DOWNTOWN CHEYENNE PARKING DEVELOPMENT PLAN

FINAL REPORT

Prepared for

Cheyenne Area Transportation Planning Process

Cheyenne, Wyoming

Prepared by

WALKER Parking Consultants/Engineers, Inc.

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walker

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CHEYENNE - LARAMIE COUNTY
REGIONAL PLANNING OFFICE
2101 O'Neil Avenue
CHEYENNE, WYOMING 82001
PHONE (307) 637-6281

January 4, 1991

walker
Parking Consultants/
Engineers, Inc.

Mr. Tom Mason
Cheyenne Area Transportation Planning Process
2101 O'Neil Avenue
Cheyenne, Wyoming 82001

RE: Downtown Cheyenne Parking Development Plan
WALKER Project #D6304.00

Dear Tom:

We are pleased to submit this final report "Parking Supply/ Demand and Parking System Analysis". This report addresses our analysis of the current and future parking conditions in the study area. Recommendations concerning alternative parking solutions are also presented.

In the study area a total of 3,554 parking spaces are available for employees, patrons, and visitors to the area. Based on the parker characteristic information gathered for this study, the study area has a demand for 2,815 spaces for a surplus of 726 effective spaces. Known future development in the study area is expected to have a nominal impact on the current parking conditions in the area. Existing parking demand will shift from one block to the next but primarily within the same zone. Given the development scenarios considered, the existing parking surplus of 726 spaces is projected to reduce to a parking surplus of 320 spaces.

In the interim, before the market will feasibly support additional parking, the City could likely expand the effective parking supply short of constructing a new parking structure. The City could accomplish this objective by converting on-street, parallel parking to angled parking; by increasing the oversell of the City Center Lot; and by altering the time restrictions of parking in certain areas.

In conclusion, municipal and/or private action to expand the parking supply is not immediately necessary. However, if more definite development scenarios were in place, the current surplus of parking spaces might quickly diminish.

We would like to thank you and your staff for the excellent cooperation in assembling the needed data. We remain available to discuss this report with you at your convenience.

Very truly yours,

John W. Dorsett
Parking Specialist

John K. Bushman, P.E.
Vice President

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INTRODUCTION

The purpose of this study is to address existing and future parking conditions in downtown Cheyenne, and to support the potential revitalization of downtown activity. Previous studies that have been performed addressed only specific issues or portions of downtown, or need to be updated to reflect current parking conditions in downtown Cheyenne. This study provides an up-to-date analysis of the downtown parking system. Moreover, it evaluates the best methods for insuring an adequate parking supply both now and in the future.

WALKER Parking Consultants/Engineers, Inc. of Aurora, Colorado has been retained by the Cheyenne Area Transportation Planning Process ("ChATPP") to conduct a comprehensive parking study for the Study area. WALKER has engaged Jack Noblitt & Associates of Cheyenne to assist in data collection activities and report review. The following tasks define the scope of work to be completed for this study.

SCOPE OF STUDY

Task 1: Parking Supply/Demand Analysis

The objective of this first task was to quantify existing parking conditions in the study area, and project what the parking conditions will be in the future. This task resulted in recommendations as to what size a new parking facility should be to meet projected demand.

As specific work elements in Task 1, WALKER:

A. Obtained and reviewed existing parking and traffic studies, market analyses, master plan documents, etc. for the study area. These were used where possible to verify and correlate inventory data.

B. Performed an inventory of the existing parking supply in the study area: private, public, off-street, and on-street. Determine user assignment, time restrictions, rates, operators, etc.

C. Studied the occupancy of all spaces at pre-selected times during one typical mid-week day.

D. Concurrently with occupancy counts, determined turnover and duration characteristics of selected facilities. This was accomplished by a license plate survey.

E. Obtained and reviewed the detailed land use and employment data from ChATPP for the study area, for use in determining demand ratios.

F. Interviewed representatives of the City, County, and private businesses to identify proposed developments that will affect parking in the study area. WALKER determined parking requirements for these planned developments. WALKER also met with the ChATPP Committee to jointly agree on future downtown development scenarios for a 10-year planning horizon.

G. Prepared a Task 1 report for review by the ChATPP Committee.

Task 2: Alternative Parking Solutions

The purpose of this second task was to identify and analyze alternative parking solutions and recommend improvements in the system that might expand effective parking supply, short of constructing a new parking structure.

As specific work elements in this Task, WALKER:

A. Determined whether the number of spaces in the downtown area could be increased through restriping and efficiency improvements in existing facilities or parking policy changes.

B. Determined whether any existing facilities can be expanded to meet area parking needs.

C. Identified recommended sites for construction of future parking structures based on demand identified in Task 1 and ability to capture long-term and short-term users.

D. Developed a recommended plan for improvements, including possible phasing of alternatives corresponding to projected needs.

E. Prepared a report incorporating Tasks 1 and 2 for review by the ChATPP Committee.

STUDY AREA

The study area boundaries determined include the downtown retail, office, and warehouse space. Cheyenne's concentration of governmental buildings, which were not included within this study area, are located immediately north of the study area. The study area, which encompasses 40 city blocks, is bordered by 20th Street to the north, Evans Avenue to the east, 15th Street

to the south, and O'Neil Avenue to the west. The railroad tracks located immediately south of 15th Street serve as a natural barrier. Parking demand in this study area is strongly influenced by local retail and commercial businesses as well as historical sites and events that draw many tourists annually.

Data has been collected and analyzed for this study on the city block level. The block numbers used for identification purposes throughout this study are the same block numbers used by the City of Cheyenne and ChATPP. The study area boundaries are illustrated in Figure I-1.

NORTH

Figure I–1 : STUDY AREA

Cheyenne Downtown Parking Development Plan
Cheyenne, Wyoming

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PARKING CONDITIONS, 1990

PARKING SUPPLY

The parking supply in the study area consists of 1,214 on-street spaces and 2,663 off-street spaces located in a variety of surface lots.

Table II-1 shows a block-by-block breakdown of the on-street parking supply in the study area. Table A-1, located in the Appendix, provides a breakdown of on-street parking supply by block face. The majority of the on-street spaces, 49.4%, are unmetered with two-hour time limits. One and two-hour meters have been assigned to 8.2% and 6.7% of the on-street spaces, respectively. No time restrictions have been assigned to 22.2% of the on-street spaces. Approximately 4.1% of the on-street spaces are reserved for handicap parkers, special permits, loading, and taxicabs. Unmetered spaces located throughout the study area consist of 81.5% of the on-street spaces. A summarization of on-street parking supply is illustrated in Figure II-1.

Off-street parking facilities have been classified in four categories: assigned, customer, leased, and public. Figure II-2 shows the distribution of the parking supply in these categories:

Assigned - Parking spaces that have been assigned by the owner to an individual. These spaces are generally vacant when assignee (or his vehicle) is absent.

Customer - Parking spaces that have been reserved for customers of a business establishment. Sometimes this category includes spaces reserved for employees.

Leased - Parking facility owner leases space to parker generally on a monthly basis. The parking space is generally used only by the lessor (parker).

Public - Parking spaces that are available to the general public. This category typically includes tourists and individuals who plan to visit a place without customer parking.

Table II-2 tabulates the off-street parking spaces by block. Of the 2,663 off-street spaces, approximately 1,065 spaces, 40.0%, are assigned spaces that are available to only individual users.

Spaces reserved for customers make up approximately 29.1% of the off-street spaces. Leased spaces comprise 26.4% of the off-street spaces, while public spaces account for 4.5% of the total.

It is a generally accepted principle in parking supply/demand analysis that a supply of parking operates at optimum efficiency when occupancy is 90% to 95%. The excess spaces provide a "cushion" to allow for the dynamics of vehicles moving in and out of parking stalls and to reduce the time required to search for the last few available spaces. This cushion also allows for daily, weekly, and seasonal variations as well as vacancies created by restricting facilities to certain users, misparked vehicles, snow cover, and minor construction. When occupancy exceeds the optimum level, there may be delays and frustration in finding a space or the patron may be forced to use an undesirable space, such as one at a greater or uncomfortable walking distance. The parking supply may be perceived as inadequate even though spaces are available in the system. As a result, the "effective" parking supply is used for analysis of the adequacy of the parking system, rather than the total supply or inventory of spaces. The point of optimum efficiency for a particular facility depends on a variety of factors, including:

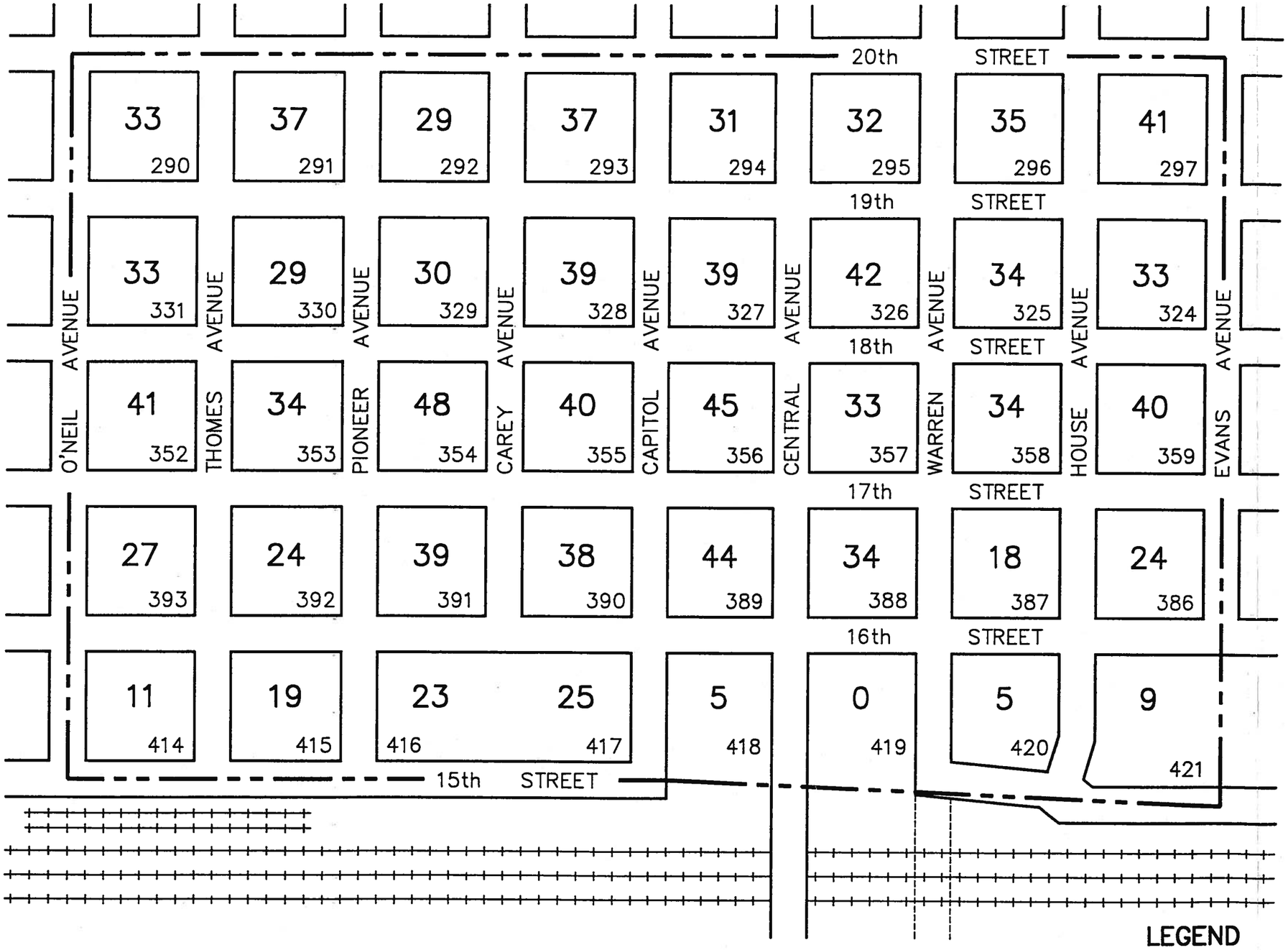
Capacity - Small scattered facilities operate less efficiently than one large facility. Moreover, it is more difficult to find the available space in a garage than in a surface lot.

Type of Users - Monthly or regular parkers can find the available space more efficiently than infrequent visitors.

Assignment of Spaces - A facility or section of a facility that is reserved for a specific group of users will have vacancies that are restricted to various user groups. This type of efficiency loss is most frequently found in private facilities, as previously defined.

Parking occupancy studies, as discussed later in this report, were conducted to assist in determining the effective supply factors to reflect actual parking practices and conditions in the study area. Other occupancy studies conducted for other cities under previous engagements were reviewed and utilized during this analysis as well. These occupancy studies in fact, prove the need to utilize an effective supply in the determination of parking adequacy.

Based upon the overall occupancy and WALKER's experience, a factor of 95% has been used for all on-street spaces other than those reserved for specific users. For all off-street parking facilities, a 90% factor has been applied. Therefore, the total effective parking supply for the study area is 3,554 spaces (91.6%) compared to a total supply of 3,877 spaces.



LEGEND

356 – BLOCK NUMBER

LIMITS OF STUDY AREA

34 NUMBER OF ON–STREET PARKING SPACES

Figure II–1 : ON–STREET PARKING SUPPLY

Cheyenne Downtown Parking Development Plan
Cheyenne, Wyoming

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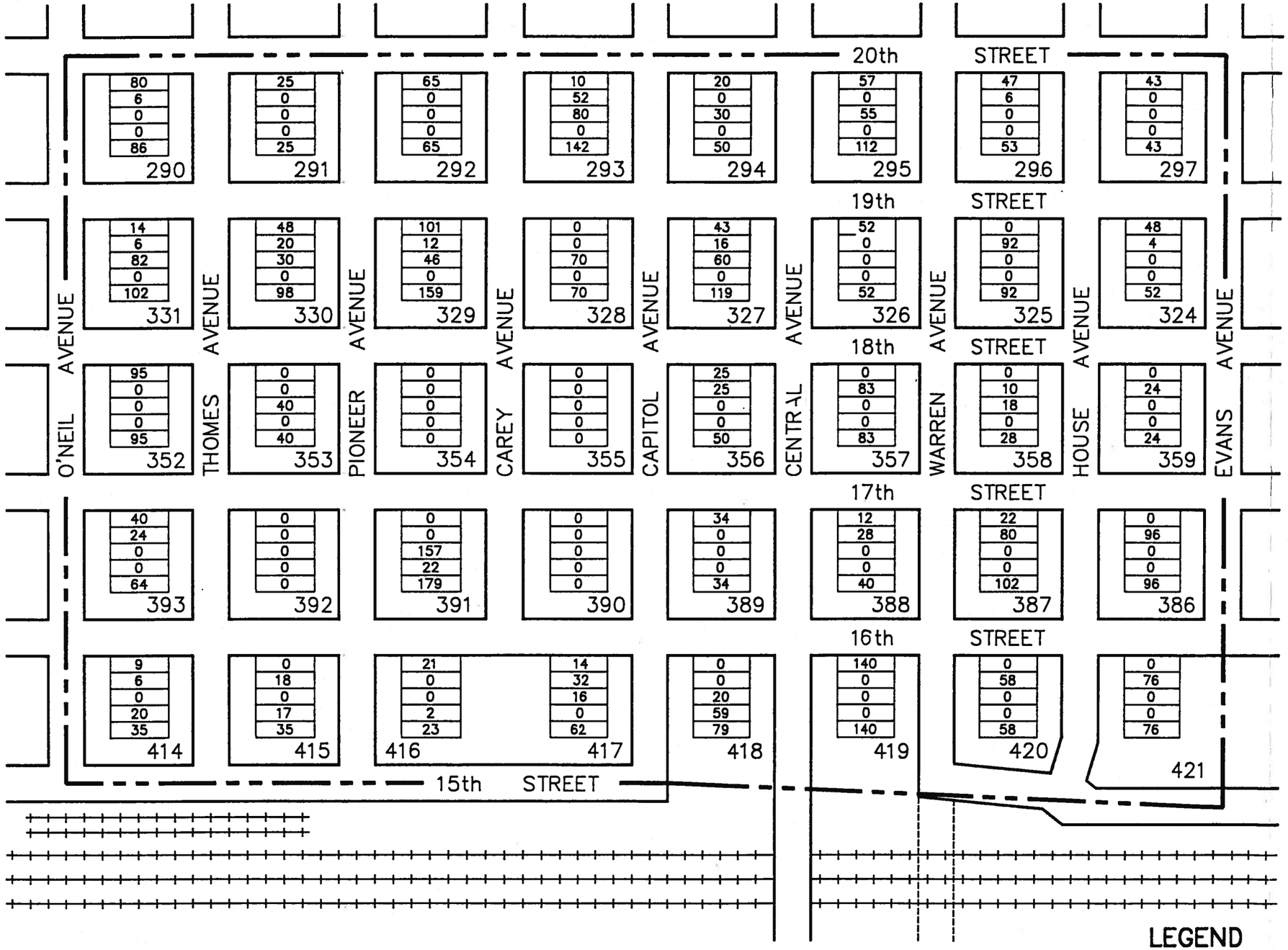

LEGEND

356 – BLOCK NUMBER

OFF–STREET PARKING SUPPLY

0	– ASSIGNED
76	– CUSTOMER
0	– LEASED
0	– PUBLIC
76	– TOTAL

Figure II–2 : OFF–STREET PARKING SUPPLY

Cheyenne Downtown Parking Development Plan
Cheyenne, Wyoming

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TABLE II-1
On-Street Parking Supply, 1990
Downtown Cheyenne Parking Development Plan
City of Cheyenne, Wyoming

	Metered				Unmetered							
Block	30 Min.	1 Hr.	2 Hr.	10 Hr.	15 Min.	30 Min.	1 Hr.	2 Hr.	No Limit	Rest.	Subtotal	Effective Parking Supply
290	0	7	4	0	0	0	7	0	15	0	33	31
291	0	0	20	0	0	0	0	0	0	17	37	35
292	0	12	4	0	0	0	0	10	0	3	29	28
293	0	25	11	0	0	0	0	0	0	1	37	35
294	0	5	9	14	0	0	0	0	0	3	31	29
295	0	0	14	2	1	5	0	0	10	0	32	30
296	0	0	0	0	0	0	0	7	28	0	35	33
297	0	0	0	0	0	0	6	0	33	2	41	39
324	0	0	0	0	0	0	0	0	33	0	33	31
325	0	15	0	5	0	4	0	0	10	0	34	32
326	0	0	0	10	0	0	0	32	0	0	42	40
327	0	0	0	0	0	0	0	38	0	1	39	37
328	0	0	0	0	0	0	0	38	0	1	39	37
329	0	0	0	0	0	0	0	30	0	0	30	29
330	0	6	5	0	0	0	0	8	10	0	29	28
331	0	0	0	0	0	0	6	0	27	0	33	31
352	0	5	0	0	0	0	11	0	25	0	41	39
353	4	17	0	0	0	0	0	0	9	4	34	32
354	0	0	0	0	0	0	0	48	0	0	48	46
355	0	0	0	0	0	0	0	40	0	0	40	38
356	0	0	0	0	0	4	0	40	0	1	45	43
357	0	0	0	0	0	0	0	30	0	3	33	31
358	0	0	0	8	0	0	0	19	7	0	34	32
359	0	0	0	0	0	0	5	30	5	0	40	38
386	0	0	0	0	0	0	0	10	14	0	24	23
387	0	0	0	0	0	2	0	5	11	0	18	17
388	0	0	0	0	0	0	0	31	0	3	34	32
389	0	0	0	0	0	0	0	42	0	2	44	42
390	0	0	0	0	0	0	0	37	0	1	38	36
391	0	0	0	0	0	0	0	39	0	0	39	37
392	0	7	7	0	0	0	0	5	5	0	24	23
393	0	0	7	0	0	0	11	0	8	1	27	26
414	0	0	0	0	0	0	0	0	11	0	11	10
415	0	0	0	0	0	0	7	12	0	0	19	18
416	0	0	0	0	2	0	0	21	0	0	23	22
417	0	0	0	0	0	0	0	25	0	0	25	24
418	0	0	0	0	0	0	0	3	0	2	5	5
419	0	0	0	0	0	0	0	0	0	0	0	0
420	0	0	0	0	0	0	0	0	0	5	5	5
421	0	0	0	0	0	0	0	0	9	0	9	9
Total	4	99	81	39	3	15	53	600	270	50	1,214	1,153
Pct. of Total	0.3%	8.2%	6.7%	3.2%	0.2%	1.2%	4.4%	49.4%	22.2%	4.1%	100.0%	95.0%
Pct. of Total Supply	0.1%	2.6%	2.1%	1.0%	0.1%	0.4%	1.4%	15.5%	7.0%	1.3%	31.4%	

TABLE II-2
Off-Street Parking Supply, 1990
Downtown Cheyenne Parking Development Plan
City of Cheyenne, Wyoming

Block	Assigned	Customer	Leased	Public	Subtotal	Effective Supply
290	80	6			86	77
291	25				25	23
292	65				65	59
293	10	52	80		142	128
294	20		30		50	45
295	57		55		112	101
296	47	6			53	48
297	43				43	39
324	48	4			52	47
325		92			92	83
326	52				52	47
327	43	16	60		119	107
328			70		70	63
329	101	12	46		159	143
330	48	20	30		98	88
331	14	6	82		102	92
352	95				95	86
353			40		40	36
354					0	0
355					0	0
356	25	25			50	45
357		83			83	75
358		10	18		28	25
359		24			24	22
386		96			96	86
387	22	80			102	92
388	12	28			40	36
389	34				34	31
390					0	0
391			157	22	179	161
392					0	0
393	40	24			64	58
414	9	6		20	35	32
415		18		17	35	32
416	21			2	23	21
417	14	32	16		62	56
418			20	59	79	71
419	140				140	126
420		58			58	52
421		76			76	68
Total	1,065	774	704	120	2,663	2,401
Pct. of Total	40.0%	29.1%	26.4%	4.5%	100.0%	90.2%
Pct. of Total Supply	27.5%	20.0%	18.2%	3.1%	68.7%	

PARKING UTILIZATION

In order to determine if spaces are serving the intended users, the utilization of all parking facilities was observed and analyzed. Selected hourly occupancy and turnover studies were also performed in selected areas.

On-Street Parking Occupancy

The occupancy of all on-street parking facilities was recorded at 9:00 a.m. and 11:00 a.m. as well as at 1:00 p.m. and 3:00 p.m. on October 11, 1990. Figure II-3 illustrates the peak parking occupancy of these on-street parking facilities. These observations are tabulated by block face in Appendix Table A-2. Table II-3 summarizes the average and peak occupancy observed by block.

The average highest utilization of on-street spaces appears to be in Blocks 389 and 390, which are centrally located in the CBD, in the heart of Cheyenne's concentration of downtown retail shops; these blocks had observed average occupancy rates of 76.7% and 78.3%, respectively, from 9:00 a.m. to 3:00 p.m. Overall peak on-street parking occupancy was observed as being 56.1%, which occurred at 3:00 p.m. Average parking accumulation for on-street parking spaces from 9:00 a.m. to 3:00 p.m. was observed to be 52.1%

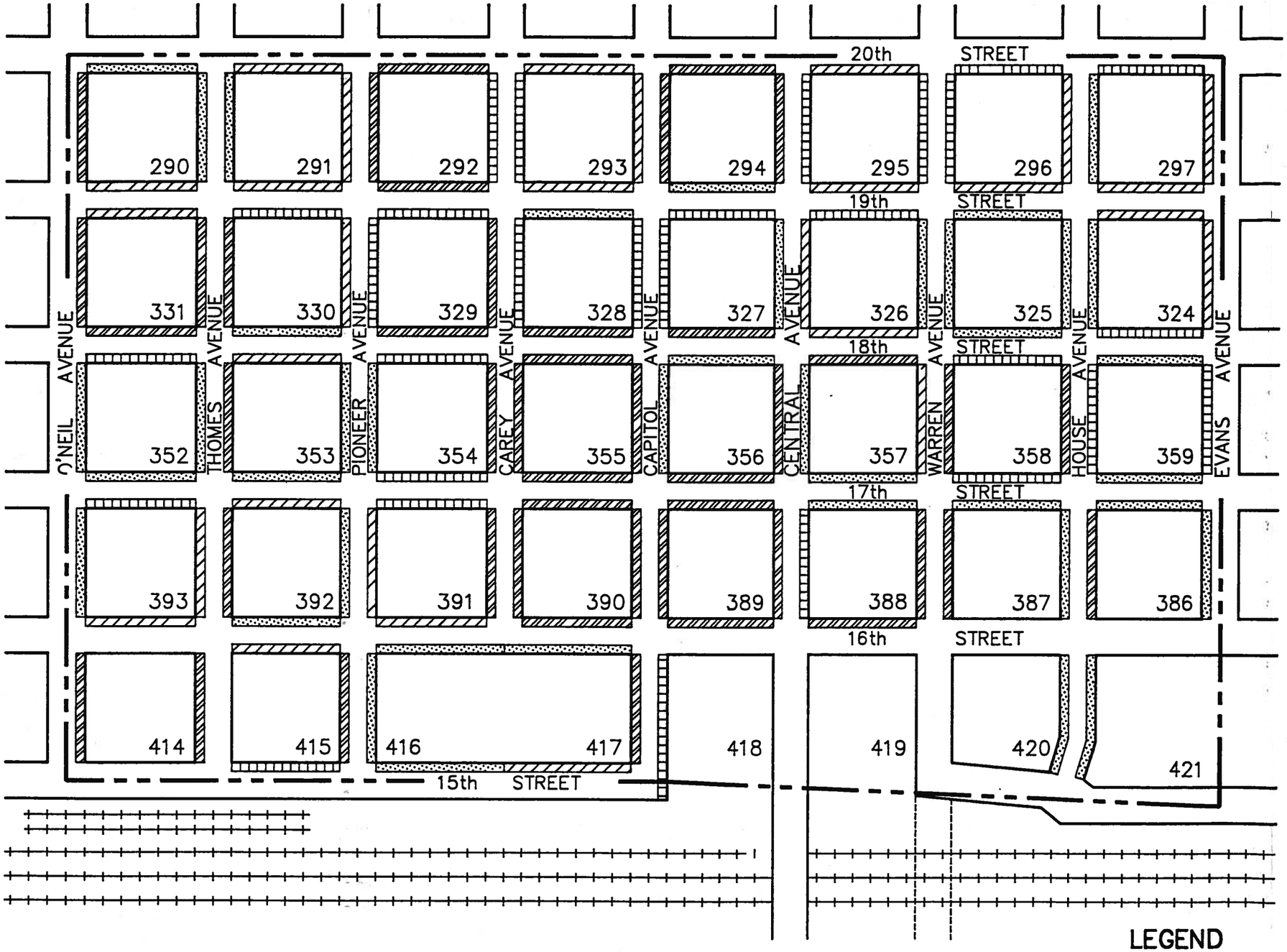
Off-Street Parking Occupancy

The occupancy of all off-street parking facilities was recorded at 9:00 a.m. and 11:00 a.m. as well as at 1:00 p.m. and 3:00 p.m. on October 11, 1990. An occupancy rate of over 100% reflects illegal parking in unmarked spaces. Limiting spaces to monthly parkers only, as in some private parking facilities, tends to leave spaces under-utilized.

Overall, the average parking occupancy between 9:00 a.m. and 3:00 p.m. was 47.3% in all off-street parking facilities. Figure II-4 illustrates the utilization patterns observed in off-street facilities by block.

Table II-4 summarizes the accumulation of vehicles by block. The highest utilization appears to be in the northwestern-most blocks of the study area, near the Cheyenne Civic Center. The off-street parking spaces in blocks 290-294 were observed as having peak occupancies ranging from 77.9% to 104.0%, and average occupancies ranging from 66.0% to 83.0%.

Figure II-5 illustrates the periods of peak parking demand observed in both on-street and off-street parking facilities. Overall parking occupancy peaked at 11:00 a.m.; it decreased at lunch hour and increased from 1:00 p.m. to 3:00 p.m. This observed pattern is typical in an area where office uses are predominate.



NORTH

LEGEND

356 – BLOCK NUMBER

ON–STREET PEAK OCCUPANCY

- 85 % OR HIGHER
- 70% – 84.9%
- 50% – 69.9%
- LESS THAN 50%

Figure II–3 : ON – STREET PARKING OCCUPANCY

Cheyenne Downtown Parking Development Plan
Cheyenne, Wyoming

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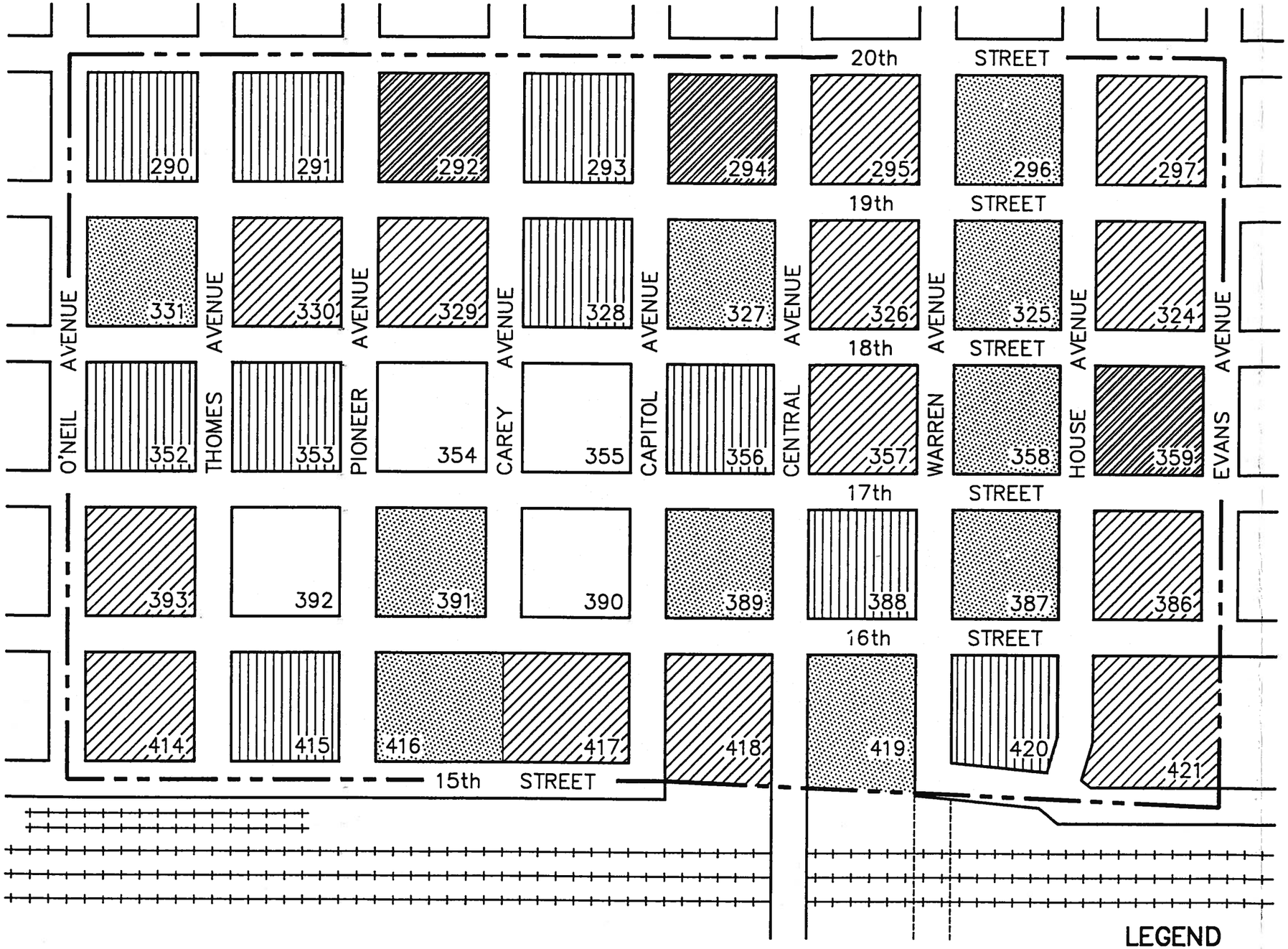

Figure II–4 : OFF – STREET PARKING OCCUPANCY

Cheyenne Downtown Parking Development Plan
Cheyenne, Wyoming

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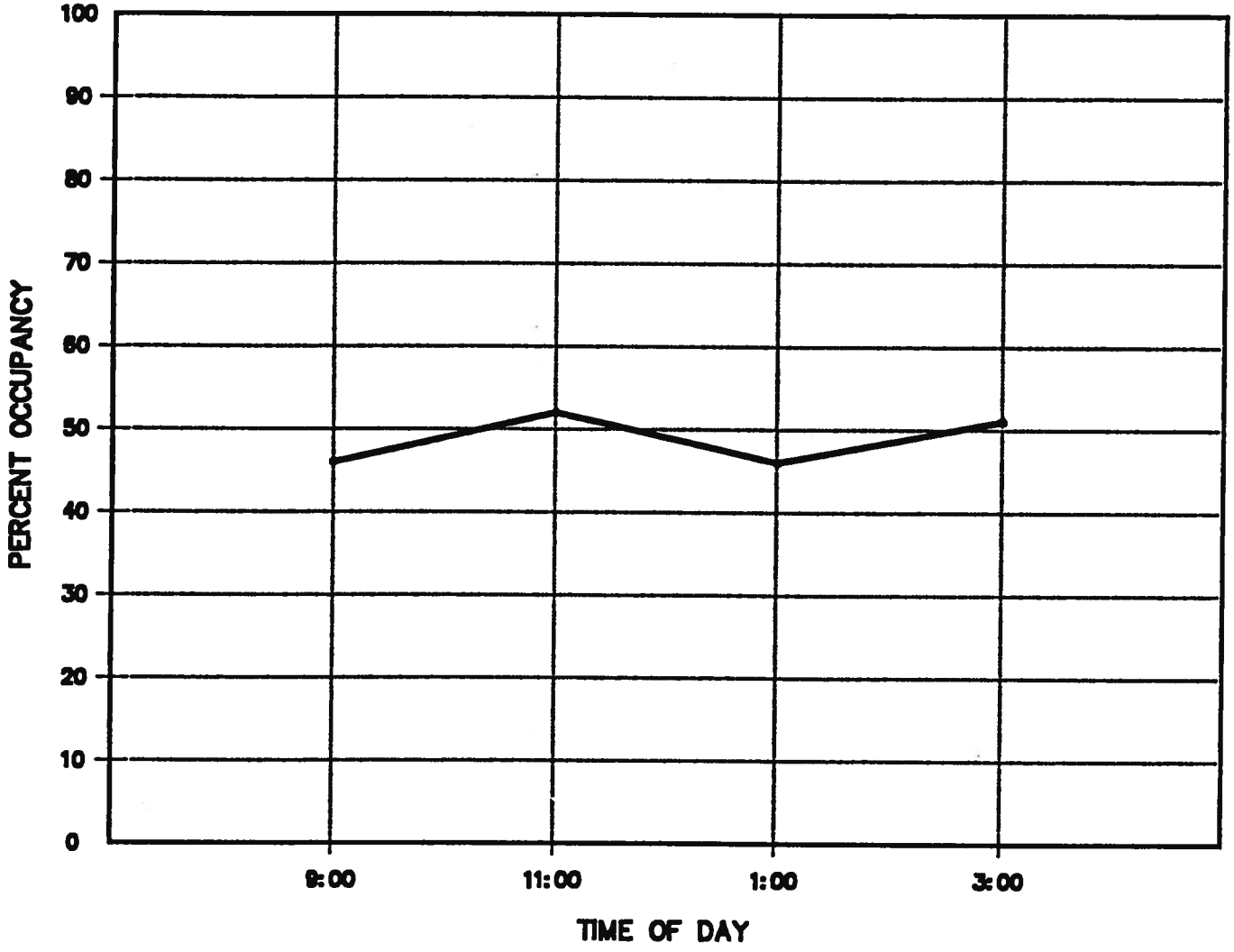
Figure II-5

OBSERVED PARKING OCCUPANCY ON AND OFF-STREET PARKING FACILITIES



SOURCE: Walker Field Counts, October 11, 1990.

TABLE II-3
On-Street Parking Accumulation
Downtown Cheyenne Parking Development Plan
City of Cheyenne, Wyoming

Block	Capacity	9:00	11:00	1:00	3:00	Peak Occ.	Avg. Occ.
290	33	11	14	11	15	45.5%	38.6%
291	37	7	11	6	11	29.7%	23.6%
292	29	19	20	21	23	79.3%	71.6%
293	37	9	11	14	12	37.8%	31.1%
294	31	26	19	22	17	83.9%	67.7%
295	32	12	14	15	16	50.0%	44.5%
296	35	17	19	13	15	54.3%	45.7%
297	41	17	13	14	16	41.5%	36.6%
324	33	14	14	12	13	42.4%	40.2%
325	34	14	18	14	12	52.9%	42.6%
326	42	13	9	13	8	31.0%	25.6%
327	39	18	16	25	23	64.1%	52.6%
328	39	20	30	29	25	76.9%	66.7%
329	30	19	21	16	21	70.0%	64.2%
330	29	14	17	19	16	65.5%	56.9%
331	33	22	24	25	25	75.8%	72.7%
352	41	19	23	19	22	56.1%	50.6%
353	34	13	12	13	20	58.8%	42.6%
354	48	23	27	26	38	79.2%	59.4%
355	40	25	33	28	42	105.0%	80.0%
356	45	22	34	25	28	75.6%	60.6%
357	33	13	20	14	18	60.6%	49.2%
358	34	22	22	26	19	76.5%	65.4%
359	40	18	16	23	13	57.5%	43.8%
386	24	16	17	16	14	70.8%	65.6%
387	18	12	12	12	12	66.7%	66.7%
388	34	18	19	18	23	67.6%	57.4%
389	44	28	37	32	38	86.4%	76.7%
390	38	26	30	32	31	84.2%	78.3%
391	39	6	14	12	20	51.3%	33.3%
392	24	10	17	8	11	70.8%	47.9%
393	27	3	4	6	10	37.0%	21.3%
414	11	9	9	5	9	81.8%	72.7%
415	19	12	9	10	12	63.2%	56.6%
416	23	7	7	12	11	52.2%	40.2%
417	25	7	4	16	10	64.0%	37.0%
418	5	2	3	0	4	80.0%	45.0%
419	0	0	0	0	0	–	–
420	5	2	2	3	3	60.0%	50.0%
421	9	5	6	5	5	66.7%	58.3%
Total	1,214	570	647	630	681	56.1%	52.1%
Pct. Occupancy		47.0%	53.3%	51.9%	56.1%		

TABLE II-4
Off-Street Parking Accumulation
Downtown Cheyenne Parking Development Plan
City of Cheyenne, Wyoming

Block	Capacity	9:00	11:00	1:00	3:00	Peak Occ.	Avg. Occ.
290	86	60	65	35	67	77.9%	66.0%
291	25	16	18	17	20	80.0%	71.0%
292	65	52	50	40	57	87.7%	76.5%
293	142	97	106	79	90	74.6%	65.5%
294	50	52	44	35	35	104.0%	83.0%
295	112	47	47	34	43	42.0%	38.2%
296	53	14	29	11	11	54.7%	30.7%
297	43	16	18	18	18	41.9%	40.7%
324	52	17	14	16	16	32.7%	30.3%
325	92	61	61	49	55	66.3%	61.4%
326	52	20	21	15	20	40.4%	36.5%
327 (1)	92	46	51	39	46	55.4%	49.5%
328	70	30	51	48	49	72.9%	63.6%
329	159	34	39	31	47	29.6%	23.7%
330	98	27	36	18	36	36.7%	29.8%
331	102	58	64	46	52	62.7%	53.9%
352	95	62	70	45	68	73.7%	64.5%
353	40	25	30	16	26	75.0%	60.6%
354	0	0	0	0	0	–	–
355	0	0	0	0	0	–	–
356	50	30	36	33	38	76.0%	68.5%
357	83	19	20	18	21	25.3%	23.5%
358	28	9	15	11	14	53.6%	43.8%
359	24	16	13	18	21	87.5%	70.8%
386	96	15	16	29	19	30.2%	20.6%
387	102	57	48	44	29	55.9%	43.6%
388	40	18	21	20	28	70.0%	54.4%
389	34	12	20	15	15	58.8%	45.6%
390	0	0	0	0	0	–	–
391	179	106	118	94	105	65.9%	59.1%
392	0	0	0	0	0	–	–
393	64	3	8	13	12	20.3%	14.1%
414	35	7	14	11	6	40.0%	27.1%
415	35	26	25	21	21	74.3%	66.4%
416	23	13	19	15	16	82.6%	68.5%
417	62	8	18	29	24	46.8%	31.9%
418	79	13	21	35	23	44.3%	29.1%
419	140	81	83	87	85	62.1%	60.0%
420	58	34	39	39	41	70.7%	65.9%
421	76	5	5	12	14	18.4%	11.8%
Total	2,636	1,206	1,353	1,136	1,288	51.3%	47.3%
Pct. Occupancy		45.8%	51.3%	43.1%	48.9%		

(1) Note: Does not include 27 spaces located in basement.

Parking Turnover and Duration

Parking turnover represents the average number of vehicles parked per space over a set time period. Turnover is a measure of utilization that must be used carefully. It reflects the overall utilization of each space and is quickly affected by low occupancy; a vacant space is obviously not "turning over". Duration studies provide information on length of stay of vehicles.

A turnover and duration study was conducted on Thursday, October 11, 1990 at selected on-street and off-street parking locations. The locations selected included the diagonal on-street parking located on the north and south sides of 17th Street from Pioneer Avenue to Central Avenue. Moreover, on-street parking located on Carey and Central Avenues between 16th and 17th Streets was included within this analysis. The off-street location included within this study included the 22 short-term spaces located in the City-operated lot at the intersection of Carey Avenue and 16th Street. All spaces included within this turnover and duration study are restricted to a two-hour time limit. Some parking spaces are metered and some are unmetered.

All spaces were observed hourly from 9:00 a.m. until 4:00 p.m. The license plate number of each vehicle parked was recorded on an hourly basis in these areas and the data was used to determine the peak parking period (previously discussed), the parking turnover, and the average length of stay for parkers. Table II-5 summarizes the observations by block face.

In short-term spaces, those with one or two-hour limits, some expect to see turnover rates approaching the number of hours observed divided by the time limit. For example, a two-hour space could turn over 4 times in 8 hours and a one-hour space could turn 8 times. In reality, however, the spaces can turn more or less times depending on the length of stay and on whether or not the space was occupied throughout the period. But since we only make hourly observations, any number of vehicles could park in a space during the hour interval and never be recorded. A study by the British Transportation and Road Research Laboratory in London in 1984 found that hourly license plate studies only observed 60% of the actual vehicles using public spaces. The area in which the studies were conducted had very short stays/high turnover. The percent of vehicles that will be missed entirely during hourly license plate studies will vary substantially according to the length of stay and turnover characteristics. On the other hand, other spaces will be occupied by the same vehicle longer than the allowed time which will lower turnover. Therefore, turnover

rates of 3 to 5 are considered very good for a study conducted over an eight-hour period, while those exceeding five are unusually high.

As shown in Table II-5, the average turnover rates by block observed ranged from 1.86 times to 5.38 times. The average turnover rate was 3.55 times. This means that on the average, over three different vehicles parked in each of the parking spaces during the observation period.

The observed parking duration, representing the average length of stay per vehicle, ranged from 0.70 hours (42 minutes) to 1.43 hours (1 hour and 26 minutes). The latter occurred on Block 391, the City Center Lot. Overall, the average stay was one hour. The average parking duration is also summarized in Table II-5.

It appears that most parkers heed the posted time limits. In fact, of the 501 different vehicles observed, 88.7% of the total vehicles observed (444 vehicles) parked less than or equal to the two-hour time limit. Forty-eight (9.6%) of the observed vehicles were parked between two and four hours. Only 1.4% of the vehicles (7 vehicles) parked in "no parking" zones. Only nine vehicles (1.8%) were parked for four or more hours, which could indicate that a few employees are parking in two-hour time zones. While this percentage is not high, these parkers are considered flagrant violators.

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TABLE II-5
Parking Duration and Turnover
Downtown Cheyenne Parking Development Plan
City of Cheyenne, Wyoming

Block/ Face	Capacity	Hours of Stay 0-1	1-2	2-3	3-4	4-5	5-6	6+	Total Different Vehicles Observed	Average Stay (Hrs)	Parking Turnover	All Day Parkers (4+ Hrs)	Parked in Illegal Spaces
354S	15	25	15	5	1	0	0	0	46	1.11	3.07	0	0
355S	12	58	10	2	0	0	0	0	70	0.70	5.38	0	2
356S	15	48	12	5	0	0	0	1	66	0.94	4.40	1	0
388W	12	24	6	2	0	1	0	1	34	1.09	2.83	2	0
389E	10	33	3	9	0	0	0	0	45	0.97	4.09	0	2
389N	13	32	10	4	2	0	2	0	50	1.18	3.57	2	2
390N	12	34	12	2	1	0	0	0	49	0.89	3.77	0	1
390W	9	32	5	1	0	0	1	1	40	0.98	4.44	2	0
391	22	23	9	4	3	0	1	1	41	1.43	1.86	2	0
391E	6	14	5	2	1	0	0	0	22	1.05	3.67	0	0
391N	15	23	11	2	2	0	0	0	38	1.05	2.53	0	0
Total	141	346	98	38	10	1	4	4	501	1.00	3.55	9	7
Pct. of Observed		69.1%	19.6%	7.6%	2.0%	0.2%	0.8%	0.8%	100.0%			1.8%	1.4%

Source: Walker Field Survey, Thursday, October 11, 1990.

PARKING RATES

Parking in the study area is typically provided free of charge. The City's metered spaces require $.10 per hour. Parking is provided by several private operators for monthly market rates of up to $25.00.

PARKING DEMAND

Parking demand is defined as the peak accumulation of parkers generated by the building and land uses present in the study area on a "design day". Design day conditions should represent parking activity levels in the study area that occur often, three or four times a month, but not necessarily the true peak that would occur only once a year. In Cheyenne's particular case, the parking system should be designed to accommodate a typical parking demand that is generated during the summer tourist season which includes the months of June through September. During these months, traffic throughout the City increases substantially, which consequently creates additional demand for parking facilities.

There are three primary types of parking demand: employee, visitor/customer, and residential. In order to project the parking needs of the City of Cheyenne during summer months, the parking demand will be categorized by two of these types of parking demand. The third type, residential parking demand, will not be used simply because very little residential land use exists within the study area.

After studying the utilization of the parking spaces in the area and interviewing the directors at various institutions, the design day has been determined to be a typical busy weekday in July (mid-summer), when long-term parking needs of downtown employees mix with the short-term parking needs generated by high activity levels at attractions such as the Wyoming State Museum, Wyoming State Capitol Building, Wyoming Governor's Mansion, Old West Museum, etc. Although few of these attractions are located in downtown Cheyenne, it is believed that those individuals attending these attractions also patronize downtown retail, hotel, service, and restaurant establishments. Consequently, additional parking demand is generated by these individuals.

The estimated parking demand was based upon employment data which was provided by the Cheyenne-Laramie County Regional Planning Office. This employment data provided a breakdown of the number of employees by 18 different land use types on a block level. Retail, restaurant, office, service, and hotel land uses represented over 90% of the total employment within

the study area. Consequently, for the purpose of convenience, several different land uses exhibiting similar parking characteristics were combined. The combinations made are as follows:

Restaurant - This type of land use includes eating establishments, bar/lounges, and entertainment and recreational facilities.

Retail - Self-explanatory. No combinations were made to this category.

Office - This category includes general office, communication, transportation, utilities, schools, and government.

Service - This category includes both professional and general/technical service establishments, automobile/truck service, and warehouse land uses.

Hotel/Motel - Self-explanatory. No combinations were made to this category.

Nearly 2,900 employees were accounted for within the study area. Employment by block and land use type is presented in Table II-6.

In order to estimate employee parking demand, the total number of employees must be reduced through the utilization of a presence factor and a driving ratio. A presence factor is the ratio of employees that are present on a typical day. On a typical day, it was estimated that approximately 30% of the total number of employees (which included part-time employees) are absent from work due to illness, vacation, scheduled day off, appointments, etc. Effectively, the presence factor for employees within the study area was estimated to be 70%.

A driving ratio is defined as the percent of employees who typically drive a vehicle to work. It was estimated that approximately 90% of all employees within the study area drive a vehicle to work. The remaining 10% of employees likely carpool or arrange for a friend or relative to provide a ride.

Visitor parking demand is estimated similarly to employee parking demand. First, a visitor to employee ratio is derived based upon each land use. Implied in this methodology is the understanding that some land uses have a proportionately larger number of visitors than others. The ratio of visitors to employees by land use, utilized within this study, is as follows:

Land Use	Ratio of Visitors/Employees
Restaurant	2.00 visitors per employee
Service	0.10 visitors per employee
Retail	3.00 visitors per employee
Hotel/Motel	2.00 visitors per employee
Office	0.10 visitors per employee

Source: WALKER Estimates

The same driving ratio of 90% was utilized for visitors. In order to account for the effects of a captive market, which is experienced in the study area, a non-captive ratio must be assigned to visitors. A non-captive ratio is the inverse, or opposite, of a captive ratio. An example of a non-captive parker is the suburbanite who drives from his home to downtown Cheyenne to shop or visit an office. An example of a captive parker would be a downtown employee shopping during lunch hour or attending a meeting downtown.

The formulas for calculating parking demand for employees and visitors, respectively, are as follows:

No. of employees X presence factor X driving ratio ratio

No. of employees X visitor/employee ratio X driving ratio X non-captive ratio

Based upon the above formulas, the parking demand calculated for the study area was estimated to be 2,815 parking spaces. The breakdown between employee and visitor parking demand by type of land use is as follows:

Land Use Type	Employee	Visitor	Total
Restaurant	170	144	314
Service	726	49	775
Retail	325	692	1,017
Hotel/Motel	38	98	136
Office	536	37	573
Total	1,795	1,020	2,815

Tables II-7 through II-11 provide a detailed breakdown of the employee and visitor parking demand calculations by block and type of land use.

Parking Characteristics

The interplay of land uses in a mixed-use environment produces a reduction in parking demand. For example, a substantial percentage of patrons of one business are employees of another CBD business. The Urban Land Institute defines this as the "effects of the captive market". These patrons are already parked; therefore, they "contribute" only once to the total number of peak-hour parkers. In other words, the parking demand ratio for individual land uses should be factored downward in proportion to the captive market support received from neighboring land uses.

Overall, the effects of the captive market can be very significant. Based upon past studies conducted by WALKER, it was estimated that 70% of restaurant and 50% of retail patrons have been determined to be CBD employees and considered captive. The captive market factor was estimated to be 50% for visitors to office buildings and visitors to technical and professional service establishments. Approximately 10% of hotel/motel visitors were estimated to be part of this captive market. The use of captive market factors ensures that captive patrons are not counted twice in the overall parking demand estimate for the study area.

Adjustment for Seasonality

The peak parking occupancy observed on October 11, 1990 was 51.9%, a relatively low figure when considering the parking demand presented above. If the actual parking demand for 2,832 parking spaces were to occur, the occupancy rate for the study area's 3,877 spaces would be 73.0%. The difference between observed parking occupancy and estimated parking demand can be attributed to the seasonal parking needs of the City of Cheyenne.

Cheyenne's parking needs are higher in summer months than in non-summer months due to an increased presence of tourists. Based upon the observed occupancy counts, previous parking and traffic studies, monthly attendance data collected on various tourist attractions, and county sales tax receipts, consideration was given to what parking demand would ordinarily be during summer months. The +20% difference in estimated parking demand from actual observed parking occupancy is believed to be reasonable.

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TABLE II-6
Employment by Block and Land Use Type
Cheyenne Downtown Parking Development Plan
City of Cheyenne, Wyoming

Block	Land Use					
	Rest-aurant	Retail	Svc.	Hotel/ Motel	Office	Total
290		8	117		62	187
291					113	113
292					266	266
293			138		2	140
294					100	100
295		1	10		19	30
296			43		6	49
297		4	22		16	42
324			8			8
325	12	3	81			96
326		1	2		5	8
327		8	76		27	111
328	19	3	9		21	52
329			117			117
330		40				40
331		6	31		25	62
352			54		28	82
353		14	12			26
354	6	58	74		32	170
355	4	77	49		55	185
356		12	102			114
357	7	7	13	32	2	61
358	14	8	8			30
359	15		12			27
386	22	8				30
387	42		11			53
388	12	40	42		16	110
389	53	37	36	25	25	176
390	21	31	32	3		87
392		54				54
393		2	6		3	11
414		7			6	13
415		7	8		13	28
416		38	1		8	47
417	30	33				63
418			14			14
420		7	21			28
421	12					12
Total	269	514	1,149	60	850	2,842

Note: Blocks 391 and 419 have been excluded because these blocks do not have any employees.

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TABLE II-7
Restaurant Parking Demand
Cheyenne Downtown Parking Development Plan
City of Cheyenne, Wyoming

Block	No. of Empl.	Empl. Driving Ratio	Pre-sence Factor	Empl. Pkg. Demand	Vis./ Empl. Ratio	Vis. Driving Ratio	Non-Captive Ratio	Vis. Pkg. Demand	Total Demand
290	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
291	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
292	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
293	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
294	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
295	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
296	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
297	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
324	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
325	12	90.0%	70.0%	8	2.00	90.0%	30.0%	6	14
326	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
327	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
328	19	90.0%	70.0%	12	2.00	90.0%	30.0%	10	22
329	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
330	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
331	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
352	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
353	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
354	6	90.0%	70.0%	4	2.00	90.0%	30.0%	3	7
355	4	90.0%	70.0%	3	2.00	90.0%	30.0%	2	5
356	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
357	7	90.0%	70.0%	4	2.00	90.0%	30.0%	4	8
358	14	90.0%	70.0%	9	2.00	90.0%	30.0%	8	17
359	15	90.0%	70.0%	9	2.00	90.0%	30.0%	8	17
386	22	90.0%	70.0%	14	2.00	90.0%	30.0%	12	26
387	42	90.0%	70.0%	26	2.00	90.0%	30.0%	23	49
388	12	90.0%	70.0%	8	2.00	90.0%	30.0%	6	14
389	53	90.0%	70.0%	33	2.00	90.0%	30.0%	29	62
390	21	90.0%	70.0%	13	2.00	90.0%	30.0%	11	24
392	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
393	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
414	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
415	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
416	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
417	30	90.0%	70.0%	19	2.00	90.0%	30.0%	16	35
418	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
420	0	90.0%	70.0%	0	2.00	90.0%	30.0%	0	0
421	12	90.0%	70.0%	8	2.00	90.0%	30.0%	6	14
Total	269			170				144	314

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TABLE II-8
Technical and Professional Service Parking Demand
Cheyenne Downtown Parking Development Plan
City of Cheyenne, Wyoming

Block	No. of Empl.	Empl. Driving Ratio	Pre-sence Factor	Empl. Pkg. Demand	Vis./ Empl. Ratio	Vis. Driving Ratio	Non-Captive Ratio	Vis. Pkg. Demand	Total Demand
290	117	90.0%	70.0%	74	0.10	90.0%	50.0%	5	79
291	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
292	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
293	138	90.0%	70.0%	87	0.10	90.0%	50.0%	6	93
294	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
295	10	90.0%	70.0%	6	0.10	90.0%	50.0%	0	6
296	43	90.0%	70.0%	27	0.10	90.0%	50.0%	2	29
297	22	90.0%	70.0%	14	0.10	90.0%	50.0%	1	15
324	8	90.0%	70.0%	5	0.10	90.0%	50.0%	0	5
325	81	90.0%	70.0%	51	0.10	90.0%	50.0%	4	55
326	2	90.0%	70.0%	1	0.10	90.0%	50.0%	0	1
327	76	90.0%	70.0%	48	0.10	90.0%	50.0%	3	51
328	9	90.0%	70.0%	6	0.10	90.0%	50.0%	0	6
329	117	90.0%	70.0%	74	0.10	90.0%	50.0%	5	79
330	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
331	31	90.0%	70.0%	20	0.10	90.0%	50.0%	1	21
352	54	90.0%	70.0%	34	0.10	90.0%	50.0%	2	36
353	12	90.0%	70.0%	8	0.10	90.0%	50.0%	1	9
354	74	90.0%	70.0%	47	0.10	90.0%	50.0%	3	50
355	49	90.0%	70.0%	31	0.10	90.0%	50.0%	2	33
356	102	90.0%	70.0%	64	0.10	90.0%	50.0%	5	69
357	13	90.0%	70.0%	8	0.10	90.0%	50.0%	1	9
358	8	90.0%	70.0%	5	0.10	90.0%	50.0%	0	5
359	12	90.0%	70.0%	8	0.10	90.0%	50.0%	1	9
386	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
387	11	90.0%	70.0%	7	0.10	90.0%	50.0%	0	7
388	42	90.0%	70.0%	26	0.10	90.0%	50.0%	2	28
389	36	90.0%	70.0%	23	0.10	90.0%	50.0%	2	25
390	32	90.0%	70.0%	20	0.10	90.0%	50.0%	1	21
392	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
393	6	90.0%	70.0%	4	0.10	90.0%	50.0%	0	4
414	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
415	8	90.0%	70.0%	5	0.10	90.0%	50.0%	0	5
416	1	90.0%	70.0%	1	0.10	90.0%	50.0%	0	1
417	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
418	14	90.0%	70.0%	9	0.10	90.0%	50.0%	1	10
420	21	90.0%	70.0%	13	0.10	90.0%	50.0%	1	14
421	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
Total	1,149			726				49	775

TABLE II-9
Retail Parking Demand
Cheyenne Downtown Parking Development Plan
City of Cheyenne, Wyoming

Block	No. of Empl.	Empl. Driving Ratio	Pre-sence Factor	Empl. Pkg. Demand	Vis./ Empl. Ratio	Vis. Driving Ratio	Non-Captive Ratio	Vis. Pkg. Demand	Total Demand
290	8	90.0%	70.0%	5	3.00	90.0%	50.0%	11	16
291	0	90.0%	70.0%	0	3.00	90.0%	50.0%	0	0
292	0	90.0%	70.0%	0	3.00	90.0%	50.0%	0	0
293	0	90.0%	70.0%	0	3.00	90.0%	50.0%	0	0
294	0	90.0%	70.0%	0	3.00	90.0%	50.0%	0	0
295	1	90.0%	70.0%	1	3.00	90.0%	50.0%	1	2
296	0	90.0%	70.0%	0	3.00	90.0%	50.0%	0	0
297	4	90.0%	70.0%	3	3.00	90.0%	50.0%	5	8
324	0	90.0%	70.0%	0	3.00	90.0%	50.0%	0	0
325	3	90.0%	70.0%	2	3.00	90.0%	50.0%	4	6
326	1	90.0%	70.0%	1	3.00	90.0%	50.0%	1	2
327	8	90.0%	70.0%	5	3.00	90.0%	50.0%	11	16
328	3	90.0%	70.0%	2	3.00	90.0%	50.0%	4	6
329	0	90.0%	70.0%	0	3.00	90.0%	50.0%	0	0
330	40	90.0%	70.0%	25	3.00	90.0%	50.0%	54	79
331	6	90.0%	70.0%	4	3.00	90.0%	50.0%	8	12
352	0	90.0%	70.0%	0	3.00	90.0%	50.0%	0	0
353	14	90.0%	70.0%	9	3.00	90.0%	50.0%	19	28
354	58	90.0%	70.0%	37	3.00	90.0%	50.0%	78	115
355	77	90.0%	70.0%	49	3.00	90.0%	50.0%	104	153
356	12	90.0%	70.0%	8	3.00	90.0%	50.0%	16	24
357	7	90.0%	70.0%	4	3.00	90.0%	50.0%	9	13
358	8	90.0%	70.0%	5	3.00	90.0%	50.0%	11	16
359	0	90.0%	70.0%	0	3.00	90.0%	50.0%	0	0
386	8	90.0%	70.0%	5	3.00	90.0%	50.0%	11	16
387	0	90.0%	70.0%	0	3.00	90.0%	50.0%	0	0
388	40	90.0%	70.0%	25	3.00	90.0%	50.0%	54	79
389	37	90.0%	70.0%	23	3.00	90.0%	50.0%	50	73
390	31	90.0%	70.0%	20	3.00	90.0%	50.0%	42	62
392	54	90.0%	70.0%	34	3.00	90.0%	50.0%	73	107
393	2	90.0%	70.0%	1	3.00	90.0%	50.0%	3	4
414	7	90.0%	70.0%	4	3.00	90.0%	50.0%	9	13
415	7	90.0%	70.0%	4	3.00	90.0%	50.0%	9	13
416	38	90.0%	70.0%	24	3.00	90.0%	50.0%	51	75
417	33	90.0%	70.0%	21	3.00	90.0%	50.0%	45	66
418	0	90.0%	70.0%	0	3.00	90.0%	50.0%	0	0
420	7	90.0%	70.0%	4	3.00	90.0%	50.0%	9	13
421	0	90.0%	70.0%	0	3.00	90.0%	50.0%	0	0
Total	514			325				692	1,017

TABLE II-10
Hotel/Motel Parking Demand
Cheyenne Downtown Parking Development Plan
City of Cheyenne, Wyoming

Block	No. of Empl.	Empl. Driving Ratio	Pre-sence Factor	Empl. Pkg. Demand	Vis./ Empl. Ratio	Vis. Driving Ratio	Non-Captive Ratio	Vis. Pkg. Demand	Total Demand
290	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
291	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
292	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
293	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
294	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
295	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
296	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
297	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
324	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
325	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
326	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
327	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
328	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
329	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
330	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
331	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
352	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
353	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
354	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
355	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
356	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
357	32	90.0%	70.0%	20	2.00	90.0%	90.0%	52	72
358	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
359	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
386	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
387	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
388	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
389	25	90.0%	70.0%	16	2.00	90.0%	90.0%	41	57
390	3	90.0%	70.0%	2	2.00	90.0%	90.0%	5	7
392	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
393	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
414	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
415	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
416	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
417	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
418	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
420	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
421	0	90.0%	70.0%	0	2.00	90.0%	90.0%	0	0
Total	60			38				98	136

TABLE II-11
Office Parking Demand
Cheyenne Downtown Parking Development Plan
City of Cheyenne, Wyoming

Block	No. of Empl.	Empl. Driving Ratio	Pre-sence Factor	Empl. Pkg. Demand	Vis./ Empl. Ratio	Vis. Driving Ratio	Non-Captive Ratio	Vis. Pkg. Demand	Total Demand
290	62	90.0%	70.0%	39	0.10	90.0%	50.0%	3	42
291	113	90.0%	70.0%	71	0.10	90.0%	50.0%	5	76
292	266	90.0%	70.0%	168	0.10	90.0%	50.0%	12	180
293	2	90.0%	70.0%	1	0.10	90.0%	50.0%	0	1
294	100	90.0%	70.0%	63	0.10	90.0%	50.0%	5	68
295	19	90.0%	70.0%	12	0.10	90.0%	50.0%	1	13
296	6	90.0%	70.0%	4	0.10	90.0%	50.0%	0	4
297	16	90.0%	70.0%	10	0.10	90.0%	50.0%	1	11
324	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
325	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
326	5	90.0%	70.0%	3	0.10	90.0%	50.0%	0	3
327	27	90.0%	70.0%	17	0.10	90.0%	50.0%	1	18
328	21	90.0%	70.0%	13	0.10	90.0%	50.0%	1	14
329	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
330	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
331	25	90.0%	70.0%	16	0.10	90.0%	50.0%	1	17
352	28	90.0%	70.0%	18	0.10	90.0%	50.0%	1	19
353	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
354	32	90.0%	70.0%	20	0.10	90.0%	50.0%	1	21
355	55	90.0%	70.0%	35	0.10	90.0%	50.0%	2	37
356	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
357	2	90.0%	70.0%	1	0.10	90.0%	50.0%	0	1
358	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
359	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
386	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
387	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
388	16	90.0%	70.0%	10	0.10	90.0%	50.0%	1	11
389	25	90.0%	70.0%	16	0.10	90.0%	50.0%	1	17
390	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
392	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
393	3	90.0%	70.0%	2	0.10	90.0%	50.0%	0	2
414	6	90.0%	70.0%	4	0.10	90.0%	50.0%	0	4
415	13	90.0%	70.0%	8	0.10	90.0%	50.0%	1	9
416	8	90.0%	70.0%	5	0.10	90.0%	50.0%	0	5
417	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
418	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
420	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
421	0	90.0%	70.0%	0	0.10	90.0%	50.0%	0	0
Total	850			536				37	573

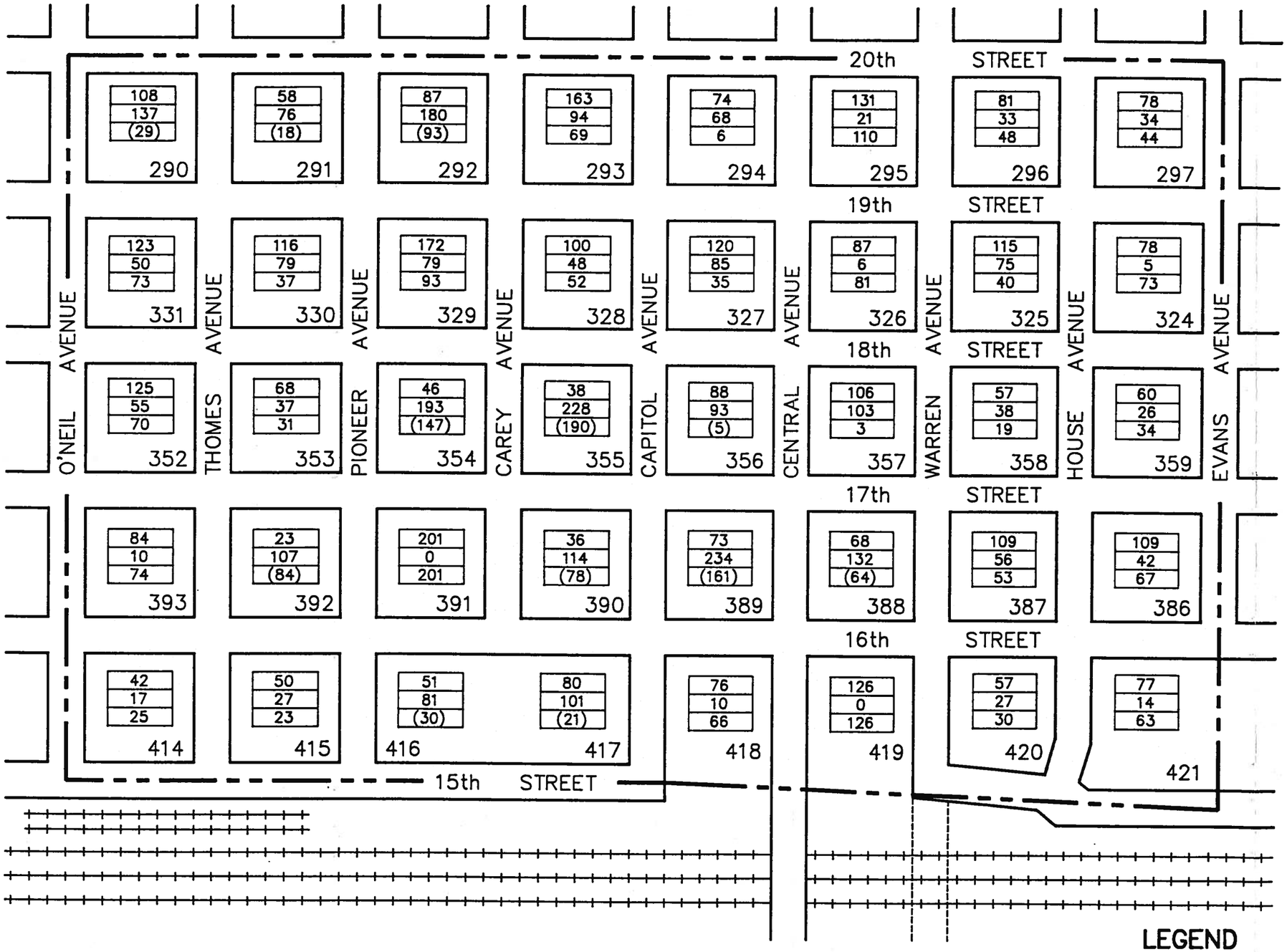
PARKING ADEQUACY

Parking adequacy is defined as the balance of the parking supply as compared to parking demand. A very fundamental aspect of any area being studied is the interplay of activities from block to block and immediately outside of the study area; parking is one of these dynamic factors. The traditional method of analyzing parking in a downtown mixed-use area is to determine the effective parking supply and the parking demand on each block and compare them to determine the parking adequacy. The parking adequacy by block and zone is shown in Table II-12. A positive figure indicates that the block contributes more supply than demand to the balance; a negative figure indicates that the block contributes more demand than supply to the balance. It is important not to focus on the balance for any individual block. Parking demand is generated only by the uses in each building; people do not come to Cheyenne's CBD, merely to park. Not all parkers bound for a particular block will choose to park there, even if sufficient spaces are available. Market factors, especially price and walking distance, will result in substantial interaction between blocks both within and outside of the study area. The positive/negative figure is merely the net parking balance which that block contributes to its "influence area" (for example, within an acceptable walking distance for most users) and the CBD as a whole. It does not and should not represent the number of spaces which should be provided on a specific block but rather the number of peak-hour parkers generated by the land uses present on the block under design day conditions.

The south central portion of the study area, Blocks 388-390, appear to have a shortage of parking spaces. These three blocks were estimated as having a deficit of 303 spaces. Many employees and visitors of these blocks likely park in the City Center lot.

An estimated deficit of 337 parking spaces exists for Blocks 354 and 355, which are located in the central portion of the study area. Moreover, Blocks 290-292 were estimated as having a deficit of 140 spaces. These three blocks are located in the northwest corner of the study area, near the Civic Center. However, this is misleading because this deficit of 140 spaces is satisfied by on-street parking and parking facilities located immediately adjacent, but outside of the study area.

In conclusion, overall the Study area has a surplus of 726 spaces as tabulated in Table II-12. Figure II-6 shows the effective parking supply, demand, and adequacy by block.



NORTH

LEGEND

356 – BLOCK NUMBER

PARKING ADEQUACY

30	– EFFECTIVE SUPPLY
16	– DEMAND
14	– ADEQUACY

Figure II–6 : PARKING ADEQUACY

Cheyenne Downtown Parking Development Plan
Cheyenne, Wyoming

walker
Parking Consultants/ Engineers, Inc.

TABLE II-12
Parking Adequacy
Cheyenne Downtown Parking Development Plan
City of Cheyenne, Wyoming

Block	Effective Parking Supply	Parking Demand	Surplus/ (Deficit)
290	108	137	(29)
291	58	76	(18)
292	87	180	(93)
293	163	94	69
294	74	68	6
295	131	21	110
296	81	33	48
297	78	34	44
324	78	5	73
325	115	75	40
326	87	6	81
327	120	85	35
328	100	48	52
329	172	79	93
330	116	79	37
331	123	50	73
352	125	55	70
353	68	37	31
354	46	193	(147)
355	38	228	(190)
356	88	93	(5)
357	106	103	3
358	57	38	19
359	60	26	34
386	109	42	67
387	109	56	53
388	68	132	(64)
389	73	234	(161)
390	36	114	(78)
391	201	0	201
392	23	107	(84)
393	84	10	74
414	42	17	25
415	50	27	23
416	51	81	(30)
417	80	101	(21)
418	76	10	66
419	126	0	126
420	57	27	30
421	77	14	63
Total	3,541	2,815	726

FUTURE PARKING CONDITIONS

In order to determine the future parking needs in the Study area, it is necessary to consider the many proposed development projects and their impact on parking supply and parking demand. A scenario for expansion and new development in the area has been developed from discussions with area businesses and various City, County, and State agencies. Such a scenario is necessarily a "best guess" based on the information available today. Following is a summary of known development plans in the Study area:

- The redevelopment of the Hynds Building, a five-story building consisting of 45,000 square feet, will add 9,000 and 36,000 square feet of retail and office space, respectively. Assuming that this property is redeveloped and achieves a 90% occupancy rate by 1995, parking demand can be expected to increase by 121 spaces.

- Increased employment within the study area will lead to an increase in parking demand. Based upon projected Laramie County employment data contained in the "1988 Laramie County Major Street and Highway System Report," the study area can expect to experience annual employment growth in the two percent range. Consequently, parking demand could increase by 285 parking spaces by 1995.

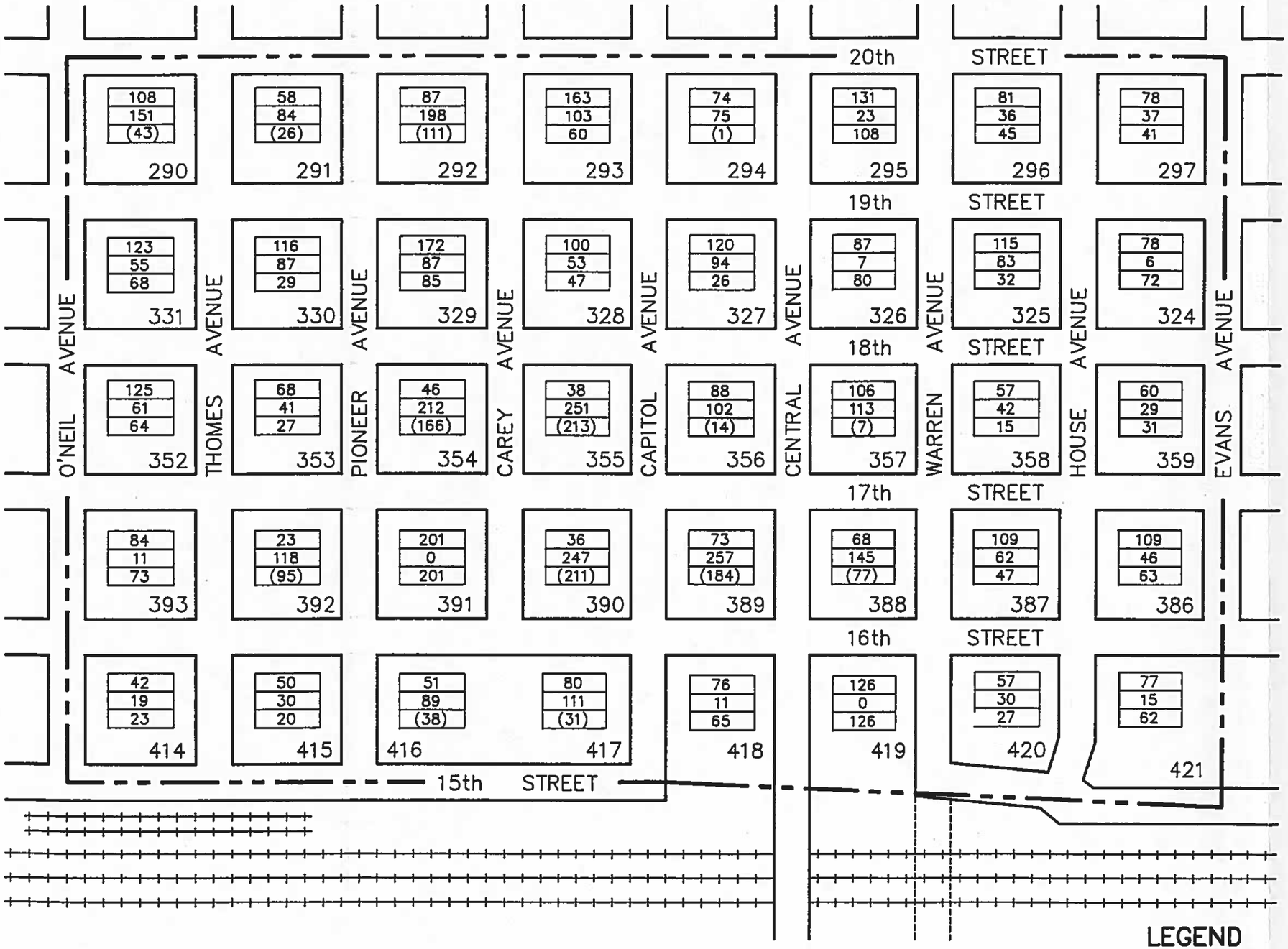
Based upon the aforementioned changes, by 1995, existing parking demand will increase from 2,815 spaces to 3,221 spaces. Consequently, the existing parking surplus of 726 spaces is projected to change to a surplus of 320 spaces. Table III-1 summarizes, by block, parking demand conditions for 1995.

Municipal and/or private action to expand the existing parking supply is not immediately necessary. However, if the aforementioned development plans materialize and employment does increase, the current surplus of parking spaces could quickly diminish.

31-Dec-90

TABLE III-1
Future Parking Demand and Adequacy – 1995
Cheyenne Downtown Parking Development Plan
City of Cheyenne, Wyoming

Block	Effective Parking Supply	Future Parking Demand	Surplus/ (Deficit)
290	108	151	(43)
291	58	84	(26)
292	87	198	(111)
293	163	103	60
294	74	75	(1)
295	131	23	108
296	81	36	45
297	78	37	41
324	78	6	72
325	115	83	32
326	87	7	80
327	120	94	26
328	100	53	47
329	172	87	85
330	116	87	29
331	123	55	68
352	125	61	64
353	68	41	27
354	46	212	(166)
355	38	251	(213)
356	88	102	(14)
357	106	113	(7)
358	57	42	15
359	60	29	31
386	109	46	63
387	109	62	47
388	68	145	(77)
389	73	257	(184)
390	36	247	(211)
391	201	0	201
392	23	118	(95)
393	84	11	73
414	42	19	23
415	50	30	20
416	51	89	(38)
417	80	111	(31)
418	76	11	65
419	126	0	126
420	57	30	27
421	77	15	62
Total	3,541	3,221	320



NORTH

LEGEND

356 – BLOCK NUMBER

FUTURE PARKING ADEQUACY

30	– EFFECTIVE SUPPLY
16	– DEMAND
14	– SURPLUS/(DEFICIT)

Figure III–1 : FUTURE PARKING ADEQUACY

Cheyenne Downtown Parking Development Plan
Cheyenne, Wyoming

walker
Parking Consultants/ Engineers, Inc.

PARKING SYSTEM ANALYSIS

Several members of the parking committee that was established for this plan, as well as members of the general public, perceive that a parking problem exists in downtown Cheyenne. Moreover, a number of individuals believe that Cheyenne has a need for a new parking structure in order to fuel economic growth. Each of these reasons serve as valid arguments as to why Cheyenne should develop a parking structure. Nevertheless, Task 1 of this report concluded that a parking structure is not presently economically feasible. In other words, if a new parking structure opened today in Cheyenne, operating revenues would not sufficiently cover operating expenses and debt service coverage.

The purpose of Task 2 is to identify and analyze alternative parking solutions and recommend improvements in the system that might expand effective parking supply, short of constructing a new parking structure. Moreover, for future planning purposes, several alternative sites for the construction of a new parking structure, were evaluated.

Angled Parking

Last year, the City of Cheyenne converted on-street, parallel parking spaces to angled parking. The parking spaces that were included in this conversion were the on-street parking spaces located on the north and south side of 17th and 18th Streets between Warren and Pioneer. Consequently, desirable parking spaces were added to the city's parking supply.

As an alternative to increase parking supply, the City of Cheyenne should consider converting additional parallel parking spaces to angled parking. The increase in parking spaces from such an action would likely be nominal; however, from a perception standpoint, this alternative is appealing because additional "doorstep" parking is created.

This alternative may necessitate that certain streets be converted from two-way to one-way traffic flow. Consequently, should this alternative be chosen, a traffic engineer would need to be consulted in order to determine the impact created by a change in the traffic flow.

The disadvantages associated with angled parking are that it reduces street capacity and results in an increase in traffic accidents.

Increase Oversell of City Center Lot

Based upon conversations with the City of Cheyenne Parking Department, it was estimated the City Center Lot is presently about 125% oversold. This means that for the 160 spaces utilized for monthly parking, about 200 parking permits have been issued (160 X 1.25 = 200).

The peak parking occupancy observed on October 11, 1990 for the City Center lot, was 65 percent. This means that at least 56 of this lot's long-term parking spaces were available at any given time of the day.

In light of the data collected, it is recommended that the City further oversell the long-term parking spaces of the City Center lot. The city should increase the oversell ratio gradually and concurrently monitor the occupancy of the City Center Lot. Once the occupancy rate reaches 90%, the City should no longer increase the overselling of this lot.

Based upon the sample data gathered for this study, it is suggested that the City could oversell this lot up to 150%. The implementation of this practice would provide the City with the effective use of up to 40 additional parking spaces.

Enforcement of Time Limitations

It is not uncommon for municipalities to have relatively lax enforcement in parking operations. Therefore, it would typically be recommended that the City increase the enforcement level of parking spaces containing time restrictions of two hours or less. However, in this particular situation, the City Parking Department is doing a commendable job at enforcement. Consequently, it would be unreasonable to suggest that any substantial improvements could be made which would increase the parking supply.

Again, most parkers are obeying the posted time limits. This is exhibited by the fact that of 501 different vehicles observed on October 11, 1990, only one out of ten vehicles parked for a period of time exceeding the posted time limit. Only nine individuals parked for four hours or more in a two-hour parking zone.

It is recommended that the City continue to strictly enforce the rules of its parking system. It may further discourage parking violations by increasing parking fines.

Alter Time Restrictions

An analysis of time restrictions was conducted in order to determine if any changes could be made in order to improve the perceived parking supply. In other words, it is possible that some parking spaces should be reclassified from short-term to long-term parking, and vice versa, in order to provide the needed type of parking in a given vicinity.

Essentially two types of parking demand are generated in Downtown Cheyenne -- employee and customer/visitor ("visitor"). Based upon the restaurant, service, retail, office, and hotel/motel parking demand estimates contained in Tables II-7 - II-11, employee and visitor parking demand are recapitulated in a summarized format for each block and presented in the second and fifth columns of Table IV-1.

The parking supply for each block was divided into two categories -- long-term and short-term. It is assumed that all assigned and leased parking is long-term parking as most of this parking is presently being utilized by employees. It is assumed that all customer and public parking is short-term parking as most of this parking is presently being utilized by visitors. Moreover, on-street parking with a time restriction of two hours or less is considered to be short-term parking, while the balance of on-street parking is deemed to be long-term parking. Long- and short-term parking supply on the block level is provided in the third and sixth columns of Table IV-1.

Based upon the aforementioned calculations, parking adequacy is then calculated for both long- and short-term parking. This calculation is performed by subtracting parking supply from parking demand. A positive balance indicates that a surplus of parking exists, while a negative balance indicates that a parking deficit is being experienced. This analysis illustrates that several blocks within the study area contain substantial (more than 50 parking spaces) surpluses or deficits of long- and/or short-term parking. In these situations, it is recommended that the City consider changing the classification and/or usage of the parking spaces located on these blocks.

Provided are several examples as to where changes might be made in order to improve the perception of parking availability:

> Block 325 - This block contains a surplus of 40 short-term spaces and a deficit of 47 long-term spaces. The surplus of 40 short-term spaces could be converted to long-term spaces in order to resolve most of the 47-space long-term deficit.

Block 359 - This block contains a surplus of 34 short-term spaces and a deficit of 12 long-term spaces. Some of these short-term spaces could be converted to long-term spaces in order to satisfy the long-term parking deficit.

Block 415 - This block contains a surplus of 23 short-term spaces and a deficit of 17 long-term spaces. Most of these short-term spaces could be converted to long-term spaces in order to eliminate the 17 space long-term parking deficit.

Block 420 - This block contains a surplus of 30 short-term spaces and a deficit of 12 long-term spaces. Some of these short-term spaces could be converted to long-term spaces in order to eliminate the 12 space long-term parking deficit.

Although this recommendation appears to be warranted, it is likely that its implementation will be difficult. The City has a problem in that, with the exception of on-street parking and the City Center Lot, it does not have control over many key parking facilities. Consequently, in order to utilize this recommendation effectively, it will likely be necessary for the City to win the cooperation of the private sector.

Site Analysis

Several alternative sites were reviewed for future development should Cheyenne warrant the construction of additional parking. Briefly, the review of these alternative sites is as follows:

Deck City Center Lot - This alternative was viewed as the most favorable for the City to act upon. Strengths of this site include City ownership, location and cost. The location of this site was considered to be as good, if not better than of any of the other alternative sites.

Purchase Bus Depot Lot and Deck for Public Parking - This location was considered to be almost as desirable for additional public parking as the City Center Lot. The advantage with this site is that the City presently has a long-term lease. Consequently, the acquisition of this site may be possible.

Purchase Union Pacific Lot (Fronts 16th Street) and Utilize for Public Parking - The location of this site is not as desirable as the first alternative site. This site is located further away from the center of the central business district. The fact that the city does not own this site as well as its prospective high cost (relative to free as in the City Center Lot), pose as potential disadvantages for this alternative.

Structure Deal with Wyoming National Bank (Block 356) to Deck its Lot - Although it is likely that this site could satisfactorily serve Downtown Cheyenne, ownership and cost (as opposed to free, as with the City Center Lot) are negative aspects of this alternative.

Purchase Land on Southside of Block 328 and Open for Public Parking - Again, it is likely that this location could adequately serve Downtown Cheyenne. The availability of this site is presently unknown. This site presents an opportunity to provide City parking at other locations than the City Center Lot.

04-Jan-91

TABLE IV-1
Long- and Short-Term Parking Adequacy
Cheyenne Downtown Parking Development Plan
City of Cheyenne, Wyoming

Block	Empl. Pkg. Demand	Eff. Long Term Sply.	Empl. Pkg. Adeq.	Vis. Pkg. Demand	Eff. Short Term Sply.	Vis. Pkg. Adeq.	Surplus/ Deficit
290	118	86	(32)	19	23	4	(28)
291	71	39	(32)	5	19	14	(18)
292	168	61	(107)	12	25	13	(94)
293	88	82	(6)	6	81	75	69
294	63	61	(2)	5	13	8	6
295	19	112	93	2	19	17	110
296	31	69	38	2	12	10	48
297	27	72	45	7	6	(1)	44
324	5	75	70	0	4	4	74
325	61	14	(47)	14	101	87	40
326	5	56	51	1	30	29	80
327	70	94	24	15	51	36	60
328	33	64	31	15	36	21	52
329	74	132	58	5	39	34	92
330	25	80	55	54	36	(18)	37
331	40	112	72	10	11	1	73
352	52	109	57	3	15	12	69
353	17	48	31	20	20	0	31
354	108	0	(108)	85	46	(39)	(147)
355	118	0	(118)	110	38	(72)	(190)
356	72	23	(49)	21	64	43	(6)
357	37	3	(34)	66	103	37	3
358	19	30	11	19	27	8	19
359	17	5	(12)	9	55	46	34
386	19	13	(6)	23	96	73	67
387	33	30	(3)	23	79	56	53
388	69	14	(55)	63	55	(8)	(63)
389	111	33	(78)	123	40	(83)	(161)
390	55	1	(54)	59	35	(24)	(78)
391	0	141	141	0	57	57	198
392	34	5	(29)	73	18	(55)	(84)
393	7	45	38	3	39	36	74
414	8	19	11	9	23	14	25
415	17	0	(17)	10	50	40	23
416	30	19	(11)	51	24	(27)	(38)
417	40	27	(13)	61	53	(8)	(21)
418	9	20	11	1	56	55	66
419	0	126	126	0	0	0	126
420	17	5	(12)	10	52	42	30
421	8	9	1	6	68	62	63
Total	1,795	1,934	139	1,020	1,619	599	738

Note: For this analysis, the effective parking supply was calculated based upon an effective supply factor of 90%. Consequently, the total effective supply differs slightly from that previously used within this report.

APPENDIX

31-Oct-90

TABLE A-1
On-Street Parking Supply, 1990 - By Block Face
Downtown Cheyenne Parking Development Plan
City of Cheyenne, Wyoming

		Metered				Unmetered						
Block	Face	30 Min.	1 Hr.	2 Hr.	10 Hr.	15 Min.	30 Min.	1 Hr.	2 Hr.	No Limit	Rest.	Subtotal
290	N			4								4
	E		5					1		6		12
	S		2					6				8
	W									9		9
291	N			8								8
	E										12	12
	S			7								7
	W			5							5	10
292	N		2	4								6
	E		5									5
	S		5								3	8
	W								10			10
293	N		3	6								9
	E		4	5							1	10
	S		9									9
	W		9									9
294	N				10							10
	E			2	4						2	8
	S			5							1	6
	W		5	2								7
295	N				2		5					7
	E									10		10
	S			5		1						6
	W			9								9
296	N									6		6
	E								7	4		11
	S									9		9
	W									9		9
297	N							4		6		10
	E									10	1	11
	S									9		9
	W							2		8	1	11

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		Metered				Unmetered						
Block	Face	30 Min.	1 Hr.	2 Hr.	10 Hr.	15 Min.	30 Min.	1 Hr.	2 Hr.	No Limit	Rest.	Subtotal
324	N									5		5
	E									14		14
	S									8		8
	W									6		6
325	N						4			1		5
	E									9		9
	S		10									10
	W		5		5							10
326	N				10							10
	E								8			8
	S								14			14
	W								10			10
327	N								10			10
	E								6			6
	S								12		1	13
	W								10			10
328	N								9		1	10
	E								10			10
	S								10			10
	W								9			9
329	N								6			6
	E								8			8
	S								9			9
	W								7			7
330	N		6									6
	E								8			8
	S			5								5
	W									10		10
331	N							6				6
	E									11		11
	S									8		8
	W									8		8
352	N									10		10
	E		5							4		9
	S							11				11
	W									11		11
353	N		8								2	10
	E		9									9
	S	4								3	2	9
	W									6		6

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		Metered				Unmetered						
Block	Face	30 Min.	1 Hr.	2 Hr.	10 Hr.	15 Min.	30 Min.	1 Hr.	2 Hr.	No Limit	Rest.	Subtotal
354	N								14			14
	E								9			9
	S								15			15
	W								10			10
355	N								10			10
	E								9			9
	S								12			12
	W								9			9
356	N								12			12
	E								9			9
	S								14		1	15
	W						4		5			9
357	N								6			6
	E								4		3	7
	S								11			11
	W								9			9
358	N								9			9
	E									7		7
	S								10			10
	W				8							8
359	N								11			11
	E							5		5		10
	S								9			9
	W								10			10
386	N								8			8
	E									9		9
	S											0
	W								2	5		7
387	N								5			5
	E						2			6		8
	S											0
	W									5		5
388	N								12		1	13
	E								9			9
	S										2	2
	W								10			10
389	N								13			13
	E								9		2	11
	S								10			10
	W								10			10

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		Metered				Unmetered						
Block	Face	30 Min.	1 Hr.	2 Hr.	10 Hr.	15 Min.	30 Min.	1 Hr.	2 Hr.	No Limit	Rest.	Subtotal
390	N								12			12
	E								8			8
	S								9			9
	W								8		1	9
391	N								15			15
	E								6			6
	S								10			10
	W								8			8
392	N		7									7
	E			7								7
	S								5			5
	W									5		5
393	N							3		5		8
	E			7							1	8
	S							8				8
	W									3		3
414	N											0
	E									3		3
	S											0
	W									8		8
415	N								6			6
	E								6			6
	S							7				7
	W											0
416	N					2			8			10
	E											0
	S								7			7
	W								6			6
417	N								10			10
	E								8			8
	S								7			7
	W											0
418	N											0
	E											0
	S											0
	W								3		2	5
419	N											0
	E											0
	S											0
	W											0

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Block	Face	Metered 30 Min.	Metered 1 Hr.	Metered 2 Hr.	Metered 10 Hr.	Unmetered 15 Min.	Unmetered 30 Min.	Unmetered 1 Hr.	Unmetered 2 Hr.	Unmetered No Limit	Unmetered Rest.	Subtotal
420	N											0
	E										5	5
	S											0
	W											0
421	N											0
	E											0
	S											0
	W									9		9
	Total	4	99	81	39	3	15	53	600	270	50	1,214
Pct. of Total		0.3%	8.2%	6.7%	3.2%	0.2%	1.2%	4.4%	49.4%	22.2%	4.1%	100.0%
Pct. of Total Supply		0.1%	2.6%	2.1%	1.0%	0.1%	0.4%	1.4%	15.5%	7.0%	1.3%	31.4%

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TABLE A-2
On-Street Parking Accumulation
Downtown Cheyenne Parking Development Plan
City of Cheyenne, Wyoming

Block	Face	Capacity	9:00	11:00	1:00	3:00	Peak Occ.	Avg. Occ.
290	N	4	0	0	1	2	50.0%	18.8%
	E	12	2	6	3	3	50.0%	29.2%
	S	8	2	0	1	2	25.0%	15.6%
	W	9	7	8	6	8	88.9%	80.6%
291	N	8	1	2	2	3	37.5%	25.0%
	E	12	2	3	1	2	25.0%	16.7%
	S	7	0	0	0	1	14.3%	3.6%
	W	10	4	6	3	5	60.0%	45.0%
292	N	6	2	6	5	5	100.0%	75.0%
	E	5	3	4	4	4	80.0%	75.0%
	S	8	4	3	4	8	100.0%	59.4%
	W	10	10	7	8	6	100.0%	77.5%
293	N	9	3	1	2	2	33.3%	22.2%
	E	10	2	1	2	4	40.0%	22.5%
	S	9	0	2	4	2	44.4%	22.2%
	W	9	4	7	6	4	77.8%	58.3%
294	N	10	10	9	10	9	100.0%	95.0%
	E	8	5	7	7	5	87.5%	75.0%
	S	6	4	1	1	1	66.7%	29.2%
	W	7	7	2	4	2	100.0%	53.6%
295	N	7	2	2	1	1	28.6%	21.4%
	E	10	7	8	8	8	80.0%	77.5%
	S	6	0	0	0	0	0.0%	0.0%
	W	9	3	4	6	7	77.8%	55.6%
296	N	6	5	5	5	3	83.3%	75.0%
	E	11	3	3	2	5	45.5%	29.5%
	S	9	4	4	2	3	44.4%	36.1%
	W	9	5	7	4	4	77.8%	55.6%
297	N	10	7	5	5	6	70.0%	57.5%
	E	11	4	4	5	5	45.5%	40.9%
	S	9	0	0	0	0	0.0%	0.0%
	W	11	6	4	4	5	54.5%	43.2%

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Block	Face	Capacity	9:00	11:00	1:00	3:00	Peak Occ.	Avg. Occ.
324	N	5	0	0	0	0	0.0%	0.0%
	E	14	4	5	5	5	35.7%	33.9%
	S	8	6	5	4	5	75.0%	62.5%
	W	6	4	4	3	3	66.7%	58.3%
325	N	5	1	3	1	1	60.0%	30.0%
	E	9	5	5	5	4	55.6%	52.8%
	S	10	4	4	5	3	50.0%	40.0%
	W	10	4	6	3	4	60.0%	42.5%
326	N	10	3	1	7	3	70.0%	35.0%
	E	8	0	4	2	3	50.0%	28.1%
	S	14	6	1	2	2	42.9%	19.6%
	W	10	4	3	2	0	40.0%	22.5%
327	N	10	7	1	2	1	70.0%	27.5%
	E	6	0	1	2	3	50.0%	25.0%
	S	13	5	9	14	12	107.7%	76.9%
	W	10	6	5	7	7	70.0%	62.5%
328	N	10	2	5	5	5	50.0%	42.5%
	E	10	7	6	7	5	70.0%	62.5%
	S	10	5	12	10	9	120.0%	90.0%
	W	9	6	7	7	6	77.8%	72.2%
329	N	6	5	5	2	3	83.3%	62.5%
	E	8	4	6	7	7	87.5%	75.0%
	S	9	5	6	6	9	100.0%	72.2%
	W	7	5	4	1	2	71.4%	42.9%
330	N	6	2	5	3	4	83.3%	58.3%
	E	8	0	0	1	0	12.5%	3.1%
	S	5	3	3	3	3	60.0%	60.0%
	W	10	9	9	12	9	120.0%	97.5%
331	N	6	0	0	0	1	16.7%	4.2%
	E	11	11	11	11	10	100.0%	97.7%
	S	8	6	7	7	7	87.5%	84.4%
	W	8	5	6	7	7	87.5%	78.1%
352	N	10	5	6	7	6	70.0%	60.0%
	E	9	4	6	4	4	66.7%	50.0%
	S	11	4	4	4	7	63.6%	43.2%
	W	11	6	7	4	5	63.6%	50.0%
353	N	10	3	2	1	1	30.0%	17.5%
	E	9	2	1	1	5	55.6%	25.0%
	S	9	1	2	4	6	66.7%	36.1%
	W	6	7	7	7	8	133.3%	120.8%

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Block	Face	Capacity	9:00	11:00	1:00	3:00	Peak Occ.	Avg. Occ.
354	N	14	8	10	6	11	78.6%	62.5%
	E	9	5	6	5	9	100.0%	69.4%
	S	15	6	7	9	12	80.0%	56.7%
	W	10	4	4	6	6	60.0%	50.0%
355	N	10	4	13	7	13	130.0%	92.5%
	E	9	7	6	7	9	100.0%	80.6%
	S	12	12	9	6	13	108.3%	83.3%
	W	9	2	5	8	7	88.9%	61.1%
356	N	12	4	7	6	5	58.3%	45.8%
	E	9	3	8	2	7	88.9%	55.6%
	S	15	11	13	13	11	86.7%	80.0%
	W	9	4	6	4	5	66.7%	52.8%
357	N	6	3	8	3	4	133.3%	75.0%
	E	7	1	1	2	2	28.6%	21.4%
	S	11	6	5	7	6	63.6%	54.5%
	W	9	3	6	2	6	66.7%	47.2%
358	N	9	6	7	7	6	77.8%	72.2%
	E	7	4	4	6	4	85.7%	64.3%
	S	10	6	4	7	3	70.0%	50.0%
	W	8	6	7	6	6	87.5%	78.1%
359	N	11	6	5	3	4	54.5%	40.9%
	E	10	7	5	7	6	70.0%	62.5%
	S	9	2	3	5	2	55.6%	33.3%
	W	10	3	3	8	1	80.0%	37.5%
386	N	8	4	5	5	4	62.5%	56.3%
	E	9	5	5	4	4	55.6%	50.0%
	S	0	0	0	0	0	–	–
	W	7	7	7	7	6	100.0%	96.4%
387	N	5	2	3	1	1	60.0%	35.0%
	E	8	4	4	5	5	62.5%	56.3%
	S	0	0	0	0	0	–	–
	W	5	6	5	6	6	120.0%	115.0%
388	N	13	6	5	8	6	61.5%	48.1%
	E	9	8	8	3	8	88.9%	75.0%
	S	2	1	0	2	1	100.0%	50.0%
	W	10	3	6	5	8	80.0%	55.0%
389	N	13	11	8	8	9	100.0%	92.3%
	E	11	9	10	7	10	90.9%	81.8%
	S	10	4	11	7	10	110.0%	80.0%
	W	10	4	8	10	9	100.0%	77.5%

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Block	Face	Capacity	9:00	11:00	1:00	3:00	Peak Occ.	Avg. Occ.
390	N	12	11	7	7	12	108.3%	83.3%
	E	8	3	7	8	7	100.0%	78.1%
	S	9	3	7	8	5	88.9%	63.9%
	W	9	9	9	9	7	100.0%	94.4%
391	N	15	2	5	6	11	80.0%	56.7%
	E	6	4	6	3	4	100.0%	70.8%
	S	10	0	3	3	4	40.0%	25.0%
	W	8	0	0	0	1	12.5%	3.1%
392	N	7	0	2	0	0	28.6%	7.1%
	E	7	1	4	1	1	57.1%	25.0%
	S	5	2	3	2	3	60.0%	50.0%
	W	5	7	8	5	7	160.0%	135.0%
393	N	8	2	3	3	6	75.0%	43.8%
	E	8	1	1	0	1	12.5%	9.4%
	S	8	0	0	1	1	12.5%	6.3%
	W	3	0	0	2	2	66.7%	33.3%
414	N	0	0	0	0	0	–	–
	E	3	2	3	3	3	100.0%	91.7%
	S	0	0	0	0	0	–	–
	W	8	7	6	2	6	87.5%	65.6%
415	N	6	0	0	0	0	0.0%	0.0%
	E	6	7	7	7	7	116.7%	116.7%
	S	7	5	2	3	5	71.4%	53.6%
	W	0	0	0	0	0	–	–
416	N	10	3	2	6	5	60.0%	40.0%
	E	0	0	0	0	0	–	–
	S	7	2	2	4	2	57.1%	35.7%
	W	6	2	3	2	4	66.7%	45.8%
417	N	10	3	2	5	5	50.0%	37.5%
	E	8	2	1	8	3	100.0%	43.8%
	S	7	2	1	3	2	42.9%	28.6%
	W	0	0	0	0	0	–	–
418	N	0	0	0	0	0	–	–
	E	0	0	0	0	0	–	–
	S	0	0	0	0	0	–	–
	W	5	2	3	0	4	80.0%	45.0%
419	N	0	0	0	0	0	–	–
	E	0	0	0	0	0	–	–
	S	0	0	0	0	0	–	–
	W	0	0	0	0	0	–	–

31-Oct-90

Block	Face	Capacity	9:00	11:00	1:00	3:00	Peak Occ.	Avg. Occ.
420	N	0	0	0	0	0	–	–
	E	5	2	2	3	3	60.0%	50.0%
	S	0	0	0	0	0	–	–
	W	0	0	0	0	0	–	–
421	N	0	0	0	0	0	–	–
	E	0	0	0	0	0	–	–
	S	0	0	0	0	0	–	–
	W	9	5	6	5	5	66.7%	58.3%