BOARD OF PUBLIC WORKS AND SAFETY
Agenda Request Form

(Form B-01-2012)

Organizations and individuals are asked to submit a request form and supporting documents to be placed on the agenda. You will be contacted by the City confirming the date of the meeting in which your request will be heard.

Please make sure that your contact information is accurate in case we need to get in touch with you. The Board of Works meets on the 1st and 3rd Monday of each month at 5:00 p.m. in City Hall located at 70 E. Monroe Street.

Date Submitted:	4/13/2015	Requested Meeting Date:	4/20/2015
		Confirmed Meeting Date:	
Received by:			

Contact Information: Please provide all requested information in the fields below. (Print or Type)

On Behalf of Organization or Individual:		Planning and Engineering Department	
Name:	Travis Underhill	Telephone:	736-3631
Title or Position:	City Engineer		
E-Mail:	tunderhill@franklin.in.gov		
Address:	70 E. Monroe Street		
City:	Franklin	State: IN	ZIP: 46131

Who will attend the meeting and present the request?

Name:	Travis Underhill	Telephone:	736-3631
Title or Position:	City Engineer		
E-Mail:	tunderhill@franklin.in.gov		

Please describe the purpose or title of your presentation.

Release of Walker Parking Consultant's Parking Study

Supporting documents: All supporting documents should be submitted with the request form.

1. Parking Study Final Report
2.
3.
4.

Questions about this application or the process described should be directed to the Clerk Treasurer's Office at 70 E. Monroe Street, Franklin Indiana 46131 or by email at jalexander@franklin.in.gov or call 317-736-3609.

WALKER
PARKING CONSULTANTS

6602 E. 75th Street, Suite 210
Indianapolis, IN 46250

Tel: 317.842.6890
Fax: 317.577.6500
www.walkerparking.com

January 20, 2015
Updated March 24, 2015

Travis Underhill, P.E.
Department of Planning & Engineering
City of Franklin
70 E. Monroe Street
Franklin, Indiana 46131

Re: Parking Study
Walker Project # 13-3147.00

Dear Travis:

We are pleased to present our findings relating to the referenced project. The attached report contains our analysis, conclusions, and assumptions. We ask that you carefully review this report to fully understand the project assumptions and we will be in contact to follow up.

Sincerely,

WALKER PARKING CONSULTANTS

Jeffrey A. Colvin, AICP
Project Manager

PARKING STUDY

CITY OF FRANKLIN

FRANKLIN, IN

Prepared for:
TRAVIS UNDERHILL

MARCH 2015

FINAL REPORT

WALKER
PARKING CONSULTANTS

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EXECUTIVE SUMMARY

The City of Franklin, Indiana (the "City") has engaged Walker ("Walker") to evaluate the current parking supply, demand, and future parking needs in downtown Franklin. Walker's evaluation is intended to provide decision-making information for the City as it considers short- and long-term planning decisions. This evaluation provides recommendations to improve the efficiency of the parking system, while balancing changes that are supportive of economic development initiatives.

This following summary should not be read in lieu of the entire report. Rather, the report should be read in its entirety to completely understand the assumptions, analysis, and conclusions contained within this document.

SUMMARY

Based on Walker's Survey Day observations, there are approximately 1,337 parking spaces available in the Study Area. During weekday conditions, we observed peak demand at 2:00 p.m. with 647 occupied spaces or 48% of capacity. The weekend occupancy rate was 29%, with 386 of the total available spaces occupied.

Several new or current developments are expected within the study area, which will increase the parking demand. The table below summarizes our findings by block for current conditions, and the projected 2020 planning horizon. Although parking shortages are expected in some of the blocks, adequate parking is available within the Study Area to support demand over the next five years. A projected surplus of approximately 288 spaces is anticipated.

In order to ease some of the parking shortages on some of the blocks, Walker conducted an alternatives analysis in the second part of this report. Adding public parking on block 12, along with some changes in signage, sharing of private lots, and policies will aid downtown parking in the future.

Parking Demand Summary

		Current Peak		5-Year Projection	
Block #	Supply	2:00	Percentage	Demand	Percentage
1	152	56	37%	56	37%
2	121	71	59%	169	139%
3	31	25	81%	118	381%
4	35	32	91%	37	106%
5	72	14	19%	14	19%
6	55	12	22%	12	22%
7	50	5	10%	5	10%
8	146	92	63%	111	76%
9	43	31	72%	62	143%
10	75	71	95%	83	111%
11	29	20	69%	53	183%
12	215	82	38%	93	43%
13	33	25	76%	25	76%
14	122	57	47%	67	55%
15	89	38	43%	129	145%
16	58	14	24%	14	24%
17	11	2	18%	2	18%
Totals	1,337	647	48%	1,049	78%

Source: Walker Parking Consultants

RECOMMENDATIONS:

- Implement a comprehensive wayfinding program for parking
- Re-establish the 3 hour parking limit on-street (re-write ordinances)
- Add public parking to block 12 (net add of 122 spaces)
- Clearly mark parking restrictions and times limits on-street
- Work with the County and Businesses downtown to educate the employees on parking options available and time limits
- Work with County to clearly mark public off-street lots used by employees (public can use after 4:30 pm and weekends)
- Work with County Courts to determine best option for jury parking (utilize lots that have lower occupancy)
- Establish a website for parking to aid in distribution of information and locations of parking facilities and restrictions
- Work with private lot owners to establish shared parking
- Continue placement of bike racks in downtown
- Consider utilizing select on-street spaces for bike parking or sidewalk dining (parklets)
- Enforce parking regulations by means of Parking Ambassador approach
- Utilize shared parking in evaluating parking demand

INTRODUCTION

The City of Franklin, Indiana (the "City") retained Walker ("Walker") to evaluate the current parking supply and demand in downtown Franklin, project future demand, and perform an alternatives analysis. The purpose of the study is to provide a quantitative evaluation of the current and future parking adequacy that clearly identifies the parking inventory, utilization and availability in Franklin, while providing insight on how the current inventory may be used more efficiently and whether additional supply is warranted.

SCOPE OF SERVICES

PHASE 1 – PARKING SUPPLY/DEMAND ANALYSIS:

1. Conduct a project start-up meeting where the objectives, project understanding, study area, lines of communication, and project schedule would be confirmed;
2. Conduct the following data collection activities:
   a. Use existing downtown plan data, meeting notes and stakeholder notes;
   b. An inventory of parking spaces located within the study area;
   c. Usage study of parking spaces taken during the following time periods: weekdays from 9 a.m. to 3 p.m., and one count after 6 p.m. if needed;
   d. A license plate survey of selected time restricted spaces to determine the user turnover and duration characteristics;
   e. Meetings with city representatives, county representatives, and developers to quantify future development plans and the timing of these plans.
3. Review the current mix and distribution of both public and private parking facilities.
4. Develop parking demand model based upon existing parking inventory, observed parking usage, and real estate development plans.
5. Determine current and future parking adequacy by comparing parking demand with available parking supply on a block-by-block basis.
6. Meet with city staff to discuss progress.
7. This Phase will be completed within 30-60 days from authorization to proceed.
8. Two on-site meetings are planned for this phase.

PHASE 2 – ALTERNATIVES ANALYSIS

1. Identify if alternative on- and off-street solutions to meet the needs of the area within reasonable walking distance exist.
2. Review existing vehicular and pedestrian access and circulation patterns for their relationship to existing and proposed parking generators and the parking supply.
3. Determine whether the opportunity for restriping and/or making efficiency improvements exists to increase the parking supply.
4. Determine any possibilities of expanding existing parking facilities to meet area parking needs identified in Task 1.
5. Determine conceptual construction and project costs for each of the alternatives including estimated operational expenses to enable a comparison of the costs of each alternative.
6. Meet with city representatives to discuss findings developed in Task 2.

DEFINITION OF TERMS

Several terms or jargon are used in this report that have unique meanings when used in the parking industry. To help clarify these terms and enhance understanding by the reader, the following definitions are presented.

- **Adequacy** - The difference between the effective parking supply and parking space demand.
- **Design Day** - The day that represents the level of parking demand that the parking system is designed to accommodate. In most of the thousands of parking studies that we have conducted, this level of activity is typically equal to the 85th to 95th percentile of absolute peak activity. Although we will occasionally design to a higher-than-typical design standard, such as one exceeded less than one day per month or even the absolute peak level of demand, we do not typically design to these extreme conditions because the result is an abundance of spaces that remain unused most of the time.
- **Effective Supply** - The total supply of parking spaces, adjusted to reflect the cushion needed to provide for vehicles moving in and out of spaces, spaces unavailable due to maintenance, and to reduce the time necessary for parking patrons to find the last few available spaces. The effective supply varies as to the user group and type of parking, but typically the effective supply is 85 percent to 95 percent of the total number of spaces. The adjustment factor is known as the Effective Supply Factor.
- **Inventory** - The total number of marked parking spaces within the Study Area.
- **Parking Generation** - The peak accumulation of parked vehicles generated by the land uses present under any given set of conditions.
- **Patron or User** - Any individual parking in a study area.
- **Peak Hour** - The peak hour represents the busiest hour of the day for parking demand.
- **Survey Day** - The day that occupancy counts within a study area are recorded. This day should represent a typical busy day.

SUPPLY AND DEMAND ANALYSIS

STUDY AREA

The City identified a 17 block Study Area as the focus of this study. The Study Area is generally bounded by Madison Street to the north, railroad tracks to the east, Wayne Street to the south, and Walnut Street to the west. The figure on the following page depicts the Study Area.

Figure 1: Study Area

Source: Google

PARKING SUPPLY

The foundation of a parking supply and demand study is an inventory of the existing parking supply. Parking in the Study Area is available in several forms. On-street parking is offered at no charge. On-street parking was not signed very well and restrictions were not clearly

marked. Off-street parking is available to the public in lots, which are both publicly- and privately-owned facilities. Private parking is available for specific user groups in lots and is often restricted for use by the individual businesses.

The inventory is compared to the parking demand to quantify the existence of a parking surplus or deficit. A surplus exists when the supply exceeds the demand; a deficit exists when the supply is inadequate to meet the demand. We conducted this analysis on a block-by-block basis within the Study Area, segmenting the demand by block.

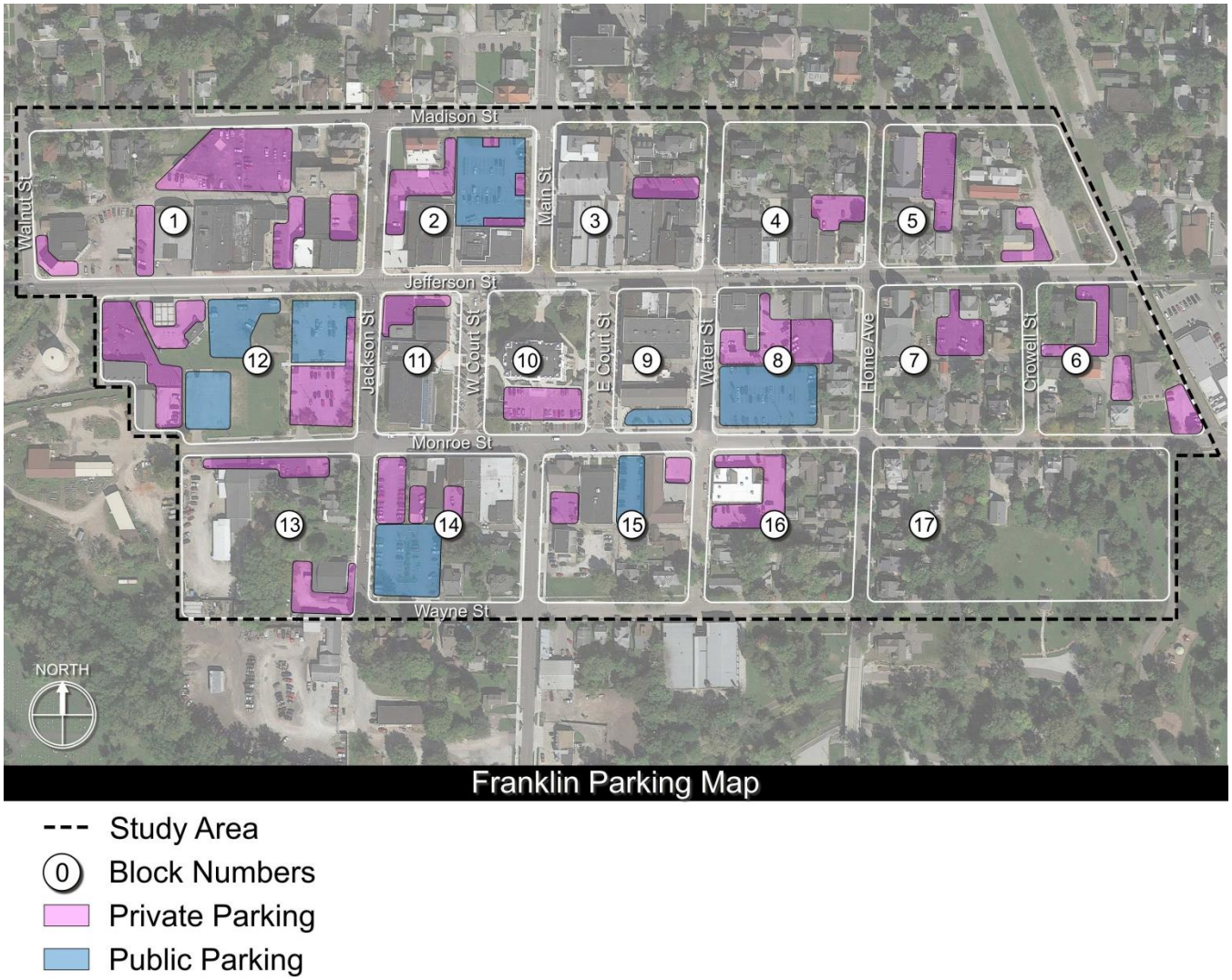
Based on the data collected, there are a total of 1,337± spaces in the Study Area. Following is a breakdown of these spaces: 439± are on-street and 898± are off-street. Of the off-street spaces, 294± are open to the public and 604± are private or restricted-use spaces. The table below summarizes the parking supply by block.

Table 1: Parking Supply Summary

Block #	Public Lot	Private Lot	Total Off-Street	On-Street	Total Supply
1		122	122	30	152
2	57	37	94	27	121
3		12	12	19	31
4		12	12	23	35
5		46	46	26	72
6		37	37	18	55
7		20	20	30	50
8	78	43	121	25	146
9	8	0	8	35	43
10		28	28	47	75
11		10	10	19	29
12	78	121	199	16	215
13		22	22	11	33
14	43	40	83	39	122
15	30	19	49	40	89
16		35	35	23	58
17			0	11	11
Totals	**294**	**604**	**898**	**439**	**1,337**

Source: Walker Parking Consultants

Figure 2: Public and Private Lots



Source: Walker Parking Consultants

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, 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 restricting parking spaces to certain users (reserved spaces), misparked vehicles, minor construction and debris removal. A parking supply operates at peak efficiency when parking occupancy, including both daily visitors and employee parking patrons, is 85 percent to 95 percent of the supply. When occupancy exceeds this level, patrons may experience delays and frustration while searching for a space. Therefore, the parking supply may be perceived as inadequate even though there are some spaces available in the parking system.

As a result, the effective 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 parking structure, which offers consolidated parking in which traffic generally, passes more available parking spaces in a more compact area. Moreover, it is more difficult to find the available spaces in a widespread parking area than a centralized parking facility.
- Type of users – 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 the last few vacant spaces. In addition, patrons are typically limited to one side of the street at a time and often must parallel park in traffic to use the space. Many times on-street spaces are not striped or are signed in a confusing manner, thereby leading to lost spaces and frustrated parking patrons.

The size of the cushion is dependent on the type of user and facility. On-Street parking is adjusted by an 85 percent effective supply factor (ESF), because of the relative difficulty of finding an open space while negotiating traffic. Public off-street parking is adjusted by a 90 percent ESF to account for user unfamiliarity and the challenges of safely navigating the area while searching for a space. Private off-street parking is adjusted by a 95 percent ESF because employees or repeat users are familiar with the area and generally park in the same location each day. The Study Area contains a total of 1,337± spaces before any adjustments are made to account for an effective supply. After the effective supply factor is applied to the overall supply numbers, the Study Area's effective supply is 1,212± spaces, as shown in Table 2.

Table 2: Effective Parking Supply Summary

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	122	0.95	116	30	0.85	26	142
2	57	0.90	51	37	0.95	35	27	0.85	23	109
3	0	0.90	0	12	0.95	11	19	0.85	16	27
4	0	0.90	0	12	0.95	11	23	0.85	20	31
5	0	0.90	0	46	0.95	44	26	0.85	22	66
6	0	0.90	0	37	0.95	35	18	0.85	15	50
7	0	0.90	0	20	0.95	19	30	0.85	26	45
8	78	0.90	70	43	0.95	41	25	0.85	21	132
9	8	0.90	7	0	0.95	0	35	0.85	30	37
10	0	0.90	0	28	0.95	27	47	0.85	40	67
11	0	0.90	0	10	0.95	10	19	0.85	16	26
12	78	0.90	70	121	0.95	115	16	0.85	14	199
13	0	0.90	0	22	0.95	21	11	0.85	9	30
14	43	0.90	39	40	0.95	38	39	0.85	33	110
15	30	0.90	27	19	0.95	18	40	0.85	34	79
16	0	0.90	0	35	0.95	33	23	0.85	20	53
17	0	0.90	0	0	0.95	0	11	0.85	9	9
Totals	**294**	**0.90**	**264**	**604**	**0.95**	**574**	**439**	**0.85**	**374**	**1,212**

Source: Walker Parking Consultants

PARKING OCCUPANCY - WEEKDAY

To determine the parking patterns of patrons in the Study Area, the usage of the majority of parking facilities located in the Study Area was evaluated. An understanding of these parking patterns helps define both patron types and parking locations. Occupancy counts for a typical weekday were taken for on- and off-street parking spaces on Thursday, December 4th, 2014. Three counts were taken at 10:00 a.m., 2:00 p.m., and 6:00 p.m.

The following table summarizes the observed occupancy rates for on-street and off-street parking.

Table 3: Weekday Parking Occupancy Summary

Type	Supply	10:00	Percentage	2:00	Percentage	6:00	Percentage
On-Street	439	225	51%	235	54%	118	27%
Off-Street Public	294	167	57%	158	54%	62	21%
Off-Street Private	604	218	36%	254	42%	124	21%
Total	**1,337**	**610**	**46%**	**647**	**48%**	**304**	**23%**

Source: Walker Parking Consultants

Occupancy rates as a whole do not indicate a shortage of parking. Peak parking demand was observed around 2:00 p.m. with approximately 647 occupied spaces, or 48% of the overall supply. Public off-street spaces were occupied at a slightly higher percentage than the other land uses. The tables below illustrate the observed occupancy for on-street, public off-street and private off-street parking by block.

Table 4: Weekday Parking Occupancy Summary – **On-Street**

Block #	Supply	10:00	Percentage	2:00	Percentage	6:00	Percentage
1	30	5	17%	9	30%	2	7%
2	27	18	67%	16	59%	14	52%
3	19	8	42%	13	68%	11	58%
4	23	17	74%	18	78%	13	57%
5	26	4	15%	5	19%	4	15%
6	18	3	17%	3	17%	4	22%
7	30	9	30%	4	13%	6	20%
8	25	13	52%	17	68%	14	56%
9	35	24	69%	28	80%	13	37%
10	47	47	100%	45	96%	8	17%
11	19	18	95%	17	89%	2	11%
12	16	11	69%	7	44%	0	0%
13	11	4	36%	5	45%	4	36%
14	39	11	28%	20	51%	8	21%
15	40	21	53%	20	50%	3	8%
16	23	9	39%	6	26%	9	39%
17	11	3	27%	2	18%	3	27%
Totals	**439**	**225**	**51%**	**235**	**54%**	**118**	**27%**

Source: Walker Parking Consultants

Generally, on-street parking occupancy during the peak hour ranges from 0% on block 12 to 100% on block 10.

Table 5: Weekday Parking Occupancy Summary – **Public Off-Street**

Block #	Supply	10:00	Percentage	2:00	Percentage	6:00	Percentage
1	0	0	0%	0	0%	0	0%
2	57	43	75%	35	61%	26	46%
3	0	0	0%	0	0%	0	0%
4	0	0	0%	0	0%	0	0%
5	0	0	0%	0	0%	0	0%
6	0	0	0%	0	0%	0	0%
7	0	0	0%	0	0%	0	0%
8	78	51	65%	49	63%	26	33%
9	8	3	38%	3	38%	0	0%
10	0	0	0%	0	0%	0	0%
11	0	0	0%	0	0%	0	0%
12	78	41	53%	42	54%	4	5%
13	0	0	0%	0	0%	0	0%
14	43	17	40%	17	40%	3	7%
15	30	15	50%	15	50%	3	10%
16	0	0	0%	0	0%	0	0%
17	0	0	0%	0	0%	0	0%
Totals	**294**	**170**	**58%**	**161**	**55%**	**62**	**21%**

Source: Walker Parking Consultants

During the peak hour, a little more than half of the available public parking supply is occupied. The peak occupancy for public off-street actually occurred at the 10:00 count. Block two had the highest public off-street occupancy at 75% full during the 10:00 a.m. count.

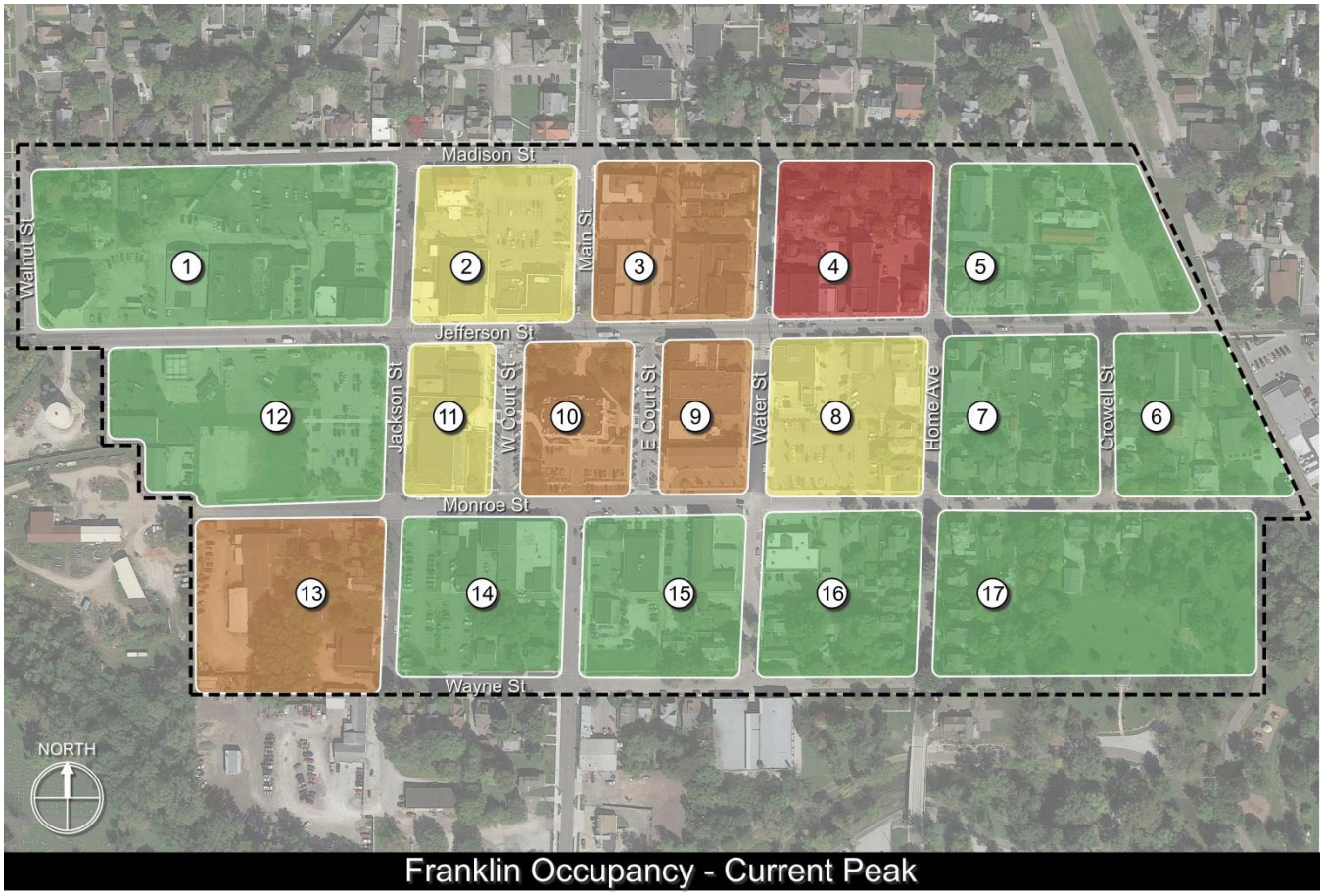
At 2:00 p.m., approximately 42% of the private off-street parking supply was occupied. The parking occupancy on some blocks was observed at more than 90%, although most blocks saw occupancy levels at a much less rate.

Table 6: Weekday Parking Occupancy Summary - **Private Off-Street**

Block #	Supply	10:00	Percentage	2:00	Percentage	6:00	Percentage
1	122	34	28%	47	39%	35	29%
2	37	16	43%	20	54%	8	22%
3	12	7	58%	12	100%	6	50%
4	12	14	117%	14	117%	4	33%
5	46	6	13%	9	20%	6	13%
6	37	7	19%	9	24%	6	16%
7	20	3	15%	1	5%	0	0%
8	43	23	53%	26	60%	20	47%
9	0	0	0%	0	0%	0	0%
10	28	24	86%	26	93%	4	14%
11	10	1	10%	3	30%	0	0%
12	121	28	23%	33	27%	15	12%
13	22	15	68%	20	91%	7	32%
14	40	23	58%	20	50%	9	23%
15	19	6	32%	3	16%	1	5%
16	35	8	23%	8	23%	3	9%
17	0	0	0%	0	0%	0	0%
Totals	**604**	**215**	**36%**	**251**	**42%**	**124**	**21%**

Source: Walker Parking Consultants

Figure 3: Total Current Weekday Parking Occupancy – By Percentage



--- Study Area
(0) Block Numbers
0% - 49%
50% - 69%
70% - 84%
85% - 100%

Source: Walker Parking Consultants

PARKING OCCUPANCY - WEEKEND

Using the same methodology as stated in the weekday section, Walker collected weekend occupancy counts on Saturday, December 13, 2014. Three counts were taken at 10:00 a.m., 2:00 p.m., and 6:00 p.m.

The following table summarizes the observed occupancy rates for on-street and off-street parking.

Table 7: Weekend Parking Occupancy Summary

Type	Supply	10:00	Percentage	2:00	Percentage	6:00	Percentage
On-Street	439	162	37%	145	33%	103	23%
Off-Street Public	294	36	12%	90	31%	75	26%
Off-Street Private	604	130	22%	151	25%	75	12%
Total	**1,337**	**328**	**25%**	**386**	**29%**	**253**	**19%**

Source: Walker Parking Consultants

Peak parking demand was observed around 2:00 p.m. with approximately 386 occupied spaces, or 29% of the overall supply. Private off-street spaces were occupied at a slightly lower percentage than the other land uses. The tables below illustrate the observed occupancy for on-street, public off-street and private off-street parking during the weekend count by block.

Table 8: Weekend Parking Occupancy Summary – **On-Street**

Block #	Supply	10:00	Percentage	2:00	Percentage	6:00	Percentage
1	30	8	27%	15	50%	2	7%
2	27	2	7%	17	63%	16	59%
3	19	9	47%	12	63%	12	63%
4	23	15	65%	15	65%	15	65%
5	26	8	31%	8	31%	7	27%
6	18	5	28%	1	6%	1	6%
7	30	8	27%	7	23%	6	20%
8	25	15	60%	10	40%	7	28%
9	35	25	71%	17	49%	9	26%
10	47	21	45%	12	26%	11	23%
11	19	7	37%	6	32%	1	5%
12	16	0	0%	1	6%	0	0%
13	11	4	36%	4	36%	2	18%
14	39	17	44%	8	21%	7	18%
15	40	4	10%	2	5%	0	0%
16	23	9	39%	8	35%	6	26%
17	11	5	45%	2	18%	1	9%
Totals	**439**	**162**	**37%**	**145**	**33%**	**103**	**23%**

Source: Walker Parking Consultants

Generally, on-street parking occupancy during the peak hour ranges from 0% on block 12 to 71% on block 9. As seen in the table above, the on-street occupancy during the weekend survey day rarely exceed 50% during our survey.

Table 9: Weekend Parking Occupancy Summary – **Public Off-Street**

Block #	Supply	10:00	Percentage	2:00	Percentage	6:00	Percentage
1	0	0	0%	0	0%	0	0%
2	57	6	11%	57	100%	57	100%
3	0	0	0%	0	0%	0	0%
4	0	0	0%	0	0%	0	0%
5	0	0	0%	0	0%	0	0%
6	0	0	0%	0	0%	0	0%
7	0	0	0%	0	0%	0	0%
8	78	21	27%	22	28%	15	19%
9	8	0	0%	0	0%	0	0%
10	0	0	0%	0	0%	0	0%
11	0	0	0%	0	0%	0	0%
12	78	0	0%	0	0%	0	0%
13	0	0	0%	0	0%	0	0%
14	43	8	19%	10	23%	2	5%
15	30	1	3%	1	3%	1	3%
16	0	0	0%	0	0%	0	0%
17	0	0	0%	0	0%	0	0%
Totals	**294**	**36**	**12%**	**90**	**31%**	**75**	**26%**

Source: Walker Parking Consultants

During the peak hour, approximately 31% of the available public parking supply is occupied. Additionally, the occupancy rate at these lots varied greatly, with block 15 experiencing a 3% occupancy rate while block 2 was 100% full.

At 2:00 p.m., approximately one quarter of the private off-street parking supply was occupied. The parking occupancy on most blocks was observed at less than 50%. Block 3 had an 83% occupancy recorded at 10:00 a.m.

Table 10: Weekend Parking Occupancy Summary - **Private Off-Street**

Block #	Supply	10:00	Percentage	2:00	Percentage	6:00	Percentage
1	122	36	30%	40	33%	24	20%
2	37	5	14%	18	49%	12	32%
3	12	10	83%	2	17%	2	17%
4	12	4	33%	6	50%	4	33%
5	46	1	2%	5	11%	1	2%
6	37	6	16%	5	14%	6	16%
7	20	1	5%	1	5%	0	0%
8	43	12	28%	14	33%	5	12%
9	0	0	0%	0	0%	0	0%
10	28	3	11%	2	7%	1	4%
11	10	0	0%	0	0%	0	0%
12	121	15	12%	22	18%	11	9%
13	22	8	36%	6	27%	3	14%
14	40	22	55%	24	60%	4	10%
15	19	4	21%	3	16%	0	0%
16	35	3	9%	3	9%	2	6%
17	0	0	0%	0	0%	0	0%
Totals	**604**	**130**	**22%**	**151**	**25%**	**75**	**12%**

Source: Walker Parking Consultants

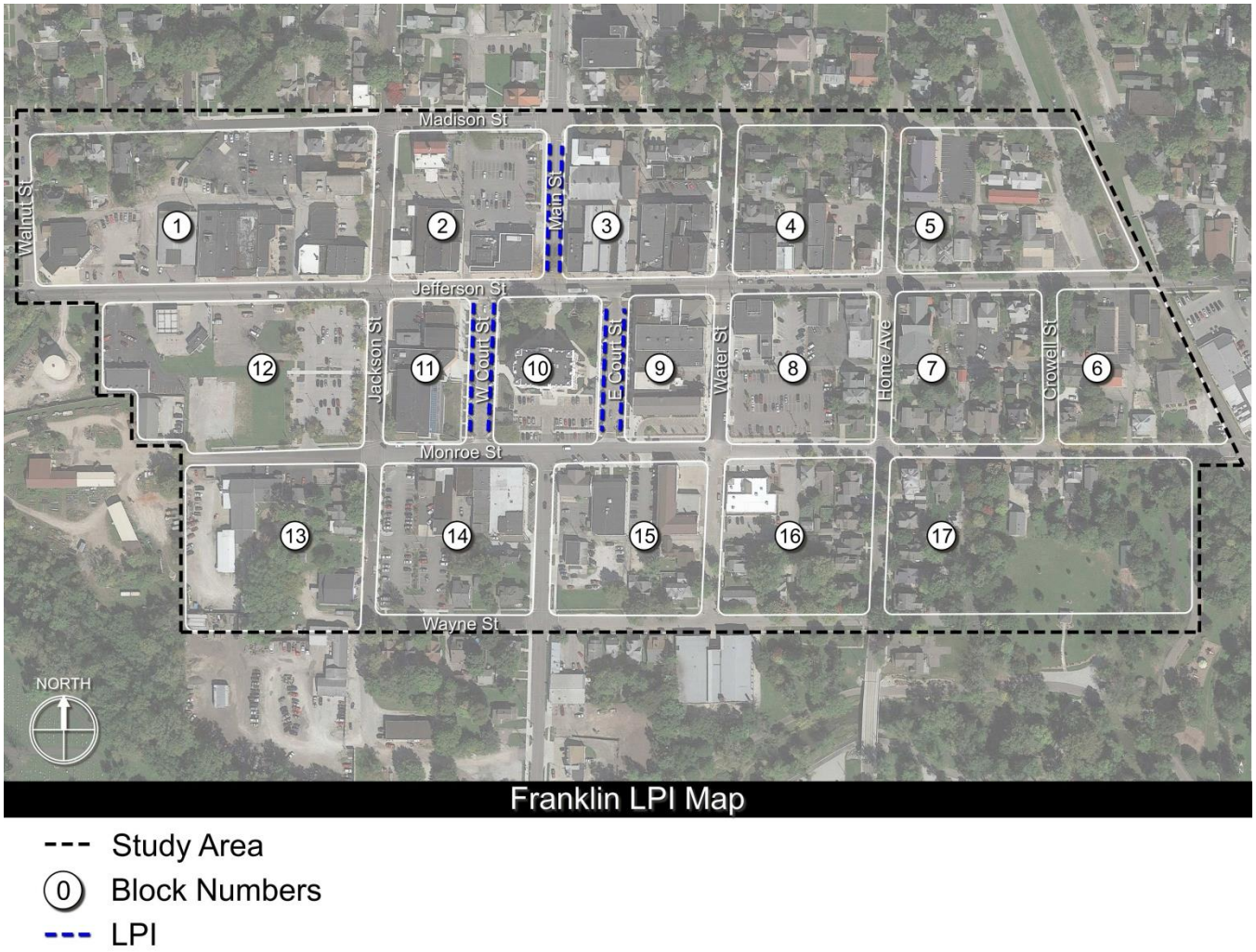
LICENSE PLATE INVENTORY

Walker conducted a site survey and analysis of the on-street parking conditions within the downtown area of the City of Franklin. The survey portion of the inventory required that visual inspections of all spaces be made every hour, during which time the last three characters of the license plate on the occupying vehicle (if present) were recorded on a data collection form. The survey began at 8:00 a.m. and continued throughout the day until 5:00 p.m.

Analysis of the data required input of the collected license plate characters into a spreadsheet that examined the turnover characteristics on a block face at a time.

The figure below identifies the six block faces that were surveyed for this effort, which included Main Street from Madison to Jefferson Street, East and West Court Streets from Jefferson to Monroe Street.

Figure 4: License Plate Inventory Map



--- Study Area
(0) Block Numbers
--- LPI

Source: Walker Parking Consultants

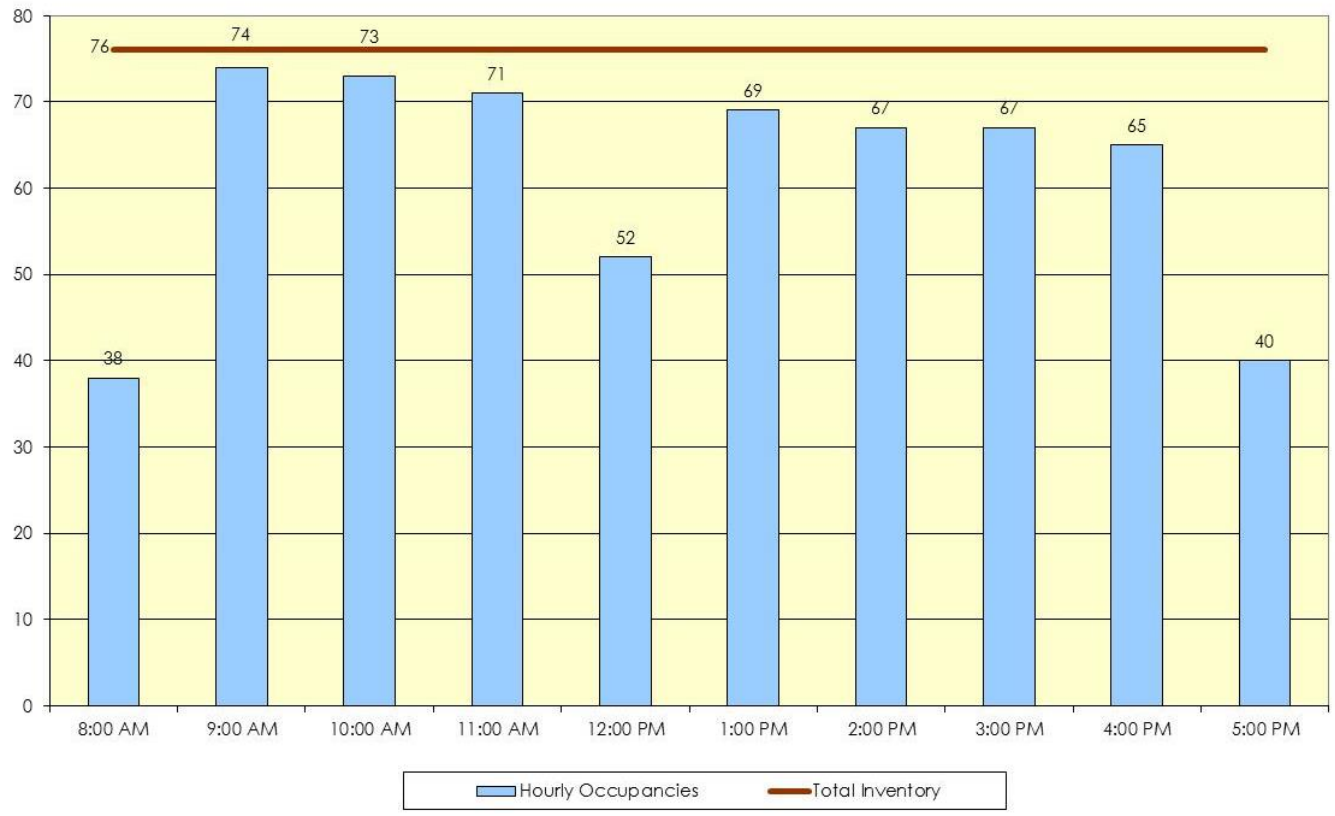
The following table shows that the peak parking occupancy occurred during the 9:00 a.m. hour, with 74 out of 76 spaces being occupied, and representing a 97% occupancy rate.

Table 11: LPI Occupancy Summary

LPI Occupancy Results						Hourly Occupancies										Peak Hour
Area	Street:	Side:	From:	To:	Total Inventory	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	9:00 AM
1	East Court	E	North	South	17	10	17	16	17	14	17	17	14	15	11	17
2	West Court	W	South	North	14	6	13	14	12	9	12	14	12	11	5	13
3	East Court	W	North	South	17	10	17	17	17	14	17	16	16	17	6	17
4	West Court	E	South	North	16	6	16	16	14	5	12	10	14	11	6	16
5	Main Street	E	South	North	5	1	4	3	5	5	5	4	5	5	5	4
6	Main Street	W	North	South	7	5	7	7	6	5	6	6	6	6	7	7
			Total Occupancies		76	38	74	73	71	52	69	67	67	65	40	74
			% Occupied			50%	97%	96%	93%	68%	91%	88%	88%	86%	53%	97%

Source: Walker Parking Consultants

Figure 5: LPI Hourly Occupancy

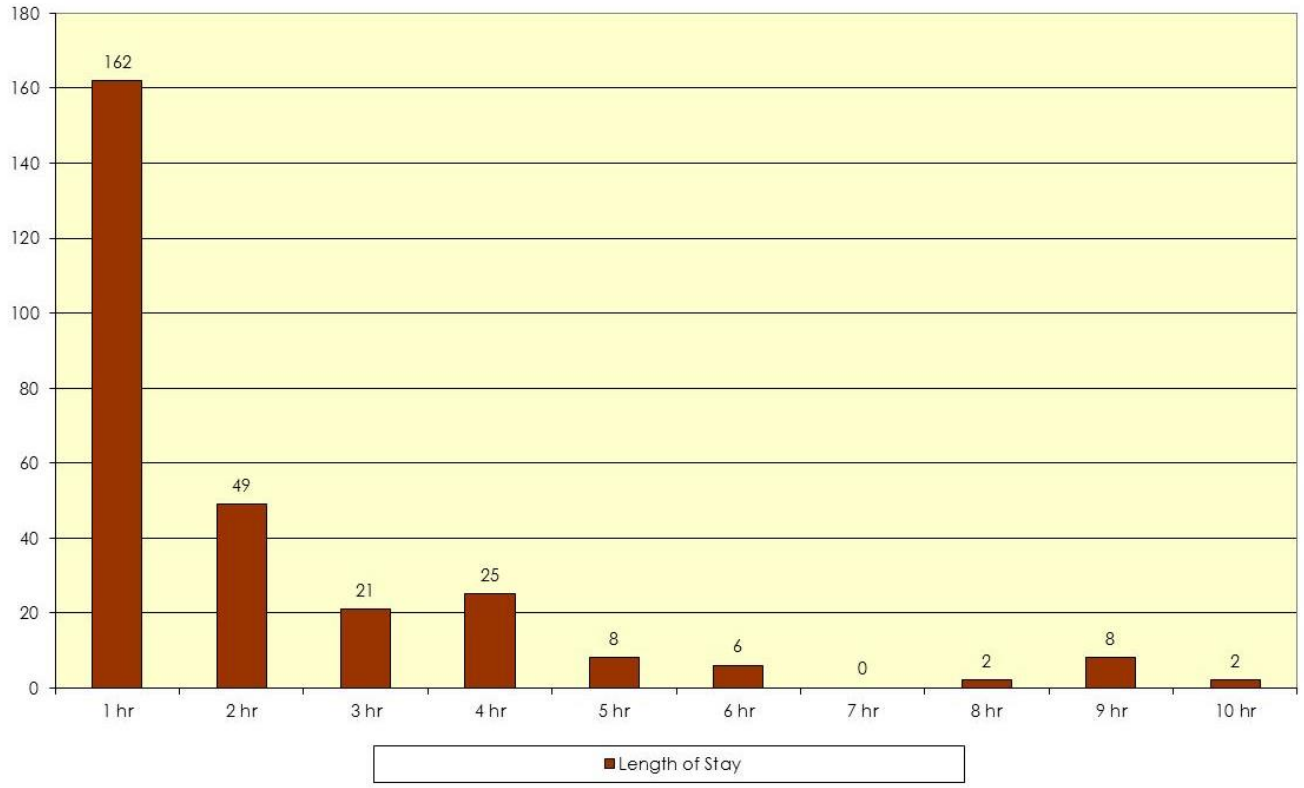


Source: Walker Parking Consultants

The figure below shows that most vehicles that were observed as parked on-street, were parked for two hours or less in the downtown area. This suggests that the majority of on-street spaces are used by short-term parkers, which is appropriate. This is not to say that specific streets within the study did not experience poor turnover. The high turnover at the majority of on-street spaces suggests that the public is, for the most part, obeying the posted time limits.

Most of the time limit signs have not been replaced in the downtown. According to city officials, there are conflicting ordinances specifying either a 2 hour limit or 3 hour limit. The average length of stay is 2.3 hours. However, our data shows approximately 51 vehicles that overstayed the 3 hour limit (18%).

Figure 6: Length of Stay Summary



Source: Walker Parking Consultants

Table 12: Average Length of Stay

						Length of Stay										
Area	Street:	Side:	From:	To:	Total Inventory	1 hr	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	9 hr	10 hr	Average
1	East Court	E	North	South	17	52	21	5	2	2	2	0	0	1	0	1.7
2	West Court	W	South	North	14	25	9	5	1	2	0	0	0	4	0	2.3
3	East Court	W	North	South	17	23	7	2	13	1	2	0	1	3	0	2.8
4	West Court	E	South	North	16	39	7	6	5	2	0	0	0	0	0	1.9
5	Main Street	E	South	North	5	13	3	1	1	0	1	0	0	0	1	2.1
6	Main Street	W	North	South	7	10	2	2	3	1	1	0	1	0	1	2.9
		Totals			76	162	49	21	25	8	6	0	2	8	2	2.3

Source: Walker Parking Consultants

STAKEHOLDER INPUT

Stakeholder interviews were held with a sample of individuals and leaders in the downtown that are directly impacted by parking policies and decisions. Information was obtained from stakeholders through individual and group discussions. The following summary highlights common subjects and reflects key comments obtained from the stakeholders.

- Need Enforcement of 3 hour limit
- County will establish a new court in 2015 in Annex North, approx. 15 staff persons
- Artcraft Theater has 625 seats and sees 2,400-2,600 persons per weekend during peak. The theater has had increasing use each year.
- Reserved spaces in public lots for county employees are from 8 am – 4:30 pm. People may not know they can park in those spaces after those times.
- Jury selection days puts pressure on parking. Prospective jurors are not required to park in any particular lot.
- There is a perception of a parking problem on weekends
- Loading zones may be needed
- East side of railroad tracks is seeing an increase in parking demand
- There are currently no requirements for parking in the downtown zone
- Ann's restaurant renovations have been positive on downtown
- Bicycle parking is needed
- Auction barn at Wayne and Jackson Streets has increased demand on Tuesday & Friday nights, may need a loading zone

FUTURE CONDITIONS

There are basically two different methods for projecting future parking volumes. One method involves the use of historical and projected 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 goes further and further into the future, the ability to predict these changes becomes more and more difficult and less accurate. In the case of Franklin, we will utilize a blended methodology.

PROJECTED 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 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 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 demand are added together and then compared to the effective parking supply to determine the overall parking adequacy.

There are several proposed urban renewal and new downtown development projects that may directly impact parking in downtown Franklin. Walker used land use data provided by the City to project future parking demand for the Study Area. We assumed that all known development projects would be operational by 2020.

The list of proposed developments may not represent all real estate projects or business expansions being considered in the Study Area, but does represent a collection of the most significant projects being considered at this time. For the purpose of this study, the following projects are reflected in the calculation of future parking demand. The projects are organized by block.

Table 13: New Development Assumptions

Block	Development	Land Use	Size	Unit
3	Pizzeria	Fast/Casual Restaurant	10,000	Square Feet
3	Office Space	Office	8,000	Square Feet
11	BBQ Restaurant	Fast/Casual Restaurant	5,000	Square Feet
2	Brew Pub	Casual/Fine Dining	7,500	Square Feet
15	BioTech Office	Office	9,000	Square Feet
9	Café	Fast/Casual Restaurant	3,000	Square Feet
9	Bakery	Fast/Casual Restaurant	3,000	Square Feet
2	New Court	Government	15	Staff

Source: City of Franklin

There are two primary variables applied to the calculation of peak accumulation for new developments: 1) the total gross floor area (GFA), number of hotel rooms, seating capacity, etc. for each type of proposed land use (i.e. office, retail, restaurant, etc.), and 2) the appropriate parking demand ratio. The following section provides a discussion on the use of shared parking methodology when calculating the appropriate demand ratio to use for each type of land use in this analysis.

SHARED PARKING DEMAND

Shared parking is defined as parking spaces that can be used to serve two or more individual land uses without conflict or encroachment. One of the fundamental principles of downtown planning from the earliest days of the automobile has always been to share parking resources rather than to have each use or building have its own parking. The resurgence of many central cities resulting from the addition of vibrant residential, retail, restaurant and entertainment developments continues to rely heavily on shared parking for economic viability. In addition, mixed-use projects in many different settings have benefited from shared parking. There are numerous benefits of shared parking to a community at large, not the least of which is the environmental benefit of significantly reducing the square feet of parking provided to serve commercial development.

The interplay of land uses in a mixed-use environment produces a reduction in overall parking demand. For example, a substantial percentage of patrons at one business (restaurant) may be employees of another downtown business (office). This is referred to as the "effects of the

captive market". These patrons are already parking and contribute only once to the number of peak hour parkers. In other words, the parking demand ratio for individual land uses should be factored downward in proportion to the captive market support received from neighboring land uses.

Adjustments are also made to account for the number of patrons who arrive at the subject property by means other than personal vehicle. Based on data collected by the U.S. Census Bureau, Walker applied a drive ratio, or modal split factor, to each land use. Per current census data, approximately 91%[1] of employees arrive via personal vehicle in Franklin, IN, depending on proximity to public transit and their type of occupation. The remaining 9% utilize another means of transportation such as mass transit, bicycle, or walking, or worked from home.

Walker did not delineate between customer and employee demand when preparing our projections. Additionally, although census data represents a blended drive ratio for all employees, professional and commercial employees exhibit slightly different driving habits. For this reason, Walker adjusted the drive ratio for each land use to account for site specific conditions.

The base parking demand ratio for each land use is adjusted to represent the project ratio. Project ratios are calculated by multiplying the base ratio by the drive ratio (modal split), non-captive ratio (one minus the percent captive) and an hourly adjustment.

Table 14: Shared Parking Ratios

Block	Development	Land Use	Size	Unit	Base Ratio Per 1,000 SF	Gross Parking Demand	Time of Day Adj	Drive Ratio	Future Parking Demand
3	Pizzeria	Fast/Casual Restaurant	10,000	Square Feet	10	100	75%	75%	56
3	Office Space	Office	8,000	Square Feet	4	32	100%	100%	32
11	BBQ Restaurant	Fast/Casual Restaurant	5,000	Square Feet	10	50	75%	75%	28
2	Brew Pub	Casual/Fine Dining	7,500	Square Feet	18	135	50%	100%	68
15	BioTech Office	Office	9,000	Square Feet	4	36	100%	100%	36
9	Café	Fast/Casual Restaurant	3,000	Square Feet	10	30	75%	50%	11
9	Bakery	Fast/Casual Restaurant	3,000	Square Feet	10	30	75%	50%	11
2	New Court	Government	15	Staff	1	15	100%	100%	15

Note:ULI recommended base parking ratios
Walker assumed peak demand occurred around 2:00 p.m.
The US Census data indicated a 91% drive ratio for employees in Franklin, IN. Walker adjusted the census data based on our experience.
Court parking for staff only. Does not include jury selection.

Source: Walker Parking Consultants

[1] Walker used the 2008-2012 ACS survey to determine modal split.

FUTURE PARKING SUPPLY

At this time, data regarding the number of spaces gained as a result of future development is unavailable. Walker assumed no change in the parking supply. No significant change in the number of parking spaces is assumed with the rebuild of Jefferson Street. (At the time of this report, no definitive plans on the rebuild were available.)

FUTURE WEEKDAY CONDITIONS

Walker projected parking demand within the downtown Study Area for the 2020 planning horizon. The 2020 projections assume all proposed development projects are operational and have begun to generate parking demand. Additionally, we assumed the remaining public parking demand in Study Area would grow a 1% compounded annually.

PARKING OCCUPANCY

Walker is projecting an overall occupancy rate of 77% during weekday conditions by 2020, assuming no new parking is built with the planned developments. When parking occupancies reach 85% or greater, finding available parking can be difficult. Most of the blocks within our Study Area are expected to experience parking rates below 85%, however blocks 2, 3, 4, 9, 10, 11, and 15 are projected to experience rates of 90-100%. To accommodate that increase in demand, parking will have to shift to adjacent blocks with excess parking supply.

Table 15: 2020 Total Peak Parking Occupancy – Weekday

		Current Peak		5-Year Projection	
Block #	Supply	2:00	Percentage	Demand	Percentage
1	152	56	37%	56	37%
2	121	71	59%	169	139%
3	31	25	81%	118	381%
4	35	32	91%	37	106%
5	72	14	19%	14	19%
6	55	12	22%	12	22%
7	50	5	10%	5	10%
8	146	92	63%	111	76%
9	43	31	72%	62	143%
10	75	71	95%	83	111%
11	29	20	69%	53	183%
12	215	82	38%	93	43%
13	33	25	76%	25	76%
14	122	57	47%	67	55%
15	89	38	43%	84	94%
16	58	14	24%	14	24%
17	11	2	18%	2	18%
Totals	1,337	647	48%	1,004	75%

Source: Walker Parking Consultants

Parking demand is expected to increase by 357 occupied spaces over the next five years. By 2020, a 75% occupancy rate is projected. Please note that while several blocks are expected to experience parking rates near or above 85%, the majority of blocks are expected to have available parking supply.

Figure 7: Future Parking Occupancy – By Percentage

--- Study Area
(0) Block Numbers
0% - 49%
50% - 69%
70% - 84%
85% - 100%

Source: Walker Parking Consultants

PARKING ADEQUACY

As discussed earlier, parking adequacy is the ability of the parking supply to accommodate the parking demand. In order to determine the 2020 adequacy, Walker compared the projected parking demand to the future effective parking supply. As shown in Table 16, adequate parking is available within the Study Area on most blocks.

Table 16: 2020 Parking Adequacy - Weekday

Block #	Effective Supply	5 Year Peak Demand	Adequacy
1	142	56	86
2	109	169	-60
3	27	118	-91
4	31	37	-6
5	66	14	52
6	50	12	38
7	45	5	40
8	132	111	21
9	38	62	-24
10	67	83	-16
11	26	53	-27
12	199	93	106
13	30	25	5
14	110	67	43
15	79	84	-5
16	53	14	39
17	9	2	7
Totals	1,213	1,004	209

Source: Walker Parking Consultants

An overall parking surplus of nearly 209 spaces is expected within the Study Area. Even though an overall parking surplus is projected, there will be blocks that have an inadequate parking supply and will depend on adjacent or nearby blocks for their parking supply. Expansion of the public parking supply may be necessary to lessen the burden of a few blocks.

ALTERNATIVES ANALYSIS

As a whole, the current perception of inadequate parking is not supported by the observed occupancy counts. This may be because on-street parking is so user-friendly that people tend to use these spaces first and only use the off-street parking lots as a last resort. The result is constant traffic congestion on-street, which creates the illusion of a parking shortage; while in fact, there is an overall surplus of parking available off-street that may not be visible to the average person driving in the district.

Future parking demand projections in the study area indicate that parking will likely be adequate with the anticipated developments. The following section of the report provides recommendations to improve the existing parking supply's adequacy and perceived adequacy.

GENERAL OBSERVATIONS

There are 1,337± total spaces in the study area. Of these, 604± have user restrictions posted, limiting usage of the lot to a particular business. The remaining 733± spaces of on- and off-street public spaces are available to the general public for parking. Regulating, organizing and improving the parking supply requires a collective effort of the property and business owners and the City.

Our observations and brief discussions with a few business owners uncovered the problem that the few available privately owned public spaces are both hard to find and not clearly defined as to who is allowed to park. Additionally, we found many small private lots separated by physical boundaries erected by individual property owners, making a less efficient layout for the space provided.

PARKING LOT ANALYSIS

Most of the blocks in the study area include off-street parking lots. Most of the lots are private, as the use of the lots is restricted to the patrons and/or employees of the business that own the lot. Some of the lots in the study area were created by "default" after buildings that once occupied those areas were demolished. This gives the landscape an appearance of "missing teeth". A long range goal should be to fill in the "missing teeth" with buildings, as development occurs. Parking areas are better served when located off the main corridor streets.

If shared parking becomes a viable option for the city, issues over liability, maintenance, operation and revenue collection will need to be addressed with the individual lot owners. This coordination of parking operations would most likely be best handled by the City. Third-party parking operators could be utilized to assist in the operation.

The general conditions of the lots in the study area range from very good to poor. Some of the private and public lots are in need of resurfacing and/or restriping.

WAYFINDING / SIGNAGE

We recommend implementing a comprehensive signage program to maximize visitor awareness to public parking locations. The signage improvements should be prepared in conjunction with any enhancements to the parking resources, in addition to any streetscape improvements along the corridor roadways. As is true with any good communications medium, signs should be brief, precise and appropriate, such as "Public Parking" or "Two Hour Parking." Further, the signage should guide the driver from the main thoroughfares into the parking lots.

At present, there appears to be no consistent parking signage for off-street parking areas or along the primary thoroughfares, particularly with respect to enforcement signs. While many business owners have private parking signs posted on the sides of buildings, sign posts and fences, they all vary in content and visual appearance.

Figure 8: Signage in Study Area

Source: Walker Parking Consultants

Each parking area has its own set of wayfinding/signage requirements. These requirements present specific questions concerning the needs and concerns of the users to be answered during the design of the signs, including:

- What are the points at which information is needed?
- What information is needed?
- How should this information be presented?
- Will there be a high percentage of first-time visitors to the district, or is the parking supply used by the same people every day?
- Are there special sign requirements for accessible parking or bilingual patrons?
- Are there choices in traffic patterns that must be presented to drivers such as directions to parking near the entrance to an anchor tenant or exits to different streets?

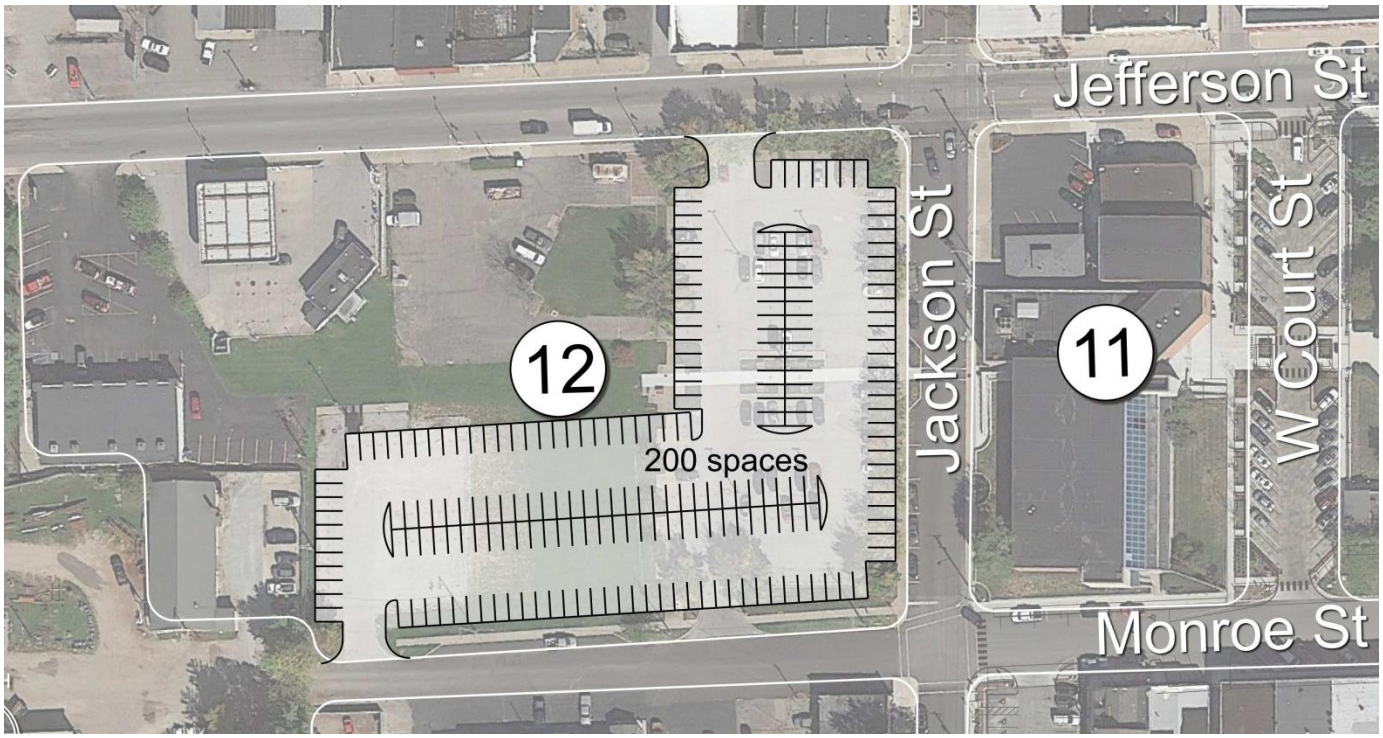
It is also important that general rules for sign design and placement be followed when planning the streetscape improvements.

- All signage should have a general organizing principle consistently evident in the system.
- Direction signage for both pedestrians and vehicles must be continuous (i.e., repeated at each point of choice) until the destination is reached. Very minimal signage exists at the point of parking that directs patrons back to the merchants.
- Signs should be placed in consistent and therefore predictable locations.

ADDITIONAL PUBLIC PARKING

Walker analyzed the configuration of the public lot located on block 12 and determined a more efficient layout that would result in about 200 parking spaces. This is a net increase of approximately 122 spaces. The following figure shows a conceptual layout.

Figure 9: Additional Public Parking



Source: Walker Parking Consultants

SHARING SMALL PRIVATE LOTS

One option that may be considered in the area is sharing the smaller restricted private lots. In essence, all of the private lots would be used as public parking areas, allowing patrons to park in the lesser used lots. The lots would still be owned by the individual property owners; however the operation of the lots would be regulated by the City. This option would greatly improve parking conditions during the previously identified peak parking demand period and evening off-peak times.

Issues concerning liability insurance, maintenance and operation need to be addressed with the individual lot owners and the City. Possible solutions to resolving the issues are:

- Form a partnership between the business and the City to share the lot.
- Assemble the properties and have the City operate the lot.
- Provide liability coverage by the City, listing each individual property owner as an additional insured.
- Sign the lot indicating it is operated and managed by the City or partnership.
- Maintain the parking lot – utilities, monitoring, and trash control - with City funds.

WALKING DISTANCE

Pedestrian Safety: This criterion involves two factors: the ability of vehicles to move to and from the area without pedestrian/vehicle conflict and, the ease of use by pedestrians with consideration of the walking path and distances to/from the facility.

Walking distance varies based on the patron user group as well as the environment of the surrounding area in which the patron must walk. To aid in estimating the appropriate walking distance, a Level of Service (LOS) rating system is used for evaluating appropriate walking distances based on specific criteria. Several factors impact the walking distance that a typical person will consider reasonable. These include climate, perceived security, lighting, and whether it is through a surface lot or inside a parking structure. LOS "A" is considered the best or ideal, LOS "B" is good, LOS "C" is average and LOS "D" is below average but minimally acceptable. A break down of the LOS conditions is provided in the following table.

Table 17: Level of Service

Level of Service Conditions	A	B	C	D
Climate Controlled	1,000 ft.	2,400 ft.	3,800 ft.	5,200 ft.
Outdoor/Covered	500	1,000	1,500	2,000
Outdoor/Uncovered	400	800	1,200	1,600
Through Surface Lot	350	700	1,050	1,400
Inside Parking Facility	300	600	900	1,200

Source: "How Far Should Parkers Have to Walker?", by Mary S. Smith and Thomas A. Butcher, Parking September 1994

We recommend striving to provide adequate parking to specific user groups using the following LOS guidelines.

Visitors: Because visitors are most likely unfamiliar with the area and/or are short-term parkers, we recommend providing walking distance LOS A to all visitors.

Employees: We recommend striving to provide LOS C and/or D to employees, which park for longer periods and may not require the use their vehicle throughout the day.

Walker measured the walking distances from a few public parking lots in the study area, to gain an appreciation of scale. The following figures detail the distances. For reference, Walker measured the walking distances from parking areas at Walmart and the Greenwood Park Mall.

Figure 10: Walking Distances from Public Lot on Block 2

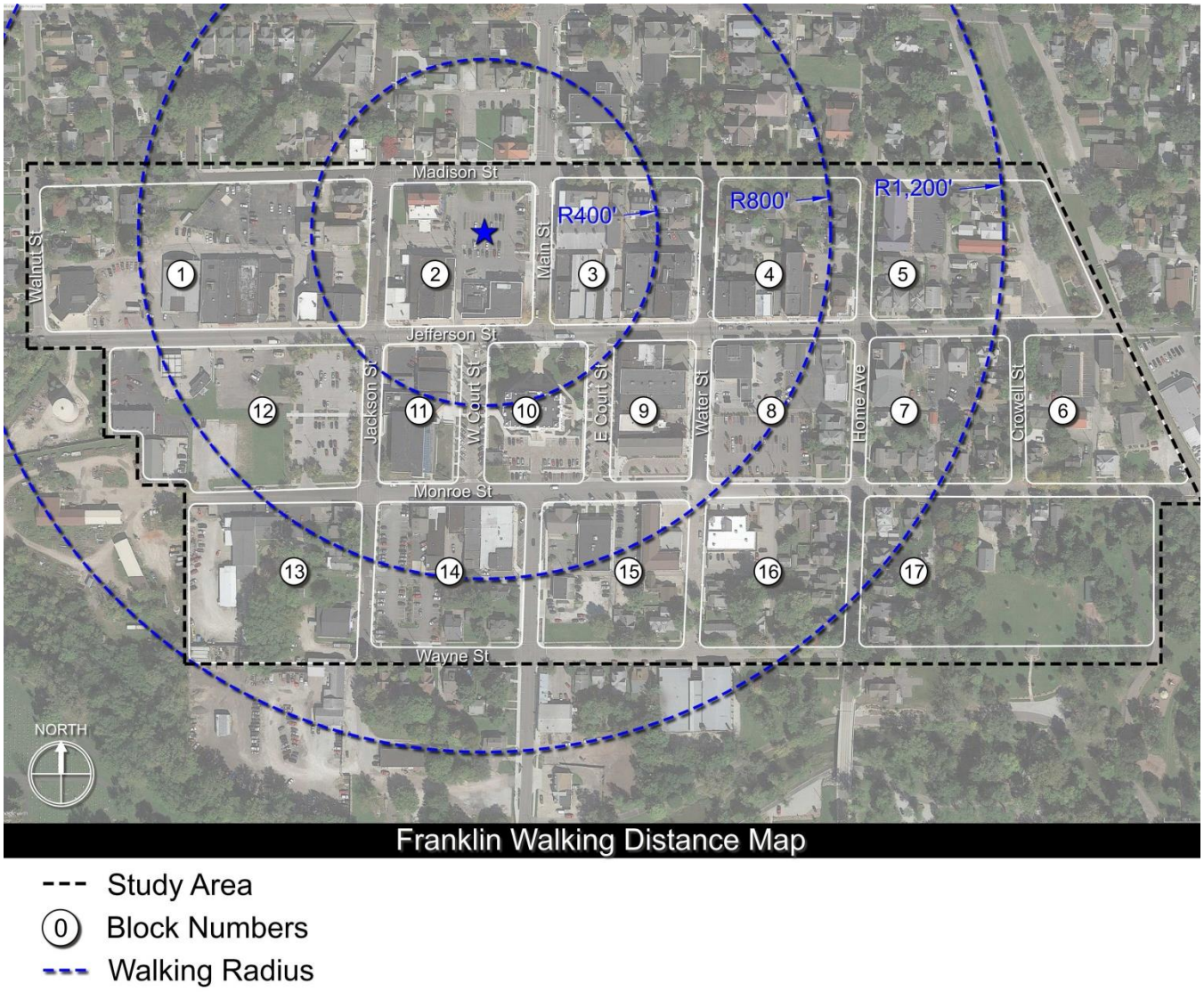
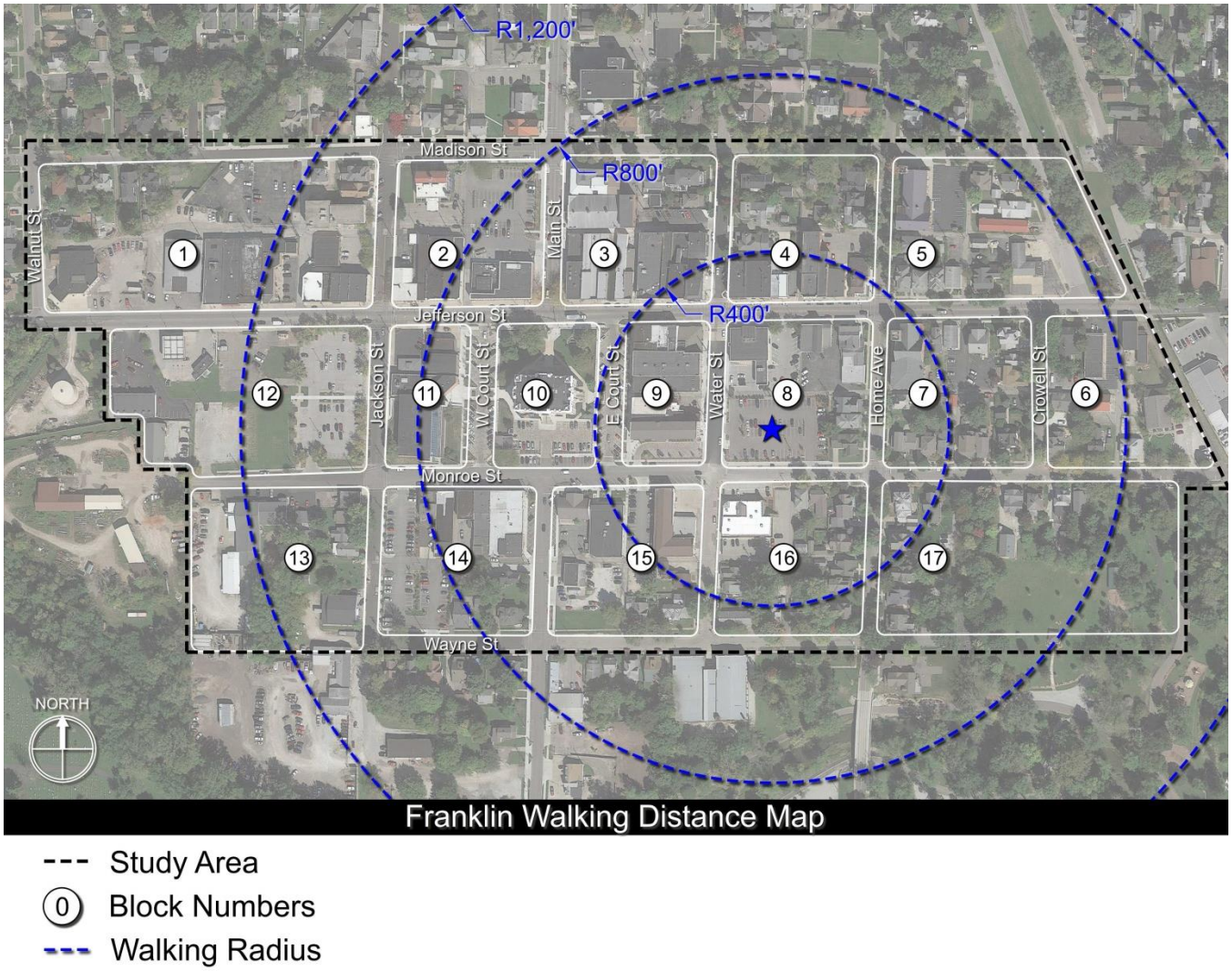


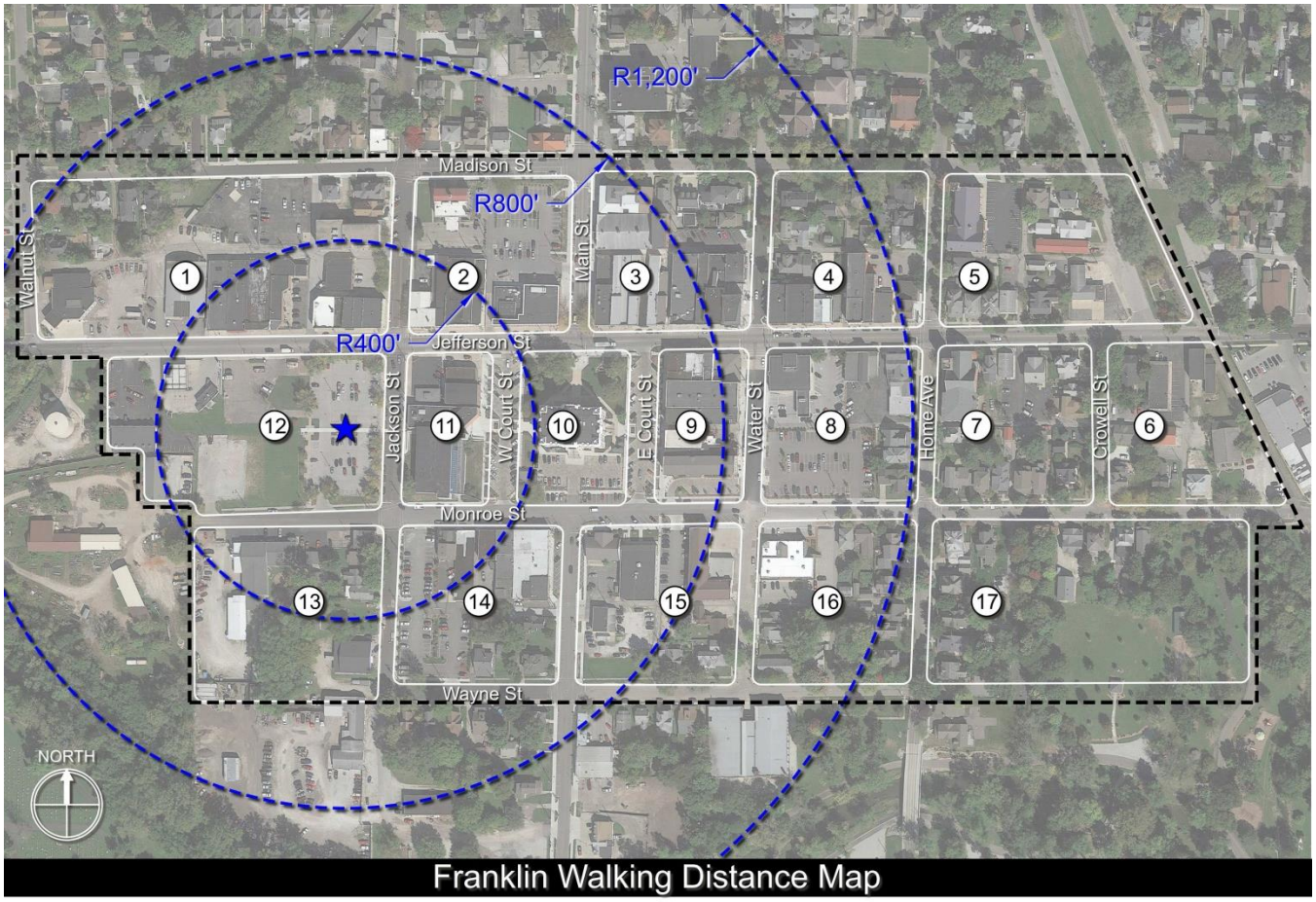
Figure 11: Walking Distances from Public Lot on Block 8



--- Study Area
(0) Block Numbers
--- Walking Radius

Walker Parking Consultants

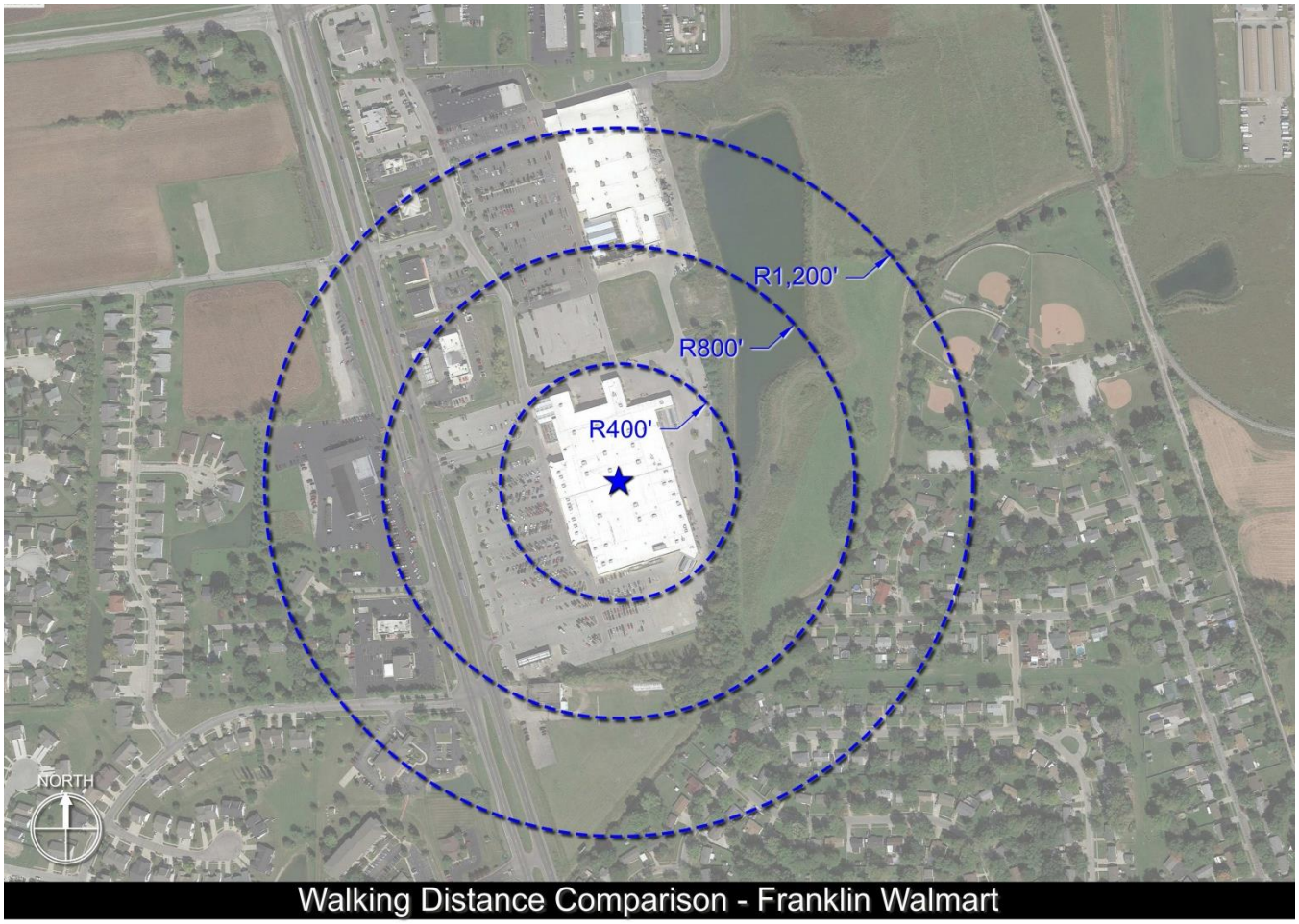
Figure 12: Walking Distances from Public Lot on Block 12



--- Study Area
(0) Block Numbers
--- Walking Radius

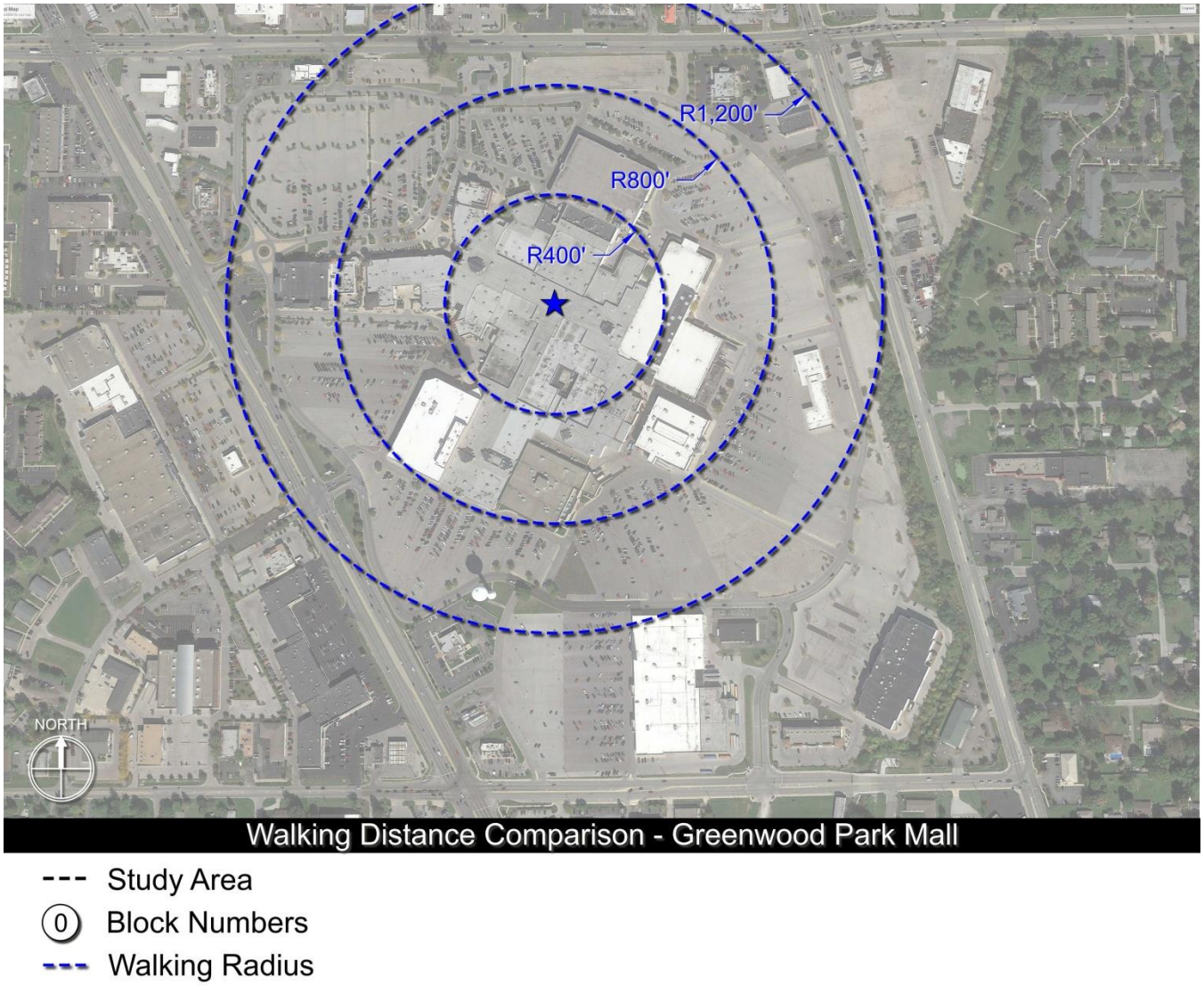
Walker Parking Consultants

Figure 13: Walking Distances – Franklin Wal-Mart



--- Study Area
(0) Block Numbers
--- Walking Radius

Figure 14: Walking Distances – Greenwood Park Mall



Walker Parking Consultants

BICYCLE RACKS

Many employers have trouble covering shifts due to their employees' lack of transportation. An alternative to expanding the bus schedule or shared vehicle services is using bicycles. By providing bicycle racks either on-street or at employment centers, employers can encourage individuals who live in close proximity to their places of work to bike or walk.

Installing bicycle racks alone, will not solve transportation issues, partly because safety will also need to be addressed in tandem. Lighting, security, bike paths, and signage all need to be considered when creating a bike program. Promotional opportunities can include, but are not limited to local bike shops run seminars to teach children and adults alike in order to ensure that biking remain a viable alternative transportation source.

A bicycle rack is a fixed structure, usually anchored to the ground or nearby building, to which a bicycle can be attached in order to prevent theft. Bike racks serve to encourage citizens to use bicycles and has the potential to significantly reduce traffic, air pollution, and parking demand within a City. Adding bicycle parking increases overall parking capacity at a relatively small cost. Additionally, businesses gain a competitive advantage by attracting and retaining health conscious employees and customers. Installing and utilizing bike racks not only makes riding a bicycle more convenient, it can eliminate the clutter, pedestrian hazard, and tree damage associated with unplanned bike parking as well.

A well-built bike rack should:

- Support the bicycle upright by its frame in two places
- Prevent the wheel from bending and the bicycle from tippling over
- Enable the frame and at least one wheel to be secured
- Support bicycles without a diamond-shaped frame with a horizontal top tube
- Allow front-in parking: a U-lock should be able to lock the front wheel and the down tube of an upright bicycle
- Allow back-in parking: a U-lock should be able to lock the rear wheel and seat tube of the bicycle

The more commonly used types include:

- Inverted U (Sheffield rack)
- Post and ring
- Campus
- Lightning bold
- Swerve

The ideal situation for those cyclists who desire long-term parking (4+ hours), is to allow bicycles to be brought and stored inside the workplaces. When this is not feasible, other solutions include:

- High security rack: the frame and wheels are secured with moving parts by a single lock
- Bicycle lid or rocker: a hard plastic shell, which securely encases the bike
- Bicycle "cage": fenced outdoor area, requiring an access key or combination lock
- Bicycle locker: an enclosed container of sorts, usually rented to a cyclist that offers a high level of security and weather protection

Bicycle racks to avoid:

- The old-fashioned "school yard" or "fence" racks do not allow both the frame and wheel to be secured to the rack, and thus experience a higher incidence of theft. Racks of this design also are most susceptible to toppling over in a domino fashion due to poor support.
- Complex or confusing bike racks should also be avoided.
- There is conflicting opinion on whether the wave shaped bike rack is effective. This type of rack is often used as a single inverted "U" by cyclists, thus limiting the capacity of the rack.
- When bikes are parked as the manufacturer intended, perpendicular to the rack, support is not provided in the recommended two locations, and bikes are more likely to fall.

Cities where a successful Bike Rack program exists:

- Madison, Wisconsin
- Chicago, Illinois
- Portland, Oregon
- Santa Cruz, California
- Bloomington, Indiana

PARKLETS

Parklets can be extensions of the sidewalk, additional restaurant or public outdoor seating capacity, long-term but not permanent structures, or convenient and efficient bicycle parking locations. Parklets can remove 1 to 3 parking spaces per block depending on the use, and are often limited to 1 parklet per block space. The biggest challenge with parklets is location.

Often, the desired parklet location is also an area of high parking space demand. Another challenge is public safety, and the increased risk for vehicle to pedestrian accidents.

Of the potential parklet options, bicycle parking is popular because a single parking space can potentially store 10+ bikes. Therefore the removal of one single parking space could potentially result in a demand reduction of up to 10 vehicles. This type of implementation should be incorporated into a larger marketing effort to promote bicycle usage. Local bicycle sales and repair stores, community groups, and cyclist enthusiasts and groups are great resources and partners for marketing efforts.

When used for additional seating capacity, parklets can increase the amount of stationary activity, like coffee, reading, smoking, and experiencing the local environment. This can result in longer stays and increased demand for long-term parking options. Local restaurants or businesses may be willing to subsidize the loss of a single parking space, but Franklin does not currently charge for any parking and therefore could be a challenging request. This type of parklet option would better serve parking and the community if the goal is community partnership and customer service.

ENFORCEMENT

Walker recommends that the City use an electronic citation issuance and parking enforcement management system that allows electronic tire chalking and maintains electronic records of enforcement activity. Systems are available that provide the enforcement officer with information on a "live" or "real-time" basis while in the field via cellular technology, but most require that base data information be downloaded to the handheld units from a local or remote application server before departure, and are not networked again until docked at the end of the shift. Citation and configuration data is then transferred to the base application server to be ready for the following business day.

In the past few years, many systems have begun offering "apps" for parking enforcement that can be used with most android and apple based cellular phones and tablets. The "apps" are downloaded, accessed, and used in very similar ways to most other smart phone apps. This type of system can be a great option for small to medium sized operations as it can significantly reduce the upfront costs. The traditional electronic handheld ticket-writer can be quite expensive when compared to the cost of a standard smart phone. Most of these applications, both the enforcement software as well as the back-end management system, are stored remotely and

accessed through standard web-browsers thereby significantly reducing the up-front hardware costs for new computers and equipment.

Parking management systems are typically networked to a service provider's central server computer, which can often be networked to exchange information with the local DMV directory license lookup services. These services supply addresses, facilitating follow-up letters, collection efforts, etc. Some service providers can also perform all of the processing between the citation and the money collection, offloading the related overhead, for small fees passed on to the payer or for portions of the ultimate collection amounts.

The most significant advantages over the old handwritten systems are

1. Information is automatically downloaded directly to the system avoiding data entry errors and transcription errors from sometimes-illegible handwritten citations,
2. Most systems are programmed or modified specifically for the client, and
3. Options such as scofflaw programs are included with a permit database, so no citations will be written on permitted vehicles. Handhelds can record occupancy data with special time intervals so the handheld keeps track of warning time (like chalk marks on tires). Some systems also use bar code reading of licenses or permits.

During Walker's license plate inventory collections and turnover analysis, there were approximately 18% (51+ vehicles per day) parked in violation of a posted (or assumed) 3 hour time limit. Extrapolated out, with significantly improved enforcement coverage, this could potentially result in over 13,260 violations annually. Improved enforcement efficiencies through technology could reduce the total number of infractions, increase the number of citations issued and associated revenues, and ultimately provide a better, more consistent parking system to the City businesses and patrons.

PARKING AMBASSADOR

The perception of on-street parking ordinance enforcement is often negative. The manner in which enforcement is presented to the public is often the reason. Enforcement is seen as punitive, which in many cases it is. For this reason, Walker recommends that the City adopt the "Ambassador Program" model for the downtown area as used successfully in Wichita, KS. In addition to the hospitality oriented nature of the program, Ambassadors are still required to enforce parking regulations.

The mission of a Downtown Ambassador Program would be to provide hospitality, tourism and public safety services to local citizens, businesses and visitors, in addition to enforcing parking regulations. The Ambassadors would be required to complete a multi-faceted training program in hospitality and customer service, emergency response and first aid, public

transportation and City services. They should work directly with the City, local businesses, and professional agencies.

The primary goals of an Ambassador program are to promote the area, resolve concerns and deter criminal activity, and help make the downtown area a better, safer and friendlier place to live, visit, shop and conduct business. Ambassadors should initiate personal contacts with the parking public (known as "touches"), issue more warnings and slightly fewer citations, and interact with visitors and citizens in a positive manner. The vision of the program is to help promote a progressive, dynamic downtown experience. The Ambassadors may accomplish these goals while providing parking management by monitoring public safety, extending a helping hand in emergency situations, and calling on area merchants on a regular basis. Beyond enforcing parking regulations, examples of appropriate behaviors of Ambassadors are:

- To greet visitors and offer customer service.
- To give a friendly face to many people's initial interaction with the City.
- To give accurate directions to visitors and direct visitors to destinations.
- To provide information and explain local traffic and parking regulations to seek voluntary compliance.
- To distribute City brochures and maps.
- To deter criminal activity by their presence.

The Ambassador Program could operate with two to four part-time Ambassadors working 6 days per week (10:00 am to 10:00 pm, Monday – Saturday) and as needed for special events in the evenings. Volunteers from the city could be called upon to become Ambassadors.

SHARED PARKING

Shared parking is defined as parking spaces that can be used to serve two or more individual land uses without conflict or encroachment. The resurgence of many central cities resulting from the addition of vibrant office, residential, retail, and entertainment developments continues to rely heavily on shared parking for economic viability. In addition, mixed-use projects in many different settings have benefited from shared parking. Numerous benefits of shared parking exist to a community at large, not the least of which is the environmental benefit of significantly reducing the square feet of parking provided to serve commercial development.

The ability to share parking spaces is the result of two conditions:

- Variations in the accumulation of vehicles by hour, by day, or by season at the individual land uses.
- Relationships among the land uses that result in visiting multiple land uses on the same auto trip.

For example, office buildings require parking spaces during daytime hours on weekdays, while restaurants and entertainment venues have peak parking needs during the evening and weekends. The interplay of land uses in a mixed-use environment also produces a reduction in overall parking demand. For example, a substantial percentage of patrons at one business (restaurant) may be employees of another downtown business (office). This phenomenon is referred to as the "effects of the captive market." Because these patrons are already parking, they contribute only once to the number of peak hour parking patrons. In other words, the parking demand ratio for individual land uses should be factored downward in proportion to the captive market support received from neighboring land uses.

Although the interplay of land uses can reduce the overall demand, it should be noted that there are limits imposed by proximity of land uses to each other and to parking facilities. While "shared parking" by definition is capitalizing on the different demand period for a combination of land uses, it is not logical to assume that a hotel (with peak demand in the evening) can share with an office building (with peak demand during the day) if the two land uses are too far apart. Human behavior restricts shared parking opportunities by limiting the distance users are willing to walk from a parking facility to their final destinations.

MARKETING AND WEBSITE

It is also recommended that the City, in coordination with any downtown business / merchants association(s), consider developing a formalized parking management plan that clearly communicates locations for employee, resident and visitor parking. Many of the localized parking challenges can be addressed through improved management and marketing of the existing resources.

The Public Relations and Communications program should:

- Include a comprehensive "Downtown Parking" City web site. This web-site can share data and links with the current city website in order to reduce duplication and overall cost and effort.
- Respond to questions and requests from the general public for locations of parking facilities, pricing and availability.
- Maintain the integrity of downtown parking promotional materials, and provide parking maps, business development packets, and fact sheets.
- Provide day-to-day media relations, and generate press releases as needed.
- Provide public relations assistance to other downtown events as needed.

This information should be distributed through:

(1) A more comprehensive "Downtown Parking" City web site.
(2) A quarterly newsletter for the downtown parking community with news of economic developments in parking, development and construction projects, upcoming events and profiles of newsmakers.
(3) Newspaper items or articles and media releases.
(4) Brochures and maps both distributed and posted.
(5) Direct mailings / email when appropriate.

(6) Meetings and presentations about downtown parking to City business and civic groups upon request.

Local businesses are often willing to provide parking information and links to additional parking resources from their web-site's home page. This can be very helpful in catering specific location data to their customers, while also providing a free portal to market parking services to potential patrons. If patrons are armed with parking availability and location information prior to arriving at their destination their overall downtown experience will be greatly improved.

Examples of Municipal Parking web pages:

- http://www.downtownsouthbend.com/parking-and-maps
- http://downtownlincoln.org/get-there/car.html
- http://www.pittsburghparking.com/
- http://www.miamiparking.com/en/home.aspx
- https://springfieldparkingauthority.com/
- http://archive.baltimoreCity.gov/Government/QuasiAgencies/ParkingAuthority.aspx
- http://www.downtownkalamazoo.org/
- http://bloomington.in.gov/sections/viewSection.php?section_id=132
- http://www.traverseCitymi.gov/publicparking.asp
- https://cantonohio.gov/engineering/?pg=112

MAXIMIZING SHARED PARKING

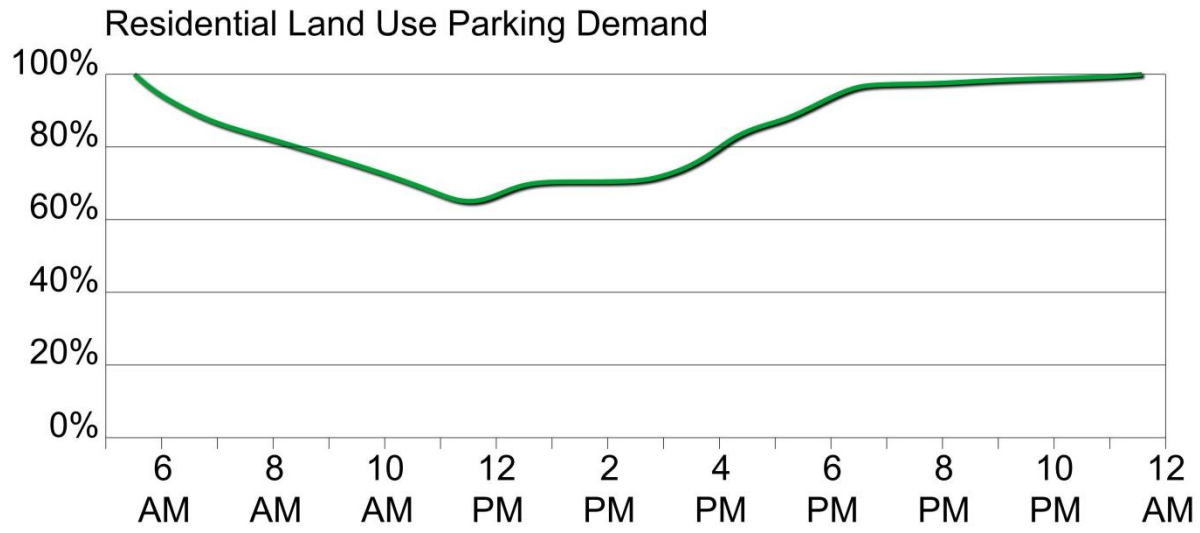
The type of land use dictates parking behaviors and patterns. When land uses have different peak periods or when they can share patrons, such as a restaurant located in an office building, parking assets can be effectively shared. Walker has been involved in several research projects of specific land uses to estimate demand ratios and parking behaviors. Other sources for estimating parking demand come from the Institute of Transportation Engineers (ITE) and the Urban Land Institute (ULI). Gaining an understanding of the parking characteristics of each land use is the first step to identifying potential sharing opportunities.

The following figures show complimentary land uses based on variations in peak parking for a weekday. Land uses that peak during the daytime share land uses that peak in the evening. As potential developments are considered, interaction between uses should be considered, even between different developments, as long as they are located within a reasonable walking distance.

Residential land use generally offers limited sharing opportunities with other land uses. This is because residential developments tend to be occupied during weekdays and weekends,

and only opens up a little during the weekday. Many times residential developers require a percentage of the parking to be reserved for tenants in order to market the units. Reserved spaces do not share and should be discouraged or limited. Assuming residential parking is not reserved, the following figure illustrates residential weekday parking characteristics from 6:00 a.m. to Midnight. The residential graph indicates parking will be available for sharing within another land use peaks between 8:00 a.m. and 5 p.m.

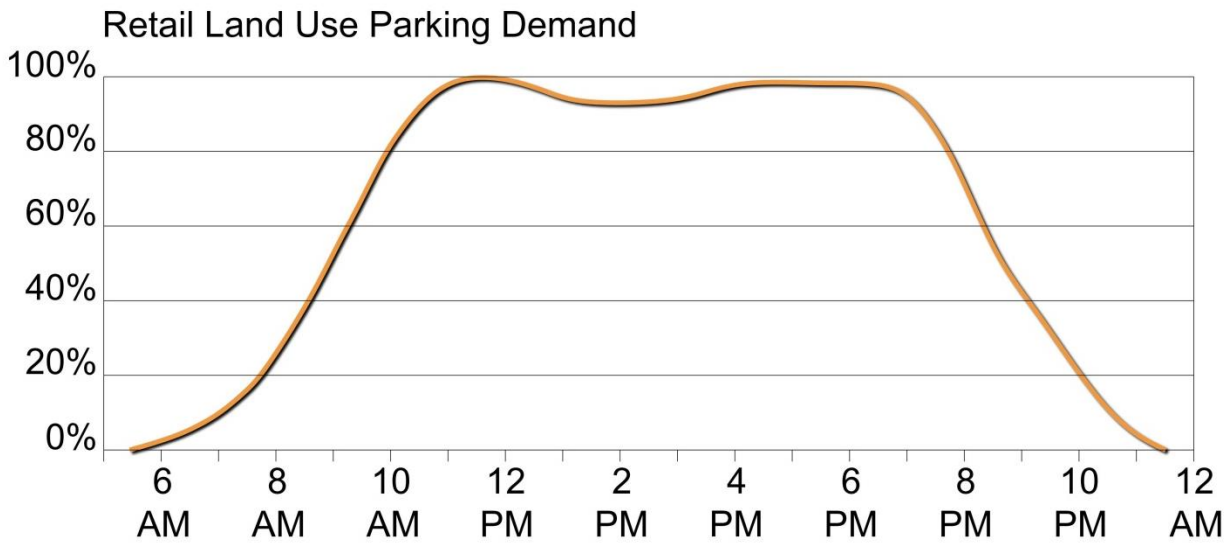
Figure 15: Weekday Residential Land Use



Source: Parking Generation, Third Edition. Washington DC: Institute of Transportation Engineers, 2004 and Walker Research

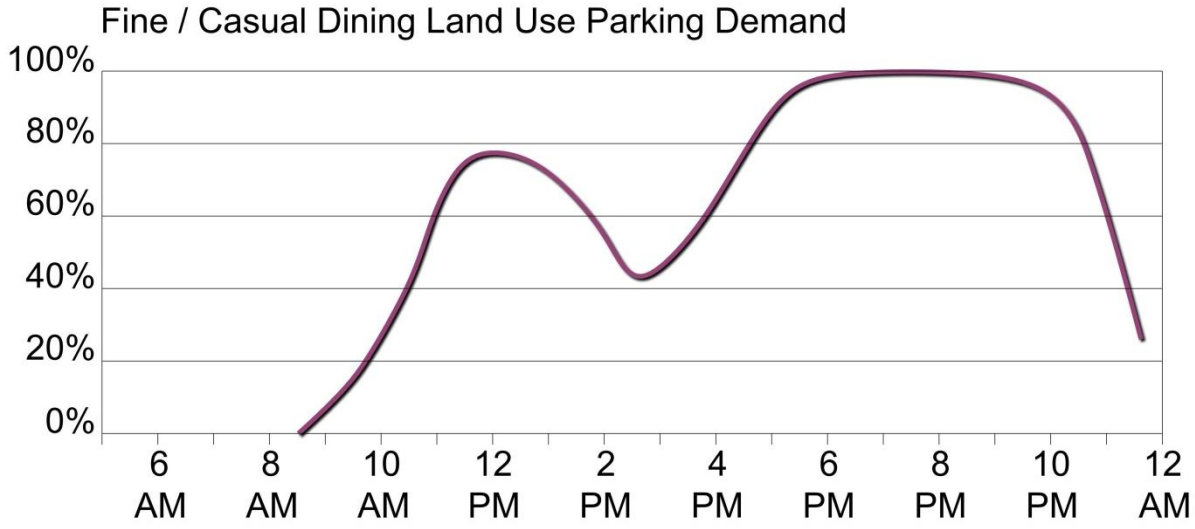
To further our example of parking characteristics, we have assembled the weekday parking characteristics of several types of land use in the following figures. We then show how they interact with each other during a weekday.

Figure 16: Weekday Parking Characteristics – Retail



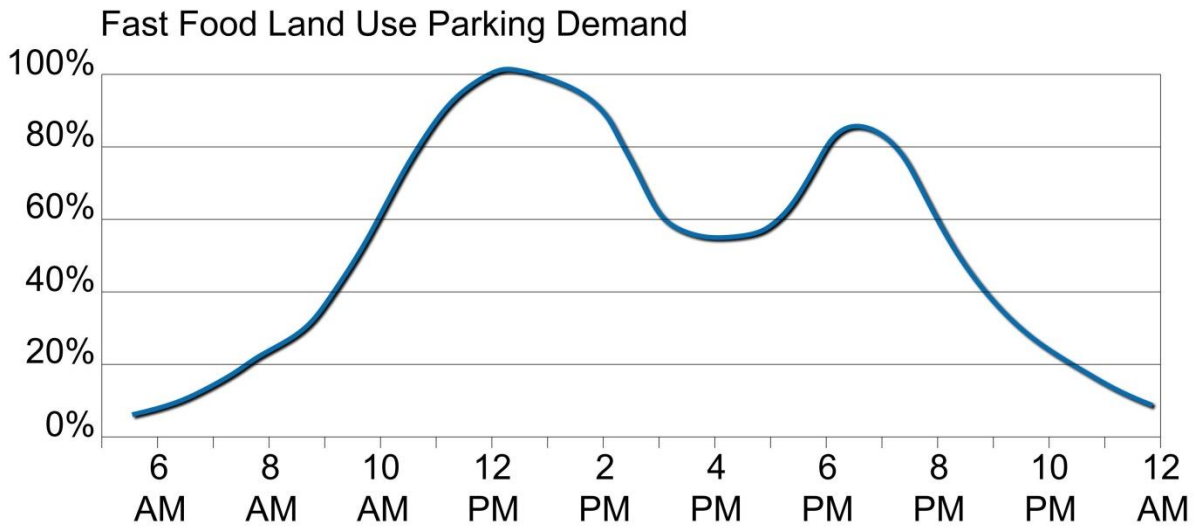
Source: Parking Requirements for Shopping Centers, Second Edition. Washington DC: ULI-The Urban Land Institute, 1999.

Figure 17: Weekday Parking Characteristics – Dining



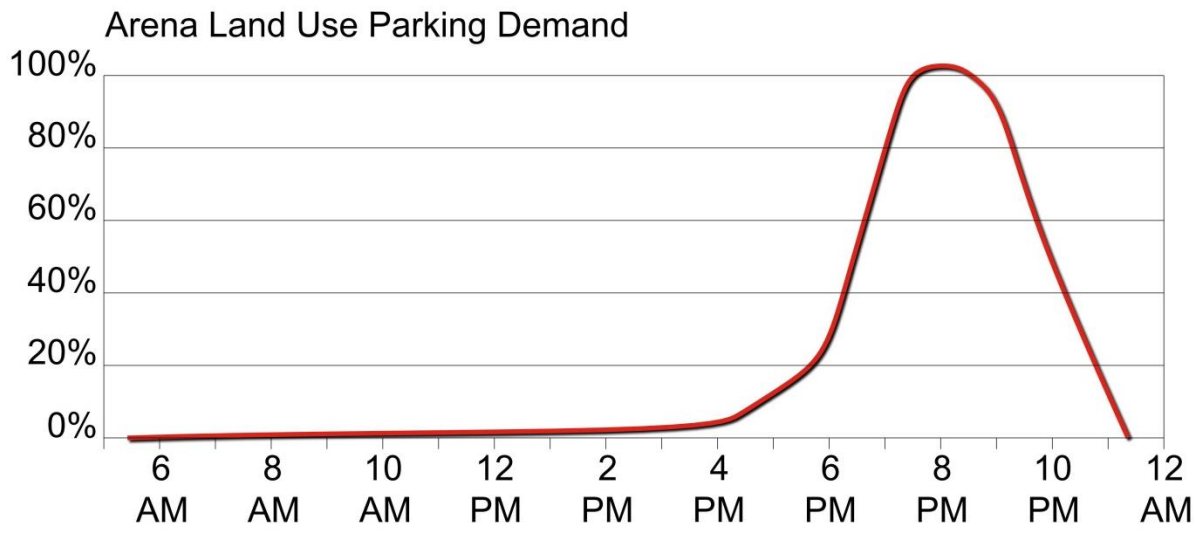
Source: Parking Generation, Third Edition. Washington DC: Institute of Transportation Engineers, 2004

Figure 18: Weekday Parking Characteristics – Fast Food



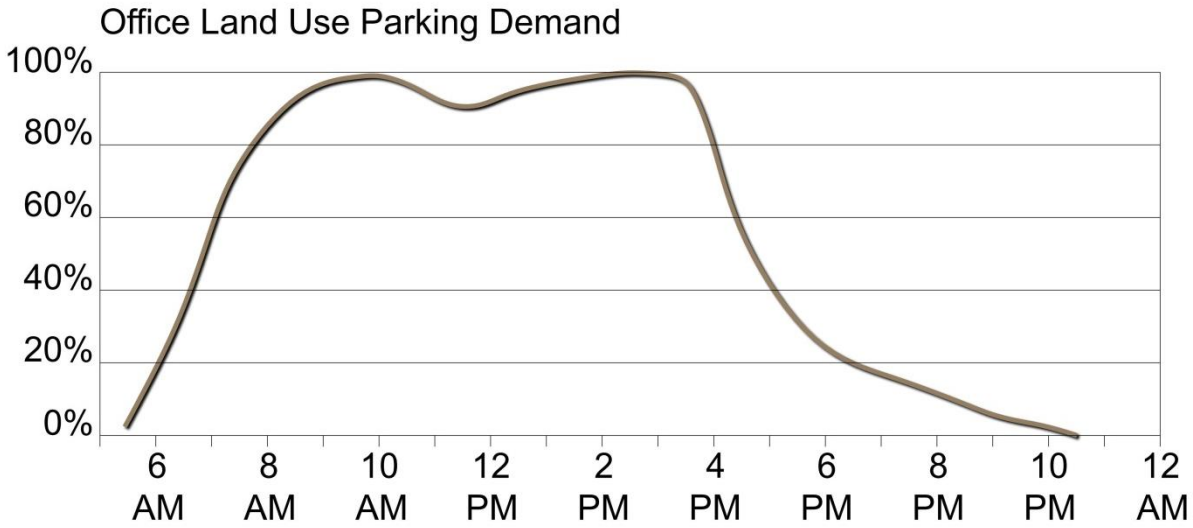
Source: Parking Generation, Third Edition. Washington DC: Institute of Transportation Engineers, 2004

Figure 19: Weekday Parking Characteristics – Arena



Source: Walker Research

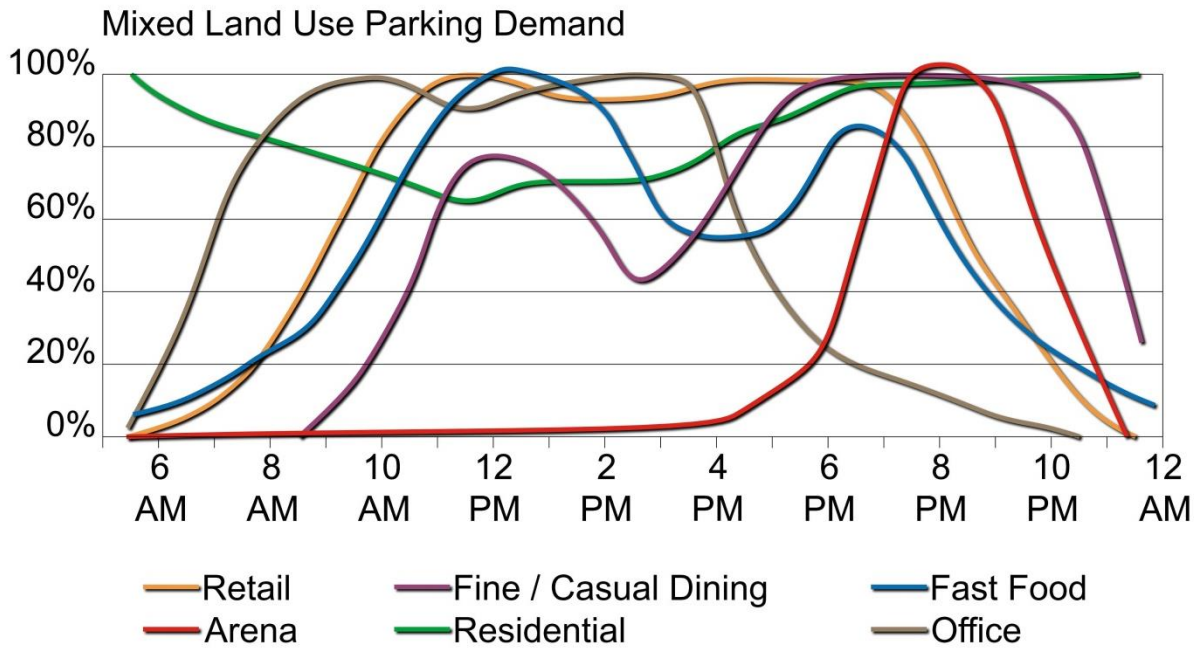
Figure 20: Weekday Parking Characteristics – Office



Source: Parking Generation, Third Edition. Washington DC: Institute of Transportation Engineers, 2004

Combining the individual hourly parking demand from the various land uses is shown in the following figure. Those uses that peak at different times tend to share parking more efficiently. When the peaks are far apart, such as office and arena, it is easy to justify a large reduction to the overall parking demand then if the two separate uses were counted alone.

Figure 21: Weekday Parking by Time of Day



Source: Walker