

CENTRAL BUSINESS DISTRICT PARKING STUDY

CITY OF CEDARBURG OZAUKEE COUNTY WISCONSIN

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Special acknowledgement is due Mr. Kenneth H. Voigt, SEWRPC Principal Engineer, for his contribution to the preparation of this report.

MEMORANDUM REPORT NUMBER 1

CEDARBURG CENTRAL BUSINESS DISTRICT PARKING STUDY

**CITY OF CEDARBURG
OZAUKEE COUNTY, WISCONSIN**

Prepared by the

**Southeastern Wisconsin Regional Planning Commission
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The preparation of this report was financed in part through a joint planning grant from the Wisconsin Department of Transportation and the U. S. Department of Transportation, Federal Highway and Urban Mass Transportation Administrations.

December 1986

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PARKING STUDY FOR THE CEDARBURG CENTRAL BUSINESS DISTRICT

INTRODUCTION

An inadequate supply of on- and off-street parking can be detrimental to a community's economic vitality. A complete and accurate assessment of a community's existing parking supply and its operating characteristics is considered essential to the identification of reported parking problems, as well as the formulation of parking management actions designed to solve or mitigate those problems.

The first step in the conduct of the study involved a detailed inventory of the existing parking supply and demand in the Cedarburg central business district. Inventory data were collected for this study in the fall of 1985 by Commission staff in cooperation with the City of Cedarburg and the Cedarburg Chamber of Commerce.

In order to identify existing parking problems, the detailed inventory data were compared to parking management design criteria. Where this comparison indicated that existing conditions do not meet the design criteria, a parking supply or operation deficiency has been identified. For each identified problem, a set of alternative traffic engineering actions was designed and evaluated, based upon the parking management design criteria, to solve or mitigate each problem. The parking management actions deemed to best solve each problem were recommended for implementation in the memorandum.

PARKING MANAGEMENT DESIGN CRITERIA

Planning and decision making for the improvement of the operation of a community's parking facilities should be based upon criteria which permit the objective evaluation of the identification of parking problems and the merits of implementing potential parking improvement actions. These criteria should be based upon sound engineering principles for the management and operation of an efficient parking system. Parking management actions can be effective only if they are used where their need is publicly understood and supported.

The parking management design criteria in Table 1 were formulated to serve as guidelines in addressing existing parking problems in the City of Cedarburg central business district. The application of the criteria set forth in Table 1 is intended to assure uniformity in the identification of parking problems

TR56/c

Table 1

PARKING MANAGEMENT DESIGN CRITERIA

1. Sufficient automobile parking spaces should be provided in the central business district so that the average hourly parking demand does not exceed 75 percent of the available on-street curb and off-street parking spaces.
2. The number and distribution of automobile parking spaces serving the central business district should be distributed between on-street curb and off-street parking facilities such that there is a minimum of 150 parking spaces per 1,000 population, with between 40 to 45 percent of these spaces composed of on-street curb parking and the remaining 55 to 60 percent composed of off-street parking spaces.
3. In the central business district, sufficient time-restricted parking should be provided near concentrations of parking demand so that 90 percent of the short-term parkers need walk no more than 600 feet to reach their destination.
4. The social and economic costs attendant to the provision of adequate parking facilities should be minimized through the proper design and location of a community's parking system:
 - a. The acquisition of land for parking purposes should be minimized.
 - b. The reduction of existing property values should be minimized.
 - c. The penetration of residential and environmentally sensitive areas by parking facilities should be minimized.

Source: SEWRPC.

and the recommendation of parking management actions designed to solve or ameliorate the identified problems. The application of the parking management design criteria presented in Table 1 is not a substitute for sound engineering judgement. The potential to improve and properly manage a community's parking system is limited by the configuration of the street and highway system serving that community, and the spatial distribution of land development within that community. It is important to note that it is not intended that every parking management action recommended for implementation in this memorandum satisfy every criterion used to evaluate the identification of parking problems in the study. An attempt has been made to satisfy as many, if not all, the parking management design criteria as practicable. When a recommended action cannot meet all the parking management criteria, the community will need to establish its priorities with regard to the relative importance of each criterion and select the parking management action which will satisfy the community's overall development objectives.

DOWNTOWN PUBLIC PARKING DEMAND AND UTILIZATION

Public parking facilities are an essential element of a community's transportation system. The provision of adequate and well managed on-street and off-street parking facilities is vital to a healthy downtown business climate. An inadequate supply of public parking, in terms of the number of spaces provided, the time restrictions applied, or the parking facility location manifests itself in the form of: 1) traffic flow disruptions and congestion as vehicles stop in moving traffic lanes to wait for and maneuver into available parking spaces; 2) motor vehicle accidents caused by parked vehicles that enter and leave the traffic stream; 3) an eventual reduction in vehicle trips and a possible loss in commercial business in those areas affected where parking is a problem; and 4) excessive air and noise pollutent emissions and fuel consumption as vehicles circulate on the local street system in search of available parking spaces. The primary purpose of streets and highways is the provision of land access and the movement of people and goods. The provision of parking is considered to be a secondary use of street space. Within these parameters, a community must balance its needs for the safe and efficient flow of traffic with the provision and management of on- and off-street public and private parking facilities.

Two measures of the adequacy and operation of public parking facilities are parking occupancy rates and 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 parking spaces available, expressed as a percentage. A low occupancy rate indicates a surplus of parking spaces. The average duration of time parked is defined as the total number of vehicles parked during each separate survey time period divided by the total number of different vehicles parking over the summation of time periods surveyed. A comparison of the average duration of 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. Parking duration is also used to identify areas of short- or long-term parking demand.

A secondary measure of parking facility utilization and management is 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 stalls available. A high turnover rate indicates the use of spaces for short-term parking, while a low turnover rate indicates the use of spaces for long-term or all-day parking.

The locations of the public on-street curb parking facilities and the off-street parking lots surveyed in this study are shown on Map 1. Of the total 1,883 parking spaces in the study area--which includes the Cedarburg central business district--780 spaces, or 41 percent, were on-street curb parking spaces. Another 1,104 parking spaces were located in a total of 40 different off-street parking facilities. The largest off-street parking facility contained 87 parking spaces. As shown on Map 1, the off-street parking facilities were evenly distributed along the length of Washington Avenue. As indicated in Table 2, 345 parking spaces, or 44 percent of the on-street spaces, are restricted with a two-hour maximum time limit; 85 parking spaces, or 11 percent, are restricted with a three-hour maximum time limit; and 350 parking spaces, or 45 percent, are not restricted with any time limit. One hundred ninety-four spaces, or about 55 percent of the unrestricted on-street curb parking spaces in the study area, are located on St. John Avenue. Of the 1,103 off-street parking spaces, 1,091 spaces were unrestricted, with a three-hour maximum parking restriction posted for the 12 spaces in the municipal lot located on the corner of Center Street and Hanover Avenue.

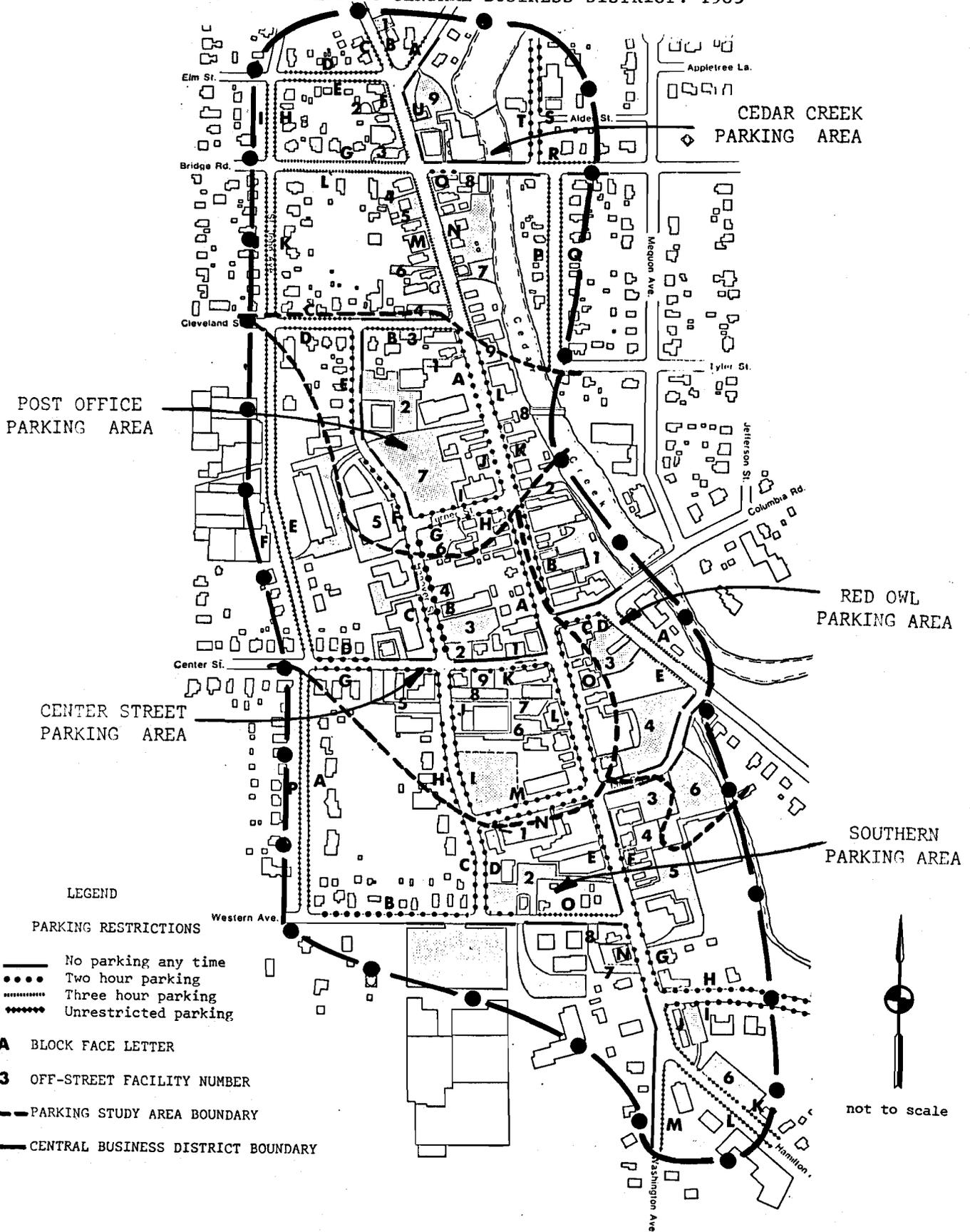
A comparison of the parking standards set forth in Table 1 to existing conditions indicates that there is an adequate number of parking spaces in the Cedarburg parking study area. A minimum of 1,350 parking spaces is required in the study area, compared to the 1,883 existing spaces. Of the total parking spaces, 134 on-street curb parking spaces are located on the segment of St. John Avenue between Western Avenue and Cleveland Street. Even without the 134 spaces on St. John Avenue, which is between 600 to 1,100 feet west of Washington Avenue, there are 1,749 parking spaces, which also satisfies the standard. A further comparison of existing conditions to the standards indicates that the distribution between on-street and off-street parking spaces--780 on-street spaces, or 41 percent of the total--satisfies the recommended standard of between 40 to 45 percent on-street spaces. However, without the 134 spaces located on St. John Avenue, the percentage of on-street spaces is reduced to 37 percent, which does not satisfy the standard for on- and off-street parking space distribution.

Two surveys of parking space demand and utilization were conducted, in addition to the inventory of parking space, in the Cedarburg parking study area. The first survey, to identify weekday parking demand, was conducted from 9:00 a.m. to 6:00 p.m. on Thursday, October 3, 1985; and the second survey, to identify weekend parking demand, was conducted from 9:00 a.m. to 5:00 p.m. on Saturday, October 5, 1985. The time periods chosen for these surveys were based upon parking demand patterns typical of small communities in southeastern Wisconsin. The weekday parking demand pattern, as shown in Figure 1, increases steadily from a low of about 520 vehicles during the 9:00 a.m. to 10:00 a.m. period to a high of about 750 vehicles during the 1:00 p.m. to 2:00 p.m. period, and then decreases to a low of about 480 vehicles during the 5:00 p.m. to 6:00 p.m. time period.

Weekend parking demand, as shown in Figure 1, demonstrates a different pattern than weekday demand. Weekend parking demand starts at a low of about 550 vehicles during the 9:00 a.m. to 10:00 a.m. period, increasing rapidly to a

Map 1

ON- AND OFF-STREET PARKING FACILITIES
IN THE CEDARBURG CENTRAL BUSINESS DISTRICT: 1985



TR56/b

Table 2

SUMMARY OF ON- AND OFF-STREET PARKING
FACILITY TIME RESTRICTIONS IN THE
CEDARBURG CENTRAL BUSINESS DISTRICT: 1985

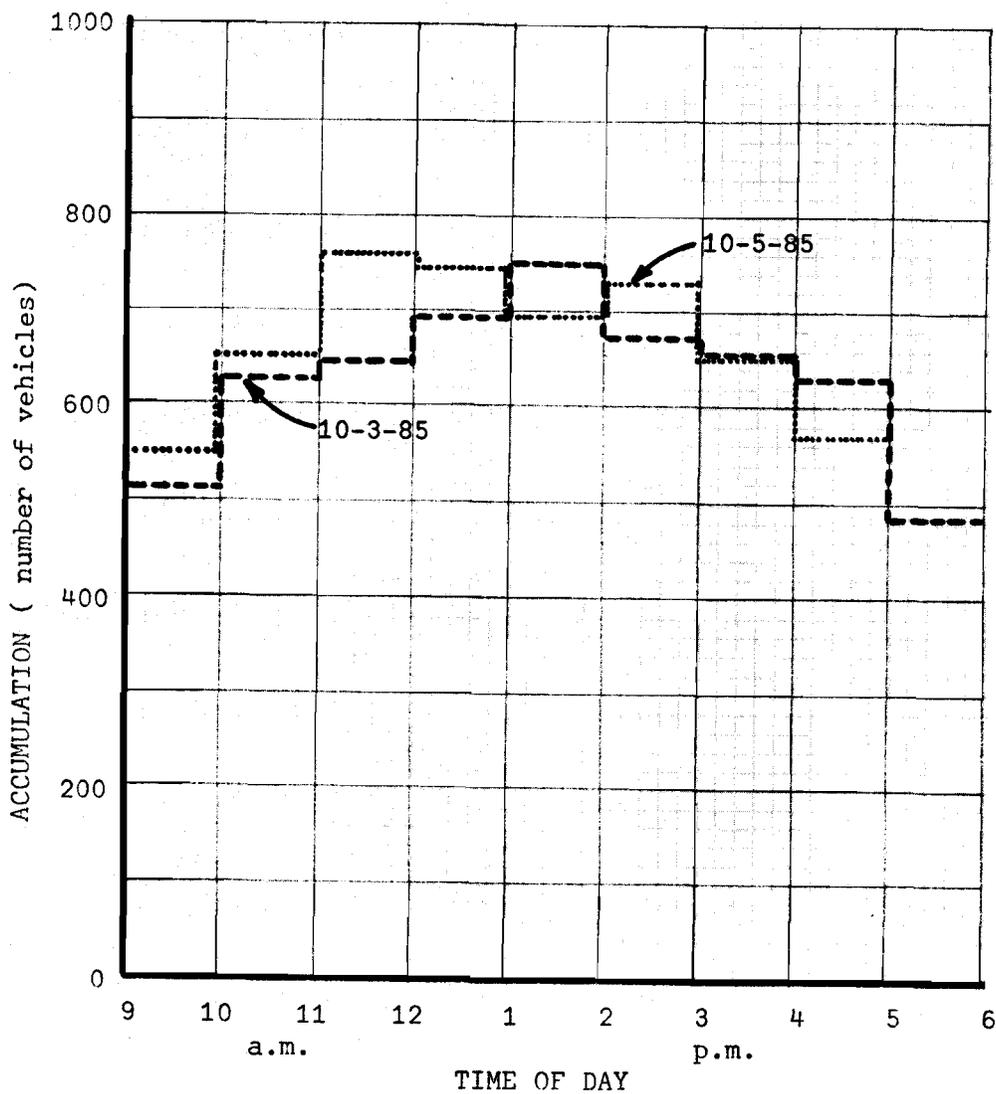
Parking Restriction	Number of Spaces	Percent of Total
On-Street		
Unrestricted.....	350	45
Two-Hour Limit.....	345	44
Three-Hour Limit.....	85	11
Subtotal	780	100
Off-Street		
Unrestricted.....	1,091	99
Two-Hour Limit.....	--	--
Three-Hour Limit.....	12	1
Subtotal	1,103	100
Total	1,883	--

Source: SEWRPC.

Figure 1

HOURLY PARKING DEMAND:
DOWNTOWN CEDARBURG

(Capacity: 1880 spaces)



Source: SEWRPC.

peak of about 760 vehicles during the 11:00 a.m. to 12:00 p.m. period, remaining fairly constant through the midday period until 3:00 p.m., after which demand decreases to a low of about 570 vehicles during the 4:00 p.m. to 5:00 p.m. period. Neither the weekday or weekend parking surveys demonstrated a total areawide hourly parking demand above the standard maximum occupancy rate of 75 percent. Total peak hourly demand for parking in the Cedarburg central business district approached a maximum occupancy rate of about 40 percent, well below the 75 percent standard, on both weekday and weekend surveys.

However, as shown on Maps 2 and 3, numerous on- and off-street parking locations in the central business district individually exceeded the standard maximum hourly occupancy rate of 75 percent. For analysis purposes, the central business district was subdivided into five separate study areas. Each parking study area, as shown on Map 1, was defined to identify geographic sections of the central business district with potentially different parking supply and demand.

The northernmost, or Cedar Creek, parking area, as shown on Maps 2 and 3 and in Table 3, demonstrated a high on-street curb parking demand, with seven of the 21 blocks of on-street curb parking and five of the nine off-street parking facilities exceeding an hourly occupancy rate of 75 percent, for a cumulative total of 22 and 20 hours, respectively. In comparison, increased parking demand on weekends resulted in 15 of the 21 blocks of on-street and five of the nine off-street parking facilities exceeding an hourly occupancy rate of 75 percent, for a cumulative total of 71 and 24 hours, respectively.

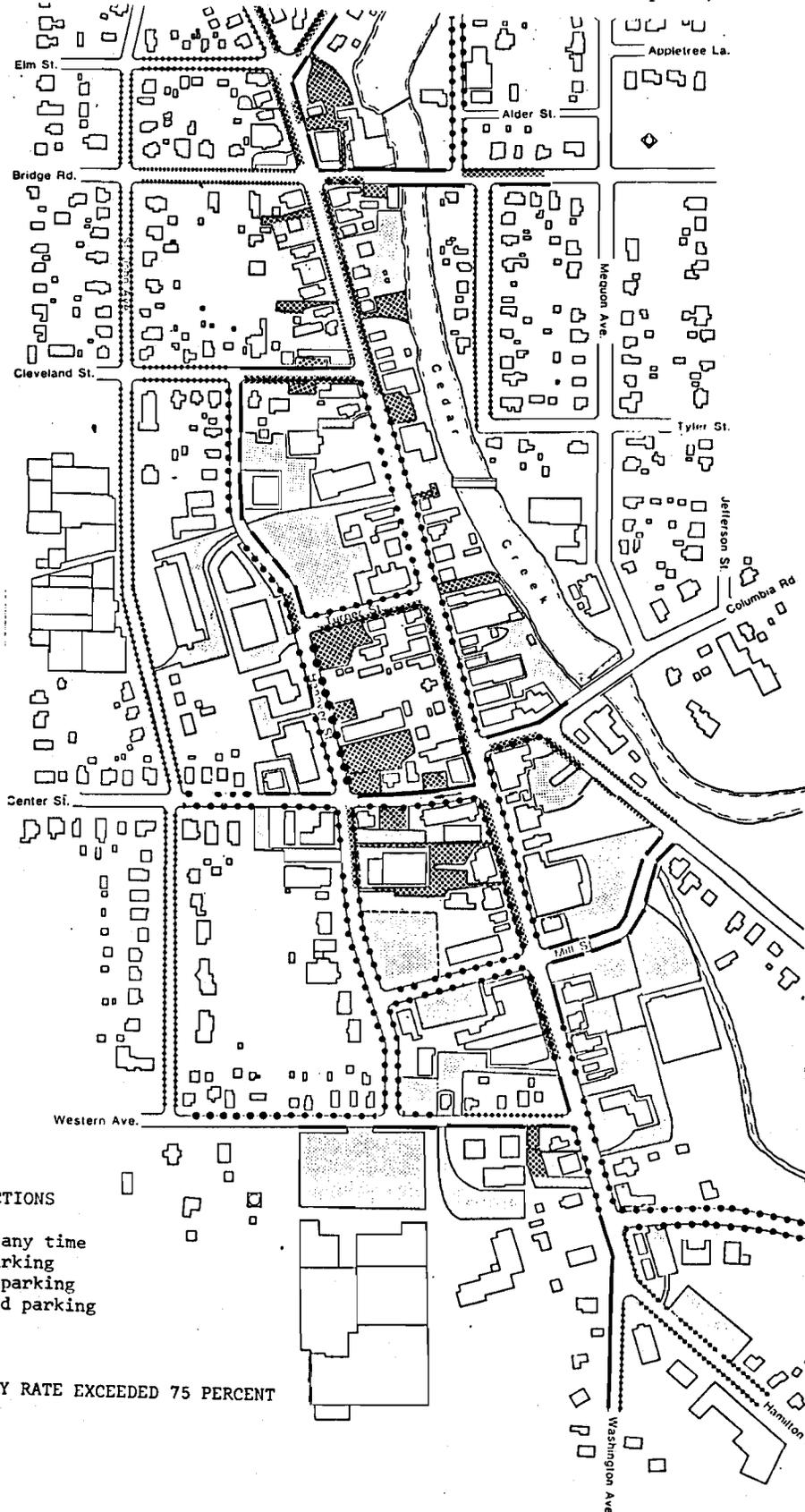
The Post Office study area, as shown on Maps 2 and 3 and in Table 4, demonstrated a slightly lower weekday demand for parking, with four of the 12 blocks of on-street and four of the nine off-street parking facilities exceeding an hourly occupancy rate of 75 percent, for a cumulative total of five and 23 hours, respectively. In comparison, parking demand in the Post Office study area was very low on the weekend, resulting in only two of the 12 blocks of on-street and three of the nine off-street parking facilities exceeding an hourly occupancy rate of 75 percent, for a cumulative total of two and eight hours, respectively.

The Center Street study area, as shown on Maps 2 and 3 and in Table 5, demonstrated a relatively low weekday demand for on-street parking, with only three of the 15 blocks of parking exceeding an hourly occupancy rate of 75 percent for a cumulative total of four hours. The weekday demand for off-street parking, however, was relatively high, with seven of the nine off-street facilities exceeding an hourly occupancy rate of 75 percent, for a cumulative total of 19 hours. In comparison, weekend demand in the Center Street study area was higher for on-street parking, with five of the 15 blocks of parking exceeding an hourly occupancy rate of 75 percent, for a cumulative total of 10 hours. However, weekend demand for off-street parking was lower than weekday demand, with four of the nine off-street facilities exceeding an hourly occupancy rate of 75 percent, for a cumulative total of seven hours.

The Red Owl study area, as shown on Maps 2 and 3 and in Table 6, demonstrated a low weekday demand for parking, with two of the five blocks of on-street and only one of the five off-street parking facilities exceeding an hourly occupancy rate of 75 percent, for a cumulative total of nine hours and one hour,

Map 2

ON- AND OFF-STREET PARKING FACILITY OCCUPANCY RATES
IN THE CEDARBURG CENTRAL BUSINESS DISTRICT
THURSDAY, OCTOBER 3, 1985 (9:00 a.m. to 6:00 p.m.)



LEGEND

PARKING RESTRICTIONS

- No parking any time
- Two hour parking
- - - - Three hour parking
- ○ ○ ○ Unrestricted parking

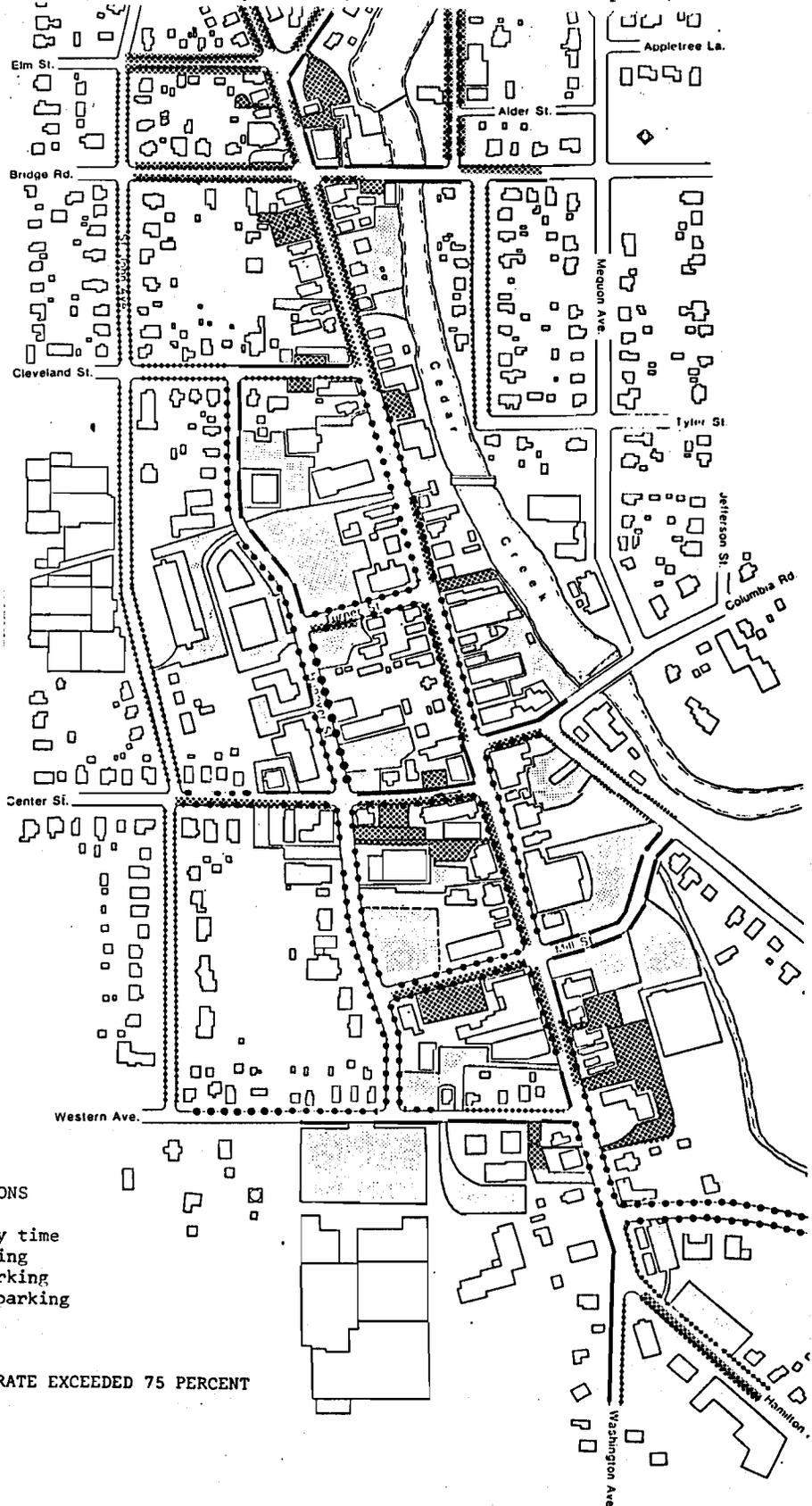
▨ HOURLY OCCUPANCY RATE EXCEEDED 75 PERCENT



not to scale

Map 3

ON- AND OFF-STREET PARKING FACILITY OCCUPANCY RATES
IN THE CEDARBURG CENTRAL BUSINESS DISTRICT
SATURDAY, OCTOBER 3, 1985 (9:00 a.m. to 5:00 p.m.)



LEGEND

PARKING RESTRICTIONS

- No parking any time
- Two hour parking
- - - - Three hour parking
- Unrestricted parking

 HOURLY OCCUPANCY RATE EXCEEDED 75 PERCENT

not to scale

Table 3

ON- AND OFF-STREET PARKING FACILITY OCCUPANCY, TURNOVER, AND AVERAGE PARKED DURATION RATES IN THE CEDAR CREEK PARKING AREA OF THE CEDARBURG CENTRAL BUSINESS DISTRICT: 1985

Block ^a Face/ Facility	Parking Regulation	Number of Spaces	Percent Spaces Occupied by Hour of Day									Average		
			9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	Turnover (vehicle space)	Duration (hours/ vehicle)	
			T	S	T	S	T	S	T	S	T			S
On-Street														
A	Unrestricted	7	T 28	86	100	100	100	100	71	57	43	1.3	5.3	
			S 28	57	100	100	100	100	86	100	NA	2.4	2.8	
B	Unrestricted	6	T 33	17	17	83	100	50	--	33	33	2.5	1.5	
			S 33	--	100	100	83	83	67	83	NA	3.3	1.6	
C	Unrestricted	8	T 12	12	38	38	75	62	--	--	12	1.3	2.0	
			S --	50	62	100	100	100	88	50	NA	2.2	2.4	
D	Unrestricted	10	T --	10	20	30	70	70	30	10	10	1.2	2.3	
			S 20	50	70	90	100	100	100	70	NA	2.2	2.7	
E	Unrestricted	11	T --	27	36	36	64	54	45	27	9	0.7	4.1	
			S 9	27	73	91	82	91	36	54	NA	1.8	2.6	
F	Three-Hour	7	T 14	--	43	100	86	57	28	--	--	2.3	1.4	
			S --	57	86	100	100	100	86	71	NA	3.0	2.0	
G	Three-Hour	14	T 14	21	21	57	64	36	28	36	36	1.8	1.8	
			S 7	7	86	93	100	100	71	57	NA	3.2	1.6	
H	Unrestricted	10	T --	--	10	10	10	10	20	--	--	0.3	2.0	
			S 10	20	10	20	30	50	20	10	NA	0.9	1.9	
I	Unrestricted	11	T --	--	--	--	--	--	--	--	--	0.1	1.0	
			S --	--	--	--	9	54	36	9	NA	0.5	2.0	
J	Unrestricted	19	T 5	5	5	5	10	5	5	10	16	0.3	2.6	
			S 16	26	21	16	16	26	10	21	NA	0.6	2.4	
K	Unrestricted	20	T 5	5	15	20	15	25	--	--	--	0.3	2.8	
			S 5	10	15	20	10	25	10	10	NA	0.4	3.0	
L	Three-Hour	14	T 21	28	57	64	64	64	28	28	36	1.7	2.3	
			S 14	28	86	100	93	78	86	28	NA	3.1	1.7	
M	Three-Hour	12	T 50	58	58	50	67	42	50	67	50	4.9	1.0	
			S 42	58	83	100	92	100	92	67	NA	4.0	1.6	
N	Three-Hour	13	T 15	38	54	77	62	54	54	46	92	3.7	1.3	
			S 15	23	92	92	92	69	69	77	NA	3.7	1.4	
O	Two-Hour	6	T 17	83	83	83	83	100	100	67	33	1.4	3.0	
			S 17	83	100	100	100	100	100	100	NA	3.0	2.3	
P	Unrestricted	23	T 35	35	48	39	44	26	17	22	22	0.9	3.3	
			S 17	22	48	39	52	52	48	43	NA	1.0	3.2	
Q	Unrestricted	21	T 33	28	33	43	43	33	52	57	33	1.0	3.4	
			S 28	33	52	48	52	57	38	43	NA	1.0	3.4	
R	Unrestricted	5	T 20	80	80	60	80	60	20	--	--	1.3	5.0	
			S 60	80	100	100	100	100	80	80	NA	2.2	3.2	
S	Two-Hour	13	T 15	15	31	46	54	38	23	23	3	1.3	1.9	
			S 15	15	92	69	92	100	92	54	NA	3.1	1.7	
T	Two-Hour	16	T 12	12	12	38	44	6	6	--	--	1.3	1.4	
			S --	--	56	56	81	81	81	31	NA	3.1	1.2	
U	Two-Hour	2	T --	--	50	100	100	--	--	--	50	2.5	1.2	
			S 50	100	50	50	100	100	100	100	NA	3.0	2.2	
	Subtotal	248	T 17	24	34	44	50	38	26	24	22	1.3	2.0	
			S 16	28	60	63	66	71	58	46	NA	2.0	2.0	
Off-Street														
1	Unrestricted	18	T 56	56	50	39	28	44	61	56	39	1.7	2.5	
			S 44	50	44	39	50	44	22	22	NA	1.3	2.4	
2	Unrestricted	7	T --	28	28	57	57	57	57	57	43	0.7	5.4	
			S 43	57	43	57	43	71	86	57	NA	1.4	3.2	
3	Unrestricted	5	T --	--	--	--	--	--	20	--	--	0.2	1.0	
			S --	--	--	--	20	--	--	--	NA	0.2	1.0	
4	Unrestricted	8	T 100	100	100	88	88	88	88	88	88	1.3	6.6	
			S 88	100	100	100	88	100	100	88	NA	3.9	2.0	
5	Unrestricted	12	T 42	42	33	33	42	33	33	50	50	1.6	2.3	
			S 50	58	100	83	67	17	17	25	NA	1.3	3.1	

-continued-

Table 3 (continued)

Block ^a Face/ Facility	Parking Regulation	Number of Spaces	Percent Spaces Occupied by Hour of Day									Average		
			9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	Turnover (vehicle/ space)	Duration (hours/ vehicle)	
6	Unrestricted	15	T	40	47	60	93	100	67	47	33	20	2.1	2.4
			S	20	20	33	27	33	47	13	7	NA		
7	Unrestricted	9	T	22	67	67	56	67	78	78	67	56	0.9	2.1
			S	--	44	56	56	44	44	44	44	NA		
8	Unrestricted	9	T	11	56	56	78	89	67	67	67	89	0.8	4.3
			S	33	56	89	89	78	78	89	NA			
9	Unrestricted	49	T	12	76	88	90	88	61	55	43	33	3.0	1.9
			S	35	86	86	84	86	86	84	86	NA		
			T	29	61	65	70	70	58	56	49	42		
S	36	62	69	67	64	63	56	55	55	NA	2.3	2.0		
Subtotal		132												
Total		380	T	21	37	45	53	57	45	36	33	29	1.5	2.2
			S	23	40	63	64	66	69	58	49	NA		

Note: T = Thursday, October 3, 1985; S = Saturday, October 5, 1985.
NA = data not available.

^a Block face letters and off-street facility number locations are shown on Map 1.

Source: SEWRPC.

Table 4
ON- AND OFF-STREET PARKING FACILITY OCCUPANCY, TURNOVER,
AND AVERAGE PARKED DURATION RATES IN THE POST
OFFICE PARKING AREA OF THE CEDARBURG CENTRAL BUSINESS DISTRICT: 1985

Block ^a Face/ Facility	Parking Regulation	Number of Spaces	Percent Spaces Occupied by Hour of Day										Average	
													Turnover (vehicle/ space)	Duration (hours/ vehicle)
			9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00			
On-Street														
A	Two-Hour	13	T 54	31	23	--	--	15	15	15	54	1.8	1.1	
			S 8	38	46	62	38	23	NA	NA	NA	1.3	1.6	
B	Unrestricted	9	T 44	33	44	44	44	56	67	78	44	2.2	2.1	
			S 11	44	44	67	67	33	NA	NA	NA	1.3	2.0	
C	Unrestricted	10	T 10	10	--	60	60	50	30	--	--	0.7	3.1	
			S 10	--	10	20	30	--	NA	NA	NA	0.4	1.8	
D	Unrestricted	9	T --	--	44	67	67	67	67	--	--	0.7	4.7	
			S --	22	22	22	33	--	NA	NA	NA	0.4	2.2	
E	Two-Hour	19	T 26	10	10	5	16	10	21	16	10	0.5	2.7	
			S 5	5	10	10	5	5	NA	NA	NA	0.1	4.0	
F	Two-Hour	5	T 80	20	40	20	20	--	40	--	--	1.4	1.6	
			S --	--	--	--	--	--	NA	NA	NA	--	--	
G	Two-Hour	3	T 67	67	67	67	67	67	100	67	33	3.3	1.8	
			S 67	--	100	--	--	33	NA	NA	NA	2.0	1.0	
H	Two-Hour	6	T 17	67	67	67	33	83	83	33	17	4.7	1.0	
			S 50	67	67	17	33	33	NA	NA	NA	2.7	1.0	
I	Two-Hour	12	T 33	17	33	58	58	25	50	17	25	3.0	1.1	
			S 67	58	33	--	--	--	NA	NA	NA	1.6	1.0	
J	Two-Hour	4	T 25	25	50	50	50	75	--	50	50	3.5	1.1	
			S 25	75	50	50	25	75	NA	NA	NA	2.5	1.2	
K	Two-Hour	6	T 50	33	33	50	67	50	33	33	50	3.7	1.1	
			S --	50	67	83	67	50	NA	NA	NA	3.0	1.0	
L	Two-Hour	11	T 54	54	45	36	73	64	45	54	64	3.0	1.6	
			S 18	73	36	54	73	45	NA	NA	NA	1.8	1.6	
	Subtotal	107	T 36	26	32	37	42	40	41 ^b	26 ^b	28	1.8	1.6	
			S 19	34	34	32	31	20	19 ^b	14 ^b	NA	1.4	1.4	
Off-Street														
1	Unrestricted	18	T 6	17	17	11	6	22	22	22	17	0.4	3.6	
			S --	--	--	--	--	--	NA	NA	NA	--	--	
2	Unrestricted	55	T 18	14	11	34	22	25	27	16	14	1.0	1.9	
			S 24	27	29	14	18	16	NA	NA	NA	0.6	2.0	
3	Unrestricted	6	T 67	50	83	100	83	83	83	83	83	1.8	3.9	
			S 50	83	83	67	100	83	NA	NA	NA	1.3	3.6	
4	Unrestricted	6	T --	17	33	33	33	33	50	83	100	2.0	1.9	
			S 50	67	83	67	83	100	NA	NA	NA	1.8	2.4	
5	Unrestricted	59	T 41	37	29	24	20	17	19	27	15	1.4	1.6	
			S 30	34	20	14	17	17	NA	NA	NA	0.7	2.0	
6	Unrestricted	24	T 88	88	88	71	88	88	92	83	17	1.6	4.4	
			S 21	33	54	21	38	21	NA	NA	NA	1.2	1.6	
7	Unrestricted	59	T 58	56	51	44	54	64	63	52	10	1.6	2.8	
			S 37	47	49	22	7	8	NA	NA	NA	0.8	2.3	
8	Unrestricted	4	T 50	75	50	75	75	100	75	100	50	2.7	3.3	
			S 50	50	50	50	25	25	NA	NA	NA	0.8	3.3	
9	Unrestricted	14	T 78	78	57	28	64	93	86	86	71	2.7	2.6	
			S 57	64	78	71	43	36	NA	NA	NA	0.8	4.1	
	Subtotal	244	T 44	43	38	38	39	45	46 ^b	43 ^b	22	1.3	2.5	
			S 30	37	38	22	21	19	16 ^b	16 ^b	NA	0.8	2.5	
	Total	351	T 41	38	36	38	40	44	44 ^b	38 ^b	24	1.5	2.2	
			S 27	36	37	25	24	19	17 ^b	16 ^b	NA	1.0	2.0	

Note: T = Thursday, October 3, 1985; S = Saturday, October 5, 1985. NA = data not available.

^aBlock face letters and off-street facility number locations are shown on Map 1. ^bEstimated value based on parking data extrapolation.

Source: SEWRPC.

Table 5
ON- AND OFF-STREET PARKING FACILITY OCCUPANCY, TURNOVER, AND AVERAGE PARKED DURATION RATES IN THE CENTER STREET PARKING AREA OF THE CEDARBURG CENTRAL BUSINESS DISTRICT: 1985

Block ^a Face/ Facility	Parking Regulation	Number of Spaces	Percent Spaces Occupied by Hour of Day									Average		
			9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	Turnover (vehicle/ space)	Duration (hours/ vehicle)	
			T	S	T	S	T	S	T	S	T			S
On-Street A	Two-Hour	8	T	62	50	62	37	37	50	50	88	62	4.5	1.1
			S	38	38	100	75	38	50	62	38	NA	4.1	1.1
B	Two-Hour	13	T	8	62	31	16	16	16	38	31	23	2.1	1.1
			S	15	15	46	38	31	31	62	46	NA	1.9	1.5
C	Two-Hour	13	T	23	54	54	31	16	38	38	38	8	1.9	1.6
			S	31	23	15	15	54	46	46	38	NA	2.2	1.2
D	Two-Hour	6	T	--	17	33	17	17	17	17	33	17	1.2	1.4
			S	--	--	--	--	33	33	50	33	NA	0.8	1.8
E	Unrestricted	40	T	2	2	10	8	25	12	2	8	2	0.9	1.9
			S	8	5	2	5	8	10	10	8	NA	0.2	3.7
F	Unrestricted	30	T	3	7	17	17	20	13	17	13	10	0.9	2.5
			S	7	7	7	7	3	--	--	--	NA	0.1	4.5
G	Two-Hour	8	T	12	12	--	12	--	--	--	--	--	0.4	1.0
			S	88	62	50	100	38	25	25	25	NA	2.6	1.6
H	Two-Hour	20	T	--	5	10	10	5	--	10	5	--	0.4	1.3
			S	--	10	--	10	10	5	--	5	NA	0.3	1.3
I	Two-Hour	9	T	56	67	33	67	22	11	--	22	--	1.8	1.6
			S	--	22	--	--	--	--	--	--	NA	0.2	1.0
J	Two-Hour	6	T	--	--	--	--	83	33	50	--	33	1.5	1.3
			S	--	--	17	17	33	33	33	17	NA	0.7	2.2
K	Two-Hour	10	T	30	50	30	20	30	30	40	60	60	2.6	1.3
			S	--	60	--	20	40	70	80	70	NA	1.9	1.8
L	Two-Hour	10	T	60	50	50	80	80	50	60	70	60	5.0	1.1
			S	80	60	60	70	80	90	90	100	NA	5.1	1.2
M	Two-Hour	13	T	38	23	31	31	54	38	54	31	15	2.2	1.5
			S	54	54	54	46	23	15	31	62	NA	3.1	1.1
N	Two-Hour	9	T	22	56	22	22	67	44	67	67	11	3.6	1.1
			S	33	44	56	78	22	44	44	11	NA	3.1	1.1
O	Two-Hour	15	T	20	47	40	47	47	47	33	67	20	3.0	1.1
			S	60	67	53	67	53	40	40	60	NA	3.5	1.2
Subtotal		210	T	17	27	25	24	30	23	26	29	16	1.5	1.4
			S	23	26	24	28	25	25	29	28	NA	1.5	1.3
Off-Street 1	Unrestricted	11	T	73	64	64	82	82	64	54	54	45	2.6	2.2
			S	91	73	82	54	64	100	73	54	NA	2.0	3.0
2	Three-Hour	12	T	67	58	58	50	83	67	50	67	NA	1.7	3.0
			S	17	50	42	33	25	50	25	33	NA	1.4	1.9
3	Unrestricted	27	T	78	74	74	56	56	63	59	52	41	2.0	2.8
			S	52	70	56	67	48	30	33	44	NA	1.9	2.1
4	Unrestricted	19	T	68	74	74	68	84	79	84	42	16	1.1	5.6
			S	21	26	32	21	10	10	5	10	NA	0.6	2.4
5	Unrestricted	26	T	19	19	15	12	42	38	38	42	38	0.9	2.9
			S	31	38	38	38	31	27	23	8	NA	1.2	2.0
6	Unrestricted	19	T	26	21	42	26	74	68	74	84	42	2.5	1.9
			S	63	47	26	32	26	16	5	10	NA	1.5	1.5
7	Unrestricted	7	T	86	86	86	57	100	86	28	28	--	1.1	4.9
			S	86	86	71	71	71	43	57	43	NA	3.0	1.7
8	Unrestricted	32	T	31	44	38	34	47	38	28	41	38	1.0	3.3
			S	91	22	22	25	25	25	25	31	NA	1.6	1.7
9	Unrestricted	9	T	56	67	78	78	78	44	78	78	78	1.6	4.1
			S	33	11	--	--	67	78	56	33	NA	1.1	2.5
Subtotal		162	T	50	51	52	45	64	57	53	52	34	1.5	2.8
			S	54	44	38	38	35	34	28	27	NA	1.5	2.0
Total		372	T	31	37	37	33	45	38	38	39	24	1.5	2.0
			S	36	34	30	32	29	29	28	27	NA	1.5	1.6

Note: T = Thursday, October 3, 1985; S = Saturday, October 5, 1985; NA = data not available.

^aBlock face letters and off-street parking facility number locations are shown on Map 1.

Source: SEWRPC.

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Table 6

ON- AND OFF-STREET PARKING FACILITY OCCUPANCY, TURNOVER, AND AVERAGE PARKED DURATION RATES IN THE RED OWL PARKING AREA OF THE CEDARBURG CENTRAL BUSINESS DISTRICT: 1985

Block ^a Face/ Facility	Parking Regulation	Number of Spaces	Percent Spaces Occupied by Hour of Day									Average		
												Turnover (vehicle/ space)	Duration (hours/ vehicle)	
			9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00			
On-Street														
A	Three-Hour	11	T 27	27	27	27	18	27	45	27	18	1.2	2.1	
			S 27	27	36	36	27	9	--	--	NA	0.7	2.2	
B	Two-Hour	13	T 38	31	54	46	38	38	54	69	23	3.5	1.1	
			S 54	69	69	73	69	54	54	54	NA	4.5	1.1	
C	Two-Hour	4	T 25	50	20	100	50	50	75	50	25	3.8	1.2	
			S 50	75	100	25	50	100	25	--	NA	3.2	1.3	
D	Three-Hour	3	T 100	100	100	100	100	100	100	100	33	1.7	5.0	
			S 67	67	67	33	33	33	33	--	NA	1.0	3.3	
E	Three-Hour	11	T 36	36	45	27	36	64	36	45	27	1.6	2.2	
			S --	9	18	--	18	--	9	9	NA	0.4	1.4	
	Subtotal	42	T 38	38	45	45	38	48	52	52	24	2.1	1.7	
			S 33	43	50	33	40	31	24	17	NA	2.1	1.3	
Off-Street														
1	Unrestricted	66	T 32	35	36	64	68	50	41	41	41	1.7	2.4	
			S 36	48	50	70	62	51	48	35	NA	2.1	1.9	
2	Unrestricted	15	T 60	60	67	60	80	73	67	67	60	1.3	4.7	
			S 60	67	60	67	67	80	67	67	NA	1.3	4.0	
3	Unrestricted	49	T 47	55	49	43	55	53	57	49	37	1.1	4.0	
			S 16	24	28	24	24	16	18	20	NA	0.8	2.2	
4	Unrestricted	64	T 28	41	39	45	44	31	30	36	28	1.5	2.2	
			S 39	53	53	53	41	45	47	42	NA	2.1	1.8	
5	Unrestricted	87	T 22	31	26	29	26	26	36	32	26	1.8	1.5	
			S 45	36	49	42	31	52	45	46	NA	2.6	1.4	
	Subtotal	281	T 32	40	38	45	48	40	41	40	33	1.4	2.4	
			S 37	42	47	49	41	46	43	39	NA	2.0	1.7	
	Total	323	T 33	40	39	45	47	41	42	41	32	1.4	2.2	
			S 37	39	48	48	41	44	40	36	NA	2.0	1.7	

Note: T = Thursday, October 3, 1985; S = Saturday, October 5, 1985; NA = data not available.

^aBlock face letter and off-street facility number locations are shown on Map 1.

Source: SEWRPC.

respectively. In comparison, a similarly low weekend demand was demonstrated in the Red Owl study area, with only one of the five blocks of on-street and one of the five off-street parking facilities exceeding an hourly occupancy rate of 75 percent, for a cumulative total of two hours and one hour, respectively.

Finally, the southern study area, as shown on Maps 2 and 3 and in Table 7, also demonstrated a low weekday demand for parking, with only one block of the 16 blocks of on-street and one of the eight off-street parking facilities exceeding an hourly occupancy rate of 75 percent, for a cumulative total of four hours and one hour, respectively. In comparison, weekend demand was slightly greater than weekday demand, with three of the 16 blocks of on-street and four of the eight off-street parking facilities exceeding an hourly occupancy rate of 75 percent, for a cumulative total of eight and nine hours, respectively.

Summary: There is a total of 1,749 public parking spaces in the Cedarburg parking study area. Another 134 on-street parking spaces are provided on St. John Avenue between Western Avenue and Cleveland Street, but these spaces should not be considered as part of the central business district parking supply, due to their distance from Washington Street--between 600 and 1,100 feet--and their lack of utilization--an average occupancy rate of 7 percent on weekdays and 9 percent on weekends. This total central business district parking supply of 1,749 spaces exceeds the minimum number of parking spaces required to serve the demand for parking in the Cedarburg central business district.

Parking demand, however, exceeds the supply of parking in various areas of the central business district. This parking supply/demand problem is exacerbated by the linear north-south spatial distribution of the central business district and the large number of small, poorly identified, off-street parking facilities. These off-street parking facility-related problems serve to accentuate the demand for on-street curb parking which was previously identified as adequate, particularly for motorists unfamiliar with the location of Cedarburg's off-street parking facilities and commercial establishments which attract a high number of tourists from areas outside the community.

On Thursday, October 3, 1985, there were a total of 2,485 vehicles that utilized public parking in the Cedarburg central business district during the 9:00 a.m. to 5:00 p.m. time period, for a total of 5,200 space-hours, resulting in an average duration of 2.1 hours and an average turnover of 1.5 vehicles per parking space. Seven of the 18 blocks of on-street parking along Washington Avenue and 19 of the 40 off-street parking facilities in the central business district exceeded an hourly occupancy rate of 75 percent. The most severe parking problems in the central business district occurred in the vicinity of the Cedar Creek Settlement development, where seven blocks of on-street parking and five off-street parking facilities experienced hourly occupancy rates exceeding 75 percent. The next most severe parking problems occurred in the vicinity of City Hall between Turner Street and Mill Street, where six blocks of on-street parking and nine off-street parking facilities experienced hourly occupancy rates exceeding 75 percent. The only other parking problem, aside from isolated instances, occurred in the vicinity of the intersection of Cleveland Street and Washington Avenue, where parking on

Table 7
ON- AND OFF-STREET PARKING FACILITY OCCUPANCY, TURNOVER, AND AVERAGE PARKED DURATION RATES IN THE SOUTHERN PARKING AREA OF THE CEDARBURG CENTRAL BUSINESS DISTRICT: 1985

Block ^a Face/ Facility	Parking Regulation	Number of Spaces	Percent Spaces Occupied by Hour of Day										Average	
			9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	Turnover (vehicle/ space)	Duration (hours/ vehicle)	
On-Street A	Unrestricted	31	T	NA	3	--	6	6	6	6	10	10	0.1	3.8
			S	--	--	--	--	--	--	--	NA	NA		
B	Two-Hour	12	T	NA	8	8	25	17	8	8	17	8	0.7	1.5
			S	33	33	42	25	8	--	--	NA	NA		
C	Two-Hour	7	T	NA	--	--	--	--	--	6	--	--	0.4	3.4
			S	--	--	--	--	14	14	14	NA	NA		
D	Two-Hour	5	T	NA	--	--	--	--	--	--	--	--	0.1	3.0
			S	--	--	20	20	--	--	--	NA	NA		
E	Two-Hour	9	T	NA	44	78	78	33	44	22	100	78	4.0	1.2
			S	100	56	89	89	78	89	67	NA	NA		
F	Two-Hour	7	T	NA	57	29	29	43	14	57	29	71	2.9	1.2
			S	86	57	43	71	57	86	71	NA	NA		
G	Two-Hour	7	T	NA	29	14	29	14	14	29	--	14	1.3	1.3
			S	29	57	43	29	57	43	43	NA	NA		
H	Two-Hour	8	T	NA	25	38	25	12	25	25	25	38	1.4	1.5
			S	--	12	37	25	37	--	--	NA	NA		
I	Two-Hour	7	T	NA	43	43	43	29	29	14	14	29	2.0	1.2
			S	29	14	43	29	29	29	--	NA	NA		
J	Two-Hour	5	T	NA	--	--	--	--	--	--	--	--	1.1	1.5
			S	--	--	--	--	--	--	--	NA	NA		
K	Unrestricted	9	T	NA	11	--	--	--	11	11	11	--	0.3	1.3
			S	--	--	--	67	78	11	11	NA	NA		
L	Unrestricted	10	T	NA	10	10	--	--	--	--	--	--	1.4	1.2
			S	50	30	10	100	70	40	40	NA	NA		
M	Unrestricted	10	T	NA	--	--	--	10	10	10	20	40	0.6	1.5
			S	--	--	--	--	--	--	--	NA	NA		
N	Two-Hour	5	T	NA	--	20	--	--	--	--	20	--	0.4	1.0
			S	--	20	60	--	--	--	--	NA	NA		
O	Unrestricted	8	T	NA	25	25	38	38	38	25	25	12	1.1	2.0
			S	37	37	75	37	--	--	--	NA	NA		
P	Unrestricted	33	T	NA	3	3	6	6	--	--	--	--	0.8	2.5
			S	15	15	12	15	15	15	15	NA	NA		
Subtotal		173	T	10 ^b	13	13	15	12	10	11	14 ^b	16	0.7	1.4
			S	21	18	23	27	24	17	14	14 ^b	NA		
Off-Street 1	Unrestricted	56	T	NA	66	53	48	45	50	55	68	59	2.8	1.7
			S	61	68	75	82	54	75	57	NA	NA		
2	Unrestricted	39	T	NA	28	33	41	36	36	36	36	28	0.6	4.3
			S	49	51	43	41	43	36	38	NA	NA		
3	Unrestricted	35	T	NA	31	31	20	23	26	17	26	20	0.7	2.7
			S	26	20	17	17	11	3	3	NA	NA		
4	Unrestricted	14	T	NA	43	43	50	43	36	7	7	21	0.6	3.9
			S	86	86	93	86	64	64	64	NA	NA		
5	Unrestricted	71	T	NA	6	4	21	28	27	27	7	8	0.8	3.1
			S	14	15	14	10	8	79	79	NA	NA		
6	Unrestricted	40	T	NA	--	--	--	--	2	--	--	--	0.1	1.0
			S	--	--	5	60	65	55	55	NA	NA		
7	Unrestricted	20	T	NA	25	35	35	20	25	55	65	60	1.7	1.9
			S	40	40	40	55	60	30	20	NA	NA		
8	Unrestricted	9	T	NA	11	67	33	22	11	44	67	100	2.2	1.6
			S	55	78	67	78	67	44	44	NA	NA		
Subtotal		284	T	21 ^b	26	27	29	28	29	30	30 ^b	28	1.1	2.0
			S	34	36	37	45	39	54	50	35 ^b	NA		
Total			T	17 ^b	21	21	24	26	21	23	24 ^b	24	0.9	1.8
			S	29	29	32	33	33	40	37	27 ^b	NA		

Note: T = Thursday, October 3, 1985; S = Saturday, October 5, 1985; NA = data not available.

^a Block face letters and off-street facility number locations are shown on Map 1; ^b Estimated value based on parking data extrapolation.

Cleveland Street between Hanover Avenue and Washington Avenue and three off-street parking facilities experienced hourly occupancy rates exceeding 75 percent.

In comparison, the parking survey conducted on Saturday, October 5, 1985, indicated that a total of 2,955 vehicles, an increase of almost 20 percent over Thursday, utilized public parking in the Cedarburg central business district during the 9:00 a.m. to 5:00 p.m. time period. Saturday's parking demand resulted in a total of 5,355 space-hours of parking, with a lower average duration of 1.8 hours and attendant increased turnover of 1.8 vehicles per parking space, in comparison to the parking demand pattern identified on Thursday.

Eleven of the 18 blocks of on-street parking along Washington Avenue, and 17 of the off-street parking lots in the central business district exceeded an hourly occupancy rate of 75 percent. The most severe parking problem in the central business district on Saturday, as was the case on Thursday, occurred in the vicinity of the Cedar Creek Settlement, where 15 blocks of on-street parking and five off-street parking facilities experienced hourly occupancy rates exceeding 75 percent. The remaining parking problems in the central business district were not as concentrated as the problems identified on Thursday, with the next most severe problem occurring in the vicinity of the intersections of Center Street and Mill Street with Washington Avenue, where on-street parking on Center Street between St. John Avenue and Washington Avenue, and on the west side of Washington Avenue between Turner Street and Western Avenue, and five off-street parking facilities experienced hourly occupancy rates exceeding 75 percent. Interestingly, parking demand generated by activities at the Immanuel Lutheran Church and the St. Francis Borgia Catholic Church increased substantially during Saturday afternoon, with the Immanuel Lutheran Church parking lot and the on-street parking on Hamilton Avenue exceeding an occupancy rate of 75 percent, and the St. Francis Borgia Church Catholic parking lot exceeding an occupancy rate of 65 percent. Table 8 summarizes the principal parking problems identified in the business district.

Table 8

PARKING PROBLEMS IN THE
CEDARBURG CENTRAL BUSINESS DISTRICT: 1985

Location ^a	Weekday	Weekend
Cedar Creek Settlement....	x	x
Center Street.....	x	x
Cleveland Street.....	x	--
Mill Street.....	--	x

^a Parking problems cannot be restricted to a specific on-street or off-street parking facility and are identified in this table by local street or commercial area designation for further analysis.

Source: SEWRPC.

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, and construction of new parking facilities need to be evaluated to determine the actions that best solve or abate existing parking problems in the Cedarburg central business district. 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 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. Each action will be analyzed with respect to its impacts on both weekday and weekend parking problems.

Cedar Creek Settlement Parking Problem

The most severe parking problem identified in the Cedarburg central business district occurred in the vicinity of the Cedar Creek Settlement and adjacent commercial development located on Washington Avenue. There are 19 blocks of on-street parking with a total of 209 parking spaces and six off-street parking facilities with a total of 97 parking spaces in the Cedar Creek Settlement parking area. Peak weekday parking demand occurred during the 1:00 p.m. to 2:00 p.m. time period, with 118 vehicles parking on-street and 83 vehicles parked off-street, resulting in six blocks of on-street parking and four off-street facilities exceeding an hourly occupancy rate of 75 percent. Peak weekend parking demand occurred over a more extended period--from 12:00 p.m. to 3:00 p.m.--reaching a high of 167 vehicles parked on-street and 73 vehicles parked off-street during the 2:00 p.m. to 3:00 p.m. time period, resulting in 14 blocks of on-street parking and three off-street parking facilities exceeding an occupancy rate of 75 percent.

Modification of Existing Parking Restrictions: Parking restrictions are intended to ensure the efficient utilization of existing parking spaces. Short-term parking restrictions are needed where demand for access to adjacent land development is high and exceeds the available supply of spaces. Very short limits, up to 30 minutes maximum, are used in areas of very high turnovers, such as near post offices or banks. Time limits of one-half to two hours are typically used in retail and office areas, with long-term limits of from three to five hours generally applied in residential areas adjacent to major generators of all-day parking. In this manner, the maximum number of people can be provided accessibility to adjacent land development and storage of their vehicles.

The first alternative parking restriction modification with potential to moderate the parking supply problem in the Cedar Creek Settlement parking area is the designation of a three-hour restriction on the unrestricted parking spaces located on Elm Street between St. John and Washington Avenues at an estimated cost of \$200. The advantage of this alternative is that it may be expected to reduce the average weekday parked vehicle duration on Elm Street from 4.1 hours to 3 hours per vehicle, thereby increasing space utilization for short-term parkers.

Although the average weekend parked duration was a reasonable 2.6 hours per vehicle, a closer inspection of the survey data indicates that 13 of the 22 stalls on Elm Street were occupied by the same vehicle in excess of four consecutive hours, with eight of the stalls occupied with the same vehicle for a six-hour period. This alternative would encourage the long-term employee parkers on Elm Street, particularly on Saturdays when parking demand is greatest, to utilize all-day parking on St. John Avenue, thereby permitting utilization of these 22 parking on-street parking spaces by tourists and other customers attracted to the Cedar Creek Settlement development and adjacent shops. The disadvantage to this alternative is that it would slightly inconvenience all-day parkers by requiring that they park their vehicles on Washington Avenue north of Elm Street or on St. John Avenue, both of which provide underutilized, unrestricted, all-day parking spaces. It is recommended that this alternative be implemented.

A second parking restriction modification alternative calls for reducing the time restrictions on the 34 on-street parking stalls located on Washington Avenue between Elm Street and Cleveland Street from three hours to two hours at an estimated cost of \$200. The average parked duration on these four blocks ranged between 1.0 to 1.4 hours per vehicle on weekdays, and 1.4 to 2.2 hours per vehicle on weekends. However, a closer inspection of the survey data indicates that 10 spaces on Thursday and 14 spaces on Saturday were occupied by the same vehicle in excess of three hours, and another 19 spaces on Thursday and 31 spaces on Saturday were occupied by the vehicle in excess of two hours. The advantages of this alternative are that it may be expected to increase on-street parking space turnover and utilization, and provide uniformity in time restrictions for all spaces along Washington Avenue. The disadvantage of this alternative is that there is insufficient off-street parking available for long-term parkers in the Cedar Creek Settlement parking area. The lack of adequate long-term parking of the three-hour duration category could adversely impact the Cedar Creek Settlement and adjacent shops, as it is probable that many trips attracted to Cedarburg and to the Cedar Creek Settlement area as a tourist attraction would be discouraged. Implementation of this alternative is not recommended.

The final parking restriction modification alternative calls for the designation of a three-hour restriction on the unrestricted parking spaces located on Sheboygan Avenue east of Washington Avenue and on Bridge Road east of Riveredge Drive at an estimated cost of \$200. The average parked duration on these two blocks was 5.3 and 5.0 hours per vehicle, respectively, on Thursday, and 2.8 and 3.2 hours per vehicle, respectively, on Saturday. The advantage of this alternative is that it may be expected to decrease parked vehicle duration, thereby increasing space utilization for short-term parkers. This alternative would encourage the long-term parkers on Sheboygan Avenue and Bridge Road to utilize all-day unrestricted parking on St. John Avenue, thereby permitting utilization of these 12 spaces by tourists and other customers attracted to the Cedar Creek Settlement development and adjacent shops. A disadvantage of this alternative is that it could slightly inconvenience all-day parkers by requiring that they park their vehicles on Washington Avenue north of Elm Street or on St. John Avenue, both of which provide underutilized unrestricted all-day parking. Another disadvantage to this alternative is that it may be expected to increase vehicle conflicts and accident potential on both Sheboygan Avenue and Bridge Road as northbound traffic on Washington Avenue attracted to the short-term parking stalls would be required

to make mid-block U-turn maneuvers or circulate through adjacent residential neighborhoods to access the parking spaces located on the north side of Sheboygan Avenue or Bridge Road. Implementation of this alternative is not recommended.

Guide Signing: In order for off-street parking facilities to be well utilized by motorists, such as tourists, unfamiliar with their location, it is important to provide appropriate guide signing to inform and direct the motorist. However, even though some of the existing off-street facilities in the Cedar Creek Settlement parking area are not well identified, the facilities are well utilized. Additional guide signing for these off-street facilities is not considered necessary to increase their utilization. There are no under-utilized off-street parking facilities in the Cedar Creek Settlement parking area to which excess parking demand could be directed. The closest off-street public parking facility that could adequately accommodate additional parking demand is located between the Cedarburg Community Center and senior citizen center. This public parking facility contains 55 spaces and is guide-signed as an off-street public parking facility to northbound traffic on Washington Avenue. The facility is located relatively far from the Cedar Creek Settlement, approximately 1,000 feet, to provide substantial off-street parking relief. The off-street facility is located adjacent to a section of Washington Avenue, with 34 two-hour restricted spaces, of which only six spaces experienced an hourly parking demand exceeding 75 percent occupancy. Improved off-street parking facility signage, therefore, does not appear warranted as an action to remedy on- or off-street parking supply shortages in the Cedar Creek Settlement parking area. Implementation of this alternative is not recommended.

Off-Street Parking Facility Design: The design of off-street parking facilities can have significant impacts on the utilization of, and motorist attraction to, a facility. Each facility must be adapted to the site available for its physical layout, with consideration provided for street accessibility, internal traffic flow, number of spaces, and customer convenience. Based upon Commission staff field inspections of the off-street parking facilities in the Cedar Creek Settlement parking area, it does not appear that facility redesign would have a significant impact on the ability of the existing parking supply to more satisfactorily serve parking demand. Implementation of this alternative is not recommended.

Construction of Additional Off-Street Parking Facilities: In keeping with the historic character of the City of Cedarburg, an increase in the number of off-street parking facilities would be very difficult. The addition of small off-street facilities of fewer than 15 spaces would not greatly alter the parking supply availability, nor would it be feasible to adequately provide identification for the small lots so that passing motorists would find them convenient to use. The problem of historical preservation also creates a significant disadvantage for any alternative that requires the razing of a building for the construction of a parking garage. It is considered essential to the provision of usable off-street parking that such parking be located between Cedar Creek on the east and Hanover Avenue on the west, preferably with accessibility provided from Washington Avenue.

With these site selection criteria in consideration, the only alternative with potential to solve the parking supply shortage problem in the Cedar Creek Settlement parking area involves construction of an off-street parking facility on the existing Spur or Mobil service station properties located on Washington Avenue south of Bridge Road, at an estimated construction cost of approximately \$45,000. In addition to the construction cost, a property acquisition cost of approximately \$83,000 for the Spur station or \$84,000 for the Mobil service station would be required to implement this alternative. The principal advantage of this alternative is that the Spur service station site would add approximately 40 off-street parking spaces and the Mobile service station site would add approximately 60 off-street parking spaces in the high parking demand Cedar Creek Settlement area. Both sites would provide good motorist parking lot identification from Washington Avenue. Several advantages of the Mobil station site over the Spur station site are that it provides a more direct pedestrian access to the Cedar Creek Settlement development; it serves to increase visibility and access to Cedar Creek, thereby enhancing the scenic and historic character of the central business district; and potentially it reduces vehicle conflicts for northbound traffic attracted to the Cedar Creek Settlement area. The only disadvantage to this alternative is the removal of a commercial business from the central business district. It is recommended that this alternative be implemented.

Concluding Remarks: In conclusion, it is recommended that a three-hour parking restriction be imposed on the 22 unrestricted parking spaces located on Elm Street between St. John Avenue and Washington Avenue, and that the City of Cedarburg acquire the Mobil Service Station property on Washington Avenue south of Bridge Road for construction of a public off-street surface parking facility.

Center Street Parking Problem

A weekday parking supply problem was identified in the vicinity of the Center Street parking area bounded on the north by Turner Street, on the south by Mill Street, on the east by Washington Avenue, and on the west by Hanover Avenue. This two-square block area contains 13 blocks of two-hour time-restricted on-street parking, with a total of 157 parking spaces, and nine off-street parking facilities, with a total of 12 three-hour time-restricted and 148 unrestricted parking spaces. The average weekday parking duration by the 410 vehicles that parked on-street was 1.2 hours per vehicle, and by the 262 vehicles that parked off-street was 3.2 hours per vehicle. Peak weekday parking demand occurred during the 1:00 p.m. to 2:00 p.m. time period, with 61 vehicles parked on-street and 114 vehicles parked off-street, resulting in one block of on-street parking, and seven off-street facilities exceeding an hourly occupancy rate of 75 percent. The only off-street parking facilities not experiencing an occupancy rate above 75 percent during this time period were the Pro-Tech Security facility with 27 spaces, and the Washington Square facility with 32 spaces.

Modification of Existing Parking Restrictions: The first alternative parking restriction modification with potential to moderate the parking supply problem in the Center Street parking area is the designation of a two-hour parking restriction on the 24 all-day unrestricted off-street parking spaces located in the public parking facility on the southeast corner of the intersection of Turner Street and Hanover Avenue, at an estimated cost of \$200. This facility

experienced an average parked vehicle duration of 4.4 hours, with 16 vehicles parked in the same spaces for over six hours. The advantages of this alternative are that it would encourage increased parking space turnover and utilization of the 24 spaces in the facility, and it would provide additional short-term parking in the Center Street parking area. The disadvantage of this alternative is that there is an inadequate supply of long-term parking spaces in the Center Street area of the City of Cedarburg. Implementation of this alternative would require the provision of additional long-term parking in the Center Street parking area. Implementation of this alternative is not recommended.

Another alternative parking restriction modification with potential to alleviate the parking supply problem in the Center Street parking area involves eliminating the existing two-hour parking restriction to permit all-day unrestricted parking in the 16 on-street spaces located on the west side of Hanover Avenue between Turner Street and Mill Street, at an estimated cost of \$200. The advantage of this alternative is that it increases the number of long-term parking spaces in the Center Street parking area. The disadvantage of this alternative is that, wherever possible, on-street parking should be reserved to encourage and promote residential and commercial business accessibility, keeping long-term parkers in off-street parking facilities. Implementation of this alternative is not recommended.

Another alternative parking restriction modification with potential to ameliorate the parking supply problem in the Center Street parking area involves partial implementation of the two previous alternatives, at an estimated cost of \$600. This would require designating a two-hour parking restriction on eight of the 24 all-day unrestricted parking spaces located along Turner Street in the public off-street parking facility on the southeast corner of Turner Street and Hanover Avenue, and also removing the two-hour on-street parking restriction to permit all-day unrestricted parking in eight of the 13 on-street spaces located on the west side of Hanover Avenue between Turner Street and Center Street, and at the 14 on-street spaces on both sides of Center Street west of Hanover Avenue. The advantage of this alternative is that it would increase turnover and utilization of the off-street parking facility in the southeast corner of Turner Street and Hanover Avenue, and it would provide additional spaces for long-term parking in the Center Street parking area. The disadvantage of this alternative is that long-term parking would be permitted on Hanover Street and Center Street in the vicinity of the Cedarburg Police Department and public library. It is, therefore, recommended that this alternative be implemented.

An alternative parking restriction modification with potential to ameliorate the parking supply problem in the Center Street parking area involves reducing the two-hour on-street parking restriction to a one-hour restriction on Washington Avenue between Columbia Avenue and Turner Street, at an estimated cost of \$300. The advantage of this alternative is that it would increase turnover and utilization of the 21 on-street parking spaces in the vicinity of the Cedarburg City Hall. The disadvantage of the alternative is that a higher parking space turnover would increase vehicle conflicts on Washington Avenue. It is noted that parking demand is high for the 13 spaces on the east side of Washington Avenue which experienced maximum weekday and weekend occupancy rates of 69 percent. It is recommended that this alternative be implemented.

The final alternative parking restriction modification with potential to ameliorate the parking supply problem in the Center Street parking area involves designation of a two-hour parking restriction on the 15 all-day unrestricted spaces in the public off-street parking facility located on the east side of Washington Avenue opposite its intersection with Turner Street, at an estimated cost of \$100. This public off-street parking facility experienced weekday and weekend occupancy rates exceeding 75 percent, with an average parked vehicle duration of 4.7 hours on a weekday and 4.0 hours on the weekend. At least seven vehicles on a weekday and eight vehicles on the weekend were parked in the same spaces in excess of six hours. The advantages of this alternative are that it would provide an off-street supply of 15 short-term parking spaces in a high weekday and weekend parking demand area; and the off-street parking facility is one of the few facilities with direct access and visibility to motorists on Washington Avenue. The disadvantage of this alternative is that it would displace long-term parkers in an area deficient in long-term parking spaces. It is the Commission staff conclusion that the advantages to the commercial development in the Cedarburg central business district from a visible short-term public off-street parking facility fronting on Washington Avenue outweigh the disadvantages of displacing long-term parkers into other long-term parking facilities such as the underutilized 55-vehicle facility at the Cedarburg Senior Center or the 66-vehicle facility behind Barth's Restaurant and the Cedarburg City Hall. It is, therefore, recommended that this alternative be implemented.

Guide Signing: Guide signing is utilized to increase driver awareness of off-street parking facilities. Guide signing can be used to attract long-term parkers to existing long-term parking spaces adjacent to the Center Street parking area. The U. S. Post Office parking facility, with 59 spaces and a maximum weekday parking demand of 41 percent during the 9:00 a.m. to 10:00 a.m. time period, could provide an additional supply of long-term parking to relieve off-street parking demand in the Center Street parking area. The disadvantage to this alternative is that the U. S. Post Office parking facility is intended to be used by government employees and the general public requiring postal services, and not private employee parking as appears to be the case in the Center Street off-street parking facilities. Implementation of this alternative is not recommended.

Off-Street Parking Facility Design: The nine off-street parking facilities in the Center Street parking area have a capacity ranging from a minimum of seven spaces to a maximum of 32 spaces. The facilities are generally small in size and irregularly shaped. Based upon Commission staff field inspections of the off-street parking facilities in the Center Street parking areas, it does not appear that facility redesign would have a significant impact on the ability of the existing off-street parking supply to more satisfactorily serve long-term parking demand.

Construction of Additional Off-Street Parking Facilities: The only alternative with potential to solve the long-term parking supply shortage problem in the Center Street parking area involves the construction of an off-street surface parking facility at the northeast corner of the intersection of Hanover Avenue and Mill Street, at an estimated cost of \$21,000. An advantage of this alternative is that it could add about 30 spaces to the 160 off-street spaces in the Center Street parking area. Another advantage of this alternative is the provision of additional off-street parking spaces adjacent to the Paulus Foods

grocery store parking facility, which experienced short-term weekend parking demand exceeding 75 percent of the facility's capacity during the 11:00 a.m. to 1:00 p.m. and 2:00 p.m. to 3:00 p.m. time periods. A disadvantage of this alternative is that the site for this facility is located in the southwest corner of the Center Street parking area and may not be an attractive site for the drivers currently utilizing the existing nine off-street parking facilities. Another disadvantage of this alternative is the removal of a potential commercial development site for transportation purposes in the Cedarburg central business district. Implementation of this alternative is not recommended.

Another alternative with potential to increase the supply of off-street parking spaces in the Center Street parking area involves the construction of an off-street parking structure on an existing off-street surface parking facility or at a new site. The cost of constructing a 50-stall parking structure is estimated at \$325,000 plus the cost of the property if required. The advantage of this alternative is that it would increase the supply of off-street parking spaces in the Center Street parking area by 25 or 50 spaces, if constructed over an existing surface facility or on a new site, respectively. The disadvantages of this alternative are that the construction of a small parking structure with 25 new spaces on an existing off-street facility would not effectively serve parking demand which is uniformly distributed over the entire two-square-block Center Street parking area and that, if constructed on a new site, some of the commercial establishments the new facility is intended to serve would have to be razed for the facility's construction. Implementation of this alternative is not recommended.

Concluding Remarks: In conclusion, it is recommended that eight of the 24 all-day unrestricted parking spaces in the public off-street parking facility on the southeast corner of Hanover Avenue and Turner Street be designated as two-hour restricted parking spaces; that eight of the 13 two-hour restricted on-street parking spaces on the west side of Hanover Avenue between Turner Street and Center Street and the 14 two-hour restricted on-street spaces on Center Street between Hanover Avenue and St. John Avenue be designated as all-day unrestricted parking spaces; that the two-hour parking restriction on the 21 on-street parking spaces on Washington Avenue between Turner Street and Columbia Avenue be changed to a one-hour restriction; and that the 15 all-day unrestricted parking spaces in the public off-street parking facility on the east side of Washington Street opposite its intersection with Turner Street be designated as two-hour restricted parking spaces.

Cleveland Street Parking Problem

A weekday parking supply problem was identified to exist on Cleveland Street in the vicinity of its intersection with Washington Avenue. There are three off-street parking facilities at the intersection of Cleveland Street and Washington Avenue, plus the segment of Cleveland Street between Hanover Avenue and Washington Avenue which experienced hourly occupancy rates exceeding 75 percent. The first off-street facility is associated with Heritage Interiors on the north side of Cleveland Street and contains six all-day unrestricted spaces that exceeded 75 percent occupancy during the 4:00 p.m. to 6:00 p.m. time period. The second off-street facility is associated with Autumn Woods Studio on the south side of Cleveland Street and contains six all-day unrestricted spaces that exceeded 75 percent occupancy during the 11:00 a.m. to 6:00 p.m. time period. The third off-street parking facility is associated

with Smithkin the Printer and contains 14 all-day unrestricted spaces that exceeded 75 percent occupancy during the 9:00 a.m. to 11:00 a.m. and 2:00 p.m. to 5:00 p.m. time periods. In addition to these off-street parking facilities, the segment of Cleveland Street between Hanover Avenue and Washington Avenue contains nine all-day unrestricted parking spaces that exceeded 75 percent occupancy during the 4:00 p.m. to 5:00 p.m. time period.

A detailed analysis of the weekday parking survey data indicates that many of the vehicles parked in the three off-street parking facilities were long-term parkers yielding an average off-street facility parked duration of 3.9, 1.9, and 2.6 hours per vehicle, respectively. These high parked vehicle duration rates are the result of two vehicles parked in excess of eight hours in the same spaces in the Autumn Woods Studio facility; of four vehicles parked in excess of three hours in the same spaces in the Heritage Interiors facility; and 16 vehicles parked in excess of three hours in the Smithkin the Printer facility. In addition, two vehicles were parked in excess of eight hours and three vehicles were parked in excess of three hours in the same spaces on the on-street spaces located on Cleveland Street between Hanover Avenue and Washington Avenue, resulting in an average parked duration of 2.1 hours per vehicle. From this detailed analysis of parking demand, it is apparent that the high occupancy rates above 75 percent are partially the result of long-term employee parking in a commercially active area with a limited supply of on- and off-street parking spaces. The solution to this parking supply problem is to encourage local business employees and owners to shift their long-term off-street parking to the underutilized all-day unrestricted on-street parking located on Cleveland Street between Hanover Avenue and St. John Avenue, and to designate a two-hour parking restriction, at an estimated cost of \$200, on the nine unrestricted on-street parking spaces located on Cleveland Street between Hanover Avenue and Washington Avenue. This action may be expected to increase the supply of short-term parking spaces available to serve customers of the businesses in the vicinity of the intersection of Cleveland Street and Washington Avenue. There are no disadvantages to this alternative. It is, therefore, recommended to implement this alternative.

Mill Street Parking Problem

A weekend parking problem was identified to exist in the vicinity of the intersection of Mill Street and Washington Avenue. Two off-street parking facilities in addition to the 35 on-street parking spaces located: on the south side of Mill Street between Hanover Avenue and Washington Avenue; both sides of Washington Avenue between Mill Street and Western Road; and the west side of Washington Avenue between Center Street and Mill Street experienced occupancy rates exceeding 75 percent. The first off-street facility is associated with Paulus Foods grocery store and contains 56 all-day unrestricted parking spaces that exceeded a 75 percent occupancy rate during the 11:00 a.m. to 1:00 p.m. and 2:00 p.m. to 3:00 p.m. time periods, with an average parked duration of 1.3 hours per vehicle. The other off-street facility is associated with the Stagecoach Pub restaurant and exceeded a 75 percent occupancy rate during the 9:00 a.m. to 1:00 p.m. time period, with an average parked duration of 3.6 hours per vehicle. In addition to these off-street parking facilities, the segment of Mill Street between Hanover Avenue and Washington Avenue contains nine two-hour restricted on-street parking spaces adjacent to the Paulus Foods off-street facility that exceeded 75 percent occupancy rates during the 12:00 p.m. to 1:00 p.m. time period, with an average parked duration of 1.1

hours per vehicle; the segment of Washington Avenue between Mill Street and Western Avenue contains nine and seven two-hour restricted on-street parking spaces on the west and east sides of Washington Avenue, respectively, that exceeded 75 percent occupancy during the 9:00 a.m. to 10:00 a.m. and 11:00 a.m. to 3:00 p.m. time periods on the west side of the street, and during the 9:00 a.m. to 10:00 a.m. and 2:00 p.m. to 3:00 p.m. time periods on the east side of the street. The average parked duration on both sides of Washington Avenue was 1.3 hours per vehicle. The west side of Washington Avenue between Center Street and Mill Street contains 10 two-hour restricted parking spaces that exceeded 75 percent occupancy during the 9:00 a.m. to 10:00 a.m. and 1:00 p.m. to 5:00 p.m. time periods with an average parked duration of 1.2 hours per vehicle. All of these on- and off-street parking facilities experienced good parking space utilization with low average parked vehicle durations and high occupancy rates except for the Stagecoach Pub off-street parking facility which, in addition to a high occupancy rate, had also experienced a high average parked vehicle duration of 3.6 hours pr vehicle, which resulted from six vehicles parked in the same space for over seven hours from 9:00 a.m. to 4:00 p.m. It is noted that, although the Paulus Foods grocery store experienced a low average parked vehicle duration of 1.3 hours, nine vehicles were parked in the same space for at least three hours during the 10:00 a.m. to 1:00 p.m. time period.

Modification of Existing Parking Restrictions: There is a limited supply of on-street parking available in the vicinity of the intersection of Mill Street and Washington Avenue. The existing two-hour parking restrictions on Mill Street and Washington Avenue are well utilized with short parked vehicle durations and correspondingly high turnover and occupancy rates. Only five vehicles on Mill Street, six vehicles on Washington Avenue south of Mill Street, and 10 vehicles on Washington Avenue north of Mill Street were parked in the same spaces in excess of one hour. A total of 159 vehicles utilized the 41 on-street spaces on these three-block segments during the 9:00 a.m. to 4:00 p.m. survey conducted on Saturday, October 5, 1985, for an average parking turnover rate of 3.9 vehicles per space during the seven-hour survey period. A reduction to a one-hour parking restriction would not significantly increase on-street parking space utilization.

Another alternative parking restriction modification involves changing the all-day unrestricted parking on Mill Street between Washington Avenue and Portland Road to a two-hour restriction. The advantage of this alternative is that it would add approximately 15 short-term on-street parking spaces in the vicinity of the Mill Street intersection with Washington Avenue at an estimated cost of \$250. The disadvantages of this alternative are that it may be expected to increase vehicle conflicts at the Mill Street/Washington Avenue intersection which currently has turn movement restrictions to reduce vehicle conflicts, and the on-street spaces are located in an area of reduced parking demand as shown on Maps 2 and 3. Implementation of this alternative is not recommended.

The final alternative parking restriction modification with potential to ameliorate the parking problem in the vicinity of the Mill Street/Washington Avenue intersection involves designating a two-hour parking restriction on the Paulus Foods and Stagecoach Pub private off-street parking facilities at an estimated cost of \$200. Implementation of this alternative would require the

cooperation of the parking lot owners, as the facilities are not publicly owned. The advantage of this alternative is that it would discourage extended parking by the nine vehicles in the Paulus Foods lot and the six vehicles parked in the Stagecoach Pub lot. The disadvantage of this alternative is that there are no long-term parking spaces in the near vicinity of these two commercial businesses. As a part of the alternative, then, it is recommended that the two-hour parking restriction on the 27 on-street parking spaces on the west side of the segment Hanover Avenue between Center Street and Western Avenue be changed to permit all-day unrestricted parking at an estimated cost of \$200. The advantage of this alternative is that it provides all-day parking in an area of low parking demand in proximity to the Paulus Foods grocery store and the off-street parking facilities that experience high parking demand in the Center Street parking problem area. There were a maximum of three vehicles parked on this segment of Hanover Avenue during any one hour of the weekend parking survey. There are no significant disadvantages to this alternative. It is, therefore, recommended that the two-hour parking restriction on the 21 on-street parking spaces on the west side of Hanover Avenue between Center Street and Western Avenue be changed to permit all-day unrestricted weekend parking; and that, instead of posting the Paulus Foods and Stagecoach Pub off-street parking facilities with a two-hour parking restriction, the owners of these commercial businesses inform their employees to park their vehicles on Hanover Street in the case of Paulus Foods and in the off-street parking facility on Washington Avenue between Spring Street and Western Avenue in the case of the Stagecoach Pub.

Redesign of Existing Off-Street Parking Facilities: The only alternative parking facility redesign with potential to increase the supply of off-street parking spaces involves eliminating the west driveway exit from the Paulus Foods parking facility. This action involves the placement of a fence or other suitable barrier across the west exit from the parking lot at an estimated cost of \$500. The advantage of this alternative is that it would add three parking spaces to the Paulus Foods parking facility. The disadvantage of this alternative is the restriction it would reduce the number of Paulus Foods parking lot driveways from three to two thereby reducing accessibility to and from the lot. It is recommended to implement this alternative.

Construction of New Off-Street Parking Facilities: Aside from the previous discussion regarding construction of an off-street parking facility on the northeast corner of the intersection of Hanover Avenue and Mill Street, which was not recommended to be implemented, there are no locations in the vicinity of the Mill Street/Washington Avenue intersection that would provide additional off-street parking without adversely impacting the commercial development in the area.

Concluding Remarks: In conclusion, it is recommended to change the two-hour parking restriction on the 27 on-street parking spaces on the west side of Hanover Avenue between Center Street and Western Avenue to permit all-day unrestricted weekend parking, that the owners of the Paulus Foods and Stagecoach Pub commercial businesses direct their employees to park their vehicles in unrestricted parking spaces on Hanover Street or the off-street parking facility on Washington Avenue between Spring Street and Western Avenue, and that the west exit driveway from the Paulus Foods off-street parking facility be barricaded to increase the number of parking spaces in the facility.

General Parking Improvement Considerations: The preceding analysis identified specific parking problems in the Cedarburg central business district and studied alternative solutions to those problems. In addition to the recommended improvements for specific parking problems, there are a set of general parking system improvements that may be expected to improve overall parking conditions in the Cedarburg central business district. Some of these system improvements are based on parking survey data and problems identified previously, and some are based upon Commission staff observations of existing parking conditions and operation.

The first general parking improvement recommendation for the Cedarburg central business district consists of improving the existing municipally owned off-street public parking facilities. Several of the facilities have gravel or dirt surfaces and are not well identified with public parking guide signs. It is recommended that each of the off-street facilities be paved, marked, and, where applicable, landscaped to improve facility identify and operation. Proper marking of parking spaces on an asphalt surface may be expected to increase the capacity of each facility and permit improved snow removal during winter conditions. There are no disadvantages to this recommendation. It is, therefore, recommended to implement this general parking improvement.

The next general parking improvement recommendation consists of upgrading the public parking signage along Washington Avenue to improve motorist identification of the limited number of municipally owned public parking facilities at an estimated cost of \$600. Parking guide signs should be used on major thoroughfares at the nearest point of access to the parking facility and where they can help relieve local streets of traffic seeking a place to park. In some cases, as shown in Map 4, existing signage could be relocated closer to the entrance of the appropriate public parking facility and larger 30" x 24" standard size signs should be used at the facility entrance. In this manner, the motorist should more readily be able to locate off-street public parking spaces. It is, therefore, recommended to implement this general parking improvement.

Another general parking improvement recommendation designed to improve public off-street parking facility accessibility involves the provision of an entrance driveway on Washington Avenue to the municipal lot located at the Cedarburg senior citizen center at an estimated cost of \$10,000. This large underutilized facility is currently identified with public parking signage that directs motorists over a circuitous route on Cleveland Street and Hanover Avenue. Direct access from Washington Avenue can be provided by constructing a driveway connection between the public facility and the First Wisconsin Bank parking lot which has a very prominent driveway entrance on Washington Avenue adjacent to the south side of the Cedarburg community center. The only disadvantage of this alternative is the potential use of the First Wisconsin Bank parking facility by nonbank customers. This potential problem can be controlled with appropriate signage and driveway design modifications that would clearly separate and identify the entrance to both the public community center and the First Wisconsin Bank parking facilities. It is, therefore, recommended to implement this general parking improvement.

Another general parking improvement recommendation involves enforcement of the existing two- and three-hour on-street parking restrictions in the Cedarburg central business district. Several blocks, in particular, experienced average parked vehicle durations exceeding the posted parking time restrictions. As shown on Maps 2 and 3, on Thursday, October 3, 1985, and on Saturday, October 5, 1985, vehicles parked on eastbound Bridge Road east of Washington Avenue and on southbound Portland Road south of Columbia Avenue in excess of respective two- and three-hour parking restrictions. In addition, Saturday also experienced average parked durations exceeding the two-hour restriction on southbound Hanover Avenue south of Cleveland Street and south of Mill Street, as well as on Washington Avenue northbound south of Bridge Road and south of Western Avenue. The advantage to this improvement is that it would improve utilization and on-street parking space availability for short-term parking demand in the central business district. The disadvantages of this alternative are that it requires a police officer to periodically enforce the parking restriction and it potentially could offend tourists attracted to the City of Cedarburg's historic and commercial development. Implementation of the previous alternative parking recommendations should provide improved parking space availability and utilization so that motorists will more readily respect existing parking restrictions and not attempt to violate those restrictions. It is, therefore, recommended to implement this general parking improvements to assure that maximum parking space utilization is maintained in the City of Cedarburg central business district.

The final general parking improvement recommendation involves employer participation of the businesses in the Cedarburg central business district and their direction to employees that they park their vehicles in the all-day unrestricted on- and off-street parking facilities that are located away from the Washington Avenue commercial area. There is no cost associated with implementing this alternative. As an integral part of this improvement, it is also recommended that the three-hour parking restriction for the 11 on-street parking spaces located along northbound Portland Road between Columbia Avenue and Mill Street be removed to permit all-day unrestricted parking at an estimated cost of \$150. The advantage of this alternative is that every effort must be made by the City and local businesses to increase the supply of short-term parking spaces for those motorists desiring to use the commercial development located along Washington Avenue. This is necessary to assure the competitiveness of the small businesses in the central business district in comparison to the attractive parking provided at shopping centers and newly developed outlying strip commercial development that is occurring on STH 57 south of the central business district. There are no disadvantages associated with this improvement. It is, therefore, recommended to implement this general parking improvement.

Concluding Remarks: In conclusion, it is recommended that the following set of general systemwide parking improvements be implemented to increase the utilization and attractiveness of the existing parking supply in the Cedarburg central business district: 1) pave and mark each of the municipally owned off-street parking facilities; 2) upgrade guide signage along Washington Avenue to the municipally owned off-street parking facilities; 3) construction of an access drive from Washington Avenue to the off-street public parking facility at the Cedarburg Senior Citizen Center; 4) enforcement of the existing short-term on-street parking restrictions in the central business district; 5) encouragement of employee parking to unrestricted all-day parking

facilities outside the Washington Avenue commercial area; and 6) removal of the three-hour parking restriction to permit all-day unrestricted parking on northbound Portland Road between Columbia Avenue and Mill Street.

SUMMARY

The preceding parking analysis has presented information on the supply and utilization of parking in the Cedarburg central business district. There were a total of 1,880 parking spaces in the central business district parking study area. Of the total, 134 parking spaces located on the segment of St. John Avenue between Western Avenue and Cleveland Street are underutilized due to their proximity, 600 to 1,100 feet, to commercial development along Washington Avenue and should not be considered part of the central business district parking supply. Therefore, a total of 1,749 parking spaces effectively serve parking demand in the central business district. Without the 134 spaces on St. John Avenue, on-street parking comprises 37 percent of the total parking available in the central business district.

A parking demand survey was conducted on Thursday, October 3, 1985, to assess weekday parking patterns in the central business district. The weekday survey was conducted during the hours of 9:00 a.m. to 6:00 p.m. with a total of 2,485 vehicles, or an average of 276 vehicles per hour, parking in the central business district. Average parking space turnover was 3.0 vehicles per space and the maximum parking space occupancy was 40 percent during the 1:00 p.m. to 2:00 p.m. time period. In comparison, the weekend survey was conducted during the hours of 9:00 a.m. to 5:00 p.m. with a total of 2,955 vehicles, or an average of 369 vehicles per hour, parking in the central business district. This is a 34 percent increase in average hourly parking demand over the weekday demand. Average parking space turnover was 3.1 vehicles per space and the maximum parking space occupancy was 40 percent during the 11:00 a.m. to 12:00 p.m. time period.

Analysis of the parking inventory and utilization survey data indicated that there is an insufficient number of on-street parking spaces in the central business district. The total number of on- and off-street parking spaces was found to be adequate to serve the overall parking demand. However, parking demand exceeded the available supply of parking in various areas of the central business district. This parking supply demand problem is exacerbated by the linear north-south spatial distribution of the central business district along Washington Avenue and the large number of small, poorly identified off-street parking facilities. These off-street parking facility-related problems serve to accentuate the demand for on-street parking. This is especially a problem for motorists unfamiliar with the the location of Cedarburg's off-street parking facilities and commercial establishments which attract a high number of tourists from outside the area. Table 9 summarizes the parking problems identified in the Cedarburg central business district and recommendations of parking management actions designed to best solve or ameliorate each problem. A total of 18 parking management actions are set forth in the table. The total capital investment, in 1986 dollars, required to implement these parking management actions is estimated at \$149,850, of which \$129,000 is the cost of acquiring the Mobil Service Station on Washington Avenue and construction of a 60-space public offstreet parking facility.

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Table 9

SUMMARY OF PARKING MANAGEMENT ACTIONS
RECOMMENDED TO IMPROVE EXISTING PARKING CONDITIONS
IN THE CEDARBURG CENTRAL BUSINESS DISTRICT

Recommended Parking Management Actions	Estimated Cost
Cedar Creek Settlement Parking Problem	
1. Designation of a three-hour parking restriction on the 22 unrestricted parking spaces located on Elm Street between St. John Avenue and Washington Avenue.....	\$ 200
2. Construction of a public off-street surface parking facility at the site of the current Mobil Service Station property.....	129,000
Center Street Parking Problem	
1. Designation of a two-hour parking restriction on eight of the 24 unrestricted parking spaces in the public off-street parking facility located on the southeast corner of Hanover Avenue and Turner Street....	200
2. Designation of unrestricted parking on eight of the 13 two-hour restricted on-street parking spaces on the west side of Hanover Avenue between Turner Street and Center Street.....	200
3. Designation of unrestricted parking on the 14 two-hour restricted on-street parking spaces on Center Street between Hanover Avenue and St. John Avenue.....	200
4. Designation of a one-hour parking restriction on the 21 two-hour restricted on-street parking spaces on Washington Avenue between Turner Street and Columbia Avenue.....	300
5. Designation of a two-hour parking restriction on the 15 unrestricted parking spaces in the public off-street parking facility located on the east side of Washington Avenue opposite its intersection with Turner Street..	100
Cleveland Street Parking Problem	
1. Encourage local business employees to shift their long-term off-street parking to the underutilized unrestricted parking spaces located on Cleveland Street between Hanover Avenue and St. John Avenue....	--

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Table 9 (continued)

Recommended Parking Management Actions	Estimated Cost
Cleveland Street Parking Area (continued)	
2. Designation of a two-hour parking restriction on the nine unrestricted on-street parking spaces on Cleveland Street between Hanover Avenue and Washington Avenue.....	\$ 200
Mill Street Parking Problem	
1. Designation of unrestricted weekend parking on the 21 two-hour restricted on-street parking spaces on the west side of Hanover Avenue between Center Street and Western Avenue.....	200
2. Encourage employees of Paulus Foods to shift their long-term parking to Hanover Avenue, and employees of the Stagecoach Pub to shift their long-term parking to the off-street parking facility on Washington Avenue between Spring Street and Western Avenue.....	--
3. Barricade the west exit driveway from Paulus Foods' off-street parking facility to permit an increase in the number of parking spaces in the facility.....	500
General Parking Improvement Considerations	
1. Improve existing municipally owned off-street public parking facilities with asphalt surfacing, markings, and improved landscaping.....	8,000 ^a
2. Upgrade public parking signage with 30" x 24" guide signs on major thoroughfares at parking facility access points.....	600
3. Provide an entrance driveway on Washington Avenue to the municipal public parking facility located at the Cedarburg senior citizen center through construction of a new driveway opening and parking lot modifications to permit joint use of the existing First Wisconsin Bank driveway on Washington Avenue.....	10,000
4. Enforcement of the existing two- and three-hour on-street parking restrictions in the central business district area.....	--

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Table 9 (continued)

Recommended Parking Management Actions	Estimated Cost
General Parking Improvement Considerations (continued) 5. Encouragement of employee parking in unrestricted parking facilities outside the Washington Avenue commercial area..... 6. Designation of unrestricted parking on the 11 three-hour restricted on-street parking spaces on northbound Portland Road south of Columbia Avenue.....	\$ -- 150
Total	\$149,850

^a Average improvement cost per municipal facility.

Source: SEWRPC.

In addition to the problem-specific parking improvements recommended in this study, the following set of general parking improvement considerations are recommended to improve overall parking conditions in the Cedarburg central business district: 1) pave and mark each of the municipal off-street public parking facilities; 2) upgrade guide signage to the municipal off-street public parking facilities; 3) construct an access driveway from Washington Avenue to the municipal off-street parking facility at the Cedarburg Senior Citizen Center; 4) enforce the existing on-street parking regulations; 5) direct employee parking to all-day unrestricted parking facilities outside the Washington Avenue commercial area; and 6) remove the three-hour parking restriction on northbound Portland Road between Columbia Avenue and Mill Street to permit all-day unrestricted parking.

Implementation of the parking management actions recommended in this study should result in marked improvement in parking conditions in the central business district, while maintaining the historic character of the City of Cedarburg. Action taken now will ameliorate existing parking problems and provide the direction required to encourage commercial stability and development in the City's central business district.