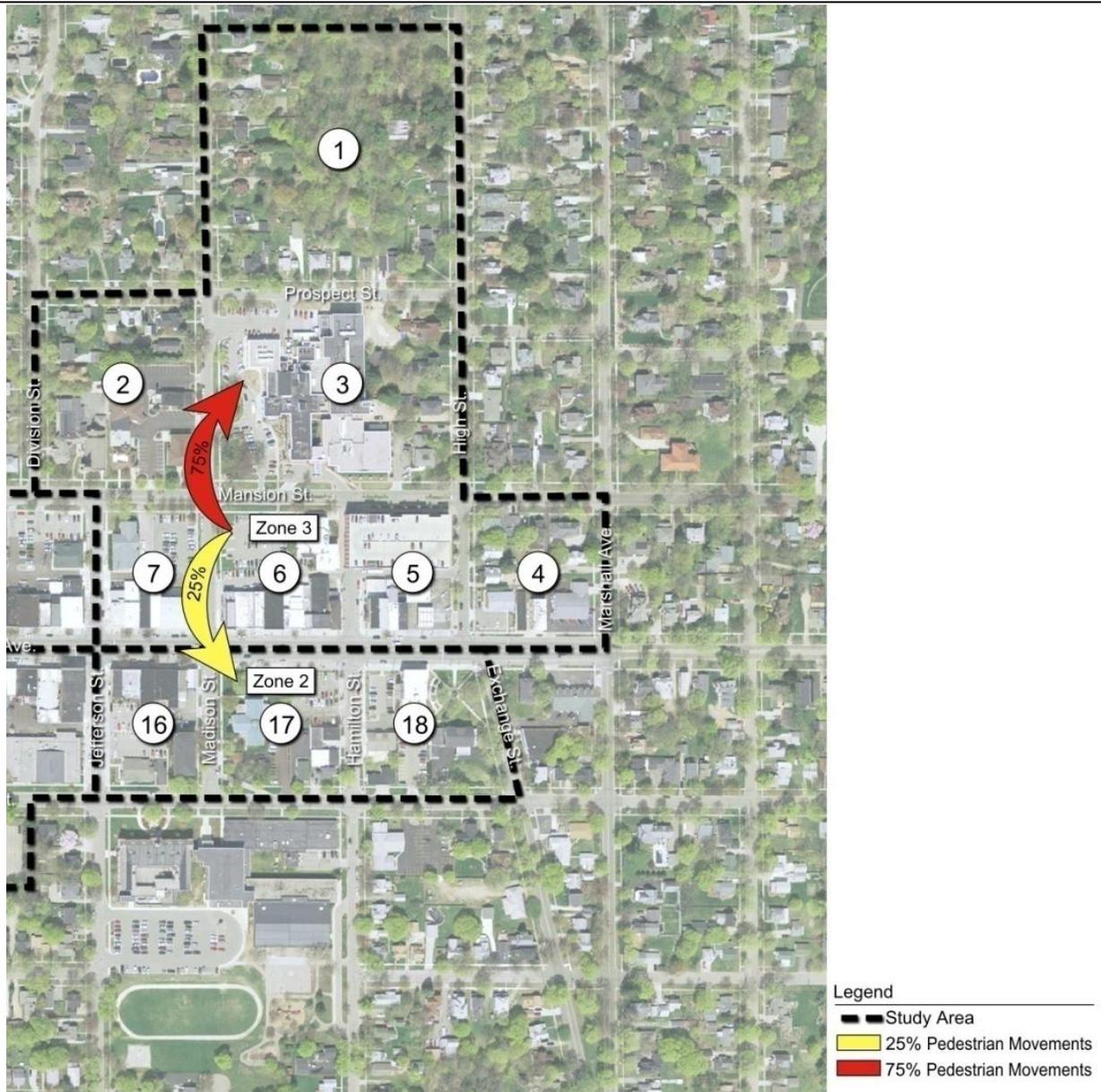
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PEDESTRIAN MOVEMENT OBSERVATION

During the data collection day, we conducted limited observations on pedestrian movement. Observations were made four different times during the day, comprising approximately 120 minutes of observation time. Based on limited observations, it is estimated that 75% of persons parking in the hospital lot went to the hospital, 25% walked in the direction of downtown.

Figure 8: Pedestrian Movement Observation



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FUTURE PARKING DEMAND

Parking demand refers to the amount of parking that is estimated to be used at a particular time, place, and price. It is a critical factor in evaluating parking problems and solutions. Parking demand is affected by vehicle ownership, trip rates, mode split, length of stay, geographic location, type of trip (work, shopping, special event), the quality of public transportation and factors such as fuel and parking costs. The methodology employed by Walker to project future demand combines the baseline demand which is equal to the observed peak weekday occupancy level, and any incremental change or growth in demand resulting from new land uses entering the study area. The baseline and incremental increase in parking demand are added together and then compared to the existing effective parking supply to determine the overall parking adequacy.

The new land uses to be located in the defined study area that sell products or services which are sensitive to business cycles impacted by macro variables and whose performance is strongly tied to the overall economy can impact the general need for parking. It is important to understand that parking is a derived demand and is susceptible to fluctuations based on changes in underlying economic conditions that drive the demand for primary activities in the study area. Historically, downtown Marshall has experienced comparable economic cycles of growth and decline as experienced by comparable downtown communities.

There are several proposed urban renewal and new downtown development projects that may directly impact public parking in downtown Marshall.

There are basically two different methods for projecting future parking volumes. One method involves the use of historical growth rates. The other method involves the collection of information regarding the proposed development that is likely to occur in terms of land use and square footage changes. This information regarding future developments allows the projecting of vehicular volumes and parking demands for these new uses. However, as the planning horizon extends further into the future, the ability to predict these changes becomes more and more difficult and less accurate.

GROWTH ASSUMPTIONS

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Using current parking demand as a baseline, a range of annual growth assumptions was applied. Three scenarios were evaluated: a low, medium and high growth rate, as it relates to parking demand. We assumed a 1% parking demand growth rate for years 1-4, a 0.05% parking demand growth rates for years 5-10, and a 0.0% parking demand growth for years 11-20.

FUTURE PARKING ADEQUACY

A fundamental aspect of any central business district or downtown area is the interplay of activities from block to block. Commonly, patrons of a downtown area park on one block and go to work and/or patronize a business on another block. Additionally, not all of the parking patrons bound for a particular block will choose to park if there is a sufficient amount of available space. Market factors, especially price, walking distance and convenient access will result in significant interplay between blocks. For these reasons, it is not critical to focus on the balance for any individual block. Rather, the focus is on the defined zones within each of the three districts.

Parking adequacy is defined as the difference between the effective parking supply provided and the parking demand generated by various land uses within a given area.

The following tables (25 & 26) show the projected future parking adequacy by type (on-street, public off-street, private off-street and total) for the two planning horizons (4 year, and 20 year).

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Table 25: Future Parking Adequacy – Year 4

	Effective Supply	Peak Demand	
		Current	Projected 1% <i>growth</i>
On-Street	247	188	196
Adequacy		59	51

	Effective Supply	Peak Demand	
		Current	Projected 1% <i>growth</i>
Public Off-Street	608	492	512
Adequacy		116	96

	Effective Supply	Peak Demand	
		Current	Projected 1% <i>growth</i>
Private Off-Street	800	484	504
Adequacy		316	296

	Effective Supply	Peak Demand	
		Current	Projected 1% <i>growth</i>
Study Area Total	1,655	1,164	1,212
Adequacy		491	443

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Table 26: Future Parking Adequacy – Year 20

	Effective Supply	Peak Demand		
		Current	Yrs. 5-10 0.05% growth	Yrs. 11-20 0.0% growth
On-Street	247	188	202	202
Adequacy		59	45	45

	Effective Supply	Peak Demand		
		Current	Yrs. 5-10 0.05% growth	Yrs. 11-20 0.0% growth
Public Off-Street	608	492	530	530
Adequacy		116	78	78

	Effective Supply	Peak Demand		
		Current	Yrs. 5-10 0.05% growth	Yrs. 11-20 0.0% growth
Private Off-Street	800	484	522	522
Adequacy		316	278	278

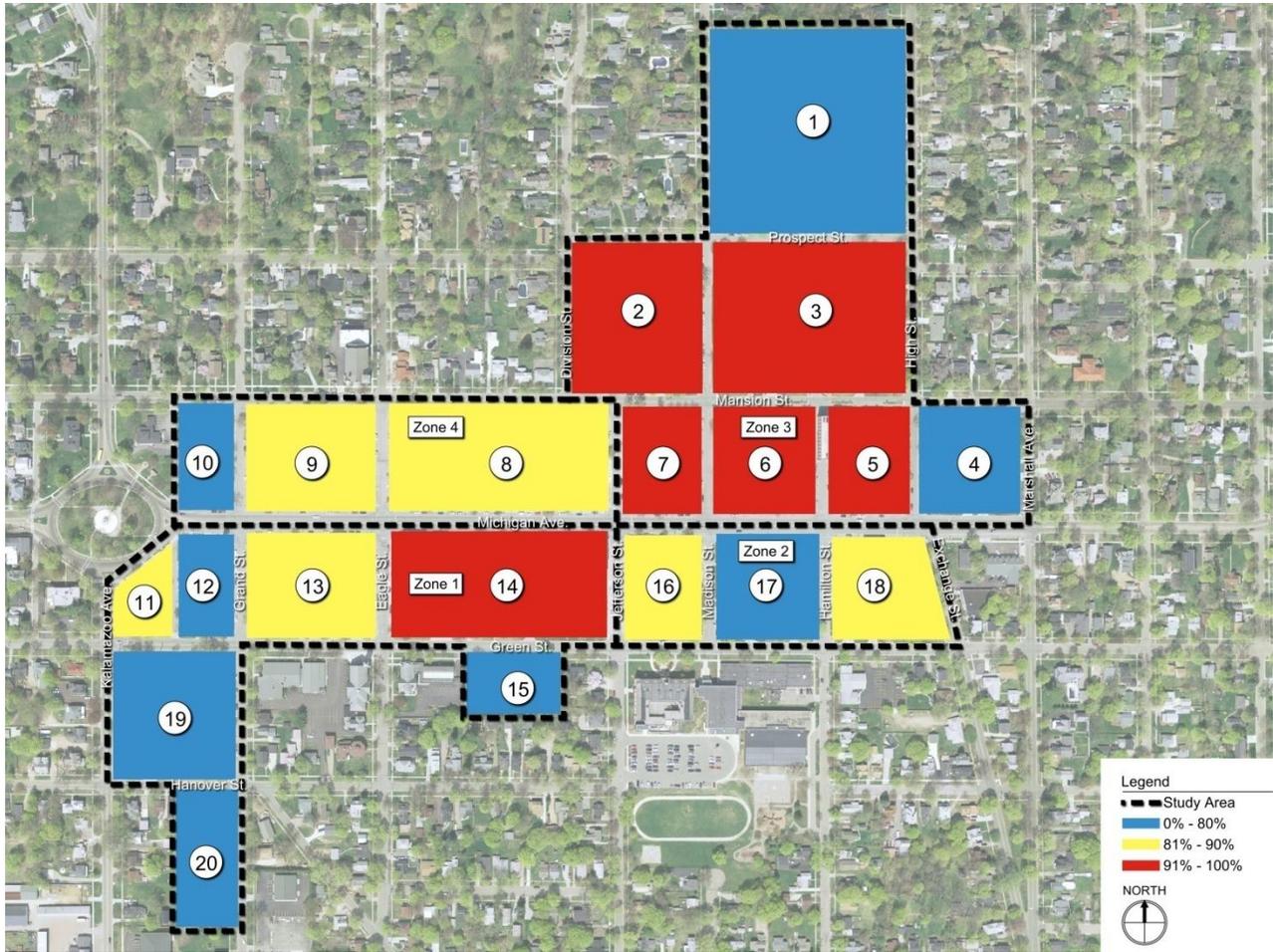
	Effective Supply	Peak Demand		
		Current	Yrs. 5-10 0.05% growth	Yrs. 11-20 0.0% growth
Study Area Total	1,655	1,164	1,248	1,248
Adequacy		491	407	407

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The following figures (9 & 10) graphically show the projected parking adequacy for all study zones. The figures reflect the anticipated parking conditions during the next four years and twenty years.

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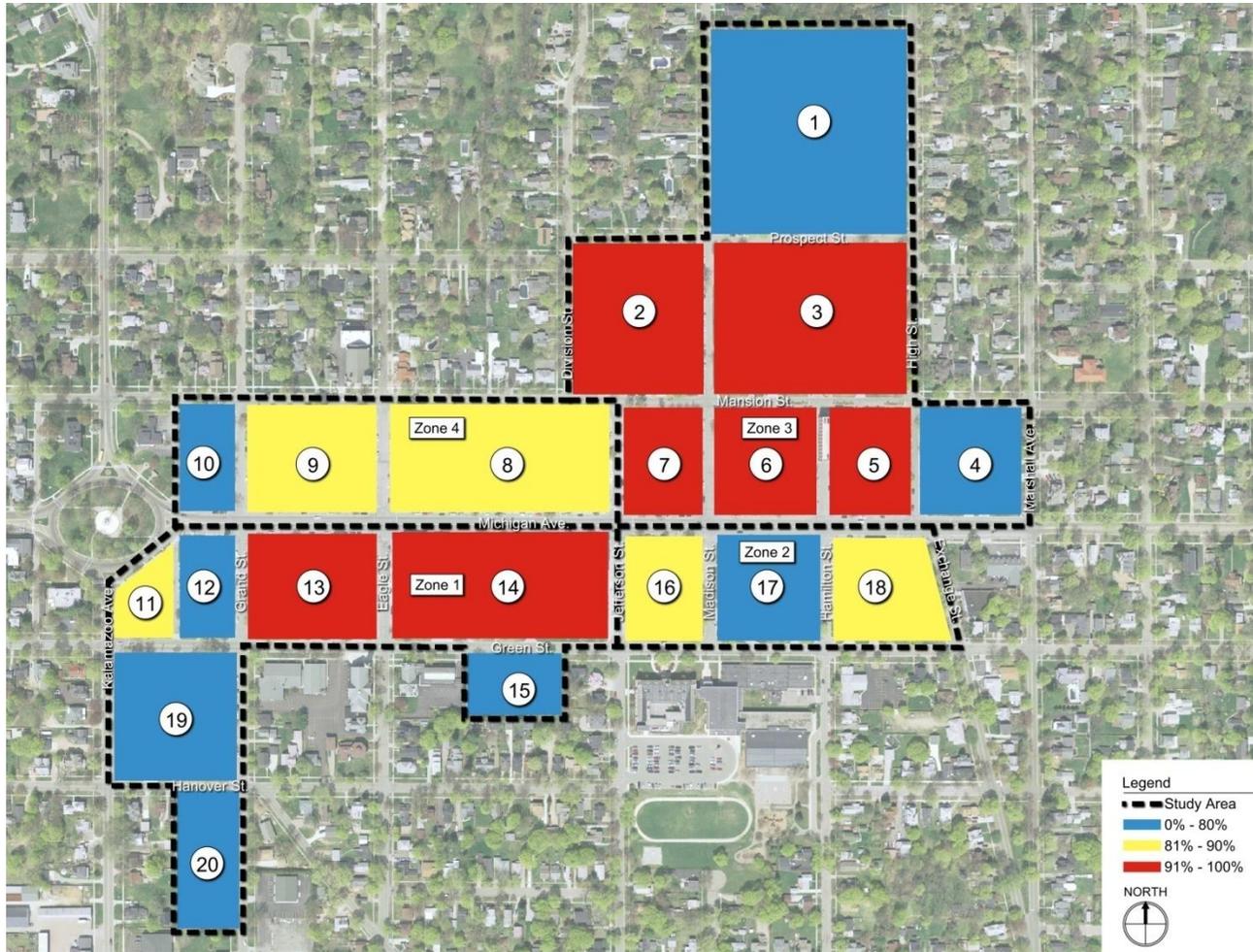
Figure 9: Future Parking Adequacy – Year 4



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Figure 10: Future Parking Adequacy – Year 20



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Future parking demand projections (both year 4 and year 20 demand scenarios) in the study area indicate that parking will likely be inadequate in Zone 3 and on one block in Zone 1. This section of the report provides recommendations to improve the existing parking supply's adequacy and perceived adequacy for Zone 3.

As the city grows and parking demand increases, it is important to plan the parking to grow with the expansion, in order to continue to meet the growing parking demands, if warranted.

ZONE 3 PARKING OPTIONS

The following options are listed to help alleviate the parking shortages identified in Zone 3, primarily around the Oaklawn Hospital.

Due to the significant costs of structured parking, we performed an analysis of surface parking to see if it can solve parking deficits identified in the future growth scenarios. Just because surface parking can be done to solve deficits, it may not be the best solution. In order to present this option, Walker analyzed the potential build-out of surface parking options within the Hospital study zone identified in the Hospital Master Plan prepared by HED.

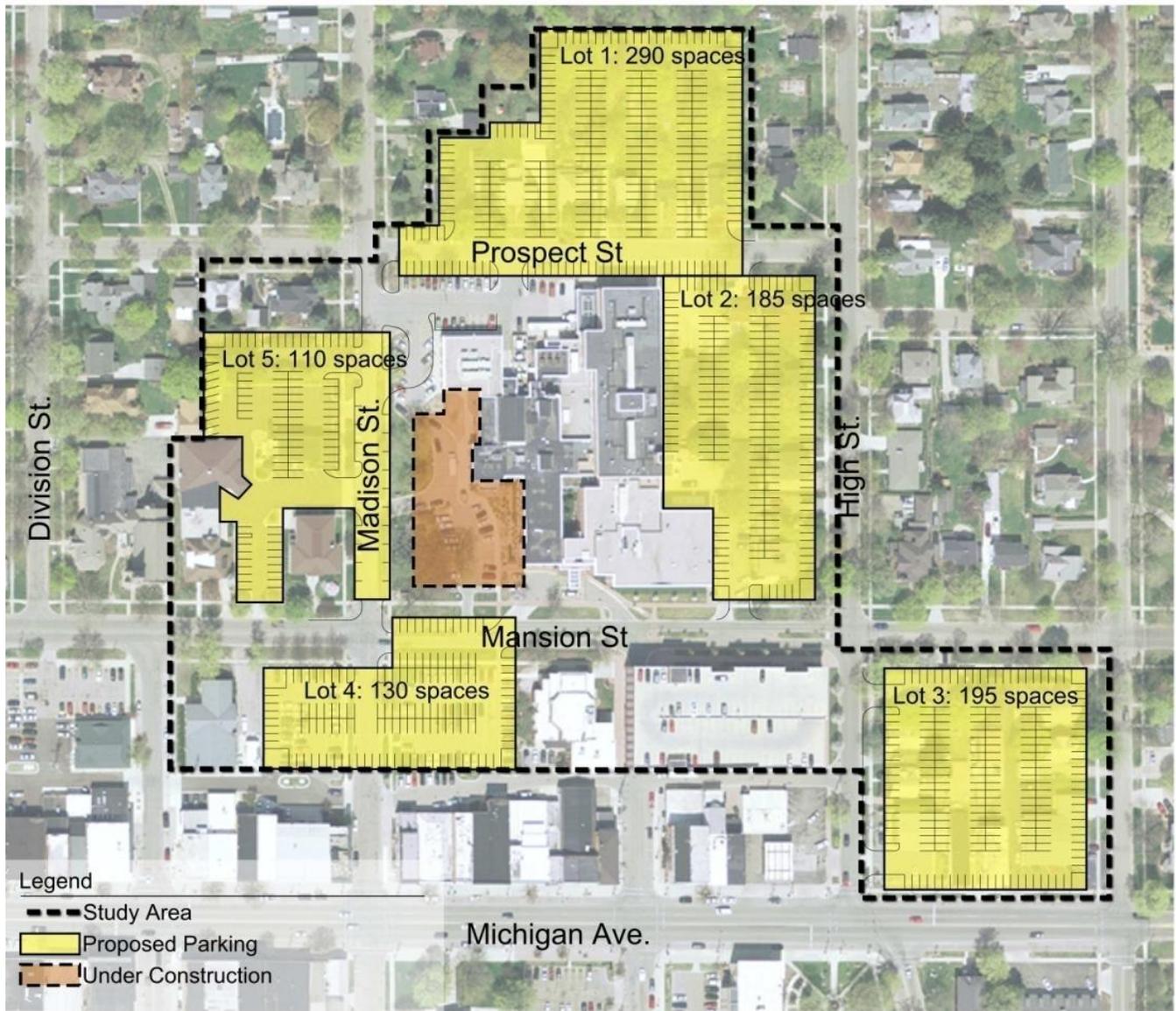
This section of the report is presented as follows:

- Surface Parking Build-Out Analysis A
- Surface Parking Build-Out Analysis B
- Current Deficit Option 1
- Current Deficit Option 2
- Year 4 Deficit Option 1
- Year 4 Deficit Option 2
- Year 4 Parking Deck Option 1
- Year 4 Parking Deck Option 2
- Year 20 North Deficit Option
- Year 20 East Deficit Option
- Year 20 South Deficit Option
- Year 20 West Deficit Option
- Year 20 Parking Deck Expansion

ALTERNATIVES ANALYSIS

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Figure 11: Surface Parking Build-Out Analysis A



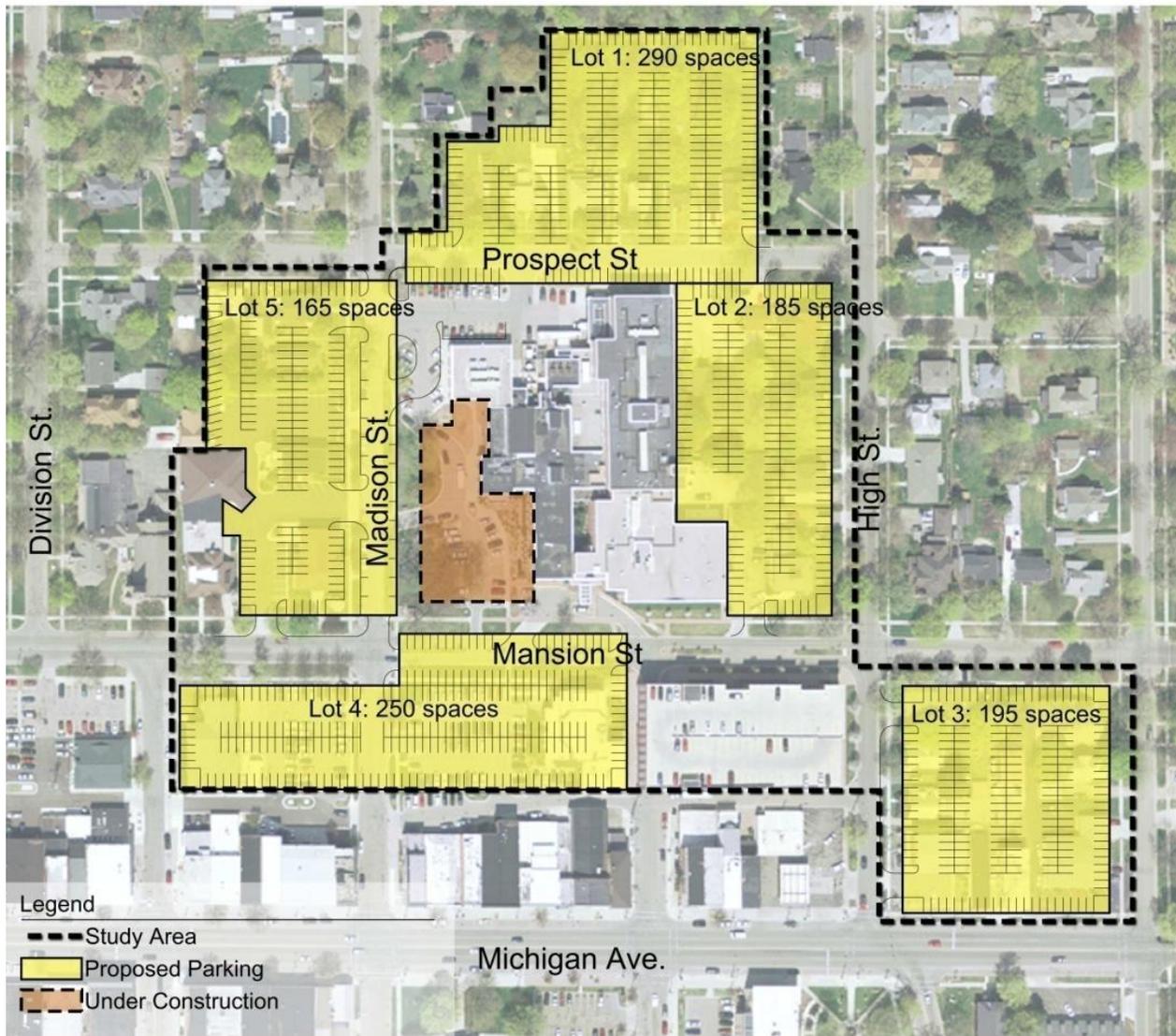
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Description: This alternative illustrates the construction of new surface parking on land within the Hospital Study Area.

- Lot 1: 290 Spaces Impact: Removal or relocate 6 houses, vacate Prospect.
 - Lot 2: 185 Spaces Impact: Removal or relocate 3 houses and 1 business.
 - Lot 3: 195 Spaces Impact: Removal or relocate 5 houses and 5 businesses.
 - Lot 4: 130 Spaces (37 net spaces) Impact: Vacate Madison and Mansion Streets.
 - Lot 5: 110 Spaces (24 net spaces) Impact: Vacate Madison Street.
- Total: 910 Spaces – 178 existing spaces = 732 new spaces.**

Figure 12: Surface Parking Build-Out Analysis B

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Description: This alternative illustrates the construction of new surface parking on land within the Hospital Study Area, encroaching into the AT & T building, museum building and Franke Center sites.

- Lot 1: 290 Spaces Impact: Removal or relocate 6 houses, vacate Prospect.
 - Lot 2: 185 Spaces Impact: Removal or relocate 3 houses and 1 business.
 - Lot 3: 195 Spaces Impact: Removal or relocate 5 houses and 5 businesses.
 - Lot 4: 250 Spaces (157 net spaces) Impact: Removal or relocate 2 businesses, vacate Madison and Mansion Streets.
 - Lot 5: 165 Spaces (80 net spaces) Impact: Removal or relocate 2 houses and 1 business, vacate Madison Street.
- Total: 1,085 Spaces - 178 existing spaces = 907 new spaces.**

CURRENT DEFICIT OPTIONS

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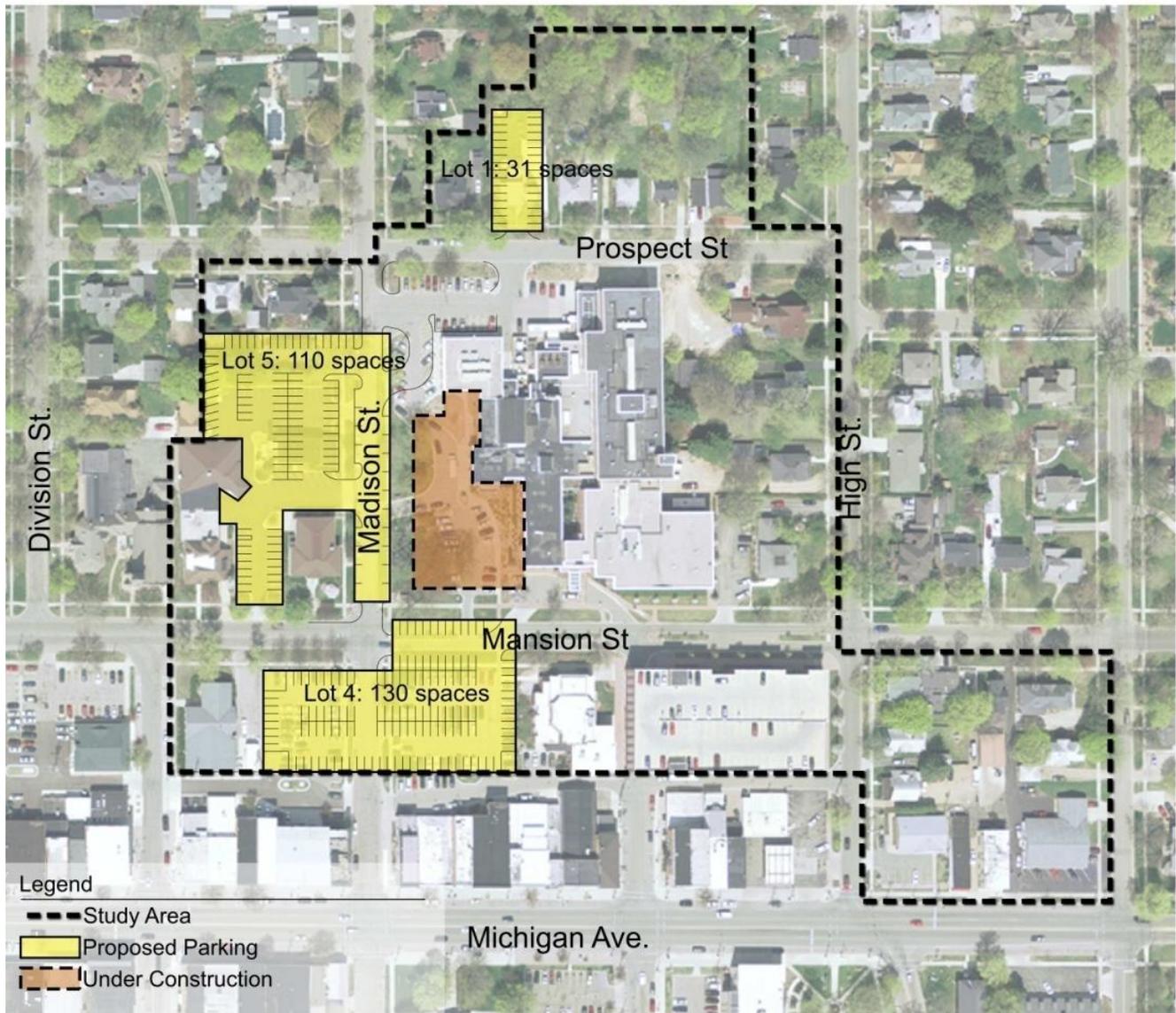
The current parking adequacy for Zone 3 indicates a deficit of 93 spaces. In order to solve that situation, Walker has developed two options:

1. Expansion/construction of lots 4, 5 and 1. Building a total of 271 spaces – 93 space deficit – 178 existing spaces = 0 space surplus.
2. Expansion/construction of lots 4 & 5, with lot 5 encroaching into the houses to the north. Building a total of 275 spaces – 93 space deficit – 178 existing spaces = 4 space surplus.

Each option is illustrated in the following figures.

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Figure 13: Current Deficit Option 1



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Description: This alternative illustrates the expansion/construction of surface parking on lots 4, 5, and 1.

Lot 1: 31 Spaces

Impact: Removal or relocate 1 house.

Lot 4: 130 Spaces (37 net spaces)

Impact: Vacate Madison and Mansion Streets.

Lot 5: 110 Spaces (25 net spaces)

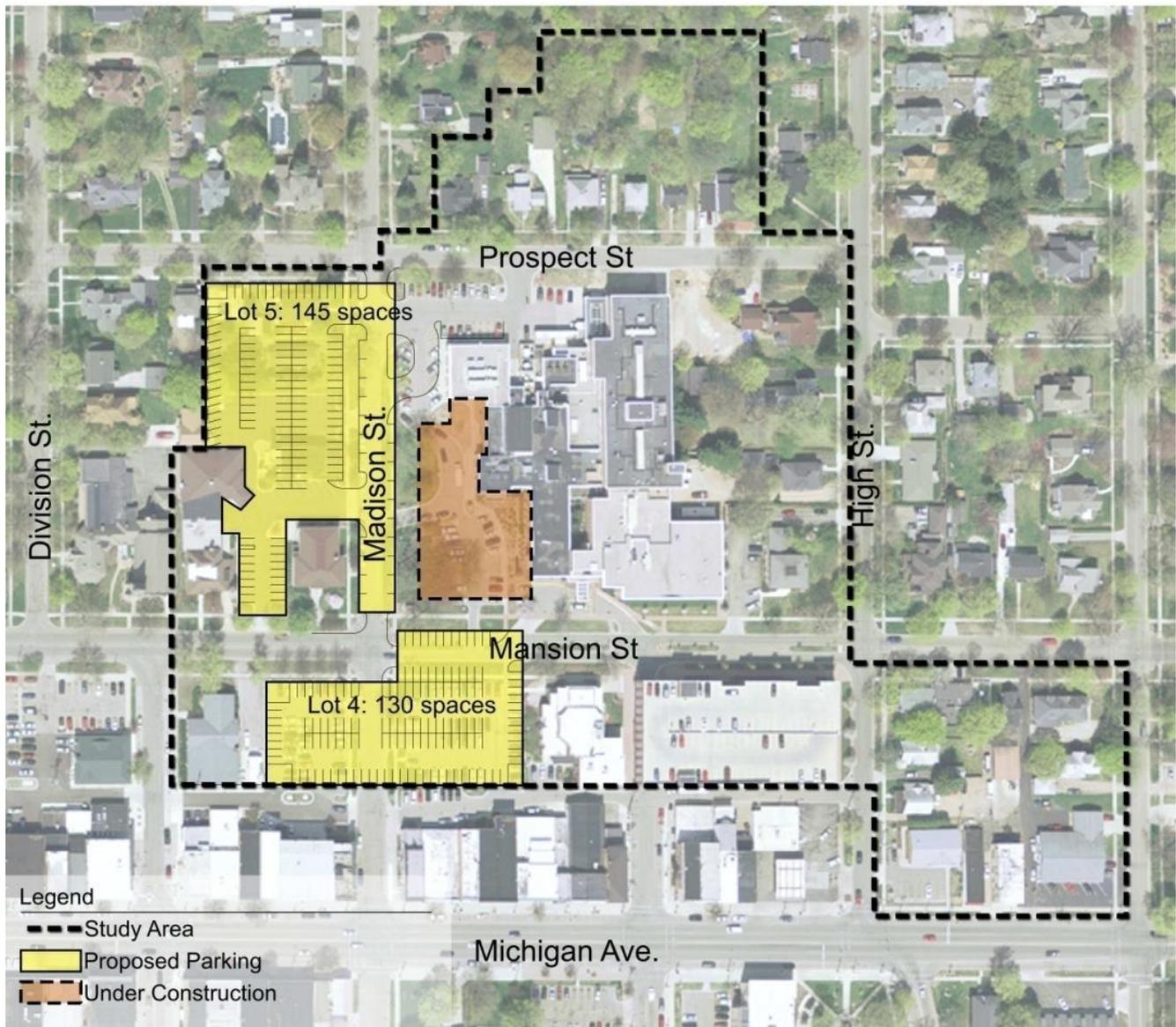
Impact: Vacate Madison Street.

Total: Build 271 Spaces -93 space deficit -178 existing spaces in lots = 0 space surplus.

Cost: \$813,000 (\$3,000/space - costs do not include land acquisition and building remediation.)

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Figure 14: Current Deficit Option 2



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Description: This alternative illustrates the expansion/construction of surface parking on lots 4, 5, encroaching into the houses to the north.

Lot 4: 130 Spaces (37 net spaces) Impact: Vacate Madison and Mansion Streets.

Lot 5: 145 Spaces (60 net spaces) Impact: Removal or relocate 2 houses, vacate Madison Street.

Total: Build 275 Spaces -93 space deficit -178 existing spaces in lots = 4 space surplus.

Cost: \$825,000 (\$3,000/space - costs do not include land acquisition and building remediation.)

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YEAR 4 DEFICIT OPTIONS

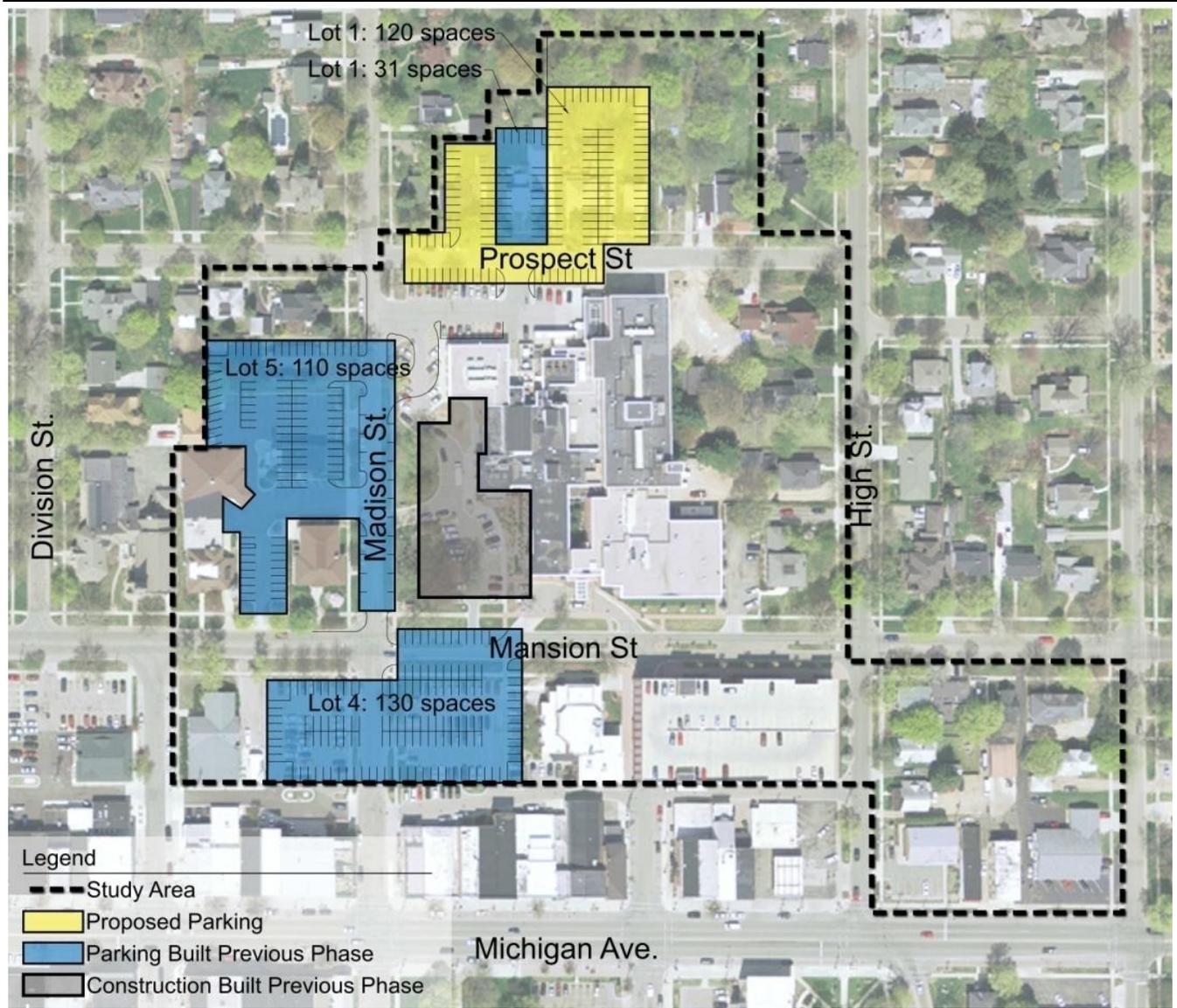
The Year 4 parking adequacy for Zone 3 indicates a deficit of 119 spaces (assumes the 93 space current deficit was resolved). In order to solve that situation, Walker has developed the following options:

1. Year 4 Option 1: Expansion/construction of lot 1. (Lot 1 was presumed built to satisfy the current deficit under this scenario) Building 120 spaces – 119 space deficit = 1 space surplus.
2. Year 4 Option 2: Construction of lot 1 (Lot 1 was presumed not built to satisfy the current deficit, instead under this option, lot 5 was expanded to satisfy the current deficit) Building 119 spaces – 119 space deficit = 0 space surplus.
3. Year 4 Parking Deck Option A: Construction of a new parking deck. (assumes current deficit was NOT resolved by building/expanding surface parking) Building a four level deck with 370 spaces – 212 space deficit – 90 spaces in existing lots displaced = 68 space surplus.
4. Year 4 Parking Deck Option B: Construction of an addition onto the existing parking deck. (assumes the current deficit was NOT resolved by building/expanding surface parking) Building a three level deck with 220 spaces – 212 space deficit = 8 space surplus.

Each option is illustrated in the following figures.

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Figure 15: Year 4 Deficit Option 1



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Description: Option one follows Current Demand Option 1, where lots 4, 5 and 1 were constructed to satisfy the 93 space deficit. To satisfy the 4 Year deficit of 119 spaces, lot one is expanded by 120 spaces.

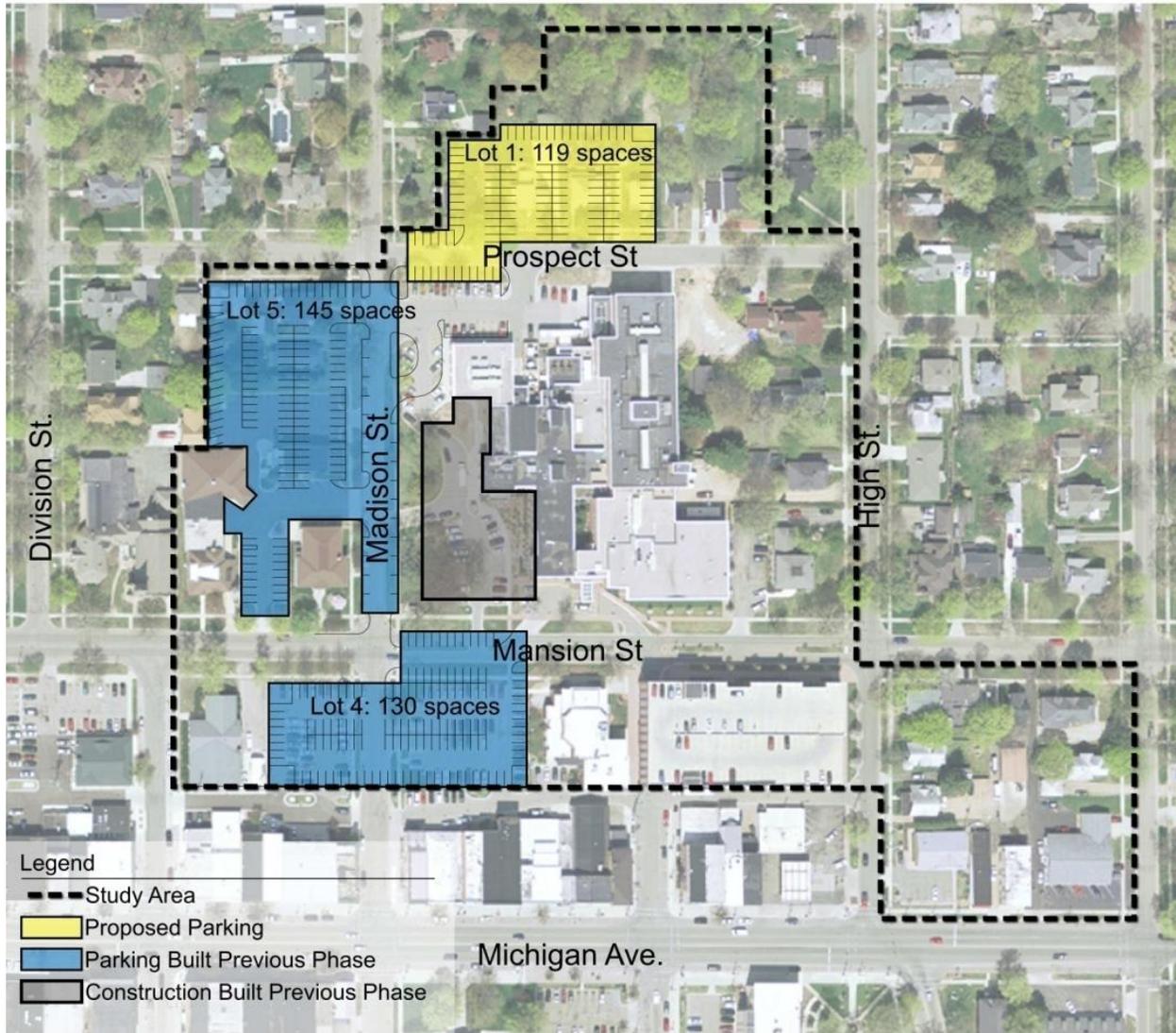
Lot 1: 120 Spaces Impact: Remove or relocate 3 houses vacate Prospect Street.

Total: Build 120 Spaces -119 space deficit = 1 space surplus.

Cost: \$360,000 (\$3,000/space - costs do not include land acquisition and building remediation.)

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Figure 16: Year 4 Deficit Option 2



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Description: Option two follows Current Demand Option 2, where lots 4, and 5 were constructed to satisfy the 93 space deficit. To satisfy the 4 Year deficit of 119 spaces, lot one is built with 119 spaces.

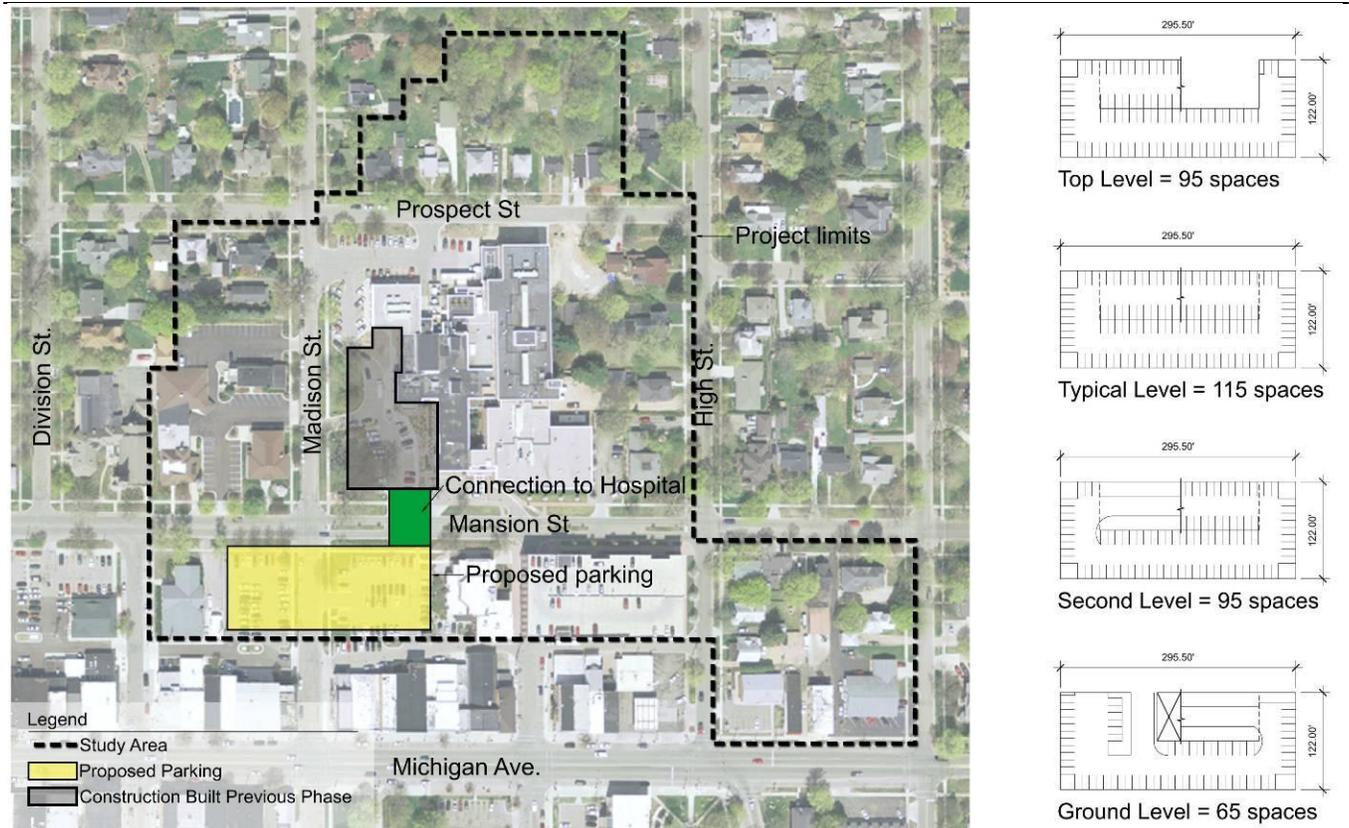
Lot 1: 119 Spaces Impact: Remove or relocate 4 houses vacate Prospect Street.

Total: Build 119 Spaces -119 space deficit = 0 space surplus.

Cost: \$357,000 (\$3,000/space - costs do not include land acquisition and building remediation.)

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Figure 17: Year 4 Parking Deck Option A



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Description: Parking Deck Option A assumes the current deficit of -93 spaces was NOT resolved. This option involves building an above-grade parking deck, four levels, with 370 spaces that will satisfy current and year 4 deficits.

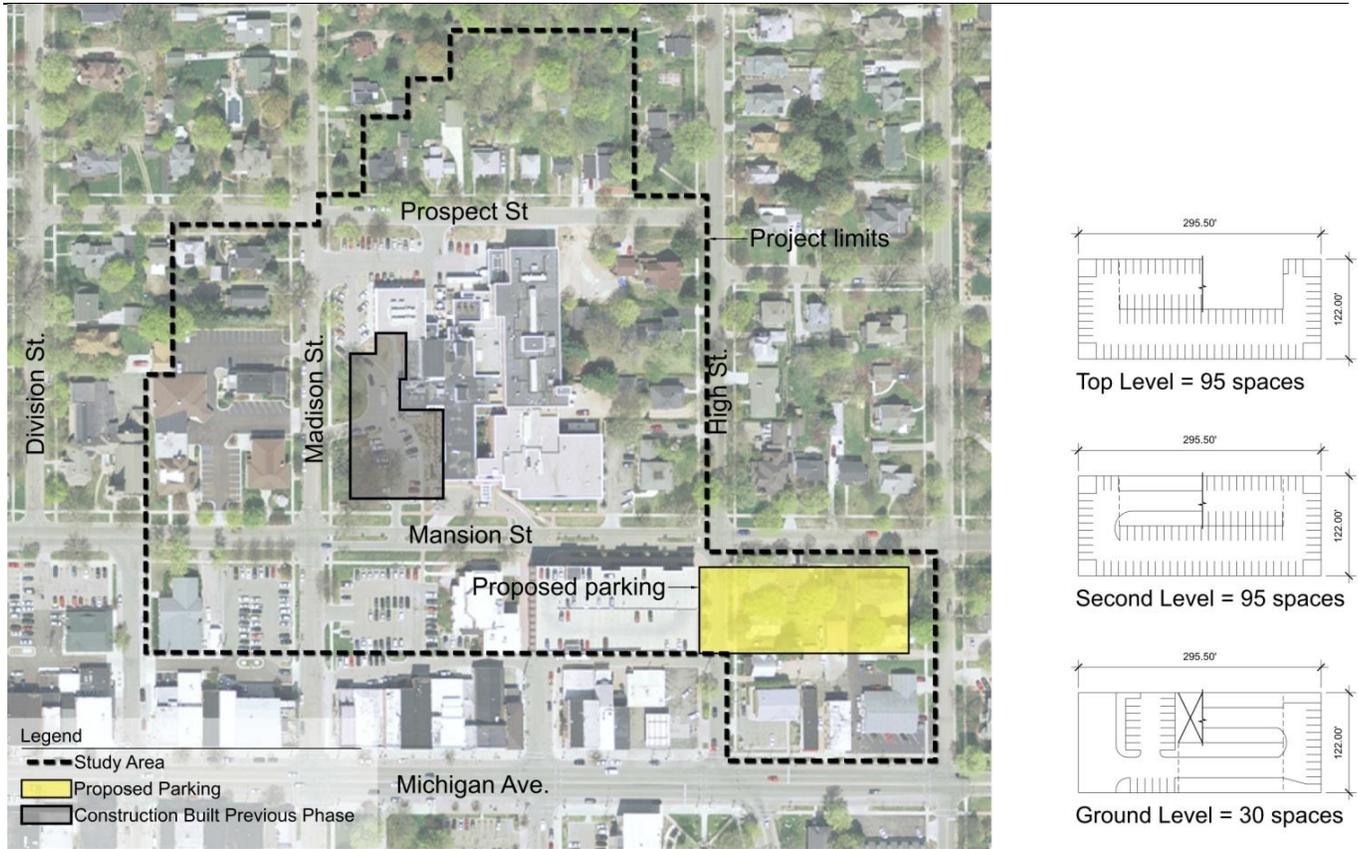
Parking Deck A: 370 Spaces Impact: Vacate Madison and Mansion Streets.

Total: Build 370 Spaces -212 space deficit – 90 existing spaces in lots = 68 space surplus.

Cost: \$5,920,000 (\$16,000/space - costs do not include land acquisition and building remediation.)

20-1158.00

Figure 18: Year 4 Parking Deck Option B



Walker Parking Consultants

Description: Parking Deck Option B assumes the current deficit of -93 spaces was NOT resolved. This option involves building onto the existing above-grade parking deck, three levels, with 220 spaces that will satisfy current and year 4 deficits.

Parking Deck B: 220 Spaces Impact: Remove or relocate 5 houses. High Street to remain open.

Total: Build 220 Spaces -212 space deficit = 8 space surplus.

Cost: \$3,520,000 (\$16,000/space - costs do not include land acquisition and building remediation.)

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YEAR 20 DEFICIT OPTIONS

The Year 20 parking adequacy for Zone 3 indicates a deficit of 230 spaces (assumes the 93 space current and the 119 space Year 4 deficits were resolved). Under the Year 20 demand scenario, the hospital has planned expansions of approximately 190,000 square feet. Four building options, located on each side of the hospital are shown for this growth scenario. The subsequent demand generated from such addition/expansion is reflected in the projected demand numbers listed in the Zone 3 Future Demand section of this report. In order to solve that situation, Walker has developed five options, one option for each side of the hospital where the proposed expansion would occur and one option for the expansion of a previously constructed parking deck. Each option is illustrated in the following figures.

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Figure 19: Year 20 North Option



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Description: The Year 20 North Option assumes the current demand and Year 4 demand was resolved by building lots 1, 4 and 5. Construction of the North option would remove most of the previously built lot 1. To satisfy the Year 20 deficit of 230 spaces, lots 1, 2, and 3 are built. Total spaces 385.

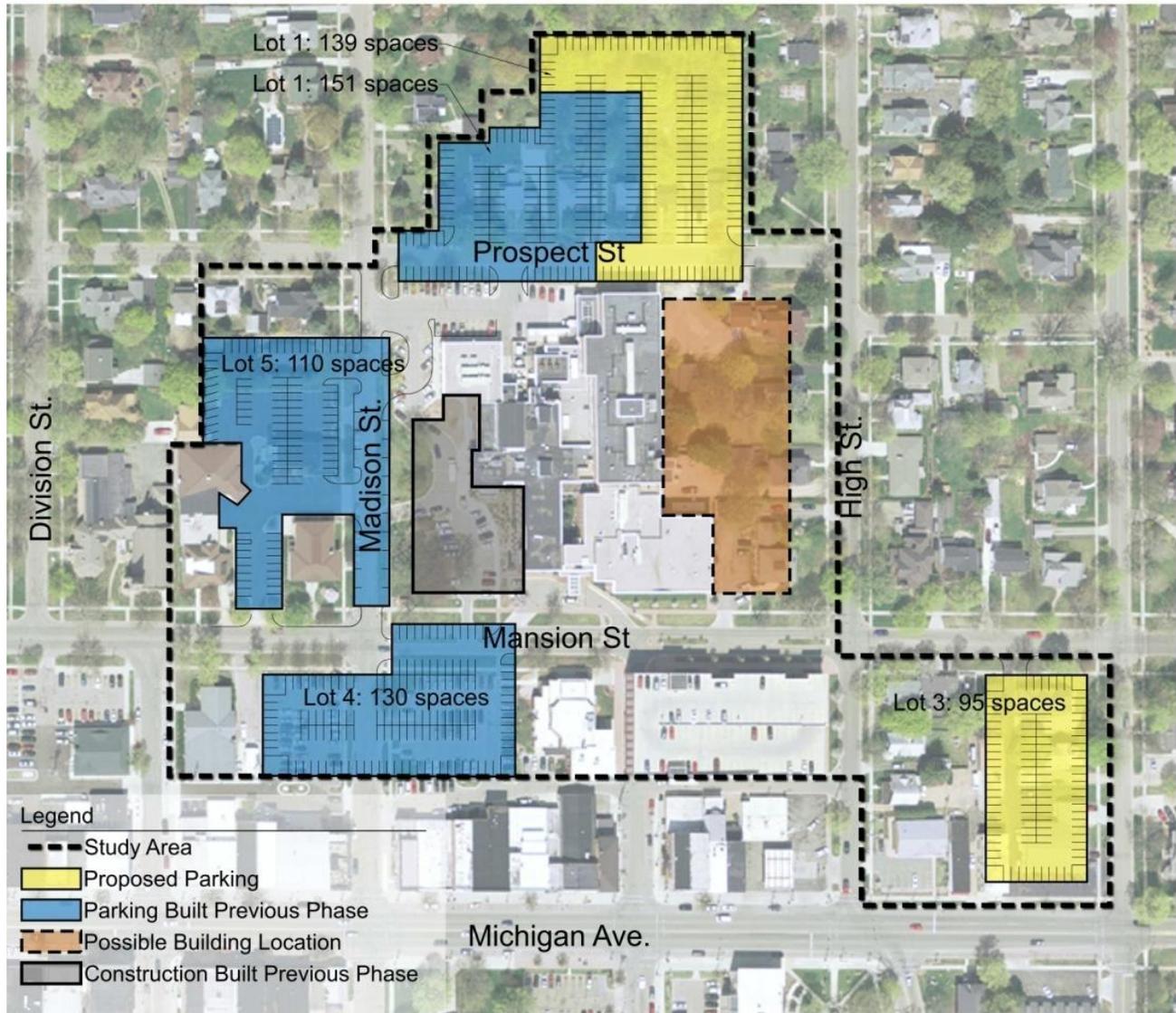
Lots 1, 2, & 3: 385 Spaces Impact: Remove or relocate 8 houses and 4 businesses.

Total: Build 385 Spaces -230 space deficit – 151 existing spaces in lots = 4 space surplus.

Cost: \$1,155,000 (\$3,000/space - costs do not include land acquisition and building remediation.)

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Figure 20: Year 20 East Option



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Description: The Year 20 East Option assumes the current demand and Year 4 demand was resolved by building lots 1, 4 and 5. To satisfy the Year 20 deficit of 230 spaces, lot 1 is added onto, and lot 3 is built. Total spaces: 234.

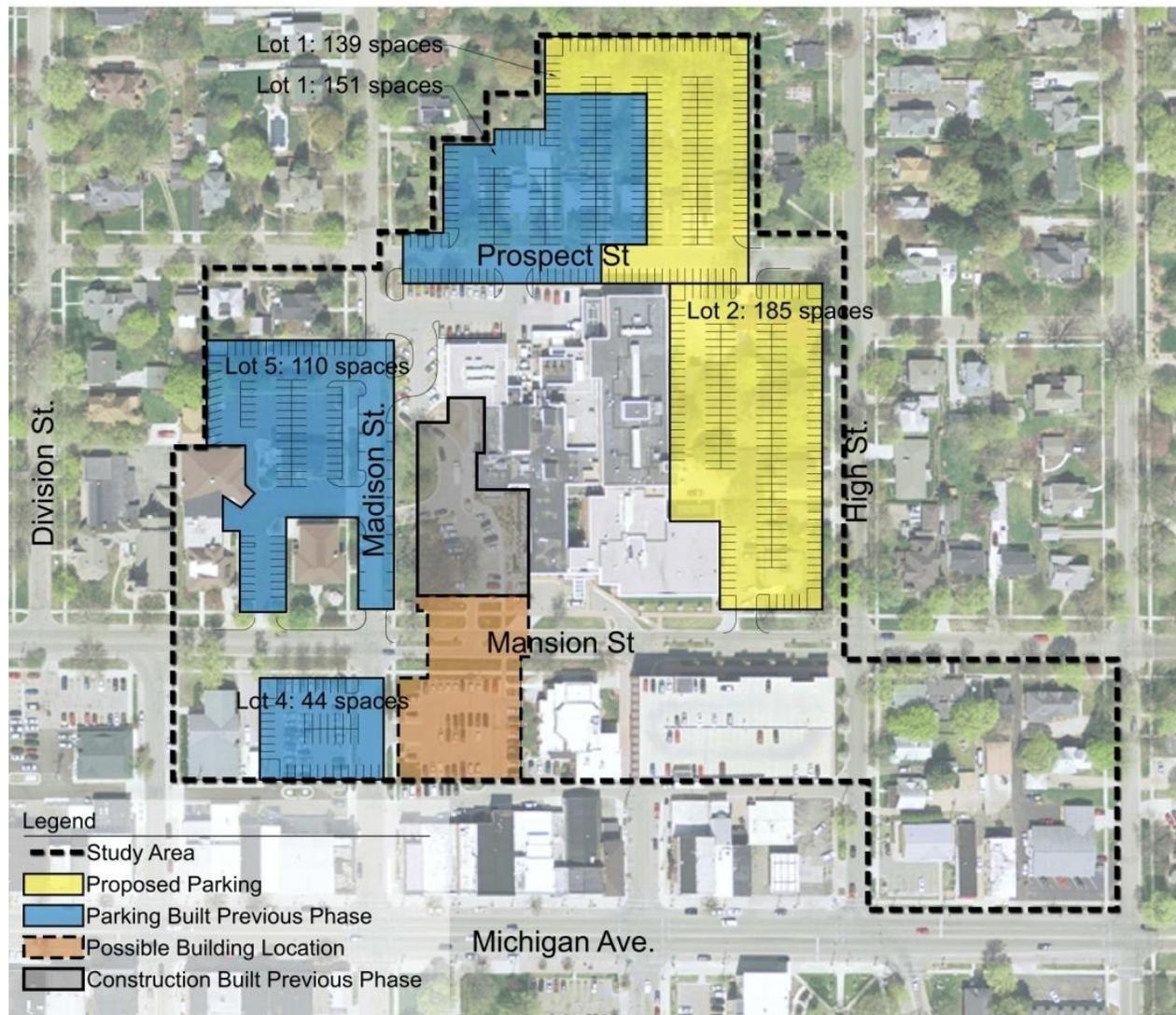
Lots 1 & 3: 234 Spaces Impact: Remove or relocate 8 houses and 4 businesses.

Total: Build 234 Spaces -230 space deficit = 4 space surplus.

Cost: \$702,000 (\$3,000/space - costs do not include land acquisition and building remediation.)

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Figure 21: Year 20 South Option



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Description: The Year 20 South Option assumes the current demand and Year 4 demand was resolved by building lots 1, 4 and 5. To satisfy the Year 20 deficit of 230 spaces, lot 1 is added onto, and lot 2 is built. Total spaces: 324. (Part of the previously built Lot 4 is removed to allow for the construction of the hospital addition)

Lots 1 & 2: 324 Spaces Impact: Remove or relocate 5 houses and 1 business.

Total: Build 324 Spaces -230 space deficit – 86 existing spaces in lot 4 = 8 space surplus.

Cost: \$972,000 (\$3,000/space - costs do not include land acquisition and building remediation.)

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Figure 22: Year 20 West Option



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Description: The Year 20 West Option assumes the current demand and Year 4 demand was resolved by building lots 1, 4 and 5. To satisfy the Year 20 deficit of 230 spaces, lot 1 is added onto, and lot 2 is built. Total spaces: 324. (Part of the previously built Lot 5 is reconfigured to allow for the construction of the hospital addition)

Lots 1 & 2: 289 Spaces Impact: Remove or relocate 5 houses.

Total: Build 289 Spaces -230 space deficit – 55 existing spaces in lot 5 = 4 space surplus.

Cost: \$867,000 (\$3,000/space - costs do not include land acquisition and building remediation.)

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YEAR 20 PARKING DECK A EXPANSION

Description: The Year 20 Parking Deck A Expansion Option assumes the current demand and Year 4 demand was resolved by building Parking Deck A. To satisfy the Year 20 deficit of 230 spaces, Parking Deck A is expanded vertically, adding 2 levels, bringing the total size to 6 levels.

Expansion of Parking Deck A: 230 Spaces Impact: None.

Total: Build 230 Spaces -230 space deficit = 0 space surplus.

Cost: \$4,416,000 (\$19,200/space - costs do not include land acquisition and building remediation.)
The first phase construction cost was \$5,920,000 to build 370 spaces.

An illustration of this option is not provided, due to the expansion being oriented vertically, building upon the top of the previously built parking deck.

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MATRIX COMPARISON OF THE ALTERNATIVES

The criteria list below was developed by the Hospital and Neighborhood Committee (HNC). The matrix was developed to assist the HNC for individual and collective ranking of the parking options. The previously identified parking site alternatives are evaluated on the basis of a number of subjective criteria. All prospective options are judged to be large enough to accommodate deficits identified under each growth scenario. Each criterion is scored relative to the others. A value (5 = excellent, down to 1 = poor) is awarded to each. Next, each criterion is weighted by percentage. The criteria used to evaluate the alternatives are as follows:

Cost per Added Space 27%

The annual debt service plus operating expenses divided by the number of spaces added to the system.

Walking Distance 17%

The ability of a solution to satisfy parking needs within a reasonable walking distance.

Pedestrian Impact/Security 12%

Consideration of the walking path and distances to/from the structure/lot and the degree of conflict with traffic patterns. The ability to safeguard the personal safety and property of the potential users.

Traffic Impact 12%

The ability of vehicles to move to and from the area without conflicting negatively with traffic patterns.

Impact on the Neighborhood 12%

The way in which an alternative positively or negatively impacts the neighborhood.

Internal Function 5%

The ease of finding and accessing the available space, of remembering and relocating the parking location on return, and the ease of exiting the system.

Implementation 5%

The ability to construct the solution based on existing physical obstacles or political obstacles. Is there a need to demolish or move any existing buildings to complete the solution?

Aesthetics 5%

The height, mass and suitability of parking solutions with respect to the campus and neighboring properties.

Future Versatility 5%

The ability to expand with minimal impediments.

**CITY OF MARSHALL/OAKLAWN HOSPITAL
DOWNTOWN AREA PARKING NEEDS ASSESSMENT**



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Alternative	Cost Per Added Space	Walking Distance	Pedestrian Impact/ Security	Traffic Impact	Impact on the Neighborhood	Internal Function	Implementation	Aesthetics	Future Versatility	Unweighted Average		Weighted Average	
										Points	Rank	Points	Rank
Weight	27%	17%	12%	12%	12%	5%	5%	5%	5%			100%	
Option 1													
Option 2													
Option 3													
Option 4													
Option 5													

5 = Excellent 4 = Very Good 3 = Average 2 = Fair 1 = Poor

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CONCLUSIONS/RECOMMENDATIONS

- A 20-block study area, divided into four zones was established for this analysis. The study area and zones are similar to the ones used in the 1996 Walker parking study.
- The study area contains 1,804 parking spaces, with an effective supply of 1,655 spaces.
- The peak parking occupancy observed was 1,164 cars, which is 65% of the total supply.
- While certain local blocks of downtown experience a deficit of parking supply during peak conditions, the overall supply appears to be sufficient and available in adjacent areas to offset any inconvenience that might exist, except in Zone 3.
- Zone 3, containing Oaklawn Hospital, currently is experiencing a 93 space parking deficit, when adjusted to the 95th percentile demand event. Walker recommends additional parking in the form of new or additions to existing surface parking are required in this zone.
- Additional immediate solutions recommended to help alleviate parking pressures in Zone 3 include
 - Continue to assign hospital employees to areas of the city with surplus parking (south of Michigan)
 - Continue to enforce designated parking areas
 - Encourage and promote ridesharing/carpooling, etc. for hospital employees
- When evaluating the future parking needs in Zone 3, the Year 4 demand creates a parking deficit of an additional 119 spaces. Walker recommends additional parking in the form of structured or additional surface parking is required in this zone to satisfy the demand.
- Zone 3 parking demand for Year 20 creates a parking deficit of an additional 230 spaces. Walker recommends additional parking in the form of additional surface or additions to existing parking structure to satisfy the demand.