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MEMORANDUM REPORT NUMBER 67

CENTRAL AREA PARKING STUDY

CITY OF LAKE GENEVA WALWORTH COUNTY, WISCONSIN

Prepared by the

Southeastern Wisconsin Regional Planning Commission P. O. Box 1607 Old Courthouse 916 N. East Avenue Waukesha, Wisconsin 53187-1607

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Southeastern Wisconsin Regional Planning Commission Memorandum Report No. 67

CENTRAL AREA PARKING STUDY FOR THE CITY OF LAKE GENEVA

INTRODUCTION

In June of 1994, the City of Lake Geneva requested that the Southeastern Wisconsin Regional Planning Commission staff conduct a study of the supply of and demand for, parking in the central area of the City as that area is shown on Map 1. The central business district of the City--which is generally bounded by Geneva Street on the north; Center Street on the east; Wrigley Street and the White River on the south; and Cook Street and Wrigley Street on the west--lies within the study area. The study was to determine the supply of, and demand for public parking space in the study area on an average weekday and on a weekend day during the summer months when parking demand reaches its peak within the City. Following analyses of the supply, of and demand for, parking space and the identification of problems, the study was to make recommendations to resolve those related problems.

Public parking facilities are an essential element of a community's transportation system. Such facilities comprise on-street curb parking and offstreet lot or garage parking spaces. An inadequate supply of public parking in terms of the number of spaces provided, the time restrictions applied, or the parking facility location may manifest itself in the form of: 1) traffic flow disruption and congestion as vehicles stop in moving traffic lanes to wait for and maneuver into available parking spaces; 2) motor vehicle accidents caused in part by restricted visibility due to illegally parked vehicles or by legally parked vans and pick-up trucks equipped with bed caps, and by unexpected maneuvers by motorists frustrated in an extended search for an available parking space; 3) a possible loss of commercial business in the areas affected by the parking problem; 4) excessive air and noise pollution and excessive fuel



THE CITY OF LAKE GENEVA PARKING STUDY AREA: JULY, 1995



Source: SEWRPC

-la-

consumption as vehicles circulate on the local street system in search of available parking spaces; and 5) an overflow of parked vehicles into adjacent residential areas.

PUBLIC PARKING SUPPLY

An inventory of the existing on-street and off-street public parking supply in the study area was conducted by Regional Planning Commission staff in April, 1995. This inventory established the number of public parking spaces available as well as current time of day and time limit restrictions¹. It should be noted that the number of parking spaces available was determined to the extent possible by counting the spaces delineated by painted lines on the pavement. However, such delineated parking spaces were not provided at every location where parking is permitted within the study area. When delineated parking spaces were not provided, the number of parking spaces available was estimated by measuring the curb length between driveways, alleys, fire hydrants, and crosswalks. From these lengths, four feet for each driveway or alley; 20 feet for each fire hydrant; and 15 feet from the near side of each crosswalk was subtracted.² The remaining length was then compared to the range of available curb lengths set forth in Table 1 and the appropriate number of spaces estimated.

In April, 1995, there were 1,258 on-street, and 176 off-street, public parking spaces available within the study area, or a total of 1,434 public parking spaces. It should be noted, however, that the 1,434 total parking spaces included a limited number of special purpose parking spaces, both on-street and off-street. Use of these spaces was limited to specifically targeted user groups. Thus, although these parking spaces help satisfy the total parking demand, the utility of these spaces was restricted with respect to satisfying general purpose parking demand. Because of this restricted utility, then, these

Between the April inventory of the parking supply and the July inventory of parking demand, all two hour metered parking spaces within the study area were converted to four hour metered parking spaces.

²Under Wisconsin Statutes, motorists may not legally park within four feet of a driveway or alley, 10 feet of a fire hydrant, or 15 feet of the near side of a crosswalk.

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Table 1

ESTIMATED NUMBER OF PARKING SPACES BY RANGE OF CURB LENGTH AVAILABLE

Range of C Available	urb Length e in Feet	Estimated Number of	Range of C Available	Estimated Number of		
Low	High	Parking Spaces	Low	High	Parking Spaces	
12	30	1	283	303	14	
31	48	2	304	324	15	
49	71	3	325	345	16	
72	93	4	346	17		
94	94 114		367	387	18	
115	135	6	388	408	19	
136	156	7	409	429	20	
157	177	8	430	450	21	
178	198	9	451	471	22	
199	219	10	472	492	23	
220	240	11	493	513	24	
241	261	12	512	534	25	
262	282	13				

Source: SEWRPC

spaces were excluded from the total supply. More specifically, the special purpose parking spaces within the study area include 16 parking spaces designated for use by handicapped persons only; two parking spaces designated for use by library visitors only; and four parking spaces designated for use by City Hall visitors only;³ reducing the total number of public parking spaces available in the study area on a typical weekday to 1,412.

Of the 1,412 total public parking spaces available; 1,241 spaces, or about 88 percent, were located on-street; and 171 spaces, or about 12 percent, were located in off-street surface parking lots. The locations of the on-street and off-street public parking spaces in the study area in 1995 are shown on Map 2 by block face, and by public parking lot, along with time of day and time limit restrictions. About 30 on-street public parking restrictions. However, these spaces were they are available for parking on weekdays during the summer months--that is from about June 1 to about August 31 of each year--and on weekends throughout the year. Also, the 35 parking spaces in parking lot "F" were restricted to vehicles with boat trailers.

Of the total 1,412 public parking spaces within the study area, 850 spaces, or about 60 percent, were equipped with parking meters. Of the 850 metered spaces, 108 were located in off-street parking lots; and the remaining 742 were located on-street, or about 13 percent, and 87 percent, respectively. Of the 562 nonmetered parking spaces, 63 were located in off-street parking lots and the remaining 519 were located on-street, or about 8 percent and 92 percent, respectively. The locations of the metered and non-metered parking spaces within the study area are also shown on Map 2.

Of the 1,412 total public parking spaces within the study area, 171 spaces, or about 12 percent, were located in the residential neighborhood immediately west of the central business district. Bounded by Madison Street on the east, Geneva

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³Three of the four stalls designated as visitor parking at City Hall are so restricted Monday through Friday only and thus are available for general purpose parking on weekends.



NUMBER AND LOCATION OF PUBLIC PARKING SPACES AND ATTENDANT PARKING RESTRICTIONS IN THE CITY OF LAKE GENEVA PARKING STUDY AREA: APRIL, 1995



^a In May 1995, these parking spaces were converted from two-hour to four-hour time restricted.

Source: SEWRPC

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Street on the south, and the study area boundary on the north and west; this neighborhood has no retail or service commercial land uses for which parking should be provided. Each of the remaining blocks within the study area have at least one block face with retail or service commercial or service land uses for which parking should be provided; with the exception of the block bounded by Cook Street; Madison Street; Geneva Street and Dodge Street which block is dominated by school and park land uses. It may be noted that the 171 spaces within this neighborhood constitutes about 33 percent of the 519 non-metered on-street public parking spaces within the study area.

Of the 1,241 on-street parking spaces, 608, or about 49 percent, were parallel parking spaces; while the remaining 633, or about 51 percent, were angle parking spaces. Angle parking is provided along the full length of Broad Street (STH 120), Wrigley Street and Baker Street through the study area; and on the segment of Main Street between Maxwell Street and Center Street, Geneva Street between Cook Street and Sage Street; of Center Street between Main Street and Wrigley Street; and South Lake Shore Drive between Cass Street and Baker Street.

PARKING DEMAND AND UTILIZATION

Two measures of the adequacy and operation of public parking facilities are the parking occupancy rate and the average duration of time parked. The parking occupancy rate is defined as the ratio of the number of vehicles parked during a specified time period to the total number of on-street or off-street parking spaces available. A high occupancy rate may indicate an inadequate supply of parking spaces.

The average duration of time parked is defined as the total number of vehicles parked during the survey time period divided by the total number of different vehicles parked during the summation of time periods surveyed. A comparison of the average duration time parked to the time restriction for an individual parking facility provides a measure of the parking restriction adequacy; or, in some instances, where duration exceeds the restriction, a need for increased enforcement of posted restrictions. The average duration of parking time is also useful in identifying areas of short- and of long-term parking demand.

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A supplementary measure of parking facility utilization is the parking space turnover rate. The parking space turnover rate is defined as the ratio of the total number of different vehicles parked during a specified time period to the total number of parking spaces available. The turnover rate is a secondary measure of demand with a high rate indicating that a parking space serves many motorists with each successive motorist entering the space almost as soon as it is vacated.

Two surveys of public parking space demand and utilization were conducted during the month of July, 1995, in the study area. The first survey was conducted between the hour of 9:00 a.m. and 7:00 p.m. on Thursday, July 6 and Wednesday July 12, to determine the parking demand on a summer weekday. The second survey was conducted between the hours of 9:00 a.m. and 9:00 p.m. on Saturday, July 8 and Saturday, July 15, to determine the parking demand on a summer weekend day. The data were collected in hourly intervals and a vehicle observed occupying a parking space during the hour was assumed to occupy that parking space for the entire hour.

The total parking demand observed on a weekday and on a weekend day within the study area is shown by hour in Figures 1 and 2. On a weekday, total parking demand, that is the total number of vehicles parked, varied significantly by hour ranging from 357 occupied parking spaces to 945 occupied parking spaces, or from about 25 percent to 67 percent, respectively, of the total on-street and offstreet public parking supply. As shown in Figure 1, weekday parking demand was observed to be quite low between the hours of 9:00 a.m. and 11:00 a.m. Demand then peaked during the early afternoon and remained fairly constant until 5:00 p.m. after which time it was observed to decline. On a weekend day, total parking demand was observed to range from 414 parking spaces to 1,231 parking spaces or from about 29 percent to about 87 percent, respectively, of the total on-street and off-street parking supply. As shown in Figure 2, parking demand on a weekend day was also observed to be quite low between the hours of 9:00 a.m. and 11:00 a.m. Demand then peaked during the early afternoon and remained fairly constant to the end of the survey period at 9:00 p.m. The occupancy rates by hour, by location, by either off-street parking lot or block face, for a weekday and for a weekend day are provided in Tables 2 and 3 respectively.

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PARKING DEMAND IN THE CITY OF LAKE GENEVA PARKING STUDY AREA ON A SUMMER WEEKDAY: JULY, 1995

Time Of Day

Legend

Parked Vehicles



Off-Street Public Parking Lot



On-Street Public Parking

Source: SEWRPC

Figure 1

Figure 2

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PARKING DEMAND IN THE CITY OF LAKE GENEVA PARKING STUDY AREA ON A SUMMER WEEKEND DAY: JULY, 1995

Time Of Day

Legend

Parked Vehicles



Off-Street Public Parking Lot



On-Street Public Parking

Source: SEWRPC

							Occupancy F	late (Percent)	·,				
LOCATION		PARKING SPACES	9:00 a.m. to 10:00 a.m.	10:00 a.m. to 11:00 a.m.	11:00 a.m. to 12:00 p.m.	12:00 p.m. to 1:00 p.m.	1:00 p.m. to 2:00 p.m.	2:00 p.m. to 3:00 p.m.	3:00 p.m. to 4:00 p.m.	4:00 p.m. to 5:00 p.m.	5:00 p.m. to 6:00 p.m.	6:00 p.m. to 7:00 p.m.	AVERAGE OCCUPANCY
Off-Street	Parking			5. ⁴⁷	·								
Parking Lot	A	76	7	17	37	76	84	83	79	58	37	22	50
	В	24	33	46	54	100	100	96	96	96	88	100	81
	C C	8	88	75	75	100	100	100	100	100	88	63	89
	D	5	0	20	60	100	100	60	60	20	40	20	48
	E	23	0	26	35	100	100	100	83	65	65	74	65
	F	35	34	26	34	34	54	54	60	63	60	66	49
r	Subtotal	171	19	27	41	76	84	81	78	66	55	51	58
	· · · · · · · · · · · · · · · · · · ·			· · · · -									
On-Street	Parking		-					`					
Block Face	1	12	8	33	25	25	25	33	33	25	17	. 25	25
	2	14	0	7	о	0	14	0	0	0	0	0	2
	3	15	0	0	0	0	0	0	7	7	7	0	2
	4	13	8	8	8	8	о	15	8	о	31	38	12
	- 5	13	62	54	54	31	69	77	77	38	46	62	57
	6	15	13	47°	27	73	67	53	40	27	20	7	37
	7	¹⁰ 13	0	0	0	0	0	. 8	. O	0	0	8	2
4.	8	12	17	25	17	8	. 17	17	17	17	17	8	16
	9	15	0	0	Ó I	0	· O	0	0	• 0	0	0	0
. 1	10	14	0	0	0	0	0	0	0	0	• 0	7	1

OBSERVED PARKING SPACE OCCUPANCY RATE BY HOUR WITHIN THE CITY OF LAKE GENEVA PARKING STUDY AREA ON A SUMMER WEEKDAY: JULY, 1995

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....

				·			Occupancy R	icy Rate (Percent)					
LOCATION		PARKING SPACES	9:00 a.m. to 10:00 a.m.	10:00 a.m. to 11:00 a.m.	11:00 a.m. to 12:00 p.m.	12:00 p.m. to 1:00 p.m.	1:00 p.m. to 2:00 p.m.	2:00 p.m. to 3:00 p.m.	3:00 p.m. to 4:00 p.m.	4:00 p.m. to 5:00 p.m.	5:00 p.m. to 6:00 p.m.	6:00 p.m. to 7:00 p.m.	AVERAGE OCCUPANCY
Block Face	11	6	0	0	0	0	0	17	17	17	0	o	5
(Continued)	12	14	7	29	43	43	43	43	43	36	29	21	34
н 	13	12	8	17	25	17	25	42	50	√ ~ 58	67	50	36
	14	22	5	14	27	9	32	14	27	36 ^{- 261}	41	50	25
	15	19	16	21	21	42	21	11	26	26	16	26	23
	16	12	33	42	58	58	67	75	50	17	25	8	43
	17	4	100	100	100	75	100	100	100	100	25	25	83
	18	4	75	100	100	75	100	100	100	75	25	25	78
	19	16	. 0	13	31	25	13	13	25	25	19	19	18
	20	15	7	7	7	20	13	20	. 13	13	7	13	12
	21	14	93	100	100	93	100	100	100	93	79	36	89
	. 22	11	.82	91	100	91	100	91	91	91	36	36	81
	23	14	0	· 0	o	0	0	0	7	0.	7	7	2
	24	13	0	0	o	0	8	0	o	8	8	0	2
	25	15	O	0	7	7	13	20	20	33	20	7	13
	26	14	14	21	79	79	93	100	86	107	64	36	68
	27	16	31	50	63	88	100	94	94	88	81	63	75
	28	16	106	113	106	113	113	106	106	106	.75	75	102
	29	11	91	100	109	100	100	91	91	91	91	55	92
	30	24	54	58	58	88	79	92	83	96	50	46	70
	31	29	7	3	14	38	55	48	31	48	28	24	30
	32	14	71	86	93	86	93	79	50	57	50	29	69

- 5d -

Table 2 (continued)

- <u>,</u> 4		2		· · · · ·											
			· · · ·	Occupancy Rate (Percent)											
LOCATION		PARKING SPACES	9:00 a.m. to 10:00 a.m.	10:00 a.m. to 11:00 a.m.	11:00 a.m. to 12:00 p.m.	12:00 p.m. to 1:00 p.m.	1:00 p.m. to 2:00 p.m.	2:00 p.m. to 3:00 p.m.	3:00 p.m. to 4:00 p.m.	4:00 p.m. to 5:00 p.m.	5:00 p.m. to 6:00 p.m.	6:00 p.m. to 7:00 p.m.	AVERAGE OCCUPANCY		
Block Face		33	10.	60	70	70	40	70	90	70	40	30	10	55	
(Continued)		34	14	107	້ 107	107	100	107	107	107	107	79	50	98	
		35	13	8	15	15	38	77	92	j i 100	69	62	62	54	
		36	10	10	30	60	70	90	90	90	70	50	50	61	
]	37	10	60	70	50	50	70	100	90	50	60	60	66	
		38	15	13	13	13	13	20	27	40	27	27	20	21	
		39	17	41	47	59	82	88	82	82	82	65	53	68	
		40	16	94	106	106	106	106	106	. 88	106	94	63	98	
	1	41	17	12	18	47	82	94	94	76	82	65	41	61	
		42	19	16	26	58	79	100	100	79	84	58	53	65	
		43	11	100	100	100	100	100	100	100	91	91	64	95	
		44	13	0	8	0	0	23	15	15	23	8	8	10	
		45	13	15	15	31	23	15	31	23	23	8	15	20	
		46	12	25	67	75	75	92	92	83	58	42	25	63	
		47	13	100	108	108	108	108	108	108	85	69	46	95	
		48	10	10	50	90	100	100	100	90	110	50	70	77	
		49	8	0	75	100	88	100	100	100	100	63	38	76	
		50	17	35	65	94	100	88	100	94	100	88	82	85	
		51	22	64	86	91	105	100	100	95	91	86	82	90	
1		52	7	29	71	71	100	100	86	100	71	71	57	76	
		53	5	0	· 0	40	100	100	100	100	80	60	60	64	
		54	22	45	86	100	95	100	105	95	105	100	82	91	

-5e-

			Occupancy Rate (Percent)										
LOCATION		PARKING SPACES	9:00 a.m. to 10:00 a.m.	10:00 a.m. to 11:00 a.m.	11:00 a.m. to 12:00 p.m.	12:00 p.m. to 1:00 p.m.	1:00 p.m. to 2:00 p.m.	2:00 p.m. to 3:00 p.m.	3:00 p.m. to 4:00 p.m.	4:00 p.m. to 5:00 p.m.	5:00 p.m. to 6:00 p.m.	6:00 p.m. to 7:00 p.m.	AVERAGE
Block Face	55	25	28	84	100	100	96	100	100	104	64	96	87
(Continued)	56	6	33	. 33	83	17	. 83	83	33	100	67	33	57
	57	105	10	33	39	51	73	59	55	43	35	21	42
ου του του του του του του του του του τ	58	21	43	67	100	100	95	105	100	100	90	76	88
	59	22	36	82	77	100	82	109	100	68	86	59	80
	60	11	0	0	36	55	91	82	36	100	109	82	59
	61	19	11	53	100	100	100	100	100	100	100	100	86
	62	4	25	· 0	100	100	75	100	100	100	75	100	78
	63	23	52	74	100	100	100	100	104	100	78	91	90
	64	19	21	84	100	100	100	95	100	95	100	95	89
	65	64	9	14	34	83	83	89	88	55	53	48	56
	66	31	3	6	10	48	65	48	48	32	29	. 16	31
	67	59	3	7	7	12	12	7	. 5	7	0	2	6
	68	-15	60	80	107	107	107	107	100	100	100	107	97
· · ·	69	28	61	96	100	104	100	100	82	100	100	100	94
	70	10	20	70	100	100	100	90	100	100	100	100	88
	71	34	0	0	0	6	6	6	6	9	3	. 3	4
L	Subtotal	1241	26	. 41	51		65	64	60	57	48	41	51
L,											· · ·	· · · · ·	
· · · · ·	Total	1412	25	39	49	61	67	66	63	58	49	42	52

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Source: SEWRPC

			-	- 				Occupancy Rate	(Percent)			_			
Locat	ion	Number Of Parking Spaces	9:00 a.m. to 10:00 a.m.	10:00 a.m. to 11:00 a.m.	11:00 a.m. to 12:00 p.m.	12:00 p.m. to 1:00 p.m.	1:00 p.m. to 2:00 p.m.	2:00 p.m. to 3:00 p.m.	3:00 p.m. to 4:00 p.m.	4:00 p.m. to 5:00 p.m.	5:00 p.m. to 6:00 p.m.	6:00 p.m. to 7:00 p.m.	7:00 p.m. to 8:00 p.m.	8:00 p.m. to 9:00 p.m.	AVERAGE OCCUPANCY
Off-Street Parl	cing ·			_	5					-					
Parking Lot	A	76	3	20	55	105	109	107	105	100	. 79	97	. 111	109	83
	В	24	29	46	92	100	100	104	104	100	58	92	100	104	86
	C .	8	88	75	50	63	63	50	50	63	63	63	63	63	63
	D	5	80	40	. 80	100	140	120	120	120	120	80	120	120	103
U.	Ε	23	26	48	100	104	104	109	109	104	104	104	104	96	93
	F.	35	89	97	. 80	100	.111	109	103	91	- 71	71	57	63	87
	Subtotal	171	33	46	72	101	105	105	103	98	78	90	95	95	85
On-Street Publi	c Parking														
Block Number	1 - 1	12	25	25	42	. 42	33	25	33	25	33	33	33	33	32
	2	. 14	٥	0	0	0	7	7	. 7	7	0	0	o	0	2
	3	15	27	13	13	20	13	13	20	27	27	13	13	7	17
•	4	13	8	. 8	15	. 15	31	46	54	69	46	46	38	15	33
	5	13	38	38	62	46	38	62	54	62	69	54	54	54	53
	6	15 .	13	20	47	40	33	33	40	33	40	33	33	33	. 33
	7	13	15	8	15	31	8	8	23	38	15	15	15	0	16
	8	12	8	8	8	8	8.	25	33	50	42	17	17	17	20
	9	15	्र ¹ 7	7	7 -	0		0	7	20	27	20	13	13	10
	10,	14	· 0	0	0	`o	71	79	86	100	100	93	86	50	55
- N.	11	6	0	0	0	33	17	50	50	67	67	33	33	33	32

OBSERVED PARKING SPACE OCCUPANCY RATE BY HOUR WITHIN THE CITY OF LAKE GENEVA PARKING STUDY AREA ON A TYPICAL SUMMER WEEKEND DAY: JULY, 1995

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Table 3 (continued)

Local	tion	Number Of Parking Spaces	9:00 a.m. to 10:00 a.m.	10:00 a.m. to 11:00 a.m.	11:00 a.m. to 12:00 p.m.	12:00 p.m. to 1:00 p.m.	1:00 p.m. to 2:00 p.m.	2:00 p.m. to 3:00 p.m.	3:00 p.m. to 4:00 p.m.	4:00 p.m. to 5:00 p.m.	5:00 p.m. to 6:00 p.m.	6:00 p.m. to 7:00 p.m.	7:00 p.m. to 8:00 p.m.	8:00 p.m. to 9:00 p.m.	AVERAGE OCCUPANCY
Block Number	12	14	0.	21	57	64	86	. 86	86	86	50	50	36	50	56
(Continued)	13	12	0	25	67	67	75	75	67	67	67	58	58	58	59
	14	22	18	9	23	14	5	32	45	50	32	27	27	27	26
	15	19	0	5	0.	5	5	21	37	42	32	16	16	16	16
	16	12	25	33	42	33	17	25	33	17	17	25	25	25	26
	17	4	75	75	75	75	100	100	100	100	100	100	100	100	92
	18	4	0	0	50	50	75	100	100	50	100	50	50	50	56
	19	16	19	19	13	25	44	69	69	75	81	63	56	63	49
	20	15	13	27	33	67	80	107	107	100	87	93	93	67	73
	21	14	64	93	100	100	86	100	100	107	107	100	100	100	96
	22	11	9	0	45	73	100	100	100	100	91	73	73	73	. 70
	23	14	0	0	0	0	29	71	71	79	. 36	14	0	0	25
	24	13	0	0	0	0	38	69	77	92	77	46	31	31	38
	25	15	o	0	7	47	67	47	60	73	53	33	20	20	36
	26	14	14	86	64	86	100	107	107	107	93	64	71	64	80
	27	16	38	106	106	106	106	106	106	106	106	81	88	88	95
	28	16	88	100	106	113	113	113	113	106	94	88	. 75	88	99
	29	11	100	100	100	100	100	100	100	100	100	100	109	109	102
	30	24	54	54	63	79	88	100	96	100	100	83	88	88	83
	31	29	o,	0	21	41	52	86	97	86	90	55	55	55	53
	32	14	79	86	79	64	64	79	93	93	79	86	86	86	81
	33	10	40	30	40	60	80	100	90	50	40	60	60	.60	59
	34	14	107	100	107	107	107	107	107	100	86	100	107	107	104
	35	13	31	8	31	69	85	100	100	100	108	77	77	77	72

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Table 3 (continued)

												· · · · · · · · · · · · · · · · · · ·			
								Occupancy Rat	e (Percent)	_			_	_	
Loca	ition	Number Of Parking Spaces	9:00 a.m. to 10:00 a.m.	10:00 a.m. to 11:00 a.m.	11:00 a.m. to 12:00 p.m.	12:00 p.m. to 1:00 p.m.	1:00 p.m. to 2:00 p.m.	2:00 p.m. to 3:00 p.m.	3:00 p.m. to 4:00 p.m.	4:00 p.m. to 5:00 p.m.	5:00 p.m. to 6:00 p.m.	6:00 p.m. to 7:00 p.m.	7:00 p.m. to 8:00 p.m.	8:00 p.m. to 9:00 p.m.	AVERAGE
Block Number	36	10	40	30	80	90	90	90	90	100	80	80	80	во	78
(Continued)	37	10	-10	40	70	90	80	100	100	80	60	70	70	70	70
	38	15	7	7	. 47	47	80	87	73	80	60	27	33	27	48
	39	17	6	94	94	106	100	94	94	100	88	71	53	59	80
	40	16	94 -	94	94	100	100	100	100	100	100	88	88	94	96
	41	17	· 6	41	59	94	94	100	100	82	82	82	100	100	78
	42	19	· 0	11	63	95	100	100	105	95	47	79	100	95	74
	43	14	86	79	86	93	93	100	100	64	86	57	64	64	81
	44	13	31	38	. 46	77	92	100	100	100	69	62	54	38	67
	45	13	62	31	. 69	77	85	100	100	85	92	77	54	62	74
	46	12	42	75	100	100	100	100	100	92	83	67	75	75	84
	47	13	85	100	100	100	108	115	. 115	108	100	92	92	108	102
	48	10	80	50	100	110	130	130	100	120	120	110	110	120	107
	49	8	63	100	100	100	100	100	113	88	113	100	100	100	98
	50	17	41	71	100	100	94	100	100	94	94	100	100	100	91
	51	22	45	59	91	100	105	100	100	100	91	100	100	100	91
	52	7 .	57	29	43	100	100	86	100	57	43	86	100	100	75
	53	5	0	40	60	100	100	140	100	100	40	40	60	100	73
	54	22	59	95	100	100	100	105	105	100	91	100	100	100	96
	55	25	44	64	100	92	96	104	104	100	104	92	100	100	92
	56	6	17	100	83	50	117	100	100	100	67	67	83	83	81
	57	105	11 11	26	53	89	96	99	99	99	94	. 77	85	93	77
	58	21	24	81	95	100	100	100	100	100	95	81	95	100	89
	59 .	22	55	73	95	91	100	95	95	105	95	95	100	91	91

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Table 3 (continued)

		Occupancy Rate (Percent)													
Locat	tion	Number Of Parking Spaces	9:00 a.m. to 10:00 a.m.	10:00 a.m. to 11:00 a.m.	11:00 a.m. to 12:00 p.m.	12:00 p.m. to 1:00 p.m.	1:00 p.m. to 2:00 p.m.	2:00 p.m. to 3:00 p.m.	3:00 p.m. to 4:00 p.m.	4:00 р.т. to 5:00 р.т.	5:00 p.m. to 6:00 p.m.	6:00 p.m. to 7:00 p.m.	7:00 p.m. to 8:00 p.m.	8:00 p.m. to 9:00 p.m.	AVERAGE
Block Number	60	11	18	55	36	64	100	91	91	91	64	45	64	82	67
(Continued)	61	18 .	44	100	100	100	106	[•] 106	106	100	106	100	106	100	98
	62	4	25	- 100	100	100	100	100	100	100	100	100	100	100	94
	63	· 23	61	91	100	100	100	100	100	100	100	96	100	· . 100	. 96
	64	19	37	84	95	100	100	105	100	100	100	95	100	100	93
	65	64	13	28	75	102	. 100	100	100	102	100	97	98	102	85
	66	31	0	3	42	68	68	71	68	65	68	65	,71	71	55
4	67	59	3	3	10	12	24	37	47	44	31	19	15	8	21
	68	15	67	107	107	100	107	107	107	107	107	93	107	107	102
	69	28	86	107	104	104	104	104	104	104	100	100	104	104	102
	70	10	40	70	70	70	70	70	70	70	80	100	100	100	76
	71	34	6	12	18	79	100	100	100	94	91	68	56	56	65
	Subtotal	1244	. 29	43	58	70	77	83	85	84	77	68	70	70	68
								. <u> </u>					-	· .	
Tota	al	1415	29	43	60	74	80	86	87	85	77	71	73	73	70

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The average daily occupancy and turnover rates, and the average duration observed, on a weekday are shown on Map 3, and provided in Table 4, by parking lot and block face. The average daily occupancy and turnover rates, and the average duration observed, on a weekend day are shown on Map 4 and provided in Table 4, by parking lot and block face. The weekday average daily occupancy rate of the off-street and on-street public parking spaces was observed to be 58 percent and 51 percent respectively. The weekday average turnover rate of the off-street and on-street public parking spaces was observed to be 2.63 and 2.32, respectively. The weekday average duration was observed to be 2.20 hours in both the off-street and the on-street public parking spaces.

The weekend day average daily occupancy rate of the off-street and the on-street public parking spaces was observed to be 85 percent and 65 percent, respectively, significantly higher than the rates observed on a weekday. The weekend day average turnover rate of the off-street and on-street public parking spaces was observed to be 4.04 and 3.19 respectively, also significantly higher than the rates observed on a weekday. The average duration on a weekend day was observed to be 2.53 hours and 2.46 hours for off-street and on-street public parking spaces, respectively, also longer than the durations observed on a weekday.

VEHICULAR PARKING SUPPLY PROBLEMS

An adequate supply of vehicular on-street and off-street parking spaces, especially in the central business district, is an important part of the total transportation system of a community, and an important factor contributing to the economic vitality of the community. This is particularity true for the City of Lake Geneva where tourism and recreation contribute significantly to the economic base and parking demand. The identification of parking deficiencies in the study was based upon the following standards:

• Sufficient automobile parking spaces should exist in the study area so that the parking demand does not exceed a specified threshold of the combined on-street and off-street parking spaces. Generally, this threshold is established at the average daily occupancy rate of 80 percent. The remaining 20 percent is provided to account for

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Map 3

AVERAGE OCCUPANCY AND TURNOVER RATES, AND AVERAGE PARKING DURATION IN THE CITY OF LAKE GENEVA PARKING STUDY AREA ON A SUMMER WEEKDAY: JULY, 1995

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Table 4

OBSERVED PARKING DEMAND AND UTILIZATION WITHIN THE CITY OF LAKE GENEVA STUDY AREA: JULY, 1995

			T	ypical Weekday		Туг	bical Weekend D	ay
Locatic	'n	Number of Parking Spaces	Average Occupancy Rate (Percent)	Average Turnover Rate (Vehicles per space)	Average Duration (Hours)	Average Occupancy Rate (Percent)	Average Turnover Rate (Vehicles per space)	Average Duration (Hours)
Off-Street Parkin	a		Υ.Υ.				· · ·	
Parking Lot	Δ	76	50	2 47	2 02	83	4 49	2 22
Turking Lot	B	24	01	2. 4 7 4 02	1.67	00	7.43 5.05	1.06
	i C	24	01	4.00	T.07	60	1.75	4.20
	D I	· 0,	69 40	1.75	5.07	03	T. 10	4.29
	ע. ר		48	3.00	1.60	103	5.40	2.30
	E	23	65	2.70	2.40	93	4.22	2.64
· · .	F	35	49	1.57	3.09	87	2.51	4.15
	Subtotal	171	58	2.63	2.20	85	4.05	2.53
On-Street Parking	3							
Block Number	1	. 12	25	1.00	2.50	32	1.00	2.83
	2	14	2	0.21	1.00	2	0.14	2.00
	3	15	2	0.13	1.50	17	0.47	4.43
	4	13	12	0.69	1.78	33	1.00	3.92
÷	5	13	57	2.00	2.85	53	1.38	3.39
	6	15	37	1.73	2.15	33	1.00	3.00
	7	13	2	0.15	1.00	16	0.77	2.50
	8	12	16	0.42	3.80	20	0.75	3.22
-	9	15	0	0.00	0.00	10	0.40	3.00
4	10	14	1	0.07	1.00	55	2.00	3.32
	11	6	5	0.33	1.50	32	1.17	3.29
	12	ର୍ଣ୍ 14.୩	34	0.50	6.71	56	2 29	2.94
	13	12	36	1 33	2 69	57	1 50	3 39
	14	22	25	1 01	1 22	26	1 45	1 56
	15	10	20	1.31	1 1 2 2	16	0.74	2.00
:	10	19	23	2.00	1.13	10	0.74	2.00
	10	12	43	0.75	4.00	20	0.83	2.50
	10	4	83	2.75	3.00	95	2.75	2.91
	18	4	/8	2.50	3.10	56	3,00	1./5
	19	16	18	0.69	2.64	49	1.69	3.52
	20	15	12	0.73	1.64	73	2.53	3.45
	21	14	89	1.93	4.63	96	2.29	3.75

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Table 4	(continued)
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· .			T	ypical Weekday	to the second	Typical Weekend Day				
Locatio	n j	Number of Parking Spaces	Average Occupancy Rate (Percent)	Average Turnover Rate (Vehicles per space)	Average Duration (Hours)	Average Occupancy Rate (Percent)	Average Turnover Rate (Vehicles per space)	Average Duration (Hours)		
Block Number	22	11, 3	81	2.09	3.87	70	1.64	3.78		
(Continued)	23	14	2	0.14	1.50	25	1.57	1.91		
	24	13	2	0.15	1.50	38	1.62	2.86		
	25	15	13	0.40	3.17	36	1.73	2.46		
	26	14	68	1.79	3.80	80	2.79	3.46		
	27	16	75	2.06	3.64	95	2.94	3.89		
	28	16	102	1.94	5.26	99	2.19	5.46		
	29	11	92	2.00	4.59	102	1.82	4.95		
	30	24	70	2.25	3.13	83	2.21	3.32		
	31	29	30	1.59	1.87	53	2.52	1.88		
	32	14	69	2.14	3.23	81	2.21	3.23		
	33	10	55	2.10	2.62	59	2.60	2.04		
	34	14	98	2.07	4.72	104	2.79	4.46		
	35	13	54	2.69	2.00	72	2.69	2.34		
	36	10	61	3.70	1.65	78	4.40	1.57		
	37	10	66	2.10	3.14	70	2.70	2.37		
	38	15	21	0.47	4.57	48	2.13	2.69		
	39	17	68	1.47	4.64	80	2.88	3.33		
	40	16	98	2.06	4.73	96	2.50	4.60		
	41	17	61	3.24	1.89	78	4.47	2.11		
	42	19	65	4.42	1.48	74	5.58	1.59		
	43	11	95	2.27	4.16	81	2.71	3.58		
- -	44	13	10	0.46	2.17	67	2.77	2.92		
	45	13	20	1.08	1.86	74	2.77	3.22		
	46	12	63	1.67	3.80	84	2.83	3.56		
	47	13	95	2.00	4.73	102	3.69	3.31		
	48	10	77	4.20	1.83	107	6.90	1.86		
	49	8	76	4.00	1.91	98	5.88	2.00		
	50	17	85	5.41	1.57	91	5.71	1.92		
	51	, 22	90	4.32	2.08	91	5.18	2.14		
	52	7	76	4.29	1.77	75	5.14	1.75		
	53	5	64	3.60	1.78	73	4.60	1.91		
	54	22	91	5.77	1.58	96	5.86	1.97		
	55	25	87	5.76	1.51	92	5.80	1.90		

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Table 4 (continued)

			T	Typical Weekday		Typical Weekend Day					
Locatic	n .	Number of Parking Spaces	Average Occupancy Rate (Percent)	Average Turnover Rate (Vehicles per space)	Average Duration (Hours)	Average Occupancy Rate (Percent)	Average Turnover Rate (Vehicles per space)	Average Duration (Hours)			
Block Number	56	6	57	3.67	1.55	81	5.67	1.71			
(Continued)	57	105	42	2.49	1.69	77	4.49	2.08			
	58	21	88	5.29	1.66	89	6.81	1.57			
	59	22	82	5.05	1.62	91	6.45	1.69			
	60	11	59	4.45	1.33	67	5.27	1.52			
	61	19	86	4.58	1.89	98	5,00	2.44			
	62	4	, 78	4.75	1.63	94	3.75	3.00			
	63	23	90	4.65	1.93	96	4.96	2.32			
	64	19	89	3.79	2.35	93	4.79	2.33			
	65	64	56	2.56	2.17	85	4.56	2.22			
	66	31	31	1.68	1.83	55	2.74	2.41			
	67	59	6	0.27	2.25	21	1.02	2.50			
	68	15	97	5.00	1.95	102	5.40	2.26			
ļ	69	28	94	4,57	2.06	102	5.07	2.63			
	70	10	88	3.60	2.44	76	4.10	2.22			
71		34	4	0.18	2.17	65	3.12	2.50			
	Subtotal	1241°	51	2.32	2.20	68	3.34	2.43			
					1		1				
	Total	1412ª	52	2.36	2.20	70	3.30	2.46			

^a The number of on-street public parking spaces--1244--and the total number of public parking spaces--1415--available on a typical weekend day is three more than the number available on a typical weekday shown in the table, because the use of three parking spaces on Geneva Street in front of City Hall which is restricted to City Hall visitor parking Monday through Friday, is not so restricted on Saturday or Sunday.

Source: SEWRPC



AVERAGE OCCUPANCY AND TURNOVER RATES, AND AVERAGE PARKING DURATION IN THE CITY OF LAKE GENEVA PARKING STUDY AREA ON A SUMMER WEEKEND DAY: JULY, 1995

Map 4

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time not utilized between the departure of one vehicle from a parking space and the arrival of the next vehicle, as well as the time periods when parking demand is low to moderate. As the 80 percent occupancy rate is exceeded, it becomes more likely that motorists will have to circulate within the area to find a vacant parking space, or alternatively, park further from their destinations.

Sufficient time related parking should be provided in the study area near concentrations of demand so that 90 percent of all short-term parkers may find a parking space within 600 feet of their destination.

Parking Supply Deficiencies

Because the observed parking demand between the hours of 9:00 a.m. and 11:00 a.m. was low in comparison to the demand during the remainder of both the summer weekday and weekend days, these hours were excluded from the analyses for the purposes of determining the average daily occupancy rate which would subsequently be used to identify potential parking supply deficiency problems. In addition, because of the significant peaking observed in the parking demand, any block face or parking lot having a daily occupancy rate of less than 80 percent, but a minimum of five hourly occupancy rates of 80 percent or greater was identified as a potential parking supply deficiency problem. However, because of the highly seasonal nature of the peak parking demand, average daily occupancy rate thresholds of 85 percent and 90 percent were also be considered in the analyses.

The average daily occupancy rates observed based on the weekday and weekend day surveys of parking demand within the study area ranged from a low of 0 to a high of 102 percent on a weekday and a low of 2 percent to a high of 107 percent on a weekend day. It should be noted that the average daily occupancy rate was observed to exceed 100 percent at eight locations.⁴

⁴The occupancy rate will exceed 100 percent only if two vehicles park in a single parking space or if vehicles park in areas where parking is prohibited.

However, the occupancy rates based upon the full ten hours of the weekday survey, and the 12 hours of the weekend day survey, do not fully reflect the relationship between the existing parking supply and the parking demand. That is, use of the survey data for the total survey day tends to understate the effective average daily occupancy rate because the observed parking demand between the hours of 9:00 a.m. and 11:00 a.m. was significantly lower than the demand during the remainder of both the weekday and weekend days, and therefore tended to reduce the average daily occupancy rate. To illustrate this consider a block face having ten parking spaces none of which is occupied in the first two hours; all ten of which are occupied in each of the next seven hours; and nine of which were all occupied in the final hour. The average daily occupancy rate considering all ten hours would be 79 percent which is below the 80 percent threshold used to identify a potential parking supply deficiency even through no parking spaces were available during seven of the ten hours concerned. If the first two hours are excluded from the analyses, however, the average daily occupancy rate becomes 99 percent, and this block face would be identified as having a parking supply deficiency.

There are two reasons why the observed parking demand between 9:00 a.m. and 11:00 a.m. is less than the demand during the remainder of the day in the City of Lake Geneva parking study area. First, retail and service commercial establishments within the study area generally do not open before 10:00 a.m. Second, waterrelated recreational parking demand is much more likely to occur in the late morning and afternoon hours. Accordingly, the parking demand observed between the hours of 9:00 a.m. and 11:00 a.m. was excluded from the computation of the average occupancy rates which were subsequently utilized to identify potential In addition, as already noted, because of the parking supply deficiencies. significant peaking observed in the parking demand, any block face or parking lot having a daily occupancy rate less than 80 percent, but exhibiting a minimum of five hourly occupancy rates of 80 percent or greater were also identified as having a potential parking supply deficiency. The parking lots and block faces exhibiting a weekday or weekend day average daily occupancy rate equal to or greater than 80 percent calculated by excluding the demand between the hours of 9:00 a.m. and 11:00 a.m. are set forth in Tables 5 and 6 respectively. These tables also include those block faces exhibiting an average daily occupancy rate

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Table 5

OBSERVED PARKING SPACE OCCUPANCY RATE BY HOUR FROM 11:00 A.M. TO 7:00 P.M. WITHIN THE CITY OF LAKE GENEVA PARKING STUDY AREA ON A SUMMER WEEKDAY: JULY, 1995

			Occupancy Rate (Percent)								
			11:00 a.m.	12:00 p.m.	1:00 p.m.	2:00 p.m.	3:00 p.m.	4:00 p.m.	5:00 p.m.	6:00 p.m.	
		Parking	to	to	to	to	to	to	to to	to	Average
Loca	tion	Spaces	12:00 p.m.	1:00 p.m.	2:00 p.m.	3:00 p.m.	4:00 p.m.	5:00 p.m.	6:00 p.m.	7:00 p.m.	Occupancy
Off-Street	Parking		· · · · · · · · · · · · · · · · · · ·		•						· · · ·
Parking Lot	В	24	54	100	100	96	96	96	88	100	91
	с	8	75	100	100	100	100	100	88	63	91
	Subtotal	32	59	100	100	97	97	97	88	91	91
										I	
On-Street	Parking										•
Block Face	17ª	4	100	75	100	100	100	100	25	25	78
	21	14	100	93	100	100	100	93	79	36	88
	22	11	100	91	100	91	91	91	36	36	80
	26	14	79	. 79	93	100	86	107	64	36	80
	27	16	63	88	100	94	94	88	81	63	84
	28	16	106	113	113	106	106	106	75	75	100
	29	. 11	109	100	100	91	91	91	91	55	91
	34	14	107	100	107	107	107	107	79	50	96
	39"	. 17	59	82	88	82	82	82	65	53	74
	40	16	106	106	106	106	88	106	94	63	97
	43	11	100	100	100	100	100	91	91	64	93
	47	13	108	108	108	108	108	85	69	46	92
	48	10	90	100	100	100	90	110	50	70	89
	49	8	100	88	100	100	100	100	63	38	86
	50	17	94	100	88	100	94	100	88	82	93
	51	22	91	105	100	100	95	91	86	82	94
	52	7	71	100	100	86	100	71	71	57	82
	53	5	40	100	100	100	100	80	60	<u> </u>	80
	54	22	100	95	100	105	95	105	100	82	98
	55	25	100	100	96	100	100	104	64	96	95
	58	21	100	100	95	105	100	100 -	90	76	96
	59	22	77	100	91	109	100	68	91	64	88
	60°	11	36	55	91	82	36	100	109	82	74
	61	19	100	100	100	100	100	100	100	100	100
	62	4	100	100	75	100	100	100	75	100	94
	63	23	100	100	100	100	104	100	78	91	. 97
	64	19	100	100	100	95	100	95	100	95	98
	68	15	107	107	107	107	100	100	100	107	104
	69	28	100	104	100	100	82	100	100	100	98
	70	10	100	100	100	90	100	100	100	100	99
	Subtotal	445	93	98	99	100	95	96	83	74	92
	Total	477	91	98	99	99	95	96	83	75	92

* Although these block faces had average daily occupancy rates less than 80 percent, each block face had at least five hourly occupancy rates equal to or greater than 80 percent.

Table 6										
` _	OCCUDANCY DATE BY HOUD FROM	11								

OBSERVED PARKING SPACE OCCUPANCY RATE BY HOUR FROM 11:00 A.M. TO 9:00 P.M. WITHIN THE CITY OF LAKE GENEVA PARKING STUDY AREA ON A SUMMER WEEKEND DAY: JULY, 1995

							Occup	ancy Rate (P	ercent)				
			11:00 a.m.	12:00 p.m.	1:00 p.m.	2:00 p.m.	3:00 p.m.	4:00 p.m.	5:00 p.m.	6:00 p.m.	7:00 p.m.	8:00 p.m.	
		Parking	to	to	to	to	to	to	to	to	to	to	Average
Locati	ion	Spaces	12:00 p.m.	1:00 p.m.	2:00 p.m.	3:00 p.m.	4:00 p.m.	5:00 p.m.	6:00 p.m.	7:00 p.m.	8:00 p.m.	9:00 p.m.	Occupancy
Off-Street	Parking							÷ .					
Parking Lot	Α	76	55	105	109	107	105	100	79	97	111.	109	98
	В	24	92	100	100	104	104	100	58	92	100	104	95
	D	5	80	100	140	120	120	120	120	80	120	120	112
	ε	23	100	104	104	109	109	104	104	104	104	. 96	104
	F	35	80	100	- 111	109	103	91	71	. 71	57	63	86
	Subtotal	163	73	103	109	107	106	99	7.9	91	97	97	96
· · · ·													
On-Street	Parking												
Block Face	17	4	75	75	100	100	100	100	100	100	100	100	95
	20	15	33	67	80	107	107	100	87	93	93	67	83
х	21	14	100	100	86	100	100	107	107	100	100	100	100
	22	11	45	73	100	100	100	100	91	73	73	73	83
	26	14	64	86	100	107	107	107	93.	64	71	64	- 86
	27	16	106	106	106	106	106	106	106	81	88	88	· 100
	28	16	106	113	113	113	113	106	94	88	75	88	101
	29	11	100	100	100	100	100	100	100	100	109	109	102
• •	30	24	63	79	88	100	96	100	100	83	88	88	88
	32	14	79	64	64	79	93	93	79	86	86	86	. 81
	34	14	107	107	107	107	107	100	86	100	107	107	104
	35	13	31	69	85	100	100	100	108	77	77	77	82
	36	10	80	90	90	90	90	100	80	80	80	80	86
	37•	10	70	90	80	100	100	- 80	60	70	70	70	79
	- 39	17	94	106	100	94	94	100	88	71	53	59	86
	40	16	94	100	100	100	100	100	100	88	88	94	96
	41	17	59	94	94	100	100	82	82	82	100	100	89
1			Occupancy Rate (Percent)										
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		en de la composition de la composition La composition de la c	11:00 a.m.	12:00 p.m.	1:00 p.m.	2:00 p.m.	3:00 p.m.	4:00 p.m.	5:00 p.m.	6:00 p.m.	7:00 p.m.	8:00 p.m.	
		Parking	to	to	to	to	to	to	to	to	to	to	Average
Locat	Location		12:00 p.m.	1:00 p.m.	2:00 p.m.	3:00 p.m.	4:00 p.m.	5:00 p.m.	6:00 p.m.	7:00 p.m.	8:00 p.m.	9:00 p.m.	Occupancy
	42	19	63	95	100	100	105	95	47	79	100	95	88
	43	14	86	93	93	100	100	64	86	57	64	64	81
	45	13	69	77	85	100	100	85	92	77	54	62	80
	46	12	100	100	· 100	100	100	92	83	67	75	75	89
	47	13	100	100	108	115	115	108	100	92	92	108	104
	48	10	100	110	130	130	100	120	120	110	110	120	115
	49	8	100	100	100	100	113	88	113	100	100	100	101
	50	17	100	100	94	100	100	94	94	100	100	100	98
	51	22	91	100	105	100	100	100	91	100	100	100	99
	52	7	43	100	100	86	100	57	43	86	100	100	81
	53	5	60	100	100	140	100	100	40	40	60	100	84
	54	22	100	100	100	105	105	100	.91	100	100	100	100
	55	25	100	92	96	104	104	100	104	92	100	100	99
	56	6	83	50	117	100	100	100	67	67	83	83	85
	57	105	53	90	97	100	100	100	95	78	86	94	89
	58	21	95	100	100	100	100	100	95	81	95	100	97
	59	.22	95	91	100	95	95	105	95	95	100	91	96
	61	18	100	100	106	106	106	100	106	100	106	100	103
	62	4	100	100	100	100	100	[`] 100	100	100	100	100	100
	63	23	100	100	100	100	100	100	100	96	100	100	100
	64	19	95	100	100	105	100	100	100	95	100	100	99
	65	64	75	102	100	100	100	102	100	97	98	102	98
	68	15	107	100	107	107	107	107	107	93	107	107	105
	69	28	104	104	104	104	104	104	100	100	104	104	103
	Subtotal	748	81	94	98	102	101	99	94	87	91	93	94
		<u>_</u>			- · · ·								
	Total	911	80	96	100	103	102	99	91	88	92	94	94

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* Although this block face had an average daily occupancy rate less than 80 percent, it had five hourly occupancy rates equal to or greater than 80 percent.

Source: SEWRPC

of less than 80 percent, but a minimum of five hourly occupancy rates of 80 percent or greater.

The revised weekday and weekend day average daily occupancy rates were compared to the 80 percent occupancy rate standard, and the two alternative thresholds of 85 and 90 percent. The results of these comparisons are set forth in Table 7. On a weekday a total of 30 block faces and two parking lots exhibited an occupancy rate of 80 percent or more; these block faces and parking lots including 477 spaces or about 34 percent, of the 1,412 total parking spaces considered. On a weekday a total of 22 block faces and two parking lots exhibited an occupancy rate of 85 percent or more, including 392 or about 28 percent of the total parking spaces considered. Similarly, on a weekday a total of 18 block faces and 2 parking lots exhibited an occupancy rate of 90 percent or more, including 338 parking spaces, or about 24 percent of the total parking spaces considered.

On a weekday, a total of 41 block faces and five parking lots exhibited an occupancy rate of 80 percent or more; these block faces and parking lots including 911 parking spaces, or about 64 percent, of the 1415 parking spaces considered. On a weekday, a total of 32 block faces and five parking lots exhibited an occupancy rate of 85 percent or more; including 809 parking spaces, or about 57 percent, of the total parking spaces considered. Similarly, on a weekday, a total of 23 block faces and four parking lots exhibited an occupancy rate of 90 percent or more; including spaces, or about 39 percent, of the total parking spaces, or about 39 percent, of the total parking spaces.

The locations of the block faces and parking lots exhibiting average occupancy rates observed to be at or above each of the thresholds are shown on Map 5 for a weekday, and on Map 6 for a weekend day. The areas highlighted in green on Maps 5 and 6 include the block faces and parking lots having average daily occupancy rates equal or which exceed the 80 percent occupancy rate standard on an average weekday and on an average weekend day, respectively. The areas highlighted blue and red on Maps 5 and 6 represent areas of increasingly intense parking demand having average daily occupancy rates which equal or exceed 85 and 90 percent occupancy respectively. Finally, the areas highlighted yellow include

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Table 7

NUMBER OF PARKING SPACES WITHIN PARKING LOTS AND BLOCK FACES HAVING AVERAGE DAILY OCCUPANCY RATES EQUAL TO OR GREATER THAN CERTAIN THRESHOLDS ON A WEEKDAY AND A WEEKEND DAY IN THE CITY OF LAKE GENEVA PARKING STUDY AREA: 1995

Average Occupancy Rate Threshold*	Number of Parking Lots Which Had an Average Daily Occupancy Rate Equal to or Greater Than The Specified Threshold		Number of Parking Spaces Within Those Parking Lots		Number of Block Faces Which Had an Average Daily Occupancy Rate Equal to or Greater Than the Specified Threshold		Number of Parking Spaces on Those Block Faces		Total Parking Spaces		
(Percent)	Weekday	Weekend Day	Weekday	Weekend Day	Weekday	Weekend Day	Weekday	Weekend Day	Weekday	Weekend Day	
80	2	5	32	163	30⁵	41 ^b	445	748	477	911	
85	2	5	32	163	22	32	360	646	392	809	1.
90	2	4	32	128	18	23	306	422	338	550	

^a An average daily occupancy rate equal to or greater than 80 percent is the standard used to identify parking supply deficiencies. The other two occupancy rate thresholds--85 and 90 percent--are shown for information purposes only and are included at the request of the City of Lake Geneva Parking Commission because of the highly seasonal nature of the peak parking demand.

^b Includes three block faces a on a weekday with 32 parking spaces having an average daily occupancy ratio of less that 80 percent, but having hourly occupancy rates equal to or exceeding 80 percent for a minimum of five hours. Similarly, one additional block face had occupancy rates at or above the 80 percent threshold for a minimum of five hours on a weekend day.

Source: SEWRPC



LOCATION OF PARKING SPACES EQUALING OR EXCEEDING SELECTED AVERAGE OCCUPANCY RATES BETWEEN 11:00 A.M. AND 7:00 P.M. IN THE CITY OF LAKE GENEVA PARKING STUDY AREA ON A SUMMER WEEKDAY: JULY, 1995



Occupancy Rate Equals or Exceeds 80 Percent for a Minimum of Five Hours





Occupancy Rate Equals or Exceeds 80 Percent for a Minimum of Five Hours

Source: SEWRPC

the block faces which have an average daily occupancy rate less than 80 percent, but which exhibited a minimum of five hourly occupancy rates equal to or greater than the 80 percent occupancy rate standard. Thus, all the highlighted areas may be considered to have a parking supply deficiency, with the areas highlighted by green, blue, and red experiencing increasingly more severe deficiencies.

Short-term Parking Supply

Short-term parking is intended to provide no more time than necessary for persons utilizing such parking to complete the related activity thereby ensuring that such parking is available to other persons several times during the period when the time limits are in effect. That is, short-term parking should encourage a high turnover rate. Within a central business district and its environs--that fringe area within about 600 feet of the boundaries of the central business district--short-term parking is generally limited to permitted parking of two hours or less and the target user group is the shopping public. This parking is not intended for use by persons filling jobs within the central business district. The need of such employees should be provided with long-term parking; that is, permitted parking of eight hours duration or longer.

Of the 1,412 public parking spaces considered within the study area; 41, or about 3 percent, were short-term one and two-hour time restricted spaces. The 41 shortterm time restricted parking spaces were all located on-street and along these four blocks faces; 13, 18, 22, and 32. It may be noted that none of the block faces so restricted were located within the central business district proper, although block faces 18, 22, and 32, along with the southern half of block face 13 were located within 600 feet of the central business district. Thus, there were approximately 35 short-term restricted parking spaces, comprising about 4 percent of the total 901 parking spaces located either within the central business district, or within 600 feet of the boundaries of that district. Therefore, it may be concluded that there is a lack of short term parking available within the central business district.

The average turnover rate and duration are two other measures of parking utilization which provide an indication of whether existing time restrictions are appropriate based upon current parking patterns. A high turnover rate and short

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duration indicate a need for short-term parking--generally two hours or less. A low turnover rate and lengthy duration may indicate a need for long-term parking--generally more than two hours for non-work related parking and more than eight hours for work related parking.

As previously noted the average turnover rate within the study area on a weekday was observed to be 2.36 vehicles per space between the hours of 9:00 a.m. and 7:00 p.m. The average turnover rate ranged between 0 and 5.77 vehicles per space in the on-street public parking spaces, and between 1.57 and 4.83 vehicles per space in the off-street public parking spaces. In comparison, the average turnover rate observed on a weekend day was 3.26. The average turnover rate ranged between 0.14 and 6.81 vehicles per space in the on-street public parking spaces, and between 1.75 and 5.40 vehicles per space in the off-street public parking spaces.

Also as previously noted the average duration observed within the study area on a weekday between the hours of 9:00 a.m. and 7:00 p.m. was 2.20 hours. The average duration observed ranged from 0.0 to 6.71 hours for the on-street public parking spaces, and between 1.60 and 5.07 hours for the off-street public parking spaces. In comparison, the average duration observed on a weekend day was 2.46 hours. The average duration observed ranged between 1.52 and 5.46 hours for the on-street public parking spaces and between 1.96 and 4.29 hours for the offstreet public parking spaces.

Short term parking -- two hours or less -- within the study area was provided on four block faces: 13, 18, 22, and 32. The average turnover rate and duration on block face 13 which was posted for one hour parking were observed to be 1.33 vehicles per space, and 2.69 hours, respectively, on a weekday. On a weekend day, the average turnover rate and duration on this block face were observed to be 1.50 vehicles per space, and 3.39 hours, respectively. Because of the low observed turnover rates and because the average durations on block face 13 were generally observed to exceed the posted time restrictions by a minimum of one hour, it may be concluded that the existing time restrictions are not appropriate to serve the existing parking demand along block face 13.

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The average turnover rate and duration on a weekday on block faces 18, 22, and 32 which were posted for two hour parking ranged from 2.09 to 2.50 vehicles per space, and from 3.10 to 3.87 hours respectively, significantly longer than the posted two hour limit. On a weekend day the average turnover rate and duration on block faces 22 and 32 also exhibited the pattern of low turnover rates--1.64 and 2.21, respectively--and with significantly longer durations -- 3.78 and 3.23, respectively,--than the posted two-hour time limit. Block face 18, however exhibited a moderate turn over rate of 3.00 vehicles per space and an average duration of 1.75 hours, or 0.25 hours less than the posted two-hour time limit. Because of the low observed turnover rates and because the average durations on these block faces were generally observed to exceed the posted time restrictions by a minimum of one hour, it may be concluded that the existing time restrictions were not appropriate to serve the existing parking demand along block faces 18, 22, and 32.

On a weekday, the average turnover rate and average duration of all public parking spaces with four-hour metered parking was observed to be 4.00 vehicles per space, and 1.70 hours, respectively, for the on-street parking spaces; and 3.04 vehicles per space and 1.87 hours, respectively, for the off-street parking spaces. The average turnover rate observed within individual block faces ranged from 1.59 to 5.77; while the average duration ranged from 1.13 to 2.35 for the on-street parking spaces. The average turnover rate observed within individual parking lots ranged from 2.47 to 4.83; while the average duration ranged from 1.60 to 2.02 hours for the off-street parking spaces. The weekday average duration in the four-hour metered parking spaces was observed to be equal to, or less than, two hours along 18 of the 23 block faces; and in two of the three parking lots where four-hour metered parking was provided. The average weekday duration was not observed to exceed 2.35 hours at any of the remaining four-hour metered locations, well below the four-hour limit. The 18 block faces, and two parking lots having an average duration equal to or less than 2.0 hours, included about 321 or about 69 percent, of all of the four-hour metered parking spaces.

On a weekend day, the average turnover rate and average duration of public parking spaces with four-hour metered parking was observed to be 4.61 vehicles per space, and 1.89 hours, respectively, for the on-street parking spaces and 4.70 vehicles per space, and 2.16 hours, for the off-street parking spaces. The average turnover rate observed within individual block faces ranged from 0.74 to 6.81, while the average duration ranged from 1.52 to 2.34 for the on-street parking spaces. Similarly, the average turnover rate of the off-street parking spaces ranged from 4.49 to 5.40 and the average duration ranged from 1.96 to 2.30 within individual parking lots. The average duration on a weekend day in the four-hour metered parking spaces was observed to be equal to or less than two hours along 16 of the 23 block faces, and in one of the three parking lots. The average duration was not observed to exceed 2.34 at any of the remaining four-hour metered locations, well below the four-hour limit. The 16 block faces and single parking lot concerned include about 287 or about 62 percent of four-hour metered parking spaces.

Both the average turnover rates and the average duration observed for the fourhour metered parking spaces indicate that a significant proportion of the motorist utilizing these spaces require no more than half of the time permitted by the meters. Thus it may be concluded that the four-hour time restriction is inappropriate.

Five-hour metered parking was provided on 11 block faces and in one parking lot within the study area. On a weekday the average turnover rate and average duration of all on-street public parking spaces which had five-hour metered parking was observed to be 2.36 vehicles per space and 1.96 hours, respectively The average turnover rate and average duration in the single parking lot having five-hour time restricted metered parking was observed to be 2.70 and 2.40, respectively. The average turnover rate observed within individual block faces ranged from 0.18 to 5.00 and the average duration ranged from 1.63 to 2.44 in the on-street parking spaces. Because only a single parking lot had five-hour meters, there is no range of data for the off-street parking spaces. On a weekday, the average parking duration for the five-hour metered parking spaces was not observed to exceed 2.45 hours, well below the five-hour limit imposed by the meters. In addition, six of the 11 block faces, which include 184 parking spaces having five-hour time restrictions, had an average duration less than 2.0 hours, or about 46 percent of all such spaces.

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On a weekend day, the average turnover rate and average duration of all on-street public parking spaces which had five-hour metered parking was observed to be 3.72 vehicles per space, and 2.38 hours respectively. The average turnover rate and average duration in the single parking lot having five-hour time restricted metered parking was observed to be 4.22 and 2.64 respectively. The average turnover rate observed within individual block faces ranged from 1.02 to 6.90, and the average duration ranged from 1.86 to 3.0 hours. Only a single parking lot was equipped with five-hour meters. It may be noted that, on a weekend day, the average duration in the five-hour metered parking spaces was less than 2.0 hours, along only one block face, but was not observed to exceed 3.0 hours anywhere, well below the five-hour limit imposed by the meters.

Both the average turnover rate and average duration observed for the five-hour metered parking spaces indicate a significant proportion of the motorists utilizing these spaces require no more than half of the time permitted by the meters. Thus it may be concluded that the five-hour duration is inappropriate.

Four block faces--28, 29, 34 and 40--appear to be utilized for long term parking by employees working in the central business district. Located just at the fringe of the central business district these block faces currently have no time restrictions and provide about 57 parking spaces. The average turnover rate for these four block faces was 2.02 vehicles per space, and the average duration was 4.84 hours. The average turnover rate observed within an individual block face ranged from 1.94 to 2.07 vehicles per space and the average duration ranged from 4.59 to 5.26 hours.

Summary

Analyses of the existing public parking supply and the observed public parking demand, and comparison of the relationship between such supply and demand to parking standards indicated that there were parking supply problems within the study area during the summer months when parking demand was at a peak. Although substantially more severe during a weekend day, parking problems were also observed during weekdays.

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Specifically, the average daily occupancy rate observed on a weekday equaled or exceeded the 80 percent occupancy rate standard for 445 on-street and 32 offstreet public parking spaces, or about 34 percent of 1,412 public parking spaces considered in the study area from the time period 11:00 a.m. to 7:00 p.m. The number of on-street and off-street public parking spaces having an average daily occupancy rate observed to equal or exceed the occupancy rate standard nearly doubled on a weekend day to 911 public parking spaces, or about 64 percent, of all public parking spaces in the study area for the time period 11:00 a.m. to 9:00 p.m.

Only 41 public parking spaces within the parking study area had time restrictions of two hours or less, and thus could be classified as short-term. None of these short-term parking spaces were located in the central business district and only 35 of the 41 total short-term parking spaces were located within 600 feet of the boundaries of that district. Thus less than 4 percent of the total of 901 public parking spaces within the central business district are within 600 feet of the boundaries of the district were short term parking spaces. This indicates a severe shortage of short-term parking spaces in the study area. Further the average duration observed in the parking spaces generally was more than one hour longer than the posted time limits.

It may be concluded that substantial demand for short-term parking; that is, parking of two hours or less duration, exists within the study area as indicated by the average duration and average turnover rates observed in the four-hour metered public parking spaces. The average duration observed in the four-hour metered spaces was equal to or less than two hours in 321, or about 69 percent, of such metered spaces on a weekday; and in 287, or about 62 percent, of such spaces on a weekend day. This indicates that nearly two-thirds of the observed parking demand in the four-hour metered spaces could be adequately served by twohour time restricted parking. Further, the maximum observed duration in the four-hour metered spaces did not exceed 2.35 hours on either a weekday or a weekend day, indicating that the needs of the motorists using these spaces is substantially less than four hours. The corresponding average turnover rates observed in the four-hour metered parking spaces were 4.00 and 4.43 vehicles per day on a weekday and a weekend day, respectively, indicating that the four-hour metered parking spaces are virtually in constant use. Because nearly two-thirds of the observed parking demand in the four-hour metered spaces has a parking duration of two hours or less, the near continuous demand for these spaces indicated by the high turnover rates further supports the conclusion that a shortage of short-term parking exists in the study area.

With respect to the five-hour metered parking spaces, it may also be noted that the maximum average duration observed did not exceed 3.0 hours. This is substantially less than the five hour time restriction currently imposed, thus indicating that a shorter duration restriction may be more appropriate.

OTHER PARKING RELATED PROBLEMS

Guide Signing

Guide signing can be used to inform motorists of the location of off-street parking lots and should serve to direct them to such lots. In addition, when properly located, such signing can divert traffic from heavily travelled arterial streets to less travelled adjacent streets, and reduce traffic circulation on all streets as the number of motorists searching for an on-street parking space is reduced. Thus, guide signing has the potential not only to reduce time spent in searching for a parking space, but to improve traffic flow as well.

Existing guide signing for off-street parking was in 1995 provided at eight locations within the study area including: 1) on Broad Street (STH 120) at the alley between Main Street (STH 50) and Geneva Street which alley serves as an entrance to parking lots "A" and "B", there being one guide sign facing northbound and one facing southbound traffic; 2) on Baker Street facing eastbound traffic at the entrance to parking lot "F"; 3) on Main Street (STH 50) just east of Center Street facing westbound traffic directing motorists north onto Center Street; 4) on Geneva Street facing westbound traffic at the entrance to parking lot "B"; 5) in the northwest quadrant of the Geneva Street intersection with Broad Street facing westbound traffic and directing motorists south onto Broad

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Street; and 6) on Wrigley Street facing southbound traffic at the boat launch and at its intersection with Baker Street. There are no other guide signs to direct motorists to off-street parking lots located within the study area.

The <u>Manual On Uniform Traffic Control Devices</u>⁵(MUTCD) recommends that guide signs for off-street parking have green lettering on a reflective white background. The guide signs on Main Street and Geneva Street conform to this standard as does one of the guide signs on Baker Street. The guide signs on Broad Street are approximately 52 inches by 32 inches, larger than the 24 by 30 inch size recommended in the MUTCD. The guide signs on Wrigley Street and a supplemental guide sign on Baker Street are approximately 18 inches by 24 inches, not the 30 by 24 inch size recommended in the MUTCD. Finally, the guide signs on Broad Street have yellow lettering on a non reflective dark brown background, while the guide signs on Wrigley Street and the supplemental sign on Baker Street have red lettering on a white background. Clearly, the existing guide signs on Broad Street, Wrigley Street and Baker Street do not conform to the standards set forth in the MUTCD. It may also be concluded that the provision of additional guide signing on Main Street facing eastbound traffic and on Center Street facing northbound and southbound traffic would be appropriate.

Roadway Capacity

In 1993, the traffic volumes on Main Street (STH 50) between Madison Street and S. Lake Shore Drive ranged between 12,400 and 16,700 vehicles per average summer weekday. The design capacity of a two lane urban roadway is generally considered to be 13,000 vehicles per average weekday; and, thus, the volume to design capacity ratio on this segment of Main Street ranges from 0.95 to 1.28.⁶

⁵Promulgated by the U. S. Department of Transportation, Federal Highway Administration, this manual serves as the national standard governing the use and placement of traffic control devices including signs, signals, pavement markings, and other devices regulating, warning, or guiding traffic.

⁶Urban surface arterial streets operating at or under their design capacity will typically experience minimal delay, with average delay at intersections ranging from 5 to 25 seconds. Average overall travel speeds will range from 20 to 30 miles per hour (mph). Urban surface arterial streets operating over their design capacity by less than 30 percent will still be operating within their maximum traffic carrying capacity and may experience delay during peak However, because parking maneuvers may block traffic lanes for as much as 18 seconds per maneuver, each maneuver has a detrimental impact on roadway capacity. As the frequency of parking maneuvers increases so does the negative impact on roadway capacity. Average daily parking space occupancy rates in excess of 89 percent, and average turnover rates greater than 5.80 on the segment of Main Street between Cook Street and Center Street indicate that the frequency of parking maneuvers may be expected to reduce the roadway capacity. Thus, the actual volume to design capacity ratios are likely to be higher than 1.28 indicated by the traffic volume carried on the facility alone.

As traffic volumes exceed the design capacity of a facility by 30 percent and approach maximum capacity, severe congestion results. Thus, it may be concluded that, under current operating conditions, Main Street between Madison Street and S. Lake Shore Drive is approaching its maximum capacity and that consideration should be given to the provision of additional capacity to reduce congestion. Both the year plan design 2010 regional transportation system plan, and the plan design year 2010 jurisdictional highway system plan for Walworth County identify a need for and recommend the provision of four traffic lanes on Main Street through the City.⁷

The provision of additional capacity on this segment of Main Street could be achieved without roadway widening through a combination of on-street parking prohibitions and conversion of existing on-street angle parking to parallel

⁷See SEWRPC Planning Report No. 41, <u>A Regional Transportation System Plan for</u> <u>Southeastern Wisconsin: 2010</u>, December 1994; and in the SEWRPC <u>Amendment to</u> the Walworth County Jurisdictional Highway System Plan: 2010, October 1991.

traffic hours with average delays at intersections ranging from 25 and 60 seconds and average overall travel speeds of 15 to 20 mph. Urban arterial streets which are subject to traffic volume demands which significantly exceed their design capacity--that is, by over 30 percent--and as well approach and exceed their maximum traffic carrying capacity, will experience during peak traffic hours average intersection delays of over 60 seconds and average overall travel speeds of less than 15 mph. These intersection delays may occur during only part of the peak hour, and may represent only increased delays and inability to clear a traffic signal in a single traffic signal cycle and do not represent conditions under which queues several blocks may develop.

parking. Specifically, the prohibition of existing on-street parking between Maxwell Street and Cook Street would be required, resulting in the loss of 105 general purpose, and four special target-group restricted, parking spaces. The conversion of existing angle parking to parallel parking between Cook Street and Center Street would result in the loss of 44 spaces, or about 49 percent, of the 90 existing parking spaces concerned.

It may be noted that sufficient right-of-way between Maxwell Street and Cook Street exists to permit widening of the existing roadway to provide four traffic lanes and the retention of parking along this segment. This right-of-way, however, abuts a City park located on the north shore of Lake Geneva and some of the right-of-way itself is currently utilized for park purposes. While this should not preclude the roadway widening, the conversion of street right-of-way concerned to its intended use may be perceived to have a detrimental impact on the aesthetics of the community and therefore engender public opposition.

Because the existing parking spaces on this segment of Main Street were observed to be in high demand, as evidenced by average daily occupancy rates ranging from 89 percent to 100 percent on a weekend day, the loss of these spaces would exacerbate the identified parking supply deficiency problem. Further, because these parking spaces serve the public library and the central business district, the loss of parking spaces attendant to the provision of four traffic lanes would have a detrimental impact on a parking year around, and not just during the summer months. Nevertheless, it is recommended that because the need to provide four traffic lanes currently exists, and may be anticipated to increase in the future, that consideration be given to the elimination of the parking between Maxwell Street and Gook Street and conversion of the angle parking to parallel parking between Gook Street and Center Street.

General Purpose On-Street Parking in Residential Neighborhoods

During periods of particularly intense parking demand--generally weekend days-general purpose on-street parking was observed in the residential neighborhood within the parking study area located west of Madison Street and north of Geneva Street. The use of on-street parking in this neighborhood for general purpose parking tends to reinforce the conclusion that there is a parking supply

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deficiency within the central business district as this neighborhood parking is generally located more than 600 feet from the boundaries of the central business district. The neighborhood is also generally located more than 600 feet from water-related recreational activity centers.

As general purpose parking penetrates this neighborhood, the on-street parking available to residents and their visitors is reduced. This leads to frustration on the part of residents within the neighborhood who believe that they should be able to park on the street in front of their homes should they so desire. Thus, it is recommended by the Commission staff that general purpose parking that occurs in this neighborhood due to the shortage of a parking supply in the study area should be accommodated elsewhere.

ALTERNATIVE AND RECOMMENDED PUBLIC PARKING PROBLEM SOLUTIONS

A broad range of alternative parking management actions, such as parking restrictions, guide signing, off-street facility design, construction of new parking facilities, and remote parking with shuttle bus service were evaluated to identify the actions that could best abate existing parking problems in the study area. It must be recognized that there are limits to the effectiveness of such parking management actions, all of which are intended to provide for the more efficient use of the community's parking facilities without adversely impacting the safety and efficient operation of the community's arterial street and highway system.

The evaluation of alternative parking management actions presented herein include consideration of the approximate cost of each action, the attendant advantages and disadvantages, and a recommendation with respect to the implementation of each action.

Parking Supply Deficiency

Observation of weekday and weekend day parking demand found that the 80 percent average daily occupancy rate standard was equaled or exceeded in 477 public parking spaces during the week, and in 911 public parking spaces during the weekend within the study area. In order to provide an average daily occupancy level of 80 percent it is estimated that approximately 80 additional parking spaces would have to be provided on an average weekday, and about 165 spaces on a weekend day. Because the parking supply deficiency is substantially greater on weekend days than on weekdays, and because comparison of Map 5 and 6 indicates that the areas identified as deficient on a weekday are also deficient on a weekend day, the analyses of impacts was focused on the weekend day deficiencies. In addition to providing the additional spaces needed to achieve an average daily occupancy rate of 80 percent within the study area, it was considered desirable to also provide such measures as may be necessary to eliminate general purpose parking in the residential neighborhood located north of Geneva Street and west of Madison Street. This would entail the provision of about 170 additional parking spaces elsewhere in the study area, or a total of about 335 spaces.

Finally, the provision of four traffic lanes on Main Street (STH 50) between Maxwell Street and Center Street without roadway widening would entail the loss of about 150 parking spaces. Thus, a total of about 485 new parking spaces would be required within the study area. Of those 485 parking spaces; 165, or about 34 percent, would be required to achieve an average daily occupancy rate of 80 percent in the study area; 170, or about 35 percent, would be required to eliminate general purpose on-street parking within the residential neighborhood in the northwest corner of the study area; and, 150, or about 31 percent would be required to provide four traffic lanes on Main Street without roadway widening.

The provision of additional parking spaces within the study area was considered as a possible measure to abate the identified parking supply deficiency. Also considered was the provision of a shuttle bus service between a remote parking lot and the central business district. It should be noted, however, that providing remote parking and shuttle bus service would probably not constitute a viable alternative for replacing the loss of on-street parking attendant to the provision of four traffic lanes on Main Street (STH 50) between Maxwell Street and Center Street because of the attendant year around detrimental impact on accessibility to the Public Library and to businesses within the central business district. Depending upon the locations of the remote lot, shuttle bus service would require parkers to either drive through or away from the central business district to reach the remote parking lot; ride the shuttle bus back to the central business district and destination, and then from the central business district back to the remote parking lot; and, drive back toward or through the central business district to their ultimate destination. Unlike tourists whose schedules are likely to be relatively flexible, residents would likely consider the additional travel and the need to schedule their travel to coincide with the shuttle bus schedule to be inconvenient; particularly if, upon arrival in the central business district on the shuttle bus, parking spaces previously occupied appeared available. Thus, because this particular element of the overall parking supply deficiency in the study area is a year around problem, it may be concluded that the provision of replacement parking within the immediate vicinity of the destinations served by the existing spaces to be eliminated would be preferable to the use of remote parking and shuttle bus service to resolve this particular element of the parking supply problem.

Alternative 1, On-Street Parking

The provision of the additional 165 parking spaces necessary to achieve an average daily occupancy rate of 80 percent on street would require about 13 block faces.⁸ Provision of on-street parking to replace the use for general parking of about 170 parking spaces in the residential neighborhood located in the northwest corner of the study area would require an estimated additional 14 block faces; and replacement of the 150 parking spaces lost for the provision of four traffic lanes on Main Street would require an estimated additional 12 block faces; for a total of 39 block faces.

There were 28 block faces in the study area on which parking was prohibited in 1995, and where the provision of additional on-street parking may be considered. With two exceptions, the roadway width of the streets concerned is generally 30 feet, less than the minimum width of 36 feet generally considered necessary to provide two traffic lanes and two parking lanes. The two exceptions to this 30 feet roadway width are Center Street between Wisconsin Street and Dodge Street which has a 44 foot wide roadway, and Wrigley Street (STH 120) between Center

⁸Assumes 13 parking spaces per block, the average number of parallel parking spaces observed per block face within the study area.

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Street and Baker Street which has a 32 foot wide roadway. In 1995 parking was permitted on one side of Center Street between Wisconsin Street and Dodge Street. No parking was permitted on Wrigley Street (STH 120) between Center Street and Baker Street. Thus, it may be concluded that only Center Street between Wisconsin Street and Dodge Street and Wrigley Street between Center Street and Baker Street have sufficient width to accommodate of additional on-street parking.

Of the 28 block faces in the study area along which parking was prohibited in 1995, 12 were within the residential neighborhood in the northwest corner of the study area. This would preclude their use to provide added general purpose onstreet parking. Eight more block faces were located along streets on which the provision of additional parking is precluded by a combination of traffic volume and pavement width and the need to maintain current traffic operating conditions. These facilities include: Main Street (STH 50), Broad Street (STH 120), and Dodge Street. Thus, the number of block faces along which the provision of additional parking may be considered is eight. These remaining eight block faces, however, are all located outside of the areas identified as having a parking supply deficiency. Thus the provision of parking along these eight block faces would not be expected to significantly abate the identified parking supply deficiencies. It may be concluded, therefore, that the provision of additional on-street parking within the study area will not resolve the identified parking supply problems.

Alternative 2, Off-Street Parking

The provision of an additional 165 off-street parking spaces necessary to achieve an average daily occupancy ratio of 80 percent would effectively double the number of such spaces within the study area in 1995. The provision of these spaces on a surface parking lot would require an area of about one acre or roughly the equivalent of about one-third of the area of a city block. Providing the 170 off-street parking spaces required to abate the parking problem in the residential neighborhood in the northwest corner of the study area would also require approximately one-third of the area of a city block. Finally, the provision of 150 off-street parking spaces to replace those parking spaces lost to provide four traffic lanes on Main Street would also require approximately one-third of the area of a City block.

There was only one undeveloped site within the study area large enough to accommodate a surface parking lot in 1995. This site abutted the west side of Center Street and the south side of the alley south of and parallel to Main Street. This site, which was approximately 150 feet by 165 feet--or about 0.6 acre in area--could accommodate a surface parking lot providing an estimated 70 spaces, well below the identified need. Thus it may be concluded that some property acquisition and demolition would be required to provide the needed number of parking spaces in off-street parking lots.

Given the existing land uses within the study area, the acquisition of sufficient land to construct a surface parking lot providing 485 parking spaces in a single location may be expected to be very difficult. Accordingly, two subalternatives for providing the needed number of additional parking spaces were considered. The first subalternative would meet the identified need through the provision of a number of relatively small sites on which a total of 485 parking spaces might be provided. The second subalternative would provide the spaces through the construction of a parking structure on a single site.

<u>Subalternative 2a; Provision of Additional Surface Off-Street Parking</u>: Alternative 2a would consist of the provision of four new off-street parking lots as shown on Map 7. In addition to the four new lots shown, the subalternative would include the expansion of three existing lots--Parking Lots "A", "B", and "C". Together, the four new sites and the expansion of the three existing parking lots would provide approximately 520 surface parking spaces, or about 35 more than required.

The proposed elimination of 109 on-street parking spaces on Main Street between Maxwell Street and Cook Street would be offset by the construction of a proposed new parking lot in the southeast quadrant of the Geneva Street and Madison Street intersection. This lot could also function to replace general purpose on-street parking in the residential neighborhood concerned. The expansion of Parking Lots "A" and "B" and the construction of a new parking lot on the west side of Center

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LOCATIONS CONSIDERED FOR THE PROVISION OF OFF-STREET PARKING ON SURFACE LOTS TO RESOLVE THE PARKING SUPPLY DEFICIENCY PROBLEM IDENTIFIED IN THE CITY OF LAKE GENEVA PARKING STUDY AREA



Source: SEWRPC

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Street south of Main Street would replace the 44 on-street parking spaces lost on Main Street between Gook Street and Center Street through conversion of angle parking to parallel parking; and provide approximately 100 additional parking spaces to reduce the average daily occupancy rate in that part of the study area where the parking demand was observed to be the most intense. Parking lot "A", and to a lesser extent, parking lot "B", are located so that they may also be expected to reduce general purpose on-street parking in the residential neighborhood concerned.

Two additional proposed new parking lots would be constructed on Geneva Street, one in the northeast quadrant at Cook Street and one between Broad Street and Center Street to provide additional parking to reduce the average daily occupancy rate within the study area. These proposed new lots would be so located as to permit their partial utilization for long-term employee parking. A new parking lot would be provided at the intersection of Cook Street and Geneva Street, so located as to reduce general purpose parking in the residential neighborhood concerned.

The additional parking provided by the expansion of parking lot "C" may be expected to the reduce the average daily occupancy rate within the study area, particularly during weekday. The provision of additional parking spaces at this site would also serve to offset the loss of parking spaces on Main Street due to the conversion of angle parking to parallel parking; and to provide additional space for long-term employee parking.

The estimated cost and disruption attendant to the construction of the four new parking lots, and the expansion of Parking Lots "A" through "C", are summarized in Table 8. The total cost of providing the additional off-street parking is estimated at about \$5.7 million, including an estimated \$4.2 million in land acquisition, demolition and relocation costs; and approximately \$1.5 million in construction costs. As already noted, the proposed construction of all four new surface parking lots and the expansion of three existing lots would provide approximately 35 more off-street parking spaces than needed to resolve the identified parking supply problem in the study area. Implementation of this

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Table 8

ESTIMATED COST AND DISRUPTION ATTENDANT TO THE PROVISION OF SUFFICIENT OFF-STREET PARKING TO RESOLVE THE PARKING SUPPLY DEFICIENCY PROBLEM IDENTIFIED IN THE CITY OF LAKE GENEVA PARKING STUDY AREA: 1995

				Estimated Cost		
Site	Disruption	Estimated Number of Stalls	Acquisition*/ Demolition and Relocation	Construction	Total	Problem Addressed
Parking Lot "A"	 Business Ambrose Christmas House Vacant Lot Institution Geneva Lake Area Museum of Historγ^d 	122 ⁶	\$360,00 \$4,000 \$140,000	\$281,000	\$785,000	Average daily occupancy rate greater than 0.80 and replacement of lost parking due to conversion of Main Street parking from angled to parallel, and elimination of parking in a residential neighborhood.
Subtotal			\$504,000	\$281,000	\$785,000	
Parking Lot "B" ^e	1 Business ● Naturally Yours Health Foods	60 ⁶	\$286,000	\$135,000	\$421,000	Average daily occupancy rate greater than 0.80 and replacement of lost parking due to conversion of Main Street parking from angled to parallel, and elimination of parking in a residential neighborhood.
Subtotal		×	\$286,000	\$135,000	\$421,000	
Parking Lot "C"°	6 Residences	99 ⁶	\$615,000	\$190,000	\$805,000	Average daily occupancy rate greater than 0.80 and replacement of lost parking due to conversion of Main Street parking from angled to parallel. In addition this lot may be used for long term
						employee parking.
Subtotal		$\frac{1}{2}$ (1.1)	\$615,000	\$190,000	\$805,000	

Table 8 (continued)

				Estimated Cost		
Site	Disruption	Estimated Number of Stalls	Acquisition [•] / Demolition and Relocation	Construction	Total	Problem Addressed
Geneva/Center	 2 Businesses Hudec Law Offices Sai Holistic Clinic 1 Residence 	76	\$600,000 \$120,000	\$150,000	\$870,000	Average daily occupancy rate greater than 0.80 and replacement of lost parking due to conversion of Main Street parking from angled to parallel. In addition this lot may be used for long term employee parking.
			\$720,000	\$150,000	\$870,000	
Geneva/Cook	 2 Business Wuttke Studio Vacant 3 Residential 	122	\$480,000 \$445,000	\$285,000	\$1,210,000	Average daily occupancy rate greater than 0.80 and replacement of lost parking due to conversion of Main Street parking from angled to parallel and elimination of parking in a residential neighborhood. In addition this lot may be used for long term employee parking.
Subtotal			\$925,000	#285,000	\$1,210,000	
Geneva/Madison*	3 Residences	106	\$720,000	\$270,000	\$990,000	Replacement of lost parking due to conversion of Main Street parking from angled to parallel and elimination of parking in a residential neighborhood.
Subtotal			\$720,000	\$270,000	\$990,000	

Table 8 (continued)

True .				Estimated Cost		
Site	Disruption	Estimated Number of Stalls	Acquisitionª/ Demolition and Relocation	Construction	Total	Problem Addressed
Main/Center	Vacant	70	\$460,000 ^r	\$142,000	\$602,000	Average daily occupancy rate
			at an			greater than 0.80; and replacement of loss parking due to conversion of Main Street parking from angled to parallel.
Subtotal			\$460,000	\$142,000	\$602,000	
Total	6 Business 13 Residences	655	\$4,230,000	\$1,453,000	\$5,683,000	

* The administrative costs attendant to the acquisition of these parcels is highly variable ranging from 25 to 200 percent of the assessed value, dependent largely on parcel size and the type of development. Administrative costs typically include appraisals, negotiations, purchase, filing and transfer fees. Such costs may also include litigation. For the purposes of of this analysis administrative costs were assumed to be 25 percent of the assessed value of each parcel.

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^b The number of parking spaces in parking lot "A is expected to increase by about 40; the number in lot "B" by about 35, and the number in lot "C" by about 70, resulting in approximately 520 new off-street parking spaces.

^e City of Lake Geneva officials have indicated significant interest in expanding parking lots "B" and "C".

^d Because this parcel is currently under City of Lake Geneva ownership, there would be no acquisition cost for this parcel, but the cost of acquiring a replacement structure was estimated at \$110,000. There would be relocation and demolition costs.

* The provision of parking at this location would not be necessary if the segment of Main Street from Maxwell Street to Cook Street was widened sufficiently to permit the provision of four traffic lanes and to retain the existing parking.

^f Estimated by multiplying the value of the land of the total parcel by the ratio of the area of the parcel to be acquired to the total parcel area.

Source: SEWRPC

subalternative would displace an estimated six businesses, 13 residences, and the Geneva Lake Area Museum of History.

It should be noted that, in 1985, the State Historic Society of Wisconsin (Society), Division of Historic Preservation, identified a total of four structures on Geneva Street which, while not viewed as historically significant in their own right, were deemed to contribute to the quality of two designated historic districts within the City of Lake Geneva. Three of these structures are proposed for demolition under this alternative; two at 817 and 821 Geneva Street are on the site of the Geneva/Cook lot, and one at 727 Geneva Street is on the site of the Geneva/Center lot. Should the City's Parking Commission and, ultimately, the City's Common Council determine to provide additional off-street parking in surface lots as proposed under this alternative, the City would be required by State Statute to notify the Society of the proposed action with respect to the structures concerned. The Society would review the proposed action, and if a determination was made by the Society that the proposed action would have an adverse impact on the historic districts, the Society could attempt to identify alternatives to reduce those impacts, and to encourage the City to consider those alternatives.

<u>Subalternative 2b; Provision of Additional Off-Street Parking in a Parking</u> <u>Structure</u> Subalternative 2b would consist of the construction of a parking structure on the site currently occupied by Parking Lot "A". The site would have to be expanded, however, to include the parcels currently occupied by the Geneva Lake Area Museum of History and a business known as Ambrose Christmas House. This site is centrally located with respect to the areas of most intense parking demand and with respect to the replacement of parking spaces lost due to the provision of four traffic lanes on Main Street. Further, a substantial proportion of this site is currently under City ownership.

Based upon the size of the site and the desired number of parking spaces necessary--485--a six story parking structure would have to be provided. The construction cost of this structure above ground is estimated at \$9.3 million, including \$8.8 million for construction and \$0.5 million for land acquisition.⁹ One business and the Geneva Lake Area Museum of History would be displaced. A suboption of Alternative 2b would consist of the construction of a five-story structure on the expanded site of parking lot "A" at an estimated construction cost of \$7.4 million. Such a structure would provide an additional 370 parking spaces. Therefore, additional parking would have to be provided in off-street lots. The expansion of parking lots "B" and "C" would provide an additional 105 parking spaces and an estimated construction cost of about \$0.9 million. The total estimated cost of this alternative, including land acquisition, demolition and relocation, and construction would approximate \$9.1 million, or \$0.2 million

Comparison of Off-Street Parking Subalternatives: The primary advantage of providing off-street parking on surface lots would be the ability to locate lots near areas of substantial parking demand thereby minimizing walking distances. Construction of surface lots could be done in phases; postponing further expansion pending experience with completion of an initial phase. For example, the provision of 165 new spaces to achieve an average occupancy rate of 80 percent in the study area may also sufficiently reduce the demand for general purpose parking in the residential neighborhood concerned to permit postponing of the provision of additional replacement parking. Similarly, provision of offstreet parking spaces attendant to the provision of four traffic lanes on Main Street could be had postponed until the four provision of lanes is imminent. As construction is phased in, there would thus be the potential to re-evaluate proposed locations, and to respond to changes in parking demand as necessary. Although construction in phases may be expected to increase the total cost incurred, the ability to finance individual phases would be enhanced.

⁹Construction of a multiple-use facility, that is a facility with commercial space on the ground floor and parking on the floors above, would add an estimated \$630,000 to the construction cost for a total construction cost of about \$8.0 million, an increase of about 7 percent.

Construction of a portion of the structure underground to minimize the aesthetic impact of the structure would result in substantially higher construction costs. If three levels were constructed below grade and three above grade the construction cost could be expected to increase from an estimated \$8.8 million to \$12.2 million, an increase of about 39 percent. The primary advantage of a parking structure as opposed to the use of surface parking is that disruption of existing land use may be minimized. However, the utility of the parking spaces within the structure is directly related to the distances of those spaces from the ultimate destination of the parkers, because most people using short-term parking--the most prevalent type of parking observed within the study area--are generally unwilling to walk more than 600 feet to their destination. The aesthetics of a parking structure, particularly the scale of the structure relative to other structures in the community would be highly undesirable. Finally, financing a parking structure would be fiscally challenging.

Thus, because of the flexibility with respect to timing and location attendant to the provision of off-street surface parking lots, and because provision of such lots was estimated to be substantially less costly than provision of a parking structure--\$5.8 million compared to either \$9.1 million for the construction of a five-story parking structure and the expansion of parking lots "B" and "C", \$9.3 million for the construction of a six-story parking structure-it is recommended that construction of a parking structure be eliminated from any further consideration in the study area.

Alternative 3; Remote Parking and Shuttle Bus Service

Under this alternative, additional parking would be provided at sites located outside of the study area, and shuttle bus service provided to transport passengers between the remote site and the central business district. As already noted, however, this alternative should not be considered a viable alternative to abating that element of the parking supply problem attendant to the provision of four traffic lanes on Main Street. The success of such service may be expected to be largely dependent upon the location, visibility, and accessibility of the remote parking lots; the location of stops on the shuttle bus service line in the central business district; the frequency and hours of shuttle bus service; and the direct cost to users of the remote parking lots and attendant costs of shuttle bus service.

Regardless of how user friendly the shuttle bus system may be, it may be expected that some motorists would not be willing to use this shuttle bus system for a

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variety of reasons including: 1) anticipated trip duration within the study area is short; 2) perception that shuttle service is inconvenient either with respect to service frequency or location of stops within the central business district; 3) lack of access to the hotels, restaurants, and recreational activities which are not located within the central business district, nor within 600 feet of the boundaries of that district; 4) desire to park "at" the destination, particularly if the time spent searching for a parking space, or walking from a less conveniently located parking space is perceived to represent a relatively small percentage of the overall trip time; 5) the amount of free parking available within the study area; and 6) that portion of the trip between the remote lot and the central business district would not be faster by shuttle bus service than by automobile. Nevertheless, it is recommended that the shuttle bus system be sized to accommodate maximum passenger loadings.

Because this alternative should not be considered a viable alternative to abating that element of the parking supply problem attendant to the provision of four traffic lanes on Main Street, the maximum number of parking spaces required at the remote parking lot or lots would approximate 335. Of the total 355 parking spaces required, 165 would be necessary to achieve an average daily occupancy rate of 80 percent, and 170 to provide for the elimination of general purpose parking in the residential neighborhood in the northwest corner of the study area. Ideally, the remote parking lot could be located on an existing parking lot to avoid site acquisition and construction costs.

Based upon the findings of an origin-destination study conducted by the Wisconsin Department of Transportation in July of 1986 to determine the potential diversion of traffic from the existing route of STH 120 through the City of Lake Geneva by a bypass, about 27 percent of the traffic entering the City destined for the central business district comes from the west, about 24 percent from the east, about 32 percent from the north, and about 17 percent from the south. Because traffic destined for the central business district arrives from all directions, the provision of four remote parking lots was postulated; on Wells Street (CTH H) near its intersection with Curtis Street on the south; two on Main Street (STH 50) near its intersection with Pearson Drive on the west and near its intersection with Edwards Boulevard on the east; and, one on Broad Street (STH 120) near its intersection with North Street.¹⁰

The size of each lot was based upon the proportion of travel observed entering the City on Wells Street, Main Street, and Broad Street which was destined for the central business district. Accordingly, 55 parking spaces would be required at the lot on Wells Street. An estimated 90 spaces and 80 spaces, respectively, would be required at the Pearson Street and Edwards Boulevard lots on Main Street. Finally, an estimated 110 spaces would be required at the lot on Broad Street. The estimated cost to provide the 335 parking spaces at these four lots, include land acquisition, demolition, relocation and construction was about \$2.9 million.

Based upon the findings of the afore-referenced origin-destination study, the average occupancy of the vehicles using these lots would be two persons per vehicle. The potential maximum passenger loadings per hour at the lot on Wells Street would, therefore, approximate 110; at the lots on Main Street about 160 and 180 west and east respectively; and about 220 at the lot on Broad Street. Thus, assuming use of shuttle buses with a capacity of 25 passengers, a total of five vehicles would be required to serve the Logan Street lot; seven and eight vehicles would be required to serve the Main Street lots west and east respectively, and nine vehicles the Broad Street lot. Providing service at 7.5 minute intervals from each lot would provide a total hourly passenger capacity of 200. This would be sufficient to accommodate the potential maximum passenger loadings at all lots except the Broad Street lot.

With respect to the operation of shuttle bus service, it was assumed that two basic routes would be provided. One route would operate east-west between the lots on Main Street, and the other route would operate north-south between the lot on Broad Street and the lot on Wells Street as shown on Map 8. It was assumed that the frequency of service from each lot would be at 7.5 minute

¹⁰ Provision of a lot on Broad Street (STH 120) near the intersection with North Street would accommodate the travel entering the City from the north on both George Street (CTH H) and STH 120.

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Source: SEWRPC

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intervals, and that service would provided between the hours of 11:00 a.m. and 7:00 p.m. on weekdays, and between the hours of 11:00 a.m. and 9:00 p.m. on weekends and holidays. The provision of service at 7.5 minute intervals from each of the four lots would require a total fleet of eight vehicles.

It should be noted that the provision of service at this frequency with eight shuttles buses would require that the shuttle buses be able to traverse the route from one remote parking lot to the other remote parking lot in less than 15 minutes. If the trip required more time, as it may well on summer weekends when both arterial streets traffic volumes and parking demand in the study area are highest, additional vehicles would have to be provided to maintain service at 7.5 minute intervals.

The capital cost of providing eight 25 to 30 foot long, wheelchair accessible buses capable of accommodating 25 passengers approximates \$820,000. The estimated cost to operate the eight vehicles seven days a week during the hours assumed through the months of June, July, and August, plus three days each during the Memorial Day and Labor Day weekends would approximate \$144,000 annually. Because parking in the study area is either free or has a nominal cost--\$1.00 for two hours--any direct user cost for either remote parking or the use of the shuttle bus service to offset the provision of such service would likely be viewed as a disincentive for its use.

The total capital cost to provide the shuttle service including the cost of the shuttle buses and the construction cost of the remote parking lots was estimated to be about \$3.7 million. The annual operating cost of the shuttle service was estimated to approximate \$144,000, or about \$2.9 million over 20 years in constant dollars. The provision of remote parking lots and shuttle bus service would not provide a viable alternative to the loss of on-street parking along Main Street. Some motorists may be unwilling to use the shuttle bus system because of perceived inconvenience including reduced access to restaurants and recreational activities outside of the study area, or because parking in the study area is either free or nominally priced. The cost to provide the necessary replacement parking spaces in off-street surface lots would approximate an additional \$2.2 million. Thus, the total capital cost would approximate \$5.9

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million, and the cost to operate the shuttle bus service on an annual basis would approximate \$144,000. Therefore, because some motorists would be more likely to continue to park in the study area rather than use the shuttle bus service for a variety of reasons thereby reducing the effectiveness of this alternative; because it would not resolve the loss of on-street parking attendant to the provision of four traffic lanes on Main Street; and because of its total capital cost and annual operating cost, this alternative was not recommended for further consideration.

CITY OF LAKE GENEVA PARKING COMMISSION REACTION TO ALTERNATIVES TO ABATE THE IDENTIFIED PARKING SUPPLY DEFICIENCIES IN THE STUDY AREA

At its February 22, 1996 meeting, the City of Lake Geneva Parking Commission reviewed the alternatives designed to abate the parking supply deficiency problems identified in the parking study area. Based upon its review, the Parking Commission directed that the need to provide replacement parking for the parking which would be eliminated by the provision of four traffic lanes on Main Street (STH 50), be removed from the estimated existing study area parking deficiency. This reduces the estimated parking supply deficiency by about 150 parking space from 485 to 335 parking spaces, or by about 31 percent. That is, an estimated 335 new parking spaces need to be provided to achieve an average daily occupancy rate of 80 percent within the study area, and to eliminate general purpose on-street parking in the residential neighborhood located north of Geneva Street and west of Madison Street. The Parking Commission further directed that each alternative be reevaluated in terms of their ability to provide the necessary 335 spaces.

One way that the action of the Parking Commission may be interpreted is that the Parking Commission believes that the City may not act in the short- or long-term to remove parking from main Street, and that such a contingent deficiency should be dealt with at such time as the incremental need actually occurs. As a result the total parking demand to be met is 335. Another way to interpret this action is that the Parking Commission has determined to only meet about 70 percent of the parking demand, or 335 of the total 485 parking spaces needed.

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With respect to subalternative 2a, which proposed that the additional parking spaces be provided by constructing four new off-street surface parking lots and expanding three existing off-street surface parking lots, the Parking Commission indicated that three of the sites proposed for new parking lots should be considered infeasible. These sites included the Geneva/Madison site, the Geneva/Cook site, and the Main/Center site as shown on Map 7. The Geneva/Madison and the Geneva/Cook sites would require the penetration of residential neighborhoods. Also, the City had required a developer to acquire the Main/Center site to provide green space as a condition of approval of a development proposal.

The Parking Commission also asked that a variation of the initial alternatives be considered. As shown in Figure 3, this variation was suboption 2 of subalternative 2b. An evaluation of the previously identified and the new parking supply alternatives with respect to their potential to provide the necessary 335 parking spaces follows.

Alternative 1, On-Street Parking

Under Alternative 1, the provision of additional on-street parking was proposed to abate the parking supply problems. The number of block faces required to provide 335 additional parking spaces is estimated to be 27 block faces. There were 28 block faces in the study area along which parking was prohibited in 1995, of which 12 were located within the residential neighborhood in the northwest corner of the study area. This would preclude their use to provide added general purpose on-street parking. Eight more block faces were located along streets on which the provision of additional parking is precluded by a combination of traffic volume and pavement width and the need to maintain current traffic operating conditions. These facilities include: Main Street (STH 50), Broad Street (STH 120), and Dodge Street. Thus, the number of block faces along which the provision of additional parking may be considered is eight. These remaining eight block faces, however, are all located well outside of the areas identified as having a parking supply deficiency. Thus the provision of parking along these eight block faces would not be expected to significantly abate the identified parking supply deficiencies. It may be concluded, therefore, that the provision of additional on-street parking within the study area cannot resolve the

Figure 3

ALTERNATIVES CONSIDERED TO ABATE THE PARKING SUPPLY DEFICIENCIES IDENTIFIED IN THE CITY OF LAKE GENEVA PARKING STUDY AREA: SUMMER, 1995



Denotes variation of alternative specifically requested by City of Lake Geneva Parking Commission

Source: SEWRPC
identified parking supply problems. Therefore, this alternative is recommended to be rejected from further consideration.

Alternative 2, Off-Street Parking

Under Alternative 2, the provision of additional off-street parking was proposed to abate the parking supply problems. Under Alternative 2, two subalternatives for providing the 335 additional parking spaces were considered. The first subalternative, subalternative 2a, would meet the identified need through the expansion of three existing parking lots and the construction of four new surface parking lots as shown on Map 7. The second subalternative, subalternative 2b, would provide the additional spaces through the construction of a new parking Two suboptions of subalternative 2b which would provide the structure. additional spaces through a combination of expanded existing surface parking lots and construction of a new parking structure were also evaluated. Under suboption 1 of subalternative 2b, a new parking structure would be constructed on the site of existing parking lot "A" shown on Map 9 and existing parking lots "B" and "C" At its February 22, 1996 meeting, the City's Parking would be expanded. Commission requested that a second suboption be evaluated with the parking structure located on an expanded parking lot "B" as shown on Map 9.

Because the Parking Commission determined that only one of the four identified potential new lot sites initially proposed under subalternative 2a was feasible, a modified subalternative 2a--which includes the expansion of existing parking lots "A", "B", and "C", together with construction of a new off-street parking lot on the Geneva/Center site--was considered. This alternative would provide about 220 new parking spaces, or about 66 percent, of the 335 parking spaces necessary. The estimated cost of this modified subalternative would approximate \$2.9 million including about \$0.8 million for construction, and about \$2.1 for land acquisition. The disruption attendant to this modified subalternative would include acquisition of seven residences, four businesses, the Geneva Lake Area Museum of History, and one vacant lot. The four businesses include: 1) Ambrose Christmas House; 2) Naturally Yours Health Foods; 3) Hudec Law Offices; and, 4) Sai Holistic Clinic. The number of additional parking spaces which could be provided under this alternative would not be sufficient to provide the additional -34a-

POTENTIAL ALTERNATIVE SITES FOR THE PROVISION OF AN OFF-STREET PARKING STRUCTURE IN THE CITY OF LAKE GENEVA CENTRAL BUSINESS DISTRICT TO ABATE IDENTIFIED EXISTING PARKING SUPPLY DEFICIENCIES



parking spaces necessary. Therefore, this subalternative was recommended to be rejected from further consideration.

Subalternative 2b proposes the construction of a parking structure on the site currently occupied by Parking Lot "A", expanded to include the parcels currently occupied by the Geneva Lake Area Museum of History and a business known as Ambrose Christmas House. Based upon the size of the site and the desired number of additional parking spaces--335--a five story parking structure would have to be provided. The capital cost of this providing this structure above ground is estimated at \$7.9 million, including \$7.4 million for construction and \$0.5 million for land acquisition, the highest capital cost of any alternative evaluated. Another disadvantage of this subalternative is that the height of a five story parking structure would be out of scale and incompatible with respect to existing structures in the area. Therefore, this subalternative was recommended to be rejected from further consideration.

A suboption of Subalternative 2b would provide additional off-street parking through construction of a new parking structure on an expanded existing parking lot "A" site; and expansion of existing parking lots "B" and "C". At the Parking Commission's request, a second suboption of subalternative 2b was evaluated. Under this second suboption, a new parking structure would be constructed on an expanded existing parking lot "B", and existing parking lots "A" and "C" would be expanded to provide additional off-street parking.

Implementation of Suboption 1, which includes the construction of a parking structure on the parking lot "A" site, would cost an estimated \$6.2 million dollars and provide an estimated 350 additional parking spaces. These costs include: 1) an estimated total of about \$3.9 million attendant to the provision of a parking structure, including about \$3.4 million for the construction of a three level parking structure, and about \$0.5 million for land acquisition; 2) an estimated total of about \$1.5 million attendant to the expansion of existing parking lot "B", including about \$0.3 million for construction, and about \$1.2 million for land acquisition; and, 3) an estimated total of about \$0.8 million attendant to the expansion of existing parking lot "C", including about \$0.2 million for construction, and about \$0.6 million for land acquisition. Implementation of Suboption 2, which includes the construction of a parking structure on the parking lot "B" site, would cost an estimated \$6.2 million dollars and provide an estimated 355 additional parking spaces. These costs include: 1) an estimated total of about \$4.6 million attendant to the provision of a parking structure, including about \$3.4 million for the construction of a three level parking structure, and about \$1.2 million for land acquisition; 2) an estimated total of about \$0.8 million attendant to the expansion of existing parking lot "A", including about \$0.3 million for construction, and about \$0.5 million for land acquisition; and, 3) an estimated total of about \$0.8 million attendant to the expansion of existing parking lot "C", including about \$0.2 million for construction, and about \$0.6 million for land acquisition. Thus, it may be concluded, that implementation of sub-options 1 and 2 of subalternative 2b would have approximately the same costs.

The two alternative sites were compared with respect to the proximity of their location to identified parking deficiencies. Maps 10 and 11 show, for a weekday and a weekend day, that the parking lot "A" site is better situated to serve the observed current parking demand deficiencies than a parking structure located on the parking lot "B" site. Furthermore, a parking structure located on the site of existing parking lot "A" would be closer to destinations on the southern and western fringes of the central business district such as the Public Library, and the entrance to the beach on Lake Geneva.

Because the same three existing parking lots would be used in each suboption and because the total land area at each of the three lots is the same under each suboption, the disruption attendant to their implementation is also essentially identical. With respect to parking lot "A", it would be necessary to acquire one business--Ambrose Christmas House; one institution--The Geneva Lake Area Museum of History; and one vacant parcel of land. With respect to parking lot "B", it would be necessary to acquire five businesses--Naturally Yours Health Foods; Haase, Derrick, Lockwood Funeral Home; Places II Travel; Mortgage Investors; and Lyle's TV & Appliance, Incorporated. Finally, with respect to parking lot "C", it would be necessary to acquire six residences. EXISTING SUMMER WEEKDAY PARKING DEMAND IN THE CITY OF LAKE GENEVA PARKING STUDY AREA SERVED BY THE TWO ALTERNATIVE SITES UNDER CONSIDERATION FOR THE LOCATION OF A PARKING STRUCTURE



Occupancy Rate Equals or Exceeds 80 Percent for a Minimum of Five Hours EXISTING SUMMER WEEKEND DAY PARKING DEMAND IN THE CITY OF LAKE GENEVA PARKING STUDY AREA SERVED BY THE TWO ALTERNATIVE SITES UNDER CONSIDERATION FOR THE LOCATION OF A PARKING STRUCTURE



Thus, because the estimated cost and disruption attendant to these two suboptions are similar and because a parking structure located on the site of existing offstreet parking lot "A" may be expected to more effectively abate the identified parking supply deficiency, Suboption 1--which includes a structure on that site--

Alternative 3; Remote Parking and Shuttle Bus Service

was recommended for further consideration.

This alternative proposes the construction of four remote parking lots and the provision of shuttle bus service between those remote lots and the central business district. This service would require two routes and a total of eight shuttle buses to provide 7.5 minute headways. Under this alternative, only 335 additional parking spaces were proposed to be provided in the remote lots. Therefore, elimination of the provision of four traffic lanes on Main Street and the attendant need to provide replacement parking has no impact on the analysis of the shuttle bus service itself.

This alternative was originally recommended to be rejected because some motorists would be more likely to continue to park in the study area rather than use the shuttle bus service for a variety of reasons thereby reducing the effectiveness of this alternative; because it would not resolve the loss of on-street parking attendant to the provision of four traffic lanes on Main Street; and because of its total capital cost and annual operating cost. Rejection of this alternative continues to be recommended for the same reasons as previously. Further, comments by Parking Commission members indicate that it would be would likely be necessary to locate the remote parking lots farther from the central business district than originally proposed thereby increasing the likelihood that motorists would prefer to park in the study area rather than use the shuttle bus service.

Recommendations to Resolve Identified Parking Supply Deficiency

Three alternatives were considered to abate the identified study area parking supply deficiency problems which, initially, included provision of additional parking to replace existing parking which would have been eliminated attendant to the provision of four traffic lanes on Main Street (STH 50) through the study area. However, at a February 22, 1996 meeting, the City of Lake Geneva Parking Commission directed that the provision of four traffic lanes on Main Street (STH 50) and the attendant need to provide replacement parking be eliminated from further consideration. This action reflects the belief of Parking Commission members that the City would not act to remove the parking from Main Street in either the short- nor the long-term. The Parking Commission also directed that the Geneva/Madison; the Geneva/Cook and the Main/Center proposed new off-street parking lots be eliminated from further consideration. Finally, the Parking Commission also requested the evaluation of a second suboption to subalternative 2b to provide the necessary additional parking in a combination of a parking structure and expansion of existing parking lots.

The first alternative evaluated proposed to abate the identified parking supply deficiency problems through the provision of additional on-street general purpose parking. The second alternative evaluated proposed to abate the identified parking supply deficiency problems through the provision of additional off-street general purpose parking and had two subalternatives and two suboptions. The first subalternative considered would provide additional parking in expanded existing and proposed new surface parking lots, while the second subalternative would provide additional parking in a parking structure. The suboptions of the second subalternative would provide additional parking in a combination of a parking structure and expansion of existing off-street parking lots. The third alternative consisted of the provision of remote parking with shuttle bus service between the remote parking lots and the central business district.

Of the alternatives examined, Alternatives 1 and 3, and Subalternatives 2a and 2b and Suboption 2 of Subalternative 2b were recommended to be eliminated from further consideration. Alternative 1 was recommended to be eliminated because an estimated 27 block faces would be needed to provide the 335 additional parking spaces required, and none of the eight block faces within the study area on which added on-street parking could be provided are located within the areas experiencing a parking supply deficiency problem.

Subalternative 2a was recommended to be eliminated from further consideration because it could provide only about two-thirds of the 335 additional parking spaces required. Subalternative 2b was recommended to be eliminated from further consideration because it has the highest capital cost of the alternatives evaluated, and because construction of a single parking structure with 335 additional parking spaces would result in a structure whose height would be incompatible with existing buildings in the community. Suboption 2 of Subalternative 2b was recommended to be eliminated from further consideration because the provision of a parking structure on an expanded site of existing parking lot "B" would less effectively serve the observed parking demand, than a parking structure on an expanded site of existing parking lot "A".

Alternative 3 was recommended to be eliminated from further consideration because the presence of free or nominally priced parking in the study area and the inconvenience of remote parking may be expected to substantially reduce shuttle bus usage.

Subalternative 2b, Suboption 1, was recommended for adoption and implementation because it may be expected to provide the 335 additional parking spaces required, and because it best serves observed parking demand. Implementation of the recommended suboption of Subalternative 2b is estimated to cost approximately \$6.2 million.

TIME RESTRICTIONS

The time restriction imposed on the use of parking spaces should reflect that time generally required for potential users to accomplish the tasks related to Time restrictions which are shorter than the time required by their trip. motorists using the parking spaces frequently results in disregard for the posted time limit by the motorists and creates a law enforcement problem for the Time restrictions which are longer than the time required by community. motorists using the parking spaces may result in lower turnover rates and longer durations of parked vehicles than necessary, denying other motorists parking This in turn, may result in lost business opportunities. The opportunities. objective of time restrictions, then, should be to provide only sufficient time to complete the purpose of the trips involved, while simultaneously ensuring the maximum turnover of parking spaces.

Analyses of the observed parking duration in the 41 short-term parking spaces provided within the study area in 1995 indicated that motorists commonly violate the one- and two-hour time restrictions. Further, the average parking duration observed in these parking spaces generally exceeded the posted time restrictions by at least one hour. Thus it may be concluded that additional enforcement activity is warranted to ensure compliance with the posted time restrictions on these block faces. Such enforcement activity should not result in any significant additional cost, but may divert police personnel from other law enforcement activities within the study area. Nevertheless, such additional enforcement activity is recommended.

Analyses of the four-hour metered parking spaces provided within the study area in 1995 indicate that the average parking duration was equal to or less than two hours for 321, or about 69 percent, of the four-hour metered public parking spaces on a weekday; and for 287, or about 62 percent of those spaces on a weekend day. The maximum observed duration occurred on a weekday and was 2.35 hours, well below the four-hour time limit. The corresponding average turnover rates were observed to be 4.0 and 4.43 vehicles per day, respectively, indicating relatively high demand for these spaces. Thus, it may be concluded that a twohour time limit would meet the need of nearly two-thirds of all motorists using the spaces concerned; and would encourage turnover of these parking spaces.

Accordingly, it is recommended that replacement of the existing four-hour metered parking with two-hour metered parking be considered for Center Street, Main Street (STH 50), Broad Street (STH 120) north of Main Street, Geneva Street between Broad Street and Center Street, and in parking lots "B" and "D". Fourhour metered parking would be retained on Broad Street south of Main Street, Geneva Street between Cook Street and Broad Street, and in parking lot "A" to accommodate demand for more parking time than permitted with two hour time restricted parking. The cost to implement this recommendation is estimated at \$16,500.

Analyses of the five-hour metered parking spaces indicate that on a weekday the average turnover rate observed ranged from 0.18 to 5.00 and the average duration ranged from 1.63 to 2.44, well below the five-hour limit imposed by the meters.

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On a weekend day, the average turnover rate observed ranged from 1.02 to 6.90, and the average duration ranged from 1.86 to 3.0 hours. On a weekend day, the average duration in the five-hour metered parking spaces was less than 2.0 hours on only one block face. These data indicate that all parking demand would be met with a shorter time restriction than is currently in place. Accordingly, it is recommended that consideration be given to replacing the all five-hour meters with four-hour meters. The cost to implement this recommendation is estimated at \$23,450.

PARKING GUIDE SIGNING

Parking guide signing serves two basic purposes. First, it is used to alert motorist that off-street parking is available; and, second, it is used to efficiently direct motorists to that off-street parking. Correctly installed guide signing has the potential to reduce traffic circulation in the central business district attendant to the search for a parking space. Such signing should conform to the provision of the <u>Manual on Uniform Traffic Control Devices</u> (MUTCD) promulgated by the U. S. Department of Transportation to promote universal understanding, and should be located far enough in advance of any required changes in route to permit motorists to safely execute attendant lane changes or turning maneuvers at intersections.

In 1995 there were signs at eight locations which informed motorists of and served to guide them to off-street parking facilities within the study area. There was no signing guiding motorists to off-street parking facilities from the west, from the north or from the south. Only four of the existing nine signs conformed to the provisions of the MUTCD with respect to color and size.

In order to resolve the lack of parking guide signing within the study area, it is recommended that four new signs be installed: 1) facing southbound traffic on Center Street just south of the alley between Wisconsin Street and Geneva Street; 2) facing northbound traffic on Center Street just north of the alley between Main Street and Geneva Street; 3) facing northbound traffic on Wrigley Street between Baker Street and Center Street; and, 4) facing eastbound traffic on Main Street between Madison Street and Cook Street. It is also recommended that the existing parking guide sign facing eastbound traffic at the intersection of Broad Street and Geneva Street be relocated to face southbound traffic on Broad Street just south of the alley between Wisconsin Street and Geneva Street. The cost to implement these recommendations is estimated to approximate \$900.

In order to provide westbound Main Street motorists with more time to move to the right turn lane at the intersection of Main Street and Center Street, it is recommended that the existing parking guide sign at this intersection be moved further east to a location at mid-block between Center Street and Mill Street. The cost to implement this recommendation is estimated to approximate \$100.

As already noted in 1995 there were five existing nonconforming guide signs, two on Broad Street at the alley between Geneva Street and Main Street, two on Wrigley Street between Center Street and Baker Street and a supplemental sign on Baker Street between Wrigley Street and S. Lake Shore Drive. Although standardization promotes ready universal understanding, because their message is clear, no recommendation was made to replace the non-standard existing signs.

Future Guide Signs

The guide signing provided upon full implementation of the recommended parking structure construction and surface parking lot expansion recommended herein should be essentially the same as that recommended for the existing conditions with two exceptions. The sign recommended to face westbound traffic on Main Street mid-block between Center Street and Mill Street should be located approximately 150 feet east of Mill Street. The estimated cost of relocating this sign is approximately \$100.

SUMMARY AND CONCLUSIONS

On June 15, 1994, the City of Lake Geneva requested that the Southeastern Wisconsin Regional Planning Commission conduct a study of the supply of and demand for, parking in the central part of the City. The parking study was to be conducted on an average weekday and weekend day during the summer months when parking demand reaches its peak. Following analyses of the supply of, and demand

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for, parking the study was to prepare recommendations to resolve any identified parking problems.

An inventory of the existing on-street and off-street public parking supply in the study area was conducted in April, 1995. This inventory established the number of public parking spaces available as well as current time of day and time limit restrictions. In April, 1995, there were 1,258 on-street, and 176 offstreet public parking spaces available within the study area, or a total of 1,434 public parking spaces. Of this total of 1,434 total parking spaces, 22 spaces were reserved for special purpose parking both on-street and off-street, reducing the total number of public parking spaces available on a typical weekday to 1,412.

Of the 1,412 total public parking spaces available; 1,241 spaces, or about 88 percent, were located on-street; while 171 spaces or about 12 percent were located in off-street surface parking lots. Approximately 850 spaces, or about 60 percent, were equipped with parking meters. Approximately 171 spaces, or about 12 percent, were located in a residential neighborhood immediately west of the central business district. About 608 of the 1,241 on-street parking spaces, or about 49 percent, were parallel parking spaces;, while the remaining 633, or about 51 percent, were angle parking spaces. A total of 41 parking spaces were posted with short term--that is one- or two-hour--time restrictions.

An inventory of existing parking guide signing was also conducted. In 1995, a total of nine signs were provided within the study area to guide motorists to off-street parking.

Two surveys of public parking space demand and utilization were conducted by the Regional Planning Commission during the month of July, 1995 in the study area. The data were collected in hourly intervals from 9:00 a.m. to 7:00 p.m. during the week and from 9:00 a.m. to 9:00 p.m. during the weekend. On a weekday, total parking demand--that is the total number of occupied spaces--varied by hour from 357 parking spaces, to 945 parking spaces, or from about 25 percent to 67 percent of the total on-street and off-street public parking supply. Demand peaked during the early afternoon and remained fairly constant until 5:00 p.m. when it was observed to decline. On a weekend day, total parking demand was observed to range from 414 parking spaces, to 1,231 parking spaces, or from about 29 percent to about 87 percent of the total on-street and off-street parking supply; and also peaked during the early afternoon and remained fairly constant to the end of the survey period at 9:00 p.m.

The weekday average daily occupancy rate of the off-street and on-street public parking spaces was observed to be 58 percent and 51 percent respectively; the average turnover rate to be 2.63 and 2.32, respectively; and the average duration to be 2.20 hours and 2.20 hours, respectively. The weekend day average daily occupancy rate of the off-street and the on-street public parking spaces was observed to be 85 percent and 65 percent, respectively; the average turnover rate to be 4.04 and 3.19 respectively; and the average duration to be 2.53 hours and 2.46 hours, respectively.

The identification of parking deficiencies within the study area was based upon the following standards: 1) sufficient automobile parking spaces should exist in the study area such that the parking demand does not exceed an average daily occupancy rate of 80 percent; and, 2) sufficient time related parking should be provided in the study area near concentrations of demand so that 90 percent of the short-term parkers may find a parking space within 600 feet of their destinations.

Because the observed parking demand between the hours of 9:00 a.m. and 11:00 a.m. was low in comparison to the demand between the hours of 11:00 a.m. and 7:00 p.m. on the summer weekday and between the hours of 11:00 a.m. and 9:00 p.m. weekend days, these two hours were excluded from the analyses made to determine the average daily occupancy rate which was to be used to identify potential parking supply deficiency problems. In addition, because of the significant peaking observed in the parking demand, any block face or parking lot having a daily occupancy rate less than 80 percent, but exhibiting a minimum of five hourly occupancy rates of 80 percent or more was also identified as a potential parking supply deficiency problem.

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On a weekday a total of 30 block faces and parking lots were found to have a daily average occupancy rate at or above the 80 percent occupancy rate standard, these block faces and lots providing 477 spaces, or about 34 percent, of the total of 1,412 parking spaces surveyed. On a weekend day the number of block faces and parking lots having an average daily occupancy rate at or above the 80 percent occupancy rate standard increased to 41; these providing 911 parking spaces, or about 64 percent, of the total parking spaces. Thus, it was concluded that demand exceeded the supply of parking spaces at a significant number of locations within the study area.

In 1995, only 41 public parking spaces within the parking study area had time restrictions of two hours or less and thus could be classified as short-term parking spaces. None of these short-term parking spaces were located within the central business district proper, and only 35 of the 41 total short-term parking spaces were located within 600 feet of the boundaries of that district; thus, indicating a severe shortage of short-term parking spaces. Further the average parking duration observed in the short-term spaces in the study area generally was more than one hour longer than the posted time limit.

Further analyses of the observed average duration and average turnover rate data for the four-hour metered public parking spaces indicates that substantial demand for short-term parking exists as the average duration observed was equal to or less than two hours for 321, or about 69 percent, of such spaces on a weekday; and for 287, or about 62 percent of such spaces on a weekend day. This indicates that a substantial percentage of the parking demand in the four-hour metered parking spaces could be adequately served by two-hour time restricted parking. The corresponding average turnover rates for the four-hour metered parking spaces were observed to be 4.0 and 4.43 vehicles per day, on a weekday and a weekend day, respectively, indicating that these spaces did not stand vacant for long periods of time.

Three additional issues were initially identified as having potentially negative impacts on the parking supply within the study area: 1) a lack of parking guide signs to efficiently direct motorists to off-street parking; 2) the existing and growing need to provide four traffic lanes on Main Street (STH 50); and, 3) the

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extent of general purpose on-street parking in a residential neighborhood within the study area. It was estimated that an additional 485 parking spaces would be required to resolve the identified parking supply deficiency; including 165 to achieve an average daily occupancy rate of 80 percent, 170 spaces to replace onstreet spaces lost if general purpose parking is prohibited in the residential neighborhood concerned; and 150 spaces to replace parking eliminated attendant to the provision of four traffic lanes on Main Street. However, at a February 22, 1996 meeting, the City of Lake Geneva Parking Commission determined to eliminate from the parking supply deficiency analysis the 150 parking spaces assumed to be required if parking is eliminated on Main Street. Such a contingent deficiency, the Parking Commission reasoned, should be dealt with at such time as action creating the need--the removal of parking from Main Street-occurs. This determination reduces number of additional parking spaces required from about 485 to about 335, or by about 31 percent.

A range of alternative parking management actions, such as parking restrictions, guide signing, off-street facility design, construction of new parking facilities, and remote parking with shuttle bus service were evaluated in an attempt to identify actions that could best abate the identified parking problems in the parking study area.

Three basic alternatives were initially considered to abate the parking supply deficiency problem identified within the study area. The first alternative proposed to provide additional on-street general purpose parking. The second alternative proposed to provide additional off-street general purpose parking with two subalternatives and one suboption considered. One of the subalternatives proposed to provide additional parking in surface parking lots and the second proposed to provide additional parking in a parking structure. Under the suboption the added parking was proposed to be provided in a combination of a parking structure and expanded surface parking lots. The third alternative would provide remote parking with shuttle bus service between the remote parking lots and the central business district. A second suboption to provide added parking through a combination of a parking structure at an alternate location and expanded surface lots was added at the request of the City's Parking Commission.

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The provision of additional on-street parking was deemed impractical because of the inadequate roadway width of those facilities within the study area on which parking was currently prohibited, those roadways being, with but two exceptions, too narrow to provide two traffic lanes and two parking lanes. Further, the 27 block faces estimated to be required to accommodate the provision of the estimated total 335 on street parking spaces required to resolve the parking space deficiency virtually equaled the total number -- 28 block faces -- available. Twelve of the 28 block faces are in the residential neighborhood from which general purpose parking is proposed to be eliminated, and thus cannot be used to provide added on-street parking. Parking could not be permitted on an additional eight block faces without severe detrimental impacts on current traffic operating Not only the eight remaining block faces would be insufficient to conditions. provide the necessary spaces, they are located outside the areas having a parking supply deficiency. Therefore, this alternative was not recommended for further consideration.

Subalternative 2a proposed to provide additional parking spaces in four new and three expanded existing off-street surface parking lots. However, the City's Parking Commission, at its February 22, 1996 meeting determined that three of the four potential new sites proposed for new parking lots were not feasible. This action reduced the number of additional parking spaces which could be provided under this alternative to approximately 220, or about 66 percent of the 335 additional parking spaces required. Thus, because this alternative cannot provide sufficient additional parking, it was not recommended for further consideration.

The provision of additional off-street parking in a parking structure under Subalternative 2b was also not recommended for further consideration because the scale of the needed structure would be incompatible with existing structures in the area; and because the estimated capital cost of a structure would approximate \$7.9 million, substantially more than any other alternative.

It was recommended that consideration be given to the variations of Subalternative 2b which proposes to provide the required 335 additional parking spaces through a combination of a new three-story parking structure on an existing parking lot, and the expansion of two other existing surface lots to abate the parking deficiency problems identified within the parking study area. Because a parking structure located on the site of existing parking lot "A" would be more centrally located with respect to the observed parking supply deficiencies than a parking structure located on an the site of existing parking lot "B", Suboption 1 of Subalternative 2b was recommended to be adopted and implemented. Under this suboption, a parking structure would be constructed on the site of existing parking lot "A", and existing parking lots "B" and "C" would be expanded. The estimated cost to implement this alternative is \$6.2 million including \$3.4 million to build the parking structure; \$0.5 million to expand lots "B" and "C"; and \$2.3 million to acquire the land.

Alternative 3, which proposed to provide shuttle bus service between remote parking lots and the central business district was not recommended for further consideration. Because this alternative reduces mobility by impairing access to other destinations within the community but outside the study area, and of the free or nominally priced parking in the study area, some motorists would prefer to continue to park within the study area, thereby reducing the effectiveness of this alternative. Further, comments by Parking Commission members indicated that it would likely be necessary to locate the remote lots farther from the central business district than originally proposed thereby increasing the likelihood that motorists would prefer to park in the study area than use the shuttle bus service.

In order to resolve the identified lack of adequate parking guide signing within the study area, it is recommended that six new signs be installed, and two existing signs be relocated. This cost to implement this recommendation was estimated at about \$1,000. It was also recommended that one of the existing parking guide signs be relocated upon construction of the proposed parking structure and expansion of the existing surface parking lots to expeditiously direct motorists to this parking. It was estimated that the cost to implement this recommendation would approximate \$100.

Analyses of the observed parking duration in the 41 short-term parking spaces within the study area indicated that motorists generally exceed the one- and two-

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hour time restrictions by at least one hour. Additional enforcement activity was recommended to ensure better compliance with the posted time restrictions on these block faces. Implementation of this recommendation may be expected to divert police personnel from other enforcement activities within the study area, but should not result in any significant increase in law enforcement costs.

With respect to the existing four-hour metered parking, it was concluded that a two-hour time limit would meet the needs of nearly two-thirds of all parkers, and would encourage timely turnover of the parking spaces. Accordingly, it was recommended that replacement of the existing four-hour metered parking with two-hour metered parking be considered for the parking spaces along Center Street, Main Street (STH 50), Broad Street (STH 120) north of Main Street, Geneva Street between Broad Street and Center Street, and for the parking spaces in lots "B" and "D". Implementation of this recommendation would also serve to abate the shortage of short-term parking; that is, two hour duration or less identified in the study area. The cost to implement this recommendation was estimated at \$16,500.

Similarly, the average duration data for the five-hour metered parking indicate that all parking demand would be met with a shorter time restriction than is currently in place. Accordingly, it is recommended that consideration be given to replacing the existing five-hour meters with four-hour meters at an estimated cost of approximately \$23,450.

A range of actions were evaluated and a set of specific actions recommended to abate the parking problems identified within the study area. A summary of the parking problems identified and the actions recommended to abate each problem is set forth in Table 9. Also shown in Table 9 are the estimated costs of implementing the recommended actions.

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Table 9

ACTIONS RECOMMENDED TO RESOLVE PARKING PROBLEMS IDENTIFIED WITHIN THE CITY OF LAKE GENEVA PARKING STUDY AREA: 1995

Problem	Action Recommended to Resolve Problem	Estimated Cost
 Parking Supply Deficiency^a 911 parking spaces having average daily occupancy rate of 80 percent or greater general purpose on-street in residential neighborhood 	Provide 350 additional parking spaces in a three-story parking structure on an expanded existing parking lot "A" and expansion of existing parking lots "B" and "C".	\$6,190,800
Lack of Short-term Parking/Inappropriate Time Restrictions	Increased enforcement of existing one-and two-hour time restrictions	None ^b
 Disregard for existing time restrictions Average duration significantly shorter than time restrictions 	Convert existing four hour metered parking spaces to two-hour metered parking spaces	\$16,500
	Convert existing five-hour metered parking spaces to four hour metered parking spaces	\$23,450
Insufficient Parking Guide Signing	Install four new parking guide signs and relocate two existing	\$1,000
	Relocate one sign following the	\$100
Total		\$6,231,850

^a At a February 22, 1996 meeting, the City of Lake Geneva Parking Commission directed that consideration of the provision of four traffic lanes on Main Street (STH 50) and the attendant need to provide replacement parking be eliminated from consideration. This action reduced the number of additional parking spaces required to abate the identified parking supply problems from 485 to 335, or about 31 percent.

^b Because this enforcement action is expected to use existing enforcement personnel, no significant increase in costs would be expected. However, enforcement personnel may be diverted from other enforcement activities.