

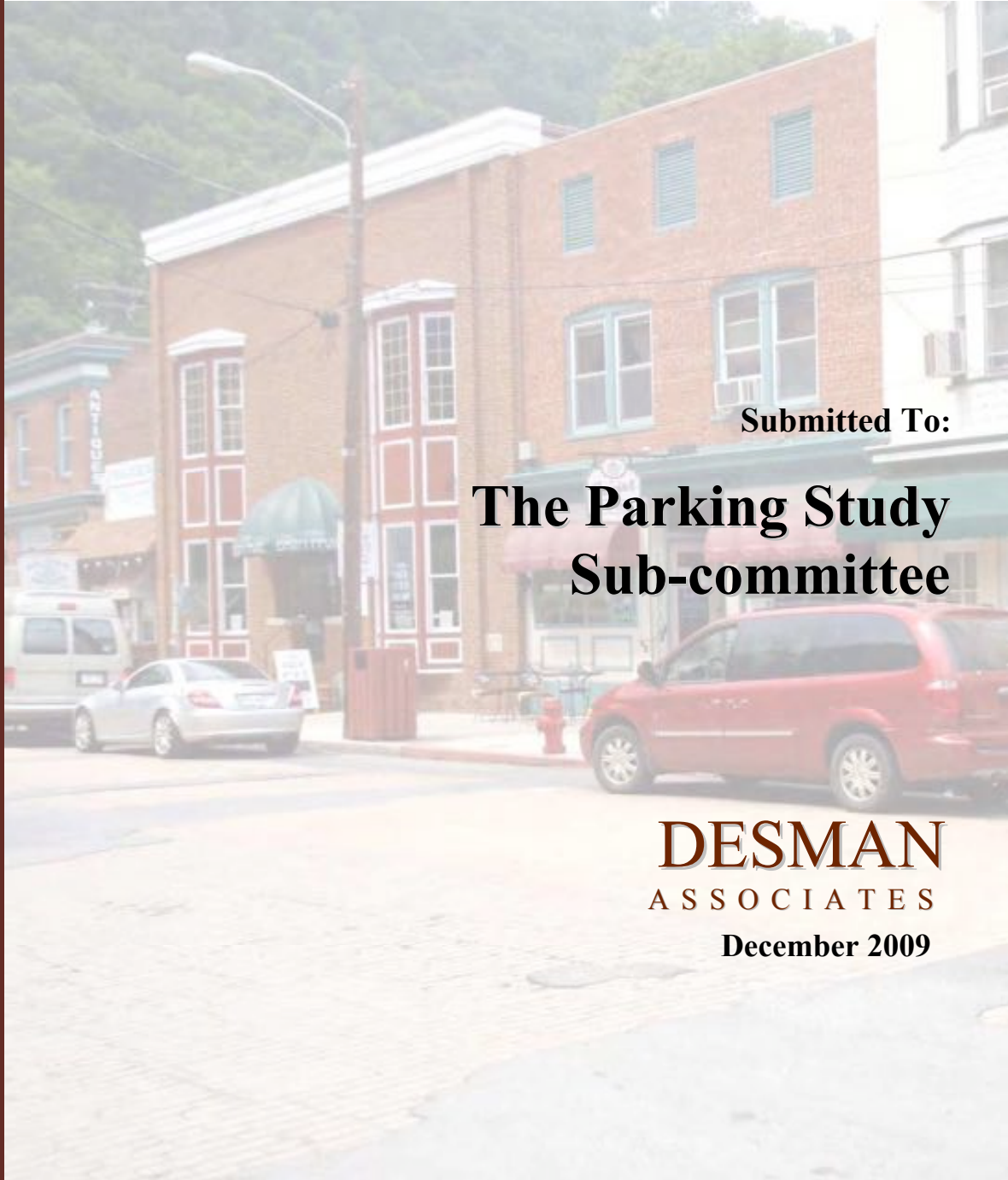
Final Report Town of Bath (Berkeley Springs) Parking Study

Submitted To:

**The Parking Study
Sub-committee**

DESMAN
ASSOCIATES

December 2009



PREFACE

This Study Report presents the results of extensive data collection, analysis and evaluation regarding the existing and future parking conditions and needs in the Town of Bath, Berkeley Springs, Morgan County, West Virginia. Managed by the Town of Bath Streetscape Committee, the study has been cooperatively funded by the Town of Bath, the Morgan County Economic Development Authority, the Berkeley Springs-Morgan County Chamber of Commerce and the West Virginia Governor's Community Partnership Program. The study has been accomplished and results presented in this report through the transportation consultant services of Desman Associates, supported by the efforts of community representatives and local volunteers.

Over the last several years, the Town of Bath and the surrounding Berkeley Springs area has achieved recognition as a visitor destination, while continuing to serve as the primary commercial and governmental center of Morgan County. Considerable commercial and residential development has taken place and is anticipated to continue in the future. To support this continued development, the Town recognized the need for a comprehensive parking plan that would support resolution of existing parking issues and accommodate expected growth.

As outlined in the Introduction, the data collection and analysis was conducted in several phases, with the intent that the presented information and conclusions will allow the community to move forward with implementation of recommendations contained in the report for a comprehensive parking plan in the community.

The cooperative efforts of all who participated in the conduct and outcomes of the study are much appreciated.

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SECTION 1- INTRODUCTION

The Town of Bath/Berkeley Springs, West Virginia recently began a streetscaping program for its historic downtown. With the introduction of formal curbs, gutters, crosswalks, and other pedestrian amenities the Town's Streetscaping Parking Sub-committee voiced concern that the supply of on-street parking spaces could be negatively affected. Furthermore, the downtown had recently received negative press regarding the management and enforcement of parking meter restrictions. Finally, with the reconstruction of the Morgan County Courthouse there was a need to quantify the impact that the Courthouse parking demand would have on commercial and residential parking availability.

DESMAN Associates was retained by the Town's Streetscaping Sub-committee to conduct a comprehensive parking study for the downtown study area. The goal of this study was to provide the Town with a comprehensive assessment of needs and creation of recommendations to support decisions regarding parking management and development. The study methodology is divided into five phases.

- Phase I – Assessment of Existing Conditions
- Phase II - Quantify the Need/Potential for Future Parking Infrastructure
- Phase III- Identify Specific Sites and Techniques for Providing Future Parking Amenities
- Phase IV – Identify/Prepare Innovative and Progressive Management Strategies and Urban Design Guidelines
- Phase V - Prepare Cost Analysis, Implementation Program, Draft Report, and Final Report

SECTION 2- STUDY AREA

Exhibit A illustrates the overall study area boundary as well as block codings. The overall study area is bounded by Williams Street to the North, Laurel Avenue and Ewing Street to the East, Martinsburg Road to the South and Wilkes Street to the West. To better identify parking needs associated with various blocks the study area was divided into 44 blocks. Parking lots within each block or section were assigned a letter.

Exhibit A: Study Area Boundaries and Block Codes



SECTION 3- ASSESSMENT OF EXISTING CONDITIONS

1.0 Parking Inventory, Existing Parking Regulations, Land Use Activity, and Stakeholder Interviews

1.1 Study Area Parking Inventory

A detailed inventory of surface parking lots and on-street spaces was conducted within the study area. The current inventory of parking in the town of Bath consists of private/restricted off-street lots and metered and non-metered on-street spaces. All off-street parking is privately owned and/or is restricted to specific user groups. There are no municipally owned/operated off-street spaces. Tables 1a and 1b present the current on- and off-street parking inventory by block by restriction respectively. The inventory consists of 1,153 private/restricted off-street and 620 on-street spaces. The on-street parking inventory includes metered spaces, non-metered paved, unpaved, handicapped spaces, and loading zones. Of the 620 on-street spaces 102 (16%) are metered, 145 (23%) are paved-unmetered and 358 (58%) are unpaved-unmetered. Exhibit B1 illustrates the study area parking inventory by type by block code.

The inventory of parking spaces in Bath is rather unique from a number of perspectives. First, there are no municipally owned or operated off-street facilities. Even in smaller communities one can find a centrally located property that is owned or leased by the municipality for the purpose of providing public parking. Public parking, as opposed to private/restricted parking, is available to anyone regardless of trip purpose. Second, there are privately owned properties that appear to be used for public parking purposes. Typically, private/restricted parking is reserved for the use of specific tenants (commercial and residential) and their customers/visitors. Examples include the two properties adjacent to the Catholic Church along Fairfax Street. Other property owners (see upcoming comments from stakeholder interviews) have voiced frustration at their inability to preserve parking for their employees and patrons. Third, much of the on-street supply is unrestricted and unpaved. In many locations it appears that the adjacent business or property owners began parking in undesignated areas that lie between the paved roadway and their property. Based on a review of the town tax/parcel maps, these areas are part of the public right-of-way and should not be restricted for private use. There are more significant examples of this on Liberty Street and Independence Street where the public right-of-way has become private lots and property. While it may be argued that the informal nature of both on-street and off-street parking in Bath has been successful in the past, continued economic and cultural success and vitality will require a more formal delineation between on-street and off-street spaces and public and private spaces.

In addition to the inventory of parking in the study area, DESMAN also evaluated customer service related issues such as cleanliness, lighting and condition of informational signage. This information is based on field observations and several one-to-one interviews with residents and stakeholders. The condition of some on-street spaces and private parking lots that are currently being used for public purpose was a great concern since neither was paved. Of an even greater concern was the lack of way-finding and parking informational signs in the downtown study area. It is too difficult to read restrictions and rates on meters at most locations. Except for the occasional “No Parking” there is no proper parking signage that indicates parking enforcement hours and time limits in the downtown study area.

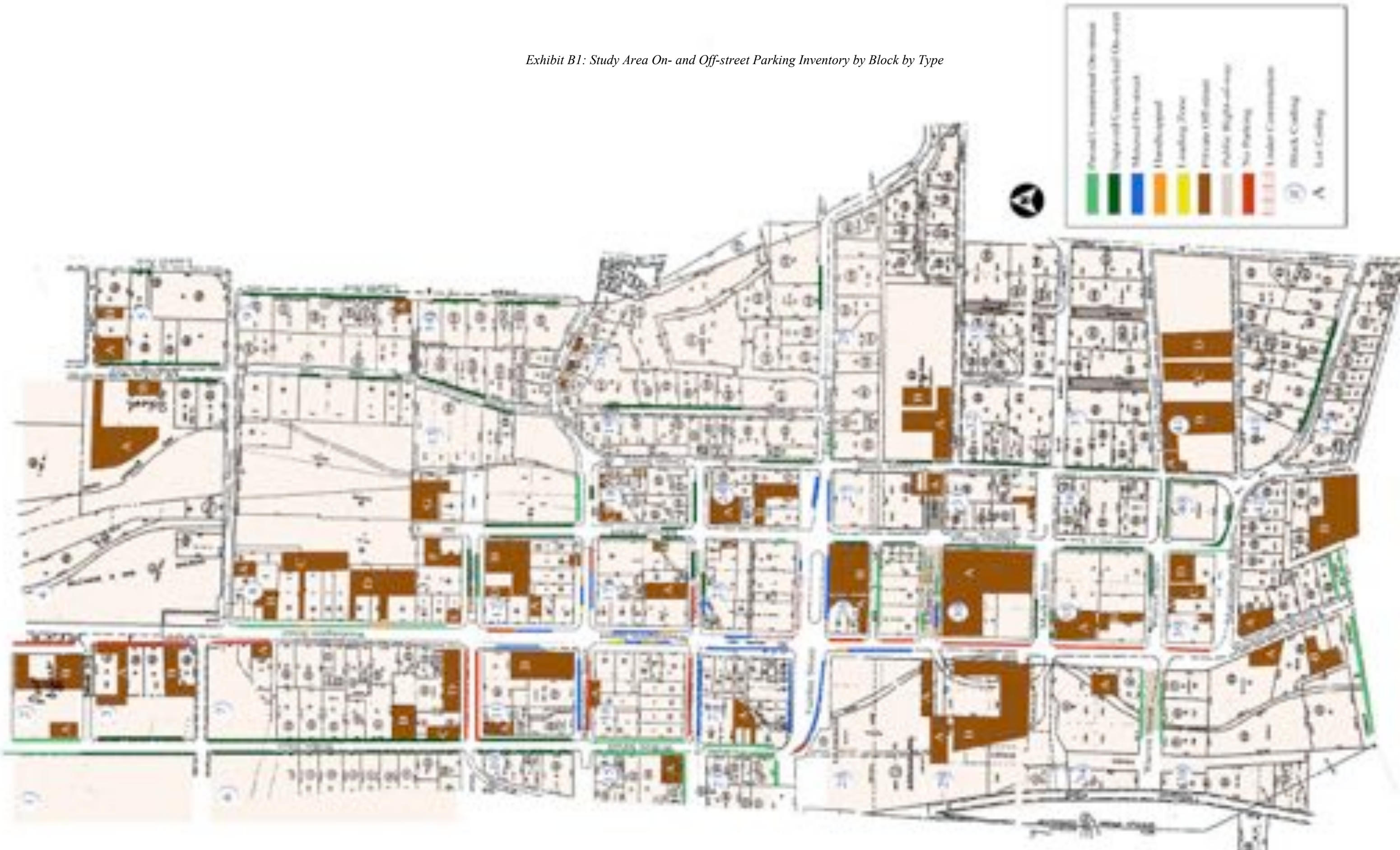
*Table 1a: Study Area Off-street Parking
Inventory by Block by Type*

Block Number	Private/ Restricted	Public	Total
1	0	0	0
2	49	0	49
3	35	0	35
4	47	0	47
5	18	0	18
6	0	0	0
7	76	0	76
8	146	0	146
9	10	0	10
10	0	0	0
11	22	0	22
12	52	0	52
13	0	0	0
14	0	0	0
15	12	0	12
16	11	0	11
17	16	0	16
18	35	0	35
19	0	0	0
20	13	0	13
21	0	0	0
22	14	0	14
23	3	0	3
24	28	0	28
25	11	0	11
26	46	0	46
27	14	0	14
28	77	0	77
29	90	0	90
30	61	0	61
31	2	0	2
32	0	0	0
33	0	0	0
34	8	0	8
35	48	0	48
36	0	0	0
37	0	0	0
38	24	0	24
39	36	0	36
40	0	0	0
41	80	0	80
42	69	0	69
43	0	0	0
44	0	0	0
Total	1,153	0	1,153

*Table 1b: Study Area On-street Parking
Inventory by Block by Type*

Block Number	Unpaved/ Unrestricted	Paved/ Unrestricted	Metered	Handicapped	Loading Zone	Total
1	12	10	0	0	0	22
2	0	9	0	0	0	9
3	12	0	0	0	0	12
4	4	0	0	0	0	4
5	14	0	0	0	0	14
6	28	0	0	0	0	28
7	28	0	0	0	0	28
8	9	26	0	4	0	39
9	20	0	0	0	0	20
10	8	0	0	0	0	8
11	10	0	9	1	0	20
12	13	0	6	1	1	21
13	12	8	0	0	0	20
14	25	0	0	0	0	25
15	0	16	0	0	0	16
16	0	10	4	1	1	16
17	15	0	10	1	0	26
18	11	0	0	0	0	11
19	3	0	0	0	0	3
20	9	0	0	0	0	9
21	0	14	0	0	0	14
22	0	6	19	1	0	26
23	5	0	6	0	0	11
24	2	0	6	0	0	8
25	0	0	20	1	0	21
26	15	5	6	2	0	28
27	0	0	9	0	0	9
28	3	3	0	0	0	6
29	0	0	0	0	0	0
30	25	5	7	1	0	38
31	0	0	0	0	0	0
32	9	0	0	0	0	9
33	0	0	0	0	0	0
34	0	4	0	0	0	4
35	19	0	0	0	0	19
36	8	0	0	0	0	8
37	4	0	0	0	0	4
38	0	9	0	0	0	9
39	0	6	0	0	0	6
40	29	0	0	0	0	29
41	0	0	0	0	0	0
42	0	14	0	0	0	14
43	6	0	0	0	0	6
44	0	0	0	0	0	0
Total	358	145	102	13	2	620

Exhibit B1: Study Area On- and Off-street Parking Inventory by Block by Type



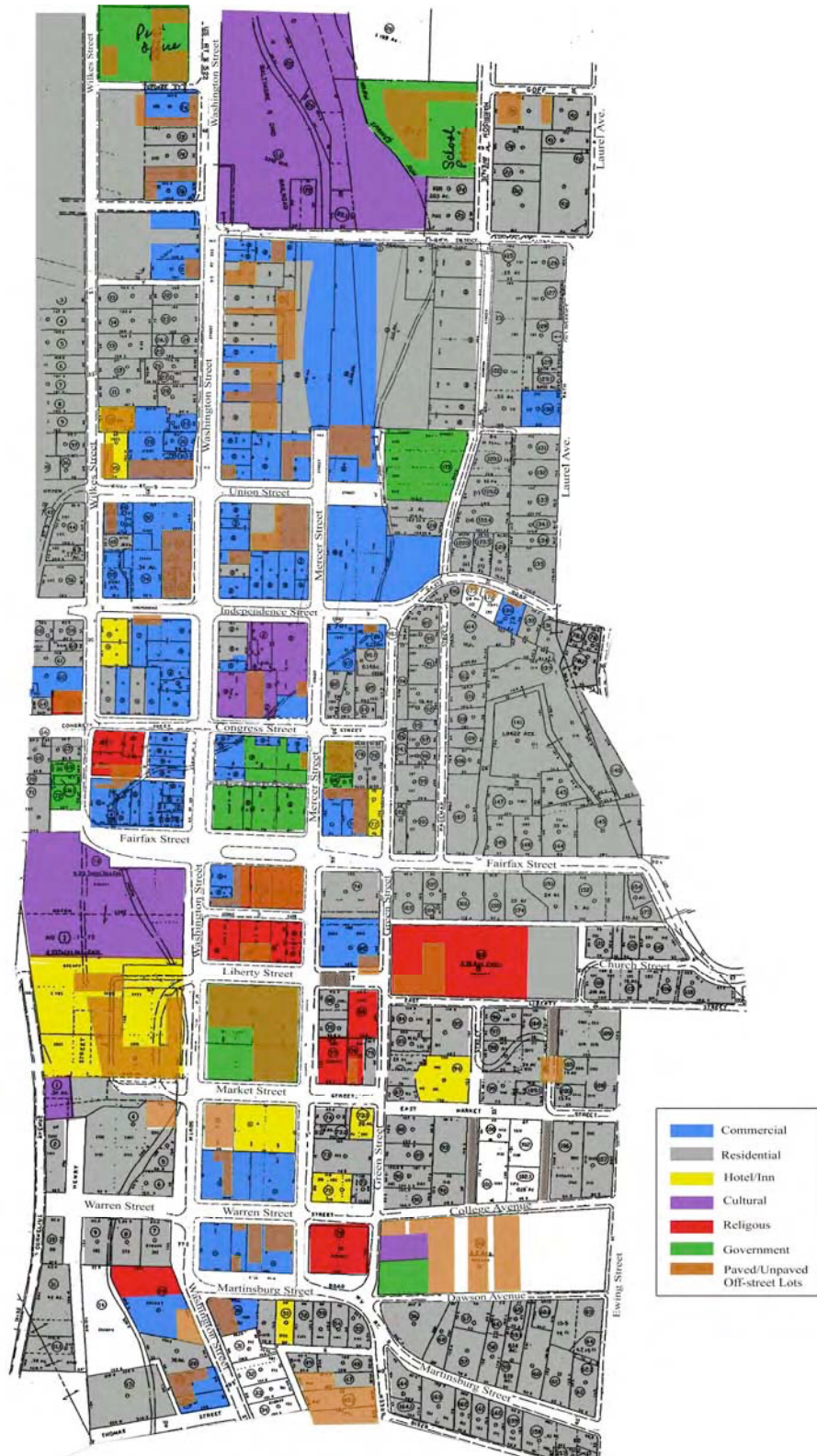
1.2 Existing Parking Regulations

As a part of studying current parking conditions in downtown, DESMAN reviewed the town's current parking ordinance. The town ordinance does not appear to have required language regarding parking design standards such as parking space and isle design dimensions, minimum dimensions for tandem or parallel parking, parking lot landscaping, lighting and maintenance. Later in the report, DESMAN will provide recommendations with regards to changes/add-ons to the Town's parking ordinance.

1.3 Land Use Activity

Parking by its very nature is a supportive function of other land use activities. In an effort to understand why the inventory of parking spaces have evolved as they have, some understanding of the character of land use activity is required. DESMAN conducted a visual tour of the properties and buildings within the study area to identify their general use. Exhibit B2 graphically presents a characterization of land use activity within the study area. Land use activities were categorized as commercial (office/retail/restaurant), residential, cultural/historical, religious, hotel/inn, and government. The image also exhibits the relative location of paved/unpaved off-street lots. Note that this is a perspective based survey that generalizes the function of existing buildings and some deviation in opinion will occur. Nonetheless, it is effective in differentiating between higher intensity commercial, religious, and government parking activity and lower intensity residential/neighborhood activity.

Exhibit B2 – Characterization of Current Land Use Activity



1.4 Stakeholder Interviews

A study of parking is also a study of people, their trip purpose (work, shop, dine, etc.), and their expectation regarding convenience. As such, an understanding of parking cannot simply be based on knowledge of supply, land use, and parking utilization. To expand upon this knowledge DESMAN conducted interview sessions with key downtown stakeholders. Interview groups included Morgan County administration, major property owners, Morgan Arts Council, representatives from the Trinity, Methodist, and Catholic churches, managers of the CNB, BB&T, and City National Banks, and various restaurant, spa, and retail shop owners. The following paraphrases some of the comments that were received.

- *Parking spaces in the town are under utilized*
- *County needs around 60 parking spaces for its employees*
- *Meters have different time restrictions which confuses people*
- *County should provide more parking*
- *Many people use parking spaces in the Trinity Church lot*
- *The Town should enforce restriction on private properties*
- *Alleyways should be enforced*
- *The County should build a parking facility*
- *Employees park on-street and use spaces that should be saved for visitors*
- *There is a need for more long-term customer spaces*
- *Discontinue Saturday parking enforcement*
- *Meters are old and its not easy to read the time restriction and fares*
- *Duration of meters should be extended*
- *Employees are willing to walk for about 2 blocks*
- *Parking will be a limiting factor when town starts to grow*
- *County employees use a lot of parking spaces in the core of downtown without paying a fee*
- *The "trailer lot" and the lot across from the BB&T are the key to solve parking problems in the town*
- *4-way stop signs should be installed at the Ice House intersection*
- *The trailer lot can accommodate the customer/visitor parking need*
- *Enforcement is overly aggressive*
- *Parking should be a revenue generator*
- *Meters should be installed in the trailer lot*
- *Some informal sharing is already taking place as some Courthouse employees and employees form other businesses already park on the Church Lot*
- *\$0.50/ hr is not a high rate for parking*
- *Fairfax can be converted to a one way street with angles parking*
- *One solution to parking is the Antique Mall lot*
- *The Courthouse lot was full everyday before the construction started*
- *Locals are price sensitive*
- *\$50 to \$70/month is a fair permit fee for employees*
- *Acceptable walking distance for tourists is 2 to 3 blocks*
- *A table top deck could be built off Mercer St onto the CNB Lot*
- *A quasi public/private effort is required to mange private lots*
- *Warning tickets should be issued for the first parking violation*
- *Converting Mercer to a one-way pattern is not a good idea*

1.5 Core Study Area Parking Inventory

Given the large size of the overall study area, the concentration of cultural, commercial, and government land uses, and on- and off-street spaces, DESMAN, in consultation with the Streetscaping Parking Sub-committee, focused the study of parking utilization and future surplus/deficit on a core area. This core study area is bounded by Green, Wilkes, Union and Martinsburg streets. Tables 2a and 2b and Exhibit B3 present the core study area's on- and off-street parking inventory by block. The core study area parking inventory includes a total of 892 parking spaces. Of the total 892 spaces 503 spaces, or about 57%, in the core study area are dedicated to private/restricted off-street parking. On-street spaces account for 43% of the total inventory and include 102 metered, 85 paved and non-metered, 189 unpaved and non-metered, 2 loading, and 11 handicapped spaces. In effect, the Town of Bath only controls 13% of the downtown parking supply (115 metered, handicapped, and loading zone spaces divided by 886 total spaces).

Table 2a: Core Study Area Off-street Parking Inventory by Block by Type

Block Number	Private/ Restricted	Public	Total
8	0	0	0
10	0	0	0
11	22	0	22
12	46	0	46
13	0	0	0
15	12	0	12
16	11	0	11
17	16	0	16
18	35	0	35
19	0	0	0
21	0	0	0
22	14	0	14
23	3	0	3
24	28	0	28
25	11	0	11
26	46	0	46
27	14	0	14
28	0	0	0
29	90	0	90
30	61	0	61
31	2	0	2
32	0	0	0
34	8	0	8
35	48	0	48
36	0	0	0
37	0	0	0
38	0	0	0
39	36	0	36
40	0	0	0
Total	503	0	503

Table 2b: Core Study Area On-street Parking Inventory by Block by Type

Block Number	Unpaved/ Unrestricted	Paved/ Unrestricted	Metered	Handicapped	Loading Zone	Total
8	0	8	0	2	0	10
10	8	0	0	0	0	8
11	10	0	9	1	0	20
12	13	0	6	1	1	21
13	10	8	0	0	0	18
15	0	16	0	0	0	16
16	0	10	4	1	1	16
17	15	0	10	1	0	26
18	11	0	0	0	0	11
19	3	0	0	0	0	3
21	0	14	0	0	0	14
22	0	6	19	1	0	26
23	5	0	6	0	0	11
24	2	0	6	0	0	8
25	0	0	20	1	0	21
26	15	5	6	2	0	28
27	0	0	9	0	0	9
28	3	0	0	0	0	3
29	0	0	0	0	0	0
30	25	5	7	1	0	38
31	0	0	0	0	0	0
32	9	0	0	0	0	9
34	0	4	0	0	0	4
35	19	0	0	0	0	19
36	8	0	0	0	0	8
37	4	0	0	0	0	4
38	0	3	0	0	0	3
39	0	6	0	0	0	6
40	29	0	0	0	0	29
Total	189	85	102	11	2	389

Exhibit B3: Core Study Area Parking Inventory by Block by Type



2.0 Core Study Area Current Peak Parking Utilization

Hourly utilization data for off- and on-street parking spaces was collected on Friday July 17th from 11 AM to 7 PM and Saturday July 18th from 11 PM to 7 PM to capture typical weekday (Friday) and Saturday parking activity. Tables 3a, 3b and 3c and Graph 1a illustrate the hourly on-street, off-street and system wide parking utilization pattern on Friday respectively. Friday peak utilization occurred at 1:00 PM for both on and off-street spaces when 273 (54%) of the 503 off-street spaces and 175 (45%) of the 389 on-street spaces were occupied. System-wide 50% of the spaces in the core were occupied

Table 3a: Friday Core Study Area Off-street Occupancy by Block

Block Number	Inventory	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM
8	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0
11	22	8	8	7	8	8	8	6	6	3
12	46	22	19	17	17	17	17	14	10	7
13	0	0	0	0	0	0	0	0	0	0
15	12	0	1	1	1	1	0	0	0	0
16	11	7	7	6	3	3	2	2	3	3
17	16	3	7	16	17	13	9	9	2	3
18	35	13	13	13	19	17	10	17	15	17
19	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0
22	14	8	10	12	10	9	8	5	4	3
23	3	1	2	3	4	2	0	0	0	0
24	28	8	16	21	12	11	10	8	8	7
25	11	11	8	6	1	2	3	6	4	4
26	46	32	36	39	38	35	33	10	6	8
27	14	7	7	7	5	6	6	5	5	3
28	0	0	0	0	0	0	0	0	0	0
29	90	38	46	52	47	49	52	49	50	52
30	61	6	18	24	26	25	23	10	10	9
31	2	2	2	2	1	1	1	1	1	1
32	0	0	0	0	0	0	0	0	0	0
34	8	0	0	0	0	0	0	0	0	0
35	48	5	14	24	28	20	13	5	0	0
36	0	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0
39	36	24	23	23	20	19	20	13	15	11
40	0	0	0	0	0	0	0	0	0	0
Total	503	195 39%	237 47%	273 54%	257 51%	238 47%	215 43%	160 32%	139 28%	131 26%

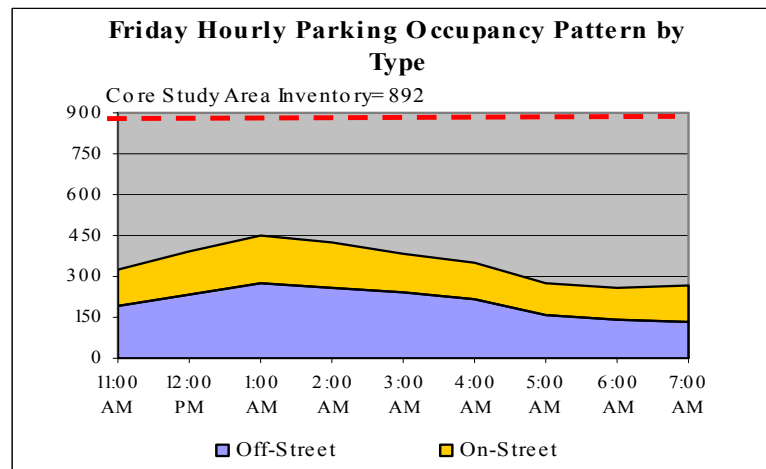
Table 3b: Friday Core Study Area On-street Parking Occupancy by Block

Block Number	Inventory	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM
8	10	0	1	2	1	1	1	0	0	0
10	8	2	3	4	1	1	1	1	1	1
11	20	5	5	6	8	7	6	5	3	3
12	21	4	5	5	5	6	6	6	4	11
13	18	3	4	4	4	4	4	6	5	5
15	16	11	14	16	13	10	8	6	5	5
16	16	9	9	9	11	8	6	5	11	9
17	26	3	9	13	16	16	16	14	9	14
18	11	2	4	6	5	5	8	2	3	2
19	3	2	2	2	2	1	1	1	1	1
21	14	12	12	12	11	13	14	12	10	10
22	26	24	21	21	23	21	20	20	24	23
23	11	7	7	9	6	5	5	6	8	8
24	8	3	4	2	1	1	1	0	0	1
25	21	9	11	12	10	8	5	6	12	10
26	28	6	12	18	14	4	5	6	2	2
27	9	9	7	5	4	6	7	0	0	0
28	3	0	0	2	2	2	2	2	0	0
29	0	0	0	0	0	0	0	0	0	0
30	38	0	5	7	13	7	3	1	2	2
31	0	0	0	0	1	0	0	0	0	0
32	9	1	1	2	2	2	2	2	3	2
34	4	1	2	2	1	1	1	1	0	0
35	19	6	7	8	5	4	4	3	2	3
36	8	0	0	0	0	0	0	0	0	0
37	4	2	2	2	2	3	4	2	2	3
38	3	0	0	0	2	1	1	1	1	1
39	6	1	1	0	0	0	0	0	0	0
40	29	9	7	6	4	5	6	7	12	17
Total	389	131 34%	155 40%	175 45%	167 43%	142 37%	137 35%	115 30%	120 31%	133 34%

Table 3c: Friday Core Study Area On- and Off-street Parking Occupancy by Block

Block Number	Inventory	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM
8	10	0	1	2	1	1	1	0	0	0
10	8	2	3	4	1	1	1	1	1	1
11	42	13	13	13	16	15	14	11	9	6
12	67	26	24	22	22	23	23	20	14	18
13	18	3	4	4	4	4	4	6	5	5
15	28	11	15	17	14	11	8	6	5	5
16	27	16	16	15	14	11	8	7	14	12
17	42	6	16	29	33	29	25	23	11	17
18	46	15	17	19	24	22	18	19	18	19
19	3	2	2	2	2	1	1	1	1	1
21	14	12	12	12	11	13	14	12	10	10
22	40	32	31	33	33	30	28	25	28	26
23	14	8	9	12	10	7	5	6	8	8
24	36	11	20	23	13	12	11	8	8	8
25	32	20	19	18	11	10	8	12	16	14
26	74	38	48	57	52	39	38	16	8	10
27	23	16	14	12	9	12	13	5	5	3
28	3	0	0	2	2	2	2	2	0	0
29	90	38	46	52	47	49	52	49	50	52
30	99	6	23	31	39	32	26	11	12	11
31	2	2	2	2	2	1	1	1	1	1
32	9	1	1	2	2	2	2	2	3	2
34	12	1	2	2	1	1	1	1	0	0
35	67	11	21	32	33	24	17	8	2	3
36	8	0	0	0	0	0	0	0	0	0
37	4	2	2	2	2	3	4	2	2	3
38	3	0	0	0	2	1	1	1	1	1
39	42	25	24	23	20	19	20	13	15	11
40	29	9	7	6	4	5	6	7	12	17
Total	892	326	392	448	424	380	352	275	259	264
		37%	44%	50%	48%	43%	39%	31%	29%	30%

Graph 1a: Friday Parking Utilization Pattern by Type



Saturday peak parking occupancy patterns slightly differ from Friday. Tables 4a, 4b and 4c illustrate the hourly on-street, off-street and system-wide parking utilization respectively. Saturday off-street parking occupancy peaked at 5:00 PM when 258 (46%) of the 503 spaces were utilized. On-street spaces experienced the highest peak occupancy at 6:00 PM when 208 (53%) of the 389 spaces were occupied. System-wide the core study area was at 51% occupancy during its peak at 6:00 PM. To further illustrate this peak condition of parking utilization Graph 1b illustrates Saturday parking utilization pattern by type.

*Table 4a: Saturday Core Study Area Off-street
Parking Occupancy by Block*

Block Number	Inventory	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM
8	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0
11	22	0	0	0	1	1	1	1	2	2
12	46	13	11	13	15	14	14	13	13	11
13	0	0	0	0	0	0	0	0	0	0
15	12	1	2	1	2	2	2	3	2	2
16	11	5	6	7	5	3	2	4	6	4
17	16	11	7	6	7	5	7	8	6	6
18	35	13	13	14	15	14	14	16	14	13
19	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0
22	14	8	10	11	11	10	10	10	8	6
23	3	1	1	0	1	0	0	0	0	0
24	28	9	10	12	10	9	8	9	8	7
25	11	9	9	10	13	13	13	12	10	11
26	46	16	14	14	14	13	13	32	38	27
27	14	4	5	6	11	10	10	1	1	3
28	0	0	0	0	0	0	0	0	0	0
29	90	71	62	62	79	73	69	80	72	63
30	61	11	4	7	8	8	8	48	41	24
31	2	0	1	1	1	1	1	1	1	1
32	0	0	0	0	0	0	0	0	0	0
34	8	0	0	0	0	0	0	0	0	0
35	48	5	2	1	0	1	2	2	5	3
36	0	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0
39	36	17	20	23	19	19	19	18	16	12
40	0	0	0	0	0	0	0	0	0	0
Total	503	194	177	188	212	196	193	258	243	195
%		34%	31%	33%	38%	35%	34%	46%	43%	35%

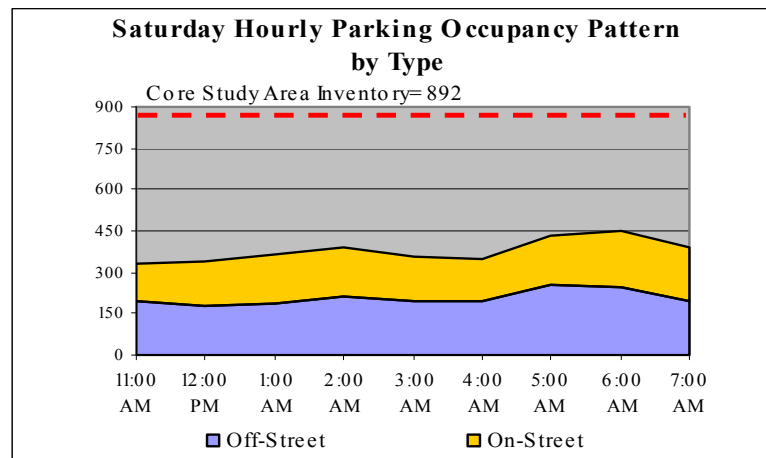
*Table 4b: Saturday Core Study Area On-street
Parking Occupancy by Block*

Block Number	Inventory	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM
8	10	1	0	0	1	0	0	2	4	2
10	8	1	1	1	1	1	2	2	2	2
11	20	4	7	14	15	10	9	12	9	6
12	21	6	6	11	10	10	9	8	10	14
13	18	0	0	5	3	2	2	2	7	7
15	16	15	14	14	12	13	14	13	11	9
16	16	14	14	12	12	12	13	11	12	13
17	26	15	19	20	15	16	17	13	12	14
18	11	5	4	5	4	4	4	5	5	4
19	3	3	3	2	2	3	4	4	2	0
21	14	8	10	9	8	8	9	8	9	10
22	26	25	26	25	25	25	25	24	25	24
23	11	7	5	7	8	6	7	8	9	10
24	8	0	3	4	4	3	2	3	6	6
25	21	8	20	15	20	16	15	20	21	18
26	28	6	7	5	7	4	2	12	11	5
27	9	1	5	6	7	7	7	6	9	6
28	3	0	0	0	2	1	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0
30	38	9	8	11	10	7	7	13	21	17
31	0	0	0	0	0	0	0	0	0	0
32	9	5	4	5	4	3	3	2	2	4
34	4	0	1	1	1	1	0	0	0	0
35	19	3	3	3	2	2	1	2	3	3
36	8	1	1	0	2	2	0	0	0	0
37	4	0	0	0	0	0	0	0	0	0
38	3	1	1	1	0	0	0	0	0	0
39	6	0	0	0	0	0	0	0	0	0
40	29	3	1	1	2	4	6	7	18	22
Total	389	141	163	177	177	160	158	177	208	196
%		36%	42%	46%	46%	41%	41%	46%	53%	50%

Table 4c: Saturday Core Study Area On- and Off-street Parking Occupancy by Block

Block Number	Inventory	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM
8	10	1	0	0	1	0	0	2	4	2
10	8	1	1	1	1	1	2	2	2	2
11	42	4	7	14	16	11	10	13	11	8
12	67	19	17	24	25	24	23	21	23	25
13	18	0	0	5	3	2	2	2	7	7
15	28	16	16	15	14	15	16	16	13	11
16	27	19	20	19	18	16	15	15	18	17
17	42	26	26	26	22	21	24	21	18	20
18	46	18	17	19	19	18	18	21	19	17
19	3	3	3	2	2	3	4	4	2	0
21	14	8	10	9	8	8	9	8	9	10
22	40	33	36	36	36	35	35	34	33	30
23	14	8	6	7	9	6	7	8	9	10
24	36	9	13	16	14	12	10	12	14	13
25	32	17	29	25	33	29	28	32	31	29
26	74	22	21	19	21	17	15	44	49	32
27	23	5	10	12	18	17	17	7	10	9
28	3	0	0	0	2	1	0	0	0	0
29	90	71	62	62	79	73	69	80	72	63
30	99	20	12	18	18	15	15	61	62	41
31	2	0	1	1	1	1	1	1	1	1
32	9	5	4	5	4	3	3	2	2	4
34	12	0	1	1	1	1	0	0	0	0
35	67	8	5	4	2	3	3	4	8	6
36	8	1	1	0	2	2	0	0	0	0
37	4	0	0	0	0	0	0	0	0	0
38	3	1	1	1	0	0	0	0	0	0
39	42	17	20	23	19	19	19	18	16	12
40	29	3	1	1	2	4	6	7	18	22
Total	892	335	340	365	390	357	351	435	451	391
%		38%	38%	41%	44%	40%	39%	49%	51%	44%

Graph 1b: Saturday Parking Utilization Pattern by Type



3.0 Core Study Area Practical Surplus/Deficit

The result of the parking occupancy surveys would suggest that the core study area has more than sufficient parking to meet weekday and Saturday needs. However, peak occupancy figures fail to illustrate the stress and frustration that drivers experience when trying to locate an available space in a particular block, lot, or curbside area. One measure of that stress is practical capacity, which estimates the operational efficiency of a parking facility and/or parking system. As occupancy levels within a parking facility or system reach a certain level, drivers who are searching for an available space will be required to search longer and farther. This increases the driver's frustration, the potential for vehicle/vehicle or vehicle/pedestrian conflicts and supports the perception of unavailable parking. This is particularly true for drivers who wish to remain parked for only a short period of time (shoppers, diners, infrequent visitors, etc.). The effective and efficient utilization and turnover of spaces is achieved when an operational surplus of between 5% and 10% is provided. For the purpose of this study, a practical capacity factor of 10% was used to analyze parking conditions in the core study area.

Tables 5a and 5b illustrate the block by block peak practical surplus or deficit on Friday and Saturday respectively. Overall, these tables indicate that the core study area experiences a practical surplus of 355 spaces on Friday and 352 spaces on Saturday. However, due to the private/restricted nature of off-street parking and depending on the type of land-use in each block, individual blocks experienced different peak surplus and/or deficit conditions. Exhibits C1 and C2 identify surplus/deficit categories for Friday and Saturday respectively. Blocks identified in dark blue represent the highest surplus (more than 30 spaces) while blocks identified in light blue represent the lowest surplus (less than 10 spaces). Alternatively, those blocks that experience a parking deficit are coded in varying shades of red.

Even when considering practical capacity there are surplus spaces available in nearly every block during each survey day. However, Block 25, which encompasses the historic baths and national park, exhibited a deficit of 2 spaces during the peak Saturday period. It should be noted that there was a concert on the park on Saturday evening which contributed to the demand and utilization of parking in that area.

*Table 5a: Friday Core Study Area
Surplus/Deficit by Block*

Block Number	Inventory	Practical Capacity	Peak Occupancy at 1:00 PM	Practical Surplus/Deficit
8	10	9	2	7
10	8	7	4	3
11	42	38	13	25
12	67	60	22	38
13	18	16	4	12
15	28	25	17	8
16	27	24	15	9
17	42	38	29	9
18	46	41	19	22
19	3	3	2	1
21	14	13	12	1
22	40	36	33	3
23	14	13	12	1
24	36	32	23	9
25	32	29	18	11
26	74	67	57	10
27	23	21	12	9
28	3	3	2	1
29	90	81	52	29
30	99	89	31	58
31	2	2	2	0
32	9	8	2	6
34	12	11	2	9
35	67	60	32	28
36	8	7	0	7
37	4	4	2	2
38	3	3	0	3
39	42	38	23	15
40	29	26	6	20
Total	892	803	448	355

*Table 5b: Saturday Core Study Area
surplus/ Deficit by Block*

Block Number	Inventory	Practical Capacity	Peak Occupancy at 6:00 PM	Practical Surplus/Deficit
8	10	9	4	5
10	8	7	2	5
11	42	38	11	27
12	67	60	23	37
13	18	16	7	9
15	28	25	13	12
16	27	24	18	6
17	42	38	18	20
18	46	41	19	22
19	3	3	2	1
21	14	13	9	4
22	40	36	33	3
23	14	13	9	4
24	36	32	14	18
25	32	29	31	-2
26	74	67	49	18
27	23	21	10	11
28	3	3	0	3
29	90	81	72	9
30	99	89	62	27
31	2	2	1	1
32	9	8	2	6
34	12	11	0	11
35	67	60	8	52
36	8	7	0	7
37	4	4	0	4
38	3	3	0	3
39	42	38	16	22
40	29	26	18	8
Total	892	803	451	352

Exhibit C1: Friday Core Study Area Surplus/Deficit by Block



Exhibit C2: Saturday Core Study Area Surplus/Deficit by Block



While the overall parking study focuses on typical weekday and Saturday parking conditions, Streetscaping Committee members wished to also sample parking activity during a Sunday when area churches and the farmers' market was active. It should be noted that farmers' markets are not held every Sunday of the year. Table 6 illustrates the results of the 11 AM survey that was completed by Streetscaping Committee volunteers within a 2-block radius of the farmers' market. Committee members suggested that farmers' market parking activity does not extend beyond that radius. In comparison to the parking utilization that was surveyed on Friday and Saturday within that same 2-block radius, Sunday use was roughly 50 vehicles greater. A surplus of nearly 100 spaces would still remain. While parking utilization is greater within this sub-area on Sunday, the overall analysis of future surplus/deficit conditions will continue to focus on a typical weekday and Saturday. However, parking management recommendations in subsequent documents will address both the weekday/Saturday needs as well as Sunday church and farmer's market impacts.

Table 6: Sunday Sample Core Study Area Surplus/Deficit by Block

Block Number	Inventory	Practical Capacity	Peak Occupancy at 11:00 AM	Surplus/Deficit
15	28	25	22	3
16	27	24	15	9
17	42	38	12	26
18	46	41	15	26
21	14	13	9	4
22	40	36	39	-3
23	14	13	20	-7
24	36	32	13	19
25	32	29	30	-1
26	74	67	71	-4
27	23	21	13	8
28	0	0	0	0
29	90	81	59	22
30	99	89	92	-3
31	2	2	4	-2
Total	567	511	414	97

4.0 Core Study Area Sample Turnover Rate

In addition to utilization data, metered space turnover and duration of stay was recorded for sample on-street locations. Exhibit D illustrates locations within which the license plate survey was conducted and which includes all of the metered, loading zone, and handicapped spaces.

Exhibit D: License Plate Survey Locations



Tables 7a and 7b present turnover rates by block for Friday and Saturday respectively. On Friday 258 vehicles parked in 111 surveyed spaces. This indicates a duration of stay of 1.6 hours and a turnover rate of 2.3 cars per space. The analysis indicates that on Friday 34 vehicles parked for more than 2 hours meaning 13% of the parkers were in violation of the 2 hour restriction. Note that this figure includes 5 County employee vehicles that parked in metered spaces on Fairfax Street that the County leases. As such, the overall percentage would be slightly lower. On Saturday 374 vehicles utilized 111 on-street surveyed spaces. The system-wide turnover rate (3.4 cars per space) was higher on Saturday and a large percentage of parkers (23%) exceeded posted duration.

Table 7a: Weekday Turnover and Duration by Block

Block		Inventory										Total Vehicle Utilization	Average Length Of Stay (Hrs)	Vehicle per Space Turnover
#	Face		1Hr	2 Hrs	3 Hrs	4 Hrs	5 Hrs	6 Hrs	7 Hrs	8 Hrs	9 Hrs			
11	East	5	0	1	0	0	0	0	0	0	0	1	2.0	0.20
11	South	5	6	2	1	0	0	0	0	0	0	9	1.4	1.80
12	South	5	6	0	1	0	0	0	0	0	0	7	1.3	1.40
12	West	3	5	0	0	0	0	0	0	0	0	5	1.0	1.67
16	East	6	9	4	0	0	0	2	0	0	1	16	2.4	2.29
17	North	4	17	2	0	0	0	0	0	0	0	19	1.1	3.80
17	West	7	13	4	1	1	0	0	0	0	0	19	1.5	2.71
22	North	8	15	8	3	1	0	0	0	0	0	27	1.6	3.00
22	South	8	9	8	4	2	1	0	0	0	0	24	2.1	2.67
22	East	4	13	1	2	0	0	0	0	0	1	17	1.8	4.25
23	North	2	7	1	0	1	0	0	0	0	0	9	1.4	3.00
23	South	1	0	0	0	0	1	0	0	0	0	1	5.0	1.00
23	West	3	4	1	1	0	0	1	0	0	0	7	2.1	2.33
24	South	6	3	0	0	0	0	0	0	0	0	3	1.0	0.50
25	North	11	30	8	1	1	0	0	0	0	0	40	1.3	3.33
25	East	10	7	0	0	0	0	0	0	0	0	7	1.0	0.70
26	North	6	12	2	1	0	0	0	0	0	0	15	1.3	1.36
27	North	9	7	5	3	1	0	1	0	0	0	17	2.1	1.89
30	North	8	12	2	1	0	0	0	0	0	0	15	1.3	1.88
Total		111	175	49	19	7	2	4	0	0	2	258	1.6	2.11

Table 7b: Saturday Turnover and Duration by Block

Block		Inventory										Total Vehicle Utilization	Average Length Of Stay (Hrs)	Vehicle per Space Turnover
#	Face		1Hr	2 Hrs	3 Hrs	4 Hrs	5 Hrs	6 Hrs	7 Hrs	8 Hrs	9 Hrs			
11	East	5	13	3	0	0	0	0	0	0	0	16	1.2	3.20
11	South	5	9	5	3	1	0	0	0	0	0	18	1.8	3.60
12	South	5	13	1	1	1	0	0	0	0	0	16	1.4	3.20
12	West	3	5	2	1	0	1	0	0	0	0	9	1.9	3.00
16	East	6	12	2	1	4	0	0	0	1	0	20	2.2	2.86
17	North	4	13	4	2	1	0	0	0	0	0	20	1.6	4.00
17	west	7	13	4	1	2	0	0	1	0	0	21	1.9	3.00
22	North	8	12	6	6	3	0	0	0	2	0	29	2.4	3.22
22	South	8	20	6	3	0	0	3	0	1	0	33	2.0	3.67
22	East	4	8	5	1	1	0	0	0	1	0	16	2.1	3.20
23	West	3	6	3	2	1	0	0	0	0	0	12	1.8	4.00
23	South	1	3	1	0	0	0	0	0	0	0	4	1.3	1.33
23	North	2	8	3	1	1	0	0	0	0	0	13	1.6	4.33
24	South	6	2	6	3	2	0	0	0	0	0	13	2.4	1.86
25	North	11	30	13	5	2	1	0	0	0	0	51	1.6	4.25
25	East	10	17	0	6	1	0	0	1	0	0	25	1.8	2.50
26	North	6	11	4	2	0	1	0	0	0	0	18	1.7	3.00
27	North	9	8	4	5	2	1	0	1	0	0	21	2.4	2.33
30	North	8	12	2	2	3	0	0	0	0	0	19	1.8	2.38
Total		111	215	74	45	25	4	3	3	5	0	374	1.9	3.09

SECTION 4- POPULATION BASED PARKING DEMAND MODEL

1.0 Core Study Area Existing Population Based Parking Demand

A study of parking utilization is simply a survey of parking use on a particular day. Utilization does not identify the demand for parking nor does it record the impact associated with special events. In order to analyze parking demand on a block by block basis a property/business owner survey was conducted. The intent was to capture the number of employees and visitors that frequent the core study area during weekdays and weekends and use that data to model parking demand. A total of 58 business owners within the core study area were interviewed representing a 90% response rate. Data was adjusted by a non-captive factor of 1.1 to estimate a 100% response rate.

On Friday the core study area has an estimated 384 employees and 764 visitors between the period of 1:00 and 3:00 PM. On Saturday the employee peak is between 10:00 AM and 12:00 PM where approximately 213 employees are at work. The visitor peak of 1,271 occurs between 1:00 and 3:00 PM. Though the Saturday employee and visitor peak hours differed the analysis of parking demand combines those two figures under the presumption that employees will remain parked over a longer period of time.

Tables 8a and 8b detail the weekday and weekend population-based employee and visitor parking demand respectively. In order to obtain an accurate parking demand figure DESMAN applied a peak hour factor (PHF) to the population figures. PHF converts people into parked cars based on estimated auto use patterns, persons per auto occupancy, and the average number of stops a visitor makes to different offices, shops, and restaurants during a single trip to Bath. This is referred to as synergy.

To calculate the peak visitor parking demand a non-captive factor of 1.1 was applied to the sample peak visitor number. The results were then multiplied by an auto use factor of 100% and a synergy factor of 75% (i.e., 75% of customers frequented more than one business). Considering a multiplier of 1.7 visitors per vehicle, the PHF for visitors is estimated at 0.16 or 16 vehicles per 100 visitors. This illustrates the interrelationship between retail and restaurant business and hotels/inns, the park/baths, offices, the courts, and other shops and restaurants. The employee PHF is based on a 1.1 non-captive adjustment, auto utilization of 85%, and an employee per auto ratio of 1.1 (one employee passenger in every 10 employee vehicles) and equals 0.85.

The peak parking demand on Friday was calculated at 318 employee parked vehicles and 124 parked visitor vehicles. In comparison to peak Friday utilization (448 occupied spaces) this total of 442 spaces suggests that the population-based demand estimate is sufficiently accurate for purposes of this study

Based on calculations on a Saturday the population-based peak parking demand would be 181 spaces for employees and 271 spaces for visitors. This total (452) is only 1 space greater than the number of vehicles that were observed during the field surveys. If deemed accurate, this would also suggest that almost none of the core area parkers are parking outside of the core study area.

Table 8a: Weekday Population Based Peak Parking Demand by Block by User Type

Block Number	Inventory	Employee		Visitor		Total Peak Parking Demand
		Peak Hour Sample	Peak Parking Demand=	Peak Hour Sample	Peak Parking Demand=	
		Employee Pop. Between 1:00 and 3:00 PM	PHF* Peak Hour Sample Population (1)	Visitor Pop. Between 1:00 and 3:00 PM	PHF* Peak Hour Sample Population (2)	
11	42	9	0	14	2	2
12	67	19	16	85	14	30
15	28	4	3	1	0	4
16	27	34	29	112	18	47
17	42	14	11	72	12	23
21	14	6	5	0	0	5
22	40	58	49	181	29	79
23	14	77	65	44	7	73
24	36	18	15	38	6	21
25	32	14	12	65	11	22
26	74	9	8	62	10	18
27	23	2	2	0	0	2
29	90	50	43	38	6	49
30	99	50	43	50	8	51
31	2	2	2	0	0	2
35	67	6	5	2	0	5
36	8	2	2	0	0	2
39	42	10	9	0	0	9
Total	747	384	318	764	124	442

(1) Peak Hour Factor (PHF) = Non-captive System-wide Adjustment (1.1) * Auto Utilization Adjustment(85%) / Visitor Per Car (1.1)

(2) Peak Hour Factor (PHF) = Visitor Sample Peak Population*Non-captive System-wide Adjustment (1.1) * Synergy(75%) / Visitor Per Car (1.7)

Table 8b: Weekend Population Based Peak Parking Demand by Block by User Type

Block Number	Inventory	Employee		Visitor		Total Peak Parking Demand
		Peak Hour Sample	Peak Parking Demand=	Peak Hour Sample	Peak Parking Demand=	
		Employee Pop. Between 10:00 and 12:00 PM	PHF* Peak Hour Sample Population (1)	Visitor Pop. Between 1:00 and 3:00 PM	PHF* Peak Hour Sample Population (2)	
11	42	6	5	20	4	9
12	67	12	10	215	46	56
15	28	1	1	0	0	1
16	27	29	25	153	33	57
17	42	9	8	84	18	26
21	14	0	0	0	0	0
22	40	42	36	384	82	117
23	14	6	5	31	7	12
24	36	2	2	20	4	6
25	32	20	17	250	53	70
26	74	3	3	2	0	3
27	23	1	1	0	0	1
29	90	50	43	110	23	66
30	99	20	17	0	0	17
31	2	3	3	0	0	3
35	67	2	2	2	0	2
36	8	2	2	0	0	2
39	42	5	4	0	0	4
Total	747	213	181	1271	271	452

(1) Peak Hour Factor (PHF) = Noncaptive System-wide Adjustment (1.1) * Auto Utilization Adjustment(85%) / Visitor Per Car (1.1)

(2) Peak Hour Factor (PHF) = Visitor Sample Peak Population*Noncaptive System-wide Adjustment (1.1) * Synergy(70%) / Visitor Per Car (1.55)

2.0 Core Study Area Estimate of Surplus/Deficit Based on Population Ratios

Tables 9a and 9b revisit the weekday and Saturday block by block practical surplus and/or deficit figures using the results of the population-based model. Although on Friday and Saturday a system-wide surplus of 231 and 221 space exists respectively, deficit in several individual blocks emerge. For example, blocks 16, 22, and 23, which include County offices and a high concentration of restaurants, spas, and retail shops, have a combined deficit of 126 spaces on Friday. On Saturday when office activity is typically quite low yet restaurant and retail activity peaks the deficits are concentrated in blocks 16, 22 and 25 and equal an estimated 155 spaces

Table 9a: Weekday Population Based Peak Surplus/Deficit

Block Number	Inventory	Peak Practical Capacity	Total Peak Parking Demand	Peak Practical Surplus/Deficit
11	42	38	2	36
12	67	60	30	30
15	28	25	4	21
16	27	24	47	-23
17	42	38	23	15
21	14	13	5	8
22	40	36	79	-43
23	14	13	73	-60
24	36	32	21	11
25	32	29	22	7
26	74	67	18	49
27	23	21	2	19
29	90	81	49	32
30	99	89	51	38
31	2	2	2	0
35	67	60	5	55
36	8	7	2	5
39	42	38	9	30
Total	747	673	442	231

Table 9b: Weekend Population Based Peak Surplus/Deficit

Block Number	Inventory	Peak Practical Capacity	Total Peak Parking Demand	Peak Practical Surplus/Deficit
11	42	38	9	29
12	67	60	56	4
15	28	25	1	24
16	27	24	57	-33
17	42	38	26	12
21	14	13	0	13
22	40	36	117	-81
23	14	13	12	1
24	36	32	6	26
25	32	29	70	-41
26	74	67	3	64
27	23	21	1	20
29	90	81	66	15
30	99	89	17	72
31	2	2	3	-1
35	67	60	2	58
36	8	7	2	5
39	42	38	4	34
Total	747	673	452	221

Although these figures are good indicators of the number of surplus or deficit of spaces within each block, they fail to address the demand associated with each user group. For instance it is not clear what percentage of the total deficit in blocks 16, 22 and 23 on Friday is associated with employees and what percentage associated with visitors.

In order to better identify the parking demand associated with employee and visitors, tables 10a and 10b present the weekday and weekend theoretical break-down of parking demand and surplus and/or deficit of spaces by user group under the presumption that all visitors utilize only the supply of on-street spaces and all employees utilize only the supply of off-street spaces.

Overall these tables indicate that if employees were to only utilize the supply of 460 off-street spaces in the core study area, a system-wide surplus of 96 spaces on weekdays and 233 spaces on weekends would exist. However, surplus and/or deficit figures vary within each block. For instance, an

employee parking space deficit of 98 (36 plus 62) spaces exists in blocks 22 and 23. Exhibits E1, E2 illustrate the weekday and weekend population based employee surplus and/or deficit by block.

Similarly, if visitors were the only group to utilized the 287 on-street parking spaces, a surplus of 132 spaces on weekdays and a deficit of 15 spaces on weekends would exist. Exhibits E3, E4 illustrate the weekday and weekend population based visitor surplus and/or deficit by block. Saturday's visitor parking deficit in blocks 22 and 25 is problematic as there are only 47 (26 plus 21) on-street spaces in those two blocks available to meet an estimated visitor demand of 135.

Table 10a: Weekday & Weekend Theoretical Peak Employee Parking Surplus/Deficit

Block Number	Off-street Parking Supply	Practical Capacity	Theoretical Peak Employee Parking Demand		Theoretical Peak Employee Parking Surplus/Deficit	
			Weekday	Weekend	Weekday	Weekend
11	22	20	0	5	20	15
12	46	41	16	10	25	31
15	12	11	3	1	8	10
16	11	10	29	25	-19	-15
17	16	14	11	8	3	6
21	0	0	5	0	-5	0
22	14	13	49	36	-36	-23
23	3	3	65	5	-62	-2
24	28	25	15	2	10	23
25	11	10	12	17	-2	-7
26	46	41	8	3	33	38
27	14	13	2	1	11	12
29	90	81	43	43	39	39
30	61	55	43	17	13	38
31	2	2	2	3	0	-1
35	48	43	5	2	38	41
36	0	0	2	2	-2	-2
39	36	32	9	4	24	28
Total	460	414	318	181	96	233

Table 10b: Weekday & Weekend Theoretical Peak Visitor Parking Surplus/Deficit

Block Number	On-street Parking Supply	Practical Capacity	Theoretical Peak Visitor Parking Demand		Theoretical Peak Visitor Parking Surplus/Deficit	
			Weekday	Weekend	Weekday	Weekend
11	20	18	2	4	16	14
12	21	19	14	46	5	-27
15	16	14	0	0	14	14
16	16	14	18	33	-4	-19
17	26	23	12	18	11	5
21	14	13	0	0	13	13
22	26	23	29	82	-6	-59
23	11	10	7	7	3	3
24	8	7	6	4	1	3
25	21	19	11	53	8	-34
26	28	25	10	0	15	25
27	9	8	0	0	8	8
29	0	0	6	23	-6	-23
30	38	34	8	0	26	34
31	0	0	0	0	0	0
35	19	17	0	0	17	17
36	8	7	0	0	7	7
39	6	5	0	0	5	5
Total	287	256	124	271	132	-15

Exhibit E1: Weekday Population Based Employee Surplus/Deficit by Block



Exhibit E2: Weekend Population Based Employee Surplus/Deficit by Block

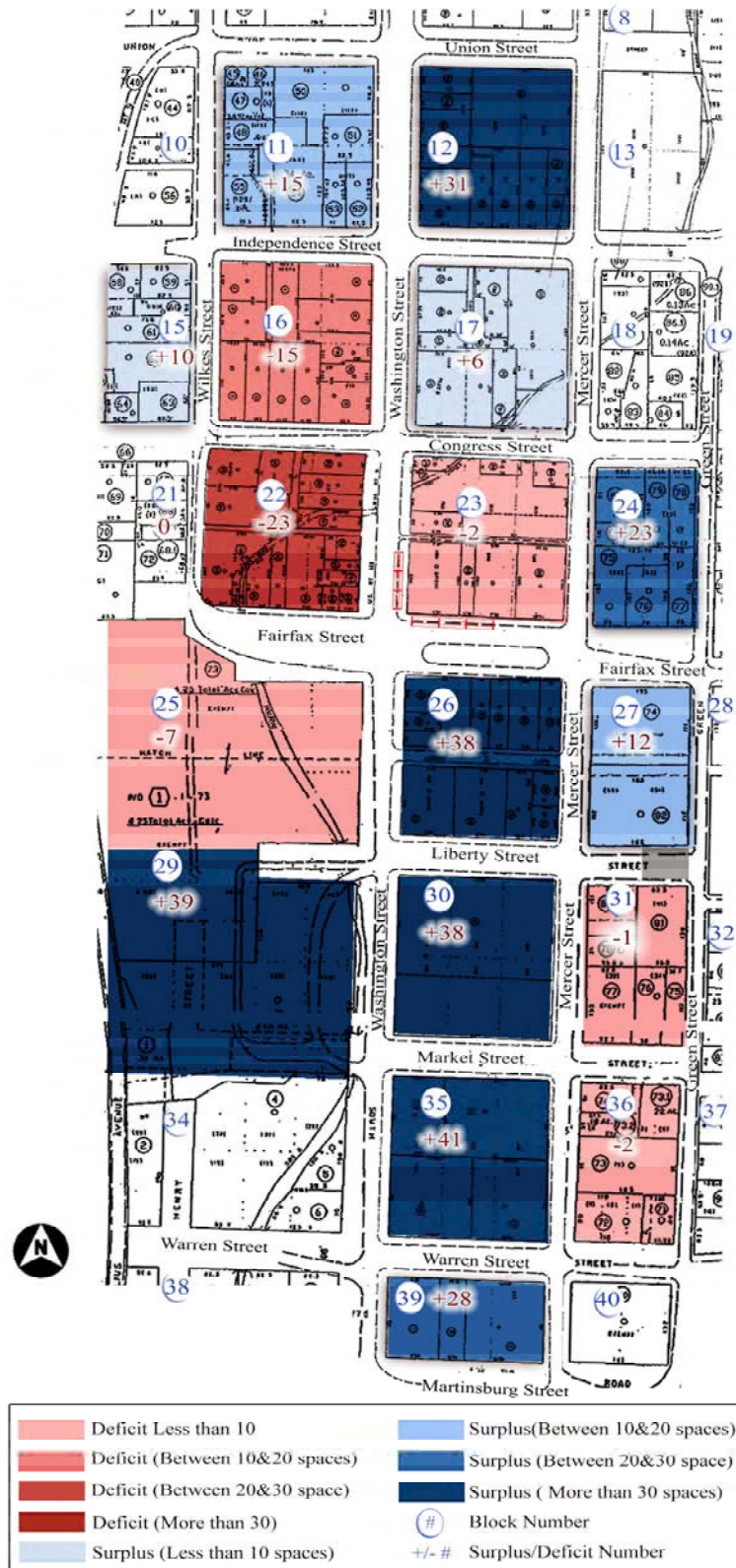


Exhibit E3: Weekday Population Based Visitor Surplus/Deficit by Block

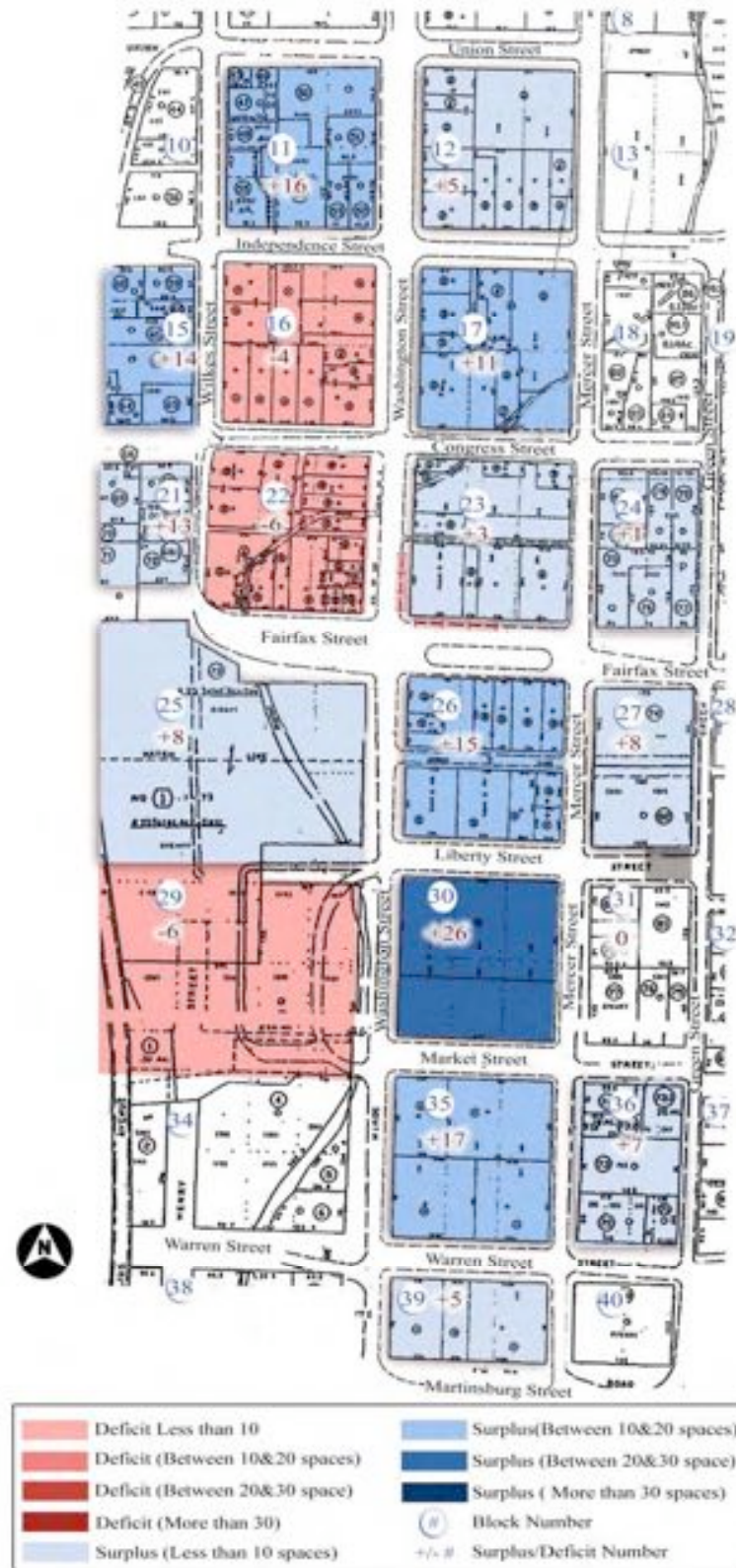
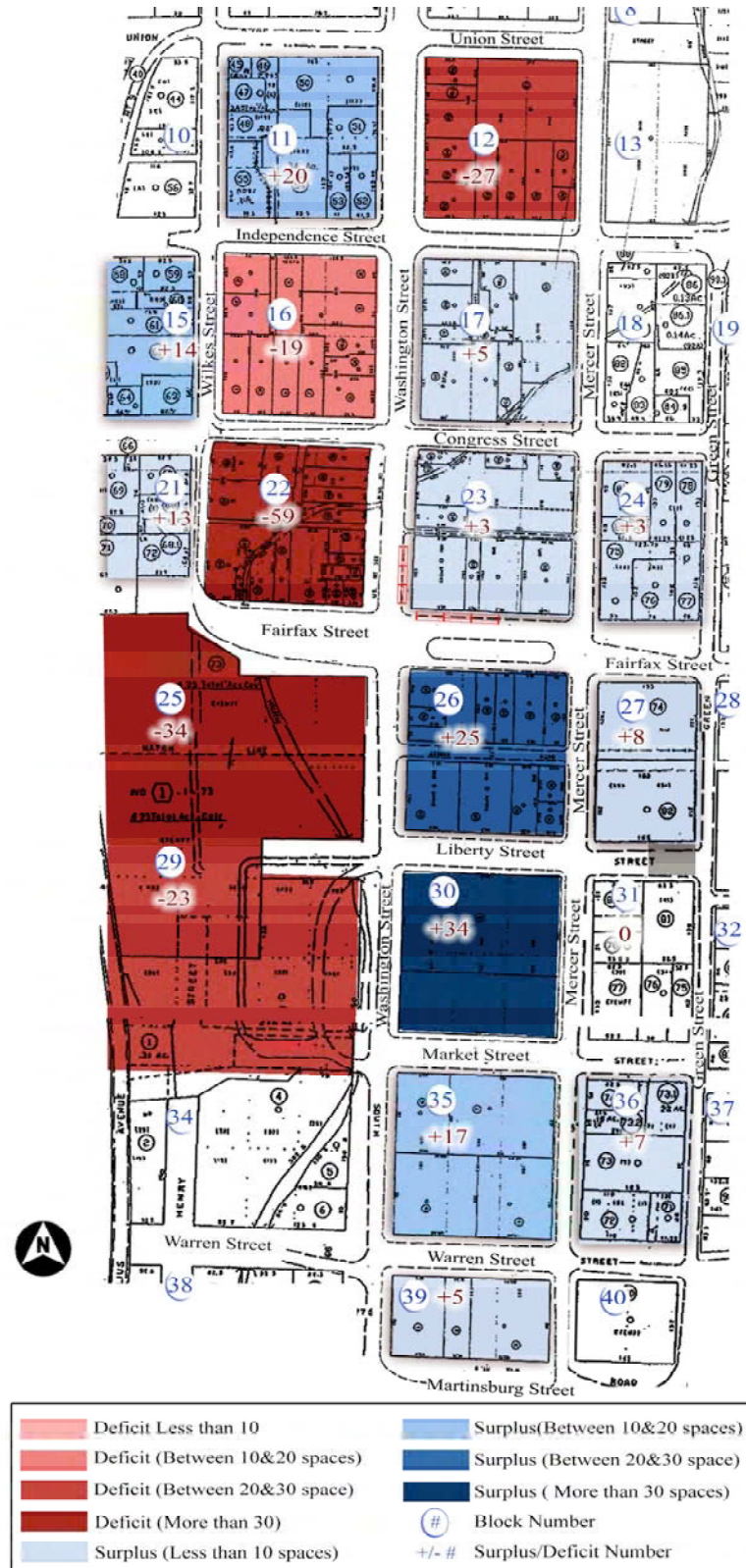


Exhibit E4: Weekend Population Based Visitor Surplus/Deficit by Block



SECTION 5- ASSESSMENT OF FUTURE CONDITIONS

1.0 Parking Demand Condition

Unlike typical municipal parking studies where significant and quantifiable development information is provided by the planning department or office of economic development, the Town of Bath's future is less concrete and definable. It is a historic district where new retail, restaurant, and office activity is associated less with new construction than with the occupancy of vacant second or third-floor buildings. As a result, future parking demand, supply, and surplus or deficit conditions for this study will be limited to an understanding of demand increase due to Morgan County's government and courts activity after the completion of the courthouse, projection of Morgan Arts Council events and the Ice House, and background growth.

Background growth attempts to quantify the increase in parking activity associated with continued success and vitality of existing business and the occupancy of vacant commercial/residential space. That continued vitality could be generated by growth in regional tourist activity or by significant residential development on the periphery of Bath. Unfortunately, this study is unable to predict the growth of tourist activity or the phasing and impact of residential development. However, for purposes of this study and in an effort to adjust for the recent downturn in the economy, a growth factor of 1.05 (5%) will be applied to current population-based estimates of peak weekday and Saturday parking demand to reflect parking condition within the next five years.

Based on information provided by the County, and due to the return of Circuit Court functions after the completion of the courthouse, the number of employees will increase by 40 during the peak hour. Similarly the number of visitors will increase by 120 during the weekday peak hour. Using the calculated PHF (Peak Hour Factor) from the previous section of this report, the return of Circuit Court functions will increase visitor parking demand by 34 spaces and employee parking demand by 20 spaces

Discussions with County administrators identified the option of locating Sheriff's Department functions into the new courthouse. Administrators suggested that the parking demand associated with Sheriff's Department employees and fleet vehicles could require an additional 30 spaces on a weekday.

Table 11 layers the demand associated with future conditions on the existing population based weekday and weekend demand.

Block Number	Theoretical Future Peak Visitor Parking Demand		Theoretical Future Peak Employee Parking Demand	
	Weekday	Weekend	Weekday	Weekend
11	2	4	0	5
12	14	48	17	11
15	0	0	4	1
16	19	34	30	26
17	12	19	12	8
21	0	0	5	0
22	31	86	52	37
23	27	7	133	5
24	6	4	16	2
25	11	56	12	18
26	11	0	8	3
27	0	0	2	1
29	6	25	45	45
30	8	0	45	18
31	0	0	2	3
35	0	0	5	2
36	0	0	2	2
39	0	0	9	4
Total	150	284	398	190

Table 11: Peak Hour Future Parking Demand by Block

2.0 Parking Surplus or Deficit Condition

Tables 12a and 12b and Exhibits F1, F2, F3 and F4 present the future parking supply, practical capacity, theoretical population-based demand, and peak weekday and Saturday parking surplus or deficit respectively based on documented future parking demand conditions. Overall, on a weekday an employee surplus of 16 off-street spaces and a visitor surplus of 106 on-street spaces would exist. Note that this surplus is dependent on sharing of on-street spaces by visitors and informal sharing of all private/restricted off-street spaces by employees.

Future conditions for Saturday would be slightly more problematic as visitor on-street parking deficits in blocks 12, 16, 22, 25 and 29 could increase to 174 spaces. Accounting for practical capacity and presuming that parkers would be willing to walk a few blocks in some cases a deficit of 28 spaces would still exist on Saturday.

Table 12a: Future Theoretical Employee Population Based Peak Surplus/Deficit

Block Number	Off-street Parking Supply	Practical Capacity	Theoretical Peak Employee Parking Demand		Theoretical Peak Employee Parking Surplus/Deficit	
			Weekday	Weekend	Weekday	Weekend
11	22	20	0	5	20	15
12	46	41	17	11	24	30
15	12	11	4	1	7	10
16	11	10	30	26	-20	-16
17	16	14	12	8	2	6
21	0	0	5	0	-5	0
22	14	13	52	37	-39	-24
23	3	3	133	5	-130	-2
24	28	25	16	2	9	23
25	11	10	12	18	-2	-8
26	46	41	8	3	33	38
27	14	13	2	1	11	12
29	90	81	45	45	36	36
30	61	55	45	18	10	37
31	2	2	2	3	0	-1
35	48	43	5	2	38	41
36	0	0	2	2	-2	-2
39	36	32	9	4	23	28
Total	460	414	398	190	16	224

Table 12b: Future Theoretical Visitor Based Population Based Peak Surplus/Deficit

Block Number	On-street Parking Supply	Practical Capacity	Theoretical Peak Visitor Parking Demand		Theoretical Peak Visitor Parking Surplus/Deficit	
			Weekday	Weekend	Weekday	Weekend
11	20	18	2	4	16	14
12	21	19	14	48	5	-29
15	16	14	0	0	14	14
16	16	14	19	34	-5	-20
17	26	23	12	19	11	4
21	14	13	0	0	13	13
22	26	23	31	86	-8	-63
23	11	10	27	7	-17	3
24	8	7	6	4	1	3
25	21	19	11	56	8	-37
26	28	25	11	0	14	25
27	9	8	0	0	8	8
29	0	0	6	25	-6	-25
30	38	34	8	0	26	34
31	0	0	0	0	0	0
35	19	17	0	0	17	17
36	8	7	0	0	7	7
39	6	5	0	0	5	5
Total	287	256	150	284	106	-28

Exhibit F1: Future Weekday Employee Population Based Peak Surplus/Deficit

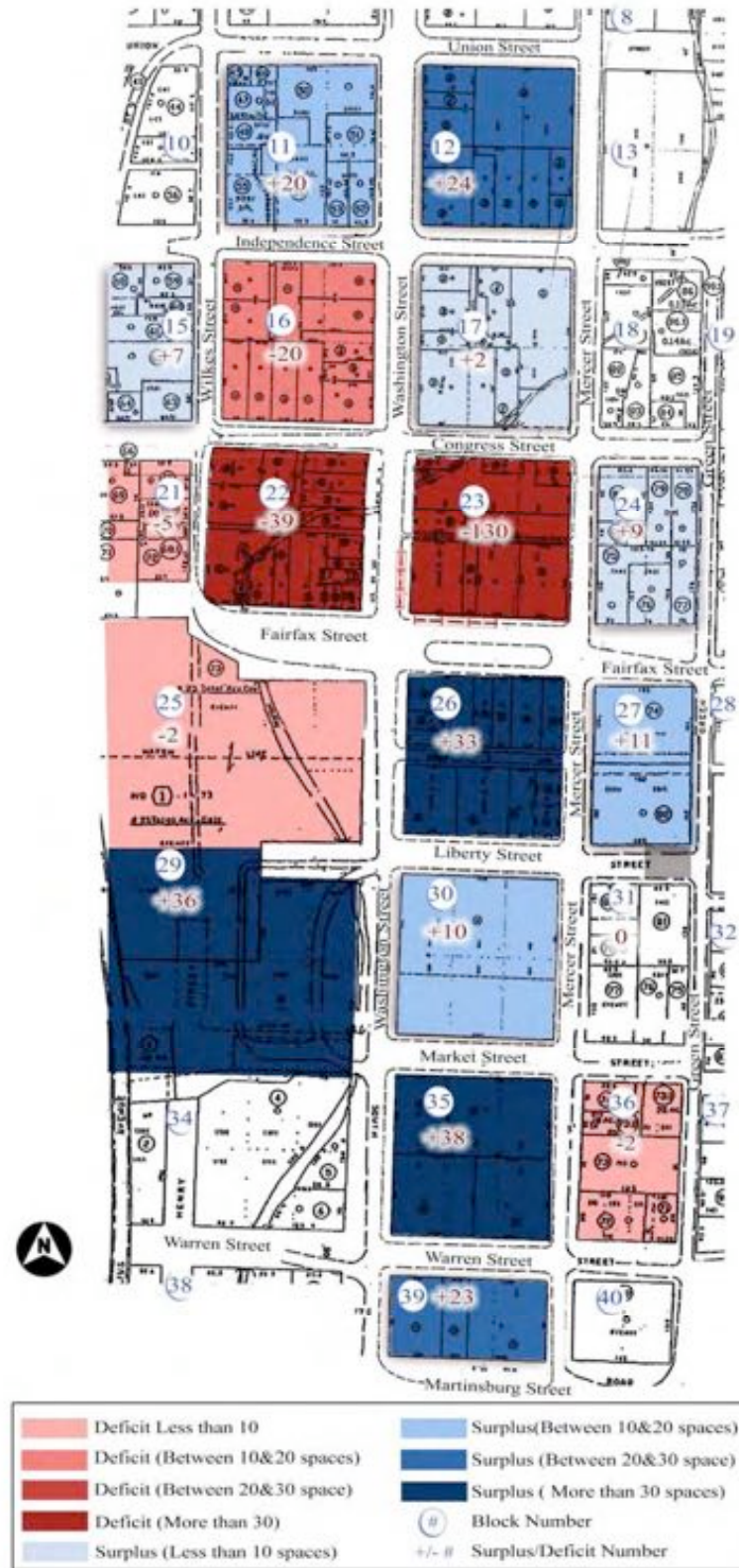


Exhibit F2: Future Weekday Visitor Population Based Peak Surplus/Deficit

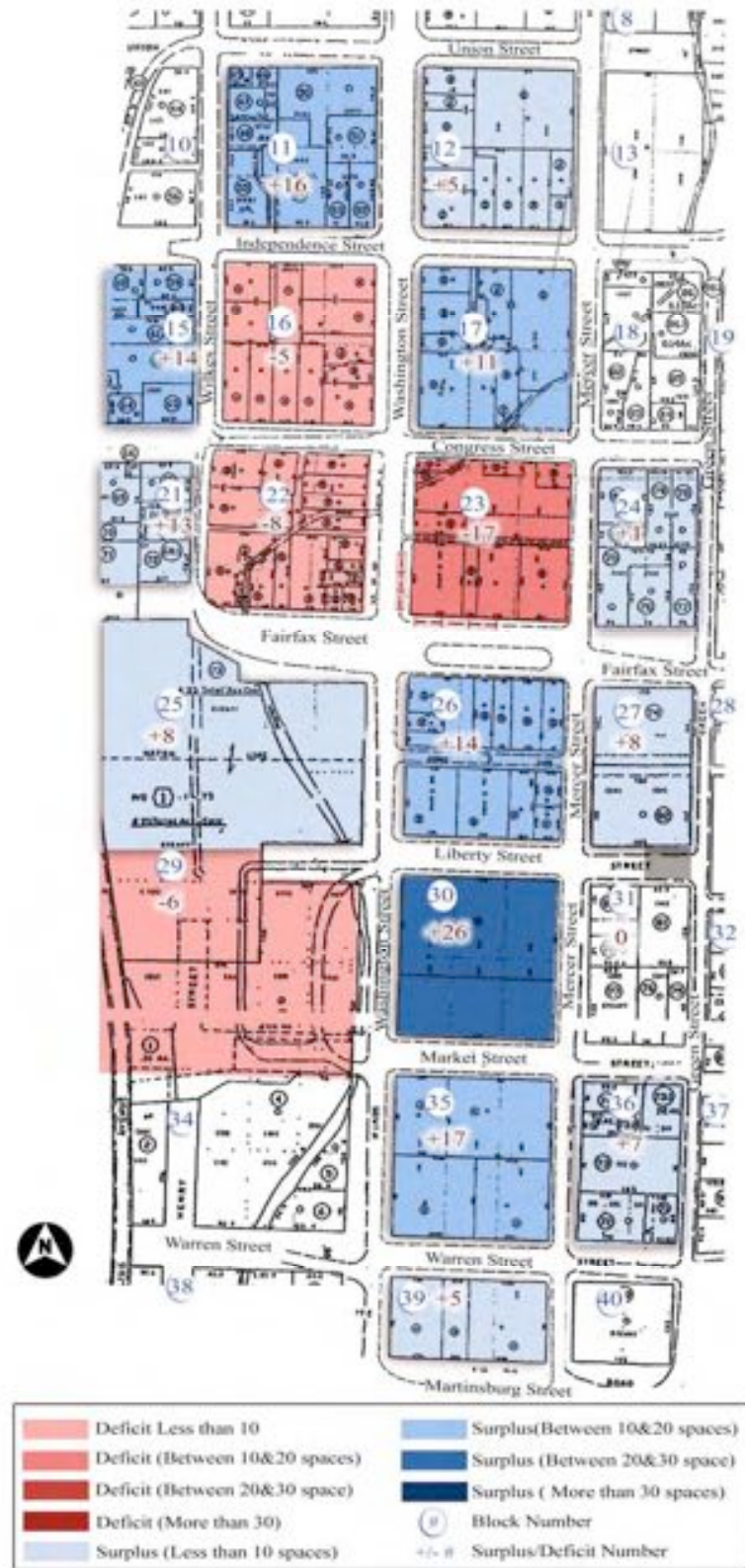


Exhibit F3: Future Weekend Employee Population Based Peak Surplus/Deficit

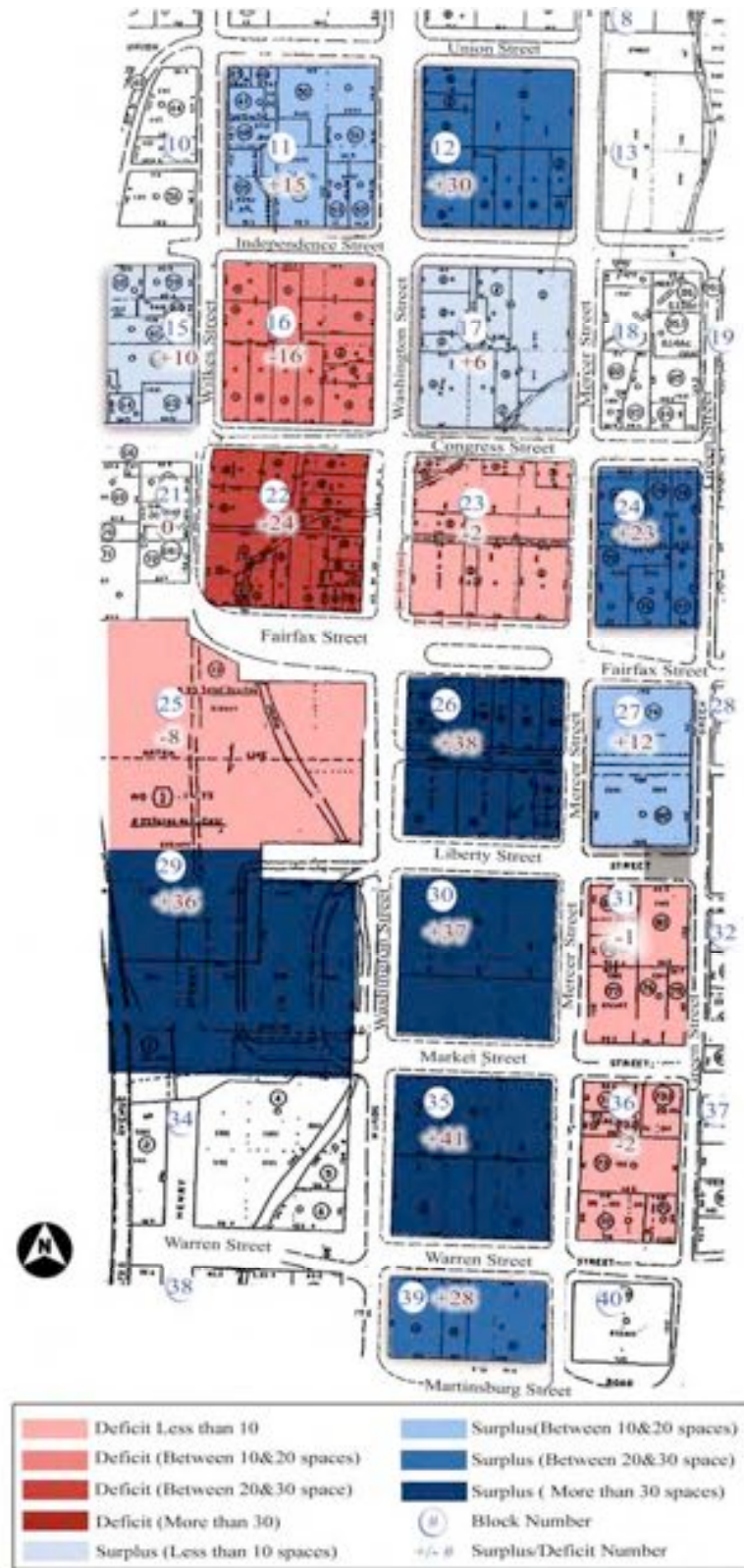


Exhibit F4: Future Weekend Visitor Population Based Peak Surplus/Deficit



3.0 Findings from the Assessment of Existing and Future Conditions

At present there appears to be sufficient parking capacity to meet current parking needs as 50% of on-street and off-street spaces were unoccupied during the surveyed peak weekday and Saturday period. However, this figure includes the availability of private/restricted parking facilities. Parking that is clearly dedicated for public purposes is limited to on-street spaces as there are no municipally owned or operated off-street lots. Additionally, the effectiveness of on-street spaces for public parking is in itself limited by the fact that only 115 are actively managed through meters (102 spaces) or handicapped/loading zone restrictions (13 spaces). “Locals” have learned to navigate through this somewhat informal and unregulated system, finding unrestricted on-street spaces on Wilkes Street and Mercer Street (among others) and unmanaged/un-enforced parking on private property. Previously, this informal system of sharing parking between property neighbors may have been viewed as acceptable. As commercial activity grew and as the loss of surface parking on and around the courthouse was realized, the increase in demand and reduction in supply created additional pressure on those private lot owners to the point where they cannot continue to share.

The study of future weekday and Saturday employee and visitor parking deficits that is based on off-street/employee and on-street/visitor parking assumptions noted that though a system-wide surplus of spaces would remain significant deficits in individual blocks would exist. With the return of circuit court functions after the completion of the courthouse (see block 23) a weekday employee parking deficit of 130 spaces is envisioned. Employment levels in block 22 and the lack of off-street spaces dedicated to employees suggest that an additional employee parking deficit of 39 spaces be anticipated. While there are off-street surpluses in other core area blocks, it is unlikely that the adjacent property owners (Catholic Church, Citizen National Bank, library, etc.) would be willing to satisfy this demand over the long term. Furthermore, on-street parking surplus, where present, should not be counted on to satisfy employee parking demand regardless of the demand generate.

Theoretical parking deficits on a future Saturday shift from employees to visitors. On-street visitor deficits north of Fairfax Street persist in blocks 12, 16, and 22 and total 112 spaces. There are insufficient on-street surpluses in adjacent blocks to satisfy that demand and it is unlikely that private off-street lots (Asbury Trinity Church, library, City National Bank, etc.) would be available to meet that need. Visitor on-street parking deficits to the south of Fairfax are less significant as the County Inn (block 29) satisfies its visitor demand in its parking lot(s).

Overall, it must be presumed that private off-street lots cannot be counted on to meet existing or future needs. This increases the value of the on-street spaces and underlines the need to maximize the capacity and efficiency of on-street parking spaces and parking management strategies. Additionally, the continued growth and vitality of the core area of Bath may be dependent to a certain degree on the introduction of an employee/resident dedicated parking facility or facilities that could accommodate between 60 and 80 spaces. Such a facility need not be in a central location given an employee and residents greater acceptable walking distance (compared to visitors). Alternatively, the town could explore more formal shared parking agreements with select downtown property owners. Unfortunately, public/private shared use agreements are difficult to enact and maintain given the complexity of parking management that is required. Nonetheless, the next phases of the study will examine physical and operational strategies that can be effectively implemented to meet current and future needs. Additionally, those strategies will be examined financially to ensure that they are reflective of the economic demographics of Bath’s employees, residents, and visitors.

SECTION 6- RECOMMENDATIONS

1.0 Physical Recommendations

One practical solution to the town's parking problem is to maximize the existing capacity and efficiency of on-street parking curbside spaces. This section of the report evaluates future parking expansion/improvement opportunities under two different alternative implementation strategies. It also estimates the cost associated with each alternative based on the estimated data or unit price provided by the streetscaping subcommittee and includes price adjustments to reflect the current conditions in Berkeley Springs.

1.1 Parking Expansion Opportunities

Alternative 1: Restriping (Immediate-range solution)

A strategy that can be implemented immediately to increase the current supply of on-street parking is to simply restripe existing parking spaces. Exhibit F illustrates the location of on-street parking spaces that could be gained through restriping. According to the Town's Parking Enforcement Officer as many as eleven (11) parking spaces could be gained if the length of yellow curbs indicating "No Parking" is limited to twenty feet. DESMAN is in agreement with this recommendation and suggests that the Town shall consider the following locations as a part of its on-street future parking expansion opportunities. Each number corresponds to the locations on the following map (Exhibit G) for ease of identification.

Exhibit G: Core Study Area Parking Expansion Opportunities



1. *North Washington St.: West side south of Union St. between the red curb (Fire Hydrant) & current meters*
2. *East Independence St.: North side west of the current loading zone*
3. *North Washington St.: North east side south of the three meters in the 300 Block*
4. *North Washington St.: North west side south of the Bank drive-way between the existing meter & the red curb (Fire Hydrant)*
5. *North Washington St.: South east side between the last meter and Independence St.*
6. *North Washington St.: South east side between the Loading Zone and Independence St.*
7. *North Washington St.: South west side in front of the Perry Building, between the last meter and the red curb (Fire Hydrant)*
8. *East Independence St. at Mercer St.: South side from the Loading Zone to the yellow curb at side entrance to the Ice House*
9. *East Fairfax at Mercer St.: North west side in front of entrance to Magistrates Court*
10. *East Fairfax at Washington St.: Southside between the Bank drive-way and Washington St (2 spaces).*

Alternative 2: Reacquisition of Public Right-of-Way (Immediate to long-range solutions)

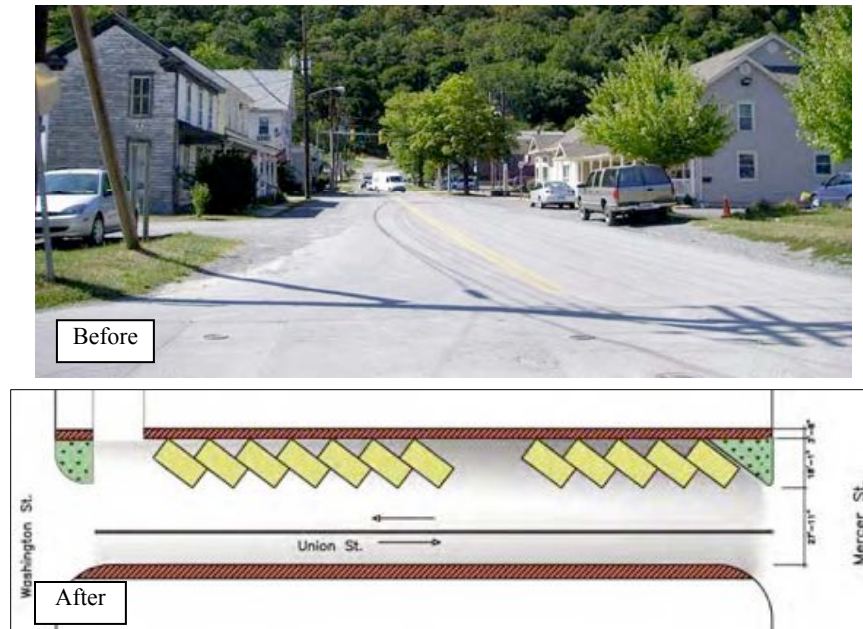
To also increase the capacity and efficiency of on-street parking in the core study area, it is recommended that reacquisition of public right-of-ways in several key and high demand areas occur. It has been noted throughout this report that areas within the public right-of-way under the purview of the West Virginia Department of Highways (WVDOH) and the town of Bath have fallen under the temporary control of private property owners. While this unapproved use of public property for private parking purposes or other purposes had not been an issue in the past, the increase in parking demand associated with office, retail, restaurant, and residential activity has brought this practice into question. In addition, given that the town does not own or operate a municipal parking lot, the ability to effectively expand on the supply of public parking is limited to these on-street areas.

Concept plans have been developed in areas where it is believed additional on-street parking capacity can be gained through reacquisition and redesign. Other areas were excluded as an initial investigation suggests that no additional on-street parking could be created. Note that these concept plans have been shared with WVDOH but no formal comments have been received to date from this agency. In addition, all concepts and cost estimates presented in this document are for planning purposes only as they are based on inexact property tax maps and aerial photographs.

Option A: Introduction of new on-street layout designs on Union, Independence and Congress Streets while maintaining two-way traffic flow pattern (2 to 3 year implementation schedule)

Union Street: Exhibit H1 illustrates the proposed conceptual angled parking layout on Union Street. Although the recommended conceptual layout on Union Street will not increase the number of parking spaces, it does offer an on-street parking design that is more efficient and easier to manage as formal curbs, gutters, pavement markings, signage, and meters would be introduced. This concept could potentially create twelve (12) on-street angled parking spaces along the north side of Union Street. This concept requires installation of a side-walk on south side of the street and curbs and gutters on both sides of the street. This plan also calls for elimination of the eight (8) foot grass/gravel median on the north side of the street and the displacement of approximately fourteen (14) unpaved-unnmetered spaces. (10 spaces on the north side and 4 spaces on the south side of the street).

Exhibit H1: Proposed Angle Parking Layout on Union Street



Congress Street: Exhibit H2 illustrates the proposed conceptual parking layout on Congress Street. This proposed layout would increase the total number of on-street spaces by 1 space and it would require demolition of the grass median and curb along the north side of Congress Street. Note that DESMAN only considered acquisition of specific parts of the right-of-way on the north side of the Congress Street since the net gain of parking spaces would be minimal due to existing curb-cuts/driveways and the negative impact on vehicle's turning radius. Though this increase is small, it would permit the town to formally manage these spaces for the benefit of the public.

Exhibit H2: Proposed Parking Layout on Congress St.



Independence Street: Currently (see photo on Exhibit H3) the right-of-way on Independence Street between Wilkes and Washington Streets has been “absorbed” and controlled by business-owners along its southern boundary. Exhibit H3 also illustrates the proposed parking layout on Independence Street, which would reintroduce these on-street spaces to the general public and create as many as six (6) on-street spaces. Implementation of this plan requires elimination of some trees, vegetations and existing curbs along the south side of the street and displacement of privately held parking spaces within the right-of-way. Note that due to the minimal net gain of parking spaces, location of existing curb-cuts and driveways, and the negative impact on vehicle’s turning radius, DESMAN did not consider additional use of the right-of-way on the north side of the Independence Street.

Exhibit H3: Proposed Parking Layout on Independence Street

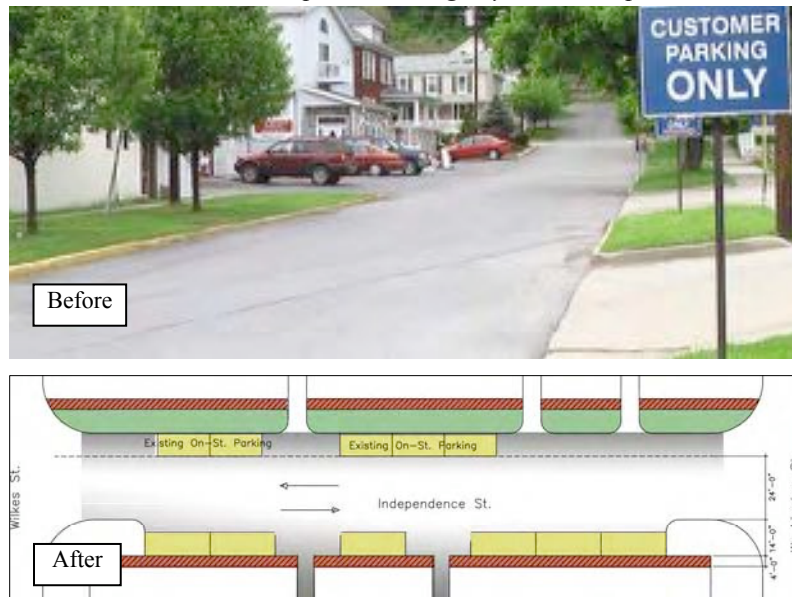


Table 13a illustrates the number of parking spaces gained as a result of proposed changes under Alternative 2-Option A. The proposed parking layouts on Union, Independence and Congress Streets would increase the total inventory of on-street parking in the core study area by five (5) spaces.

Table 13a: Net Gain of Parking Spaces - Option A

Street Name	Before	After	Net Gain
Union St. between Washington & Mercer St.	14	12	-2
Independence St. between Wilkes & Washington St.	5	11	6
Congress St between Wilkes & Washington St.	8	9	1
Total	27	32	5

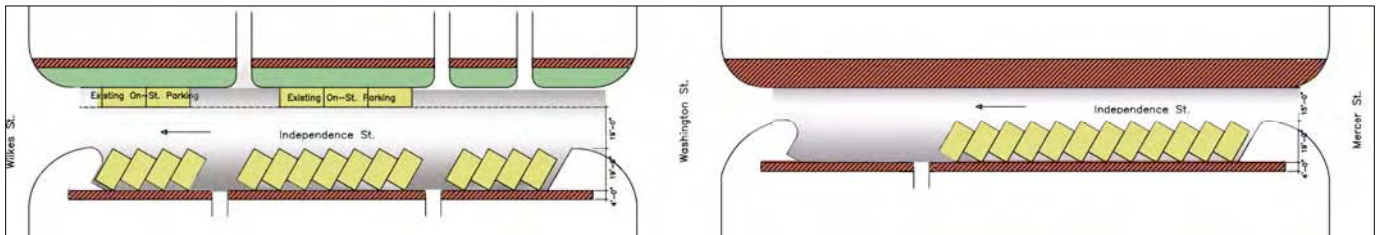
Option B: Introducing a one-way traffic flow pattern on Independence and Congress Streets with a one-side angled parking layout (3 to 5 year implementation schedule)

Another option would be to convert Independence and Congress Streets to one-way traffic patterns while introducing angled parking along one side of the streets. Note that under this option the traffic pattern on Union Street would remain two-way with the same proposed layout previously identified on Exhibit G1

Independence Street: Exhibit I1 illustrates the conceptual parking layout on Independence Street between Wilkes and Mercer Streets under the one-way west-bound traffic flow pattern. The proposed conceptual layout recommends creating angled parking along the south side of the street. Implementation of this conceptual plan requires the right-of-way in order to create fifteen (15) on-street angled parking spaces along the south side of Independence Street. As a result of this plan, some trees, vegetation, and existing curbs along the south side of street will be required to be removed as will eleven (11) “private” parking spaces located within the right-of-way.

Similarly, the conceptual layout plan for the section of Independence Street between Washington and Mercer Streets proposes conversion of Independence Street to a one-way west-bound traffic pattern and introduces twelve (12) angled parking spaces along the south side of Independence Street. This plan also requires removal of six (6) parking spaces on the north side of the street and displacement of four (4) parking spaces on the south-side of the street. Some curb, gutter, and asphalt installation is also required.

Exhibit I1: Proposed Parking Layout on Independence St. under the One-way Traffic Flow Pattern



Congress Street: Exhibit I2 illustrates the conceptual parking layout under a one-way east bound traffic pattern on Congress Street. This layout displaces eight (8) parallel parking spaces with ten (10) angled spaces along the south side of Congress between Wilkes Street and Washington Street. This concept requires extension of the existing curb on the south side of Congress between Wilkes and Washington Streets.

The proposed layout for the section of Congress Street between Washington and Mercer Streets displaces two (2) on-street parallel parking spaces and creates six (6) on-street angled parking spaces resulting in a net gain of four (4) parking spaces along Congress Street between Wilkes and Washington Streets. Implementation of this concept requires installation of curbs and gutters

Exhibit I2: Proposed Parking Layout on Congress St. Utilizing One-way Traffic Pattern

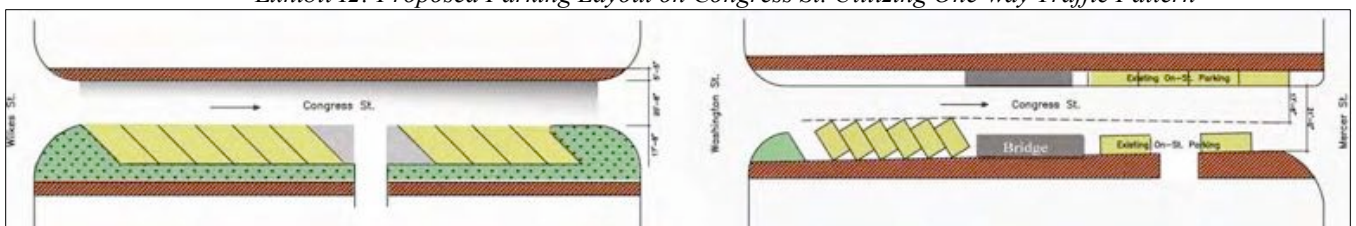


Table 13b identifies the net gain of parking spaces as a result of proposed roadway design changes under Option B. This concept could increase the supply of on-street parking by twenty-five (25) spaces.

Table 13b: Net Gain of Parking Spaces – Option B

Street Name	Before	After	Net Gain
Union St. between Washington & Mercer St.	14	12	-2
Independence St. between Wilkes & Washington St.	5	20	15
Independence St. between Washington & Mercer St.	10	12	2
Congress St between Wilkes & Washington St.	8	10	2
Congress St between Washington & Mercer St.	8	12	4
Total	45	66	21

Option C: Improve/Reclaim Lot Parking (Liberty Street)

Another mid-term implementation strategy is to reclaim and improve a public street that functions as a parking lot. Liberty Street is currently being utilized as a parking lot for the Catholic Church. There are 8-hour parking meters located in a section of this lot but are rarely used as other spaces in the lot are unmarked and free. The town could reclaim and improve the Liberty Street Lot, improve public parking signage, and install additional meters for both short-term and long-term parking activity. Exhibit J illustrates improvements that could be completed on Liberty Street by a modest amount of paving and striping. This would increase the supply by one (1) spaces and most importantly, reintroduce this lot to the general public.

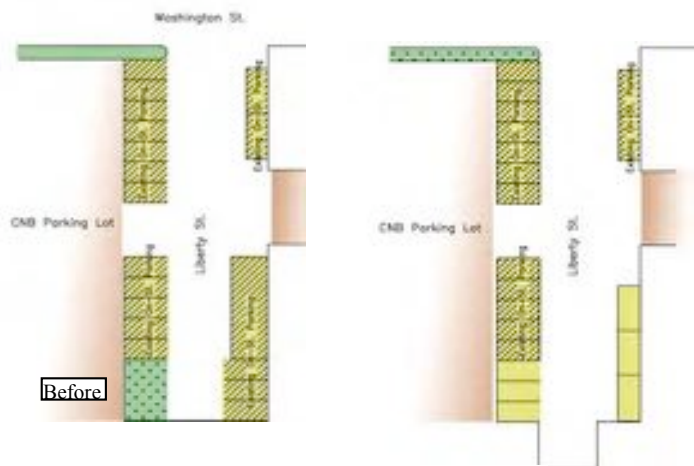


Exhibit J: Improve/Reclaim Liberty Street

Table 14 summarizes the net gain of on-street parking spaces under the two proposed alternatives. It is estimated that as many as eleven (11) parking spaces could be gained immediately by simply restriping existing spaces. As many as five (5) parking spaces can be gained through reclaiming and redesigning streets without changing the two-way traffic pattern. Twenty-one (21) spaces could be gained by changing traffic flow patterns on Independence and Congress Streets and introducing angled parking. Additionally, one (1) parking space could be gained by reclaiming and improving the Liberty Street Lot.

The town could choose to implement one or a combination of the above implementation strategies. For example, reclaiming/improving the Liberty Street Lot and redesigning roadways, while maintaining the current traffic flow pattern (Alternative 2A) could be completed simultaneously. This action would add six (6) additional spaces to the supply of on-street spaces in the core study area. Similarly, the town could choose to implement both Alternative 2B and 2C, which would increase the total on-street parking inventory by twenty-two (22) spaces.

Table 14: Net Gain of Parking Spaces

Alternative/Option	Net Gain
Alternative 1	11
Alternative 2	
Option A	5
Option B	21
Option C	1
Subtotal A+C	6
Subtotal B+C	22

1.2 Cost Estimates

Table 15 estimates the cost associated with each parking expansion alternative. Alternative 1 (restriping) costs are minimal and can be completed by the town's in-house staff. As such, there is no dollar value assigned to this improvement.

It is projected that the cost of introducing new roadway designs (Alternative 2) under Option A (two-way traffic) will be \$62,000. Implementation of Alternative 2 - Option B, which includes conversion of Independence and Congress Streets to one-way traffic is estimated to cost \$103,000. The estimated cost for reclaiming and improving the Liberty Street Lot is \$6,500.

Table 15: Cost Estimates under the Two Proposed Parking Expansion Alternatives

Phase	Location	Curb & Gutter Removal (\$8/Lf)	Curb & Gutter Installation (\$25/Lf)	Asphalt on Existing Base (\$3.5/Sq.Ft.)	Side-walk (\$7/Sq.Ft)	Total
Alternative 1	Various Streets	Minimal	Minimal	Minimal	Minimal	Minimal
Alternative 2 Option A	Union St. between Washington & Mercer St.	\$800	\$14,000	\$12,400	\$7,700	\$34,900
	Independence St. between Wilkes & Washington St.	\$1,800	\$5,000	\$12,300	\$4,000	\$23,100
	Congress St between Wilkes & Washington St.	\$600	\$1,800	\$1,600	\$0	\$4,000
	Subtotal	\$3,200	\$20,800	\$26,300	\$11,700	\$62,000
Option B	Union St. between Washington & Mercer St.	\$800	\$14,000	\$12,400	\$7,700	\$34,900
	Independence St. between Wilkes & Washington St.	\$1,800	\$6,000	\$12,300	\$4,000	\$24,100
	Independence St. between Washington & Mercer St.	\$0	\$12,500	\$3,500	\$0	\$16,000
	Congress St between Wilkes & Washington St.	\$2,600	\$15,000	\$9,500	\$0	\$27,100
	Congress St between Washington & Mercer St.	\$0	\$1,000	\$0	\$0	\$1,000
	Subtotal	\$5,200	\$48,500	\$37,700	\$11,700	\$103,100
Option C	Liberty St. Lot	\$200	\$2,800	\$3,500		\$6,500

Table 16 layers the net gain of parking spaces (Table 14) on the cost estimate associated with each alternative (Table 15). Option B has the lowest cost per space gain followed by Options C and A. The approximate cost per space gain under Option A is \$12,400. Implementation of Option B is estimated at \$4,910 per space gained.

	Cost	Net Gain	Cost per Space
Alternative 1	Minimal	11	Minimal
Alternative 2			
Option A	\$62,000	5	\$12,400
Option B	\$103,100	21	\$4,910
Option C	\$6,500	1	\$6,500
Subtotal A+C	\$68,500	6	\$11,420
Subtotal B+C	\$109,600	22	\$4,980

Table 16: Cost Estimates per Space

While the cost per space gained appears significant, these costs must be compared to traditional surface and structured parking construction costs. On average, a properly designed surface parking space costs \$2,500 per space to construct. That cost includes grading, paving, curb and gutter, lighting, landscaping, and storm water control. Parking structure construction costs can range from \$12,000 to \$25,000 per space depending on site conditions and architectural treatment/materials. These surface and structured costs do not include land value. If, for example, a 1/2 acre parcel of land in downtown Bath/Berkeley Springs cost \$250,000 and that parcel could support 60 parking spaces (approximately 350 sq.ft. per space), then the cost to build that lot would be \$250,000 plus \$150,000, or \$6,660 per space. The cost per space gained under Alternative 2B plus 2C is, in comparison, much lower estimated at \$4,980.

2.0 Parking Management Strategies and Best Practices

2.1 Current Public Parking Operations

This analysis of existing and future parking conditions suggests that at present, and presuming the availability of private/restricted parking facilities, there is sufficient capacity to meet current and near-term need. However, it is unrealistic to depend upon a supply of privately-owned spaces as these spaces may become unavailable any time. Issues associated with safety, security, and liability will require property owners to limit parking activity to your customers and/or tenants. Signs noting parking restrictions and towing posted at the Nations Bank lot are a sign of things to come. As such, the Town of Bath must expand the supply of publicly available parking spaces. Given the cost of land acquisition, it is unlikely that a new municipal lot will be developed in the near term. Therefore, on-street parking within the town's core commercial district is the only resource that the Town of Bath can quickly and efficiently improve.

This section of the report examines the town's current enforcement and maintenance of parking and suggests operational and management strategies by which the town can improve the effectiveness of the parking system without negatively affecting residents, employees or visitors.

2.2 Organizational Structure

Unlike larger municipalities, the Town of Bath does not maintain a parking division, department or parking authority. Nearly all of the day-to-day parking functions including meter installation, maintenance, revenue collection, and enforcement are performed by the enforcement officer under the supervision of the Police Department with support from other departments.

2.3 Enforcement & Maintenance

Currently, there are 102 active meters in the study area. Time restrictions for these meters are broken down as follows:

- Eighty-eight (88) 2-hour meters
- Ten (10) 8-hour meters
- Four (4) 15-minute meters

Meters are active and enforcement is conducted Monday through Saturday from 9 AM to 5 PM except for Sundays and holidays. As noted previously, one parking enforcement officer is responsible for all parking related functions including parking enforcement, revenue collection, and minor meter maintenance. The town does enforce a comprehensive range of parking violations with fines ranging from \$8 for common meter violations to \$100 for unauthorized parking in a handicapped zone. The meter enforcement program focuses mainly on meter payment and not on the enforcement of the 2-hour duration. As a result, users are allowed to park for more than two hours on a 2-hour meter if they feed the meter. The Town of Bath does maintain a booting and towing program, which is under the administration of the Chief of Police, but this program is rarely implemented.

2.4 2008-09 Parking Revenues & Expenses

Based on information provided by the Police Department, hourly rates charged at meters vary from one hour for \$0.25, two hours for \$.25, and fifteen minutes for \$0.25. Meter revenue is collected on weekly basis.

In Fiscal Year 2008-09, the revenue generated by the existing 102 meters was \$31,261.93, or \$306.48 per meter per year. Presuming a 300-day calendar year, each meter generated an average of \$1.02 per day.

Based on this same data 1,950 tickets were issued which averages 6.5 tickets issued each day. Of the 1,950 citations issued, 1560 were paid, which equates to a 75%-85% collection rate. Parking fines totaled \$8,504.50 in Fiscal Year 2008-09.



The annual operating revenue generated by the town's parking program for Fiscal Year 2008-09, which includes parking fines and parking meter revenue, totaled \$39,766.43. With the exception of the salary of the enforcement officer's the town does not track the cost to develop and maintain its parking meter program. Based on the findings from similar municipal parking systems (Clarksville, TN, Ellicott City, MD, Carlisle, PA), the cost to maintain an on-street parking space is approximately \$250 per space per year. That cost includes meter acquisition, installation, maintenance, enforcement, and revenue collection. Given the total of 102 metered spaces in the study area, the theoretical cost to maintain Bath's parking meter program equates to \$25,500. This would suggest an annual operating surplus of approximately \$14,200.

3.0 Overview of Best Management Practices

3.1 Parking Management and Operational Best Management Practices

As previously noted, the public parking system in Bath is comprised of on-street spaces with no off-street spaces owned or controlled by the town. As a result, the town must maximize the effectiveness of its on-street spaces through improved parking operation and management to provide the perception of readily available and convenient parking to support the business community. The following is offered as a basic introduction on current parking operational best management practices and serves as a foundation upon which more specific recommendations for Bath are to be based. The discussion of best management practices takes two forms; 1) the overriding principle regarding who is responsible for parking management and 2) the organization, approaches, and technologies employed to manage parking on a day-to-day basis. Note that this review is based on DESMAN's experience on a number of mid-Atlantic municipal parking studies, notably Carlisle, PA, North Beach, MD, Leesburg, VA, Frederick, MD, Ellicott City, MD, and Roanoke, VA. However, conditions in Bath are, as previously stated, unique and effective parking policy cannot simply be modeled on other municipal program's success. Ultimately, an effective management program for Bath will be based on policies and procedures that 1) are affordable, 2) politically supported, 3) are sustainable, and 4) improve accessibility and support the viability of commercial and institutional uses. Therefore, this overview provides some basic guidelines for sound management principals.

3.2 Parking Responsibility

The form, function, and character of a downtown parking system is first dictated by the roles of the public and private-sector in the planning, development, ownership, and operation of parking. The responsibilities for parking could, in some examples, fall wholly within the public-sector where new private-sector development is prohibited from building additional parking thus requiring the particular municipality to provide the necessary public infrastructure. Like water, sewer, electricity, and public safety, some towns and cities view parking as required public infrastructure that increases the value of those commercial and residential activities that it supports. Conversely, the public-sector could abrogate its authority to the private-sector, requiring developers to provide sufficient parking for their respective needs and possibly the parking needs of adjacent developments.

In the case of Bath, it appears that the community leans toward the second definition where private property owners are responsible for the supply and management of their own parking as there are no town-owned or operated off-street facilities to support the demand generated by the private-sector. Furthermore, only a small fraction of the on-street spaces are managed for public parking purposes as only 102 of the 389 on-street spaces in the core are managed through parking meters. Unfortunately, given the cost of building surface and structured parking and the cost of land acquisition, it is unlikely that private interests would be willing to build public parking facilities in Bath. This is due to low market parking rates in Bath, and in this region of the country, making the investor's return on investment an unattractive one.

3.3 Organizational Structures

Parking industry management experts generally agree that a parking management structure most often dictates what a parking system will look like. Conversely, the parking system and its operation most often reveal the nature of the management structure. A fragmented approach to managing public parking is most often a result of low demand for public parking and does not allow a parking system to properly plan for future parking growth and development. This method of parking management is also not conducive to supporting proper urban planning and redevelopment efforts in a typical downtown setting.

Given the relatively small size of the public parking system (102 metered spaces), it is understandable that the Town of Bath does not have a dedicated parking division or department. If the town's parking system were to grow significantly, there are two organizational different approaches to management that could be explored. This includes the parking authority and parking department. The following describes the characteristics associated with each of the aforementioned management approaches.

A parking authority is defined as an independent body politic of a municipality enabled under State legislation, and created by a city or county ordinance or resolution. In most States, parking authorities have the following powers and characteristics:

- The ability to acquire real property either through negotiation or its vested powers of eminent domain.
- A parking authority has a five-member board of directors. The mayor with the consent of a city or county commission appoints the board.
- The board is empowered to hire a director and any and all other employees that it deems necessary to manage and operate parking facilities, processes, and functions under its jurisdiction.

Not unlike other municipal departments, a parking department can manage its special charge from a single consolidated base. Although parking departments can succeed in managing on and off-street parking facilities, there are certain inherent problems that prevent parking departments from delivering the higher level of service that a parking authority can achieve.

The primary drawback is that parking departments cannot control all the variables associated with the delivery of parking services. Parking departments are most often created to be reliant on other departments that have cooperation with a parking department as a secondary or tertiary responsibility. A meter pole is broken - call the Public Works Department. Parking income is suspect - call the Finance Department. Have a problem with a parking contract - call the Law Department. Parking departments find it difficult to divest themselves of reliance on other departments, thus maintaining a major fatal parking flaw – fragmentation of critical support services and the absence of a true business model.

Another problem is that parking departments must compete for funding in the municipal budget environment and cannot operate as a business. It is difficult to explain to City or County officials why a parking structure's restoration needs are more important than other competing interests. Unfortunately, a frequent byproduct of Parking Department managed facilities is lesser facility maintenance levels and a Class "B" appearance.

3.4 Retention of Parking Related Revenue

Another key to a successful public parking program is the system's ability to be financially and politically neutral. Parking best management pricing and enforcement practices are often at conflict with the wishes and opinions of local property and business owners. One common refrain from downtown businesses is that parking should be free so that local businesses can compete fairly with offices, shopping centers, and restaurants in the suburbs. However, case studies have documented the fact that when on-street parking regulations are removed those most convenient spaces would be consumed by long-term parkers, i.e., employees and downtown residents, thereby reducing the supply of spaces available for shoppers and other short-term parkers. This, in turn, reduces retail/restaurant sales and the resulting sales tax revenue. A key tool to financial and political neutrality is a parking enterprise fund. The parking enterprise fund permits the department or authority to operate in a business like manner where all costs and revenues associated with the public parking system are quantified. Parking rates and enforcement revenue are set to encourage commercial and residential vitality but with knowledge of parking planning, development, operating, and maintenance costs. Generally, it costs a municipality between \$250 and \$300 per space per year to simply maintain existing on-street and off-street spaces. That cost includes meter maintenance, enforcement, and revenue collection, snow removal, restriping and repainting. The enterprise fund's charter/language could stipulate that the municipality's general fund would receive any surplus revenue each fiscal year or be responsible for any shortfall. This would lessen any temptation by the community to artificially increase or lower appropriately established parking rates and fines for violations.

3.5 On-street Parking Management Technology

One method to significantly improve on-street parking is to enhance the level of technology applied to parking operations. With the move toward a "cashless" society, it has become increasingly inconvenient to carry the number of coins needed to meet parking meter fees. To offset this demand for increased coins, parking meter manufacturers began to offer a variety of technology options. These options include debit card, credit card (for multi-space parking meters), token technology, and

cellular phone payment technologies. Multi-space parking meters come in two varieties, Pay-By-Space and Pay-And-Display. Each electronic meter option is discussed below.

1. **Electronic Single Space Parking Meters** - The traditional approach would be to install single space state-of-the-art electronic parking meters that accept various media such as debit, credit and chip cards. While the Town of Bath does employ single space parking meters the devices are currently a combination of old mechanical and newer digital meters. This often confuses frequent visitors and complicates maintenance.
2. **Multi-Space Parking Meters** - Recently, multi-space parking meters have become increasingly popular. Multi-Space parking meters come in two varieties Pay-By-Space and Pay-And-Display. Multi-space parking meters have some distinct advantages. Primarily, they provide a comprehensive audit trail of all transactions.
3. **Pay-And-Display parking meters** have been a growing part of the on-street parking market that has gained and enjoyed user acceptance. Aspen, Colorado was one of the first municipal jurisdictions to abandon traditional on-street single space parking meters and replaced them with Pay-And-Display parking meters. What started as an experiment nearly 8 years ago has turned into a successful national model for this payment option. Aspen started with a few test patches of Pay-And-Display central parking meters and expanded the program to the entire City.

3.6 Parking Enforcement

Effective parking enforcement is the key to any properly functioning on-street parking program. Industry standards suggest that a single parking enforcement officer patrolling on foot could patrol an area of between 300 and 400 on-street spaces every two hours. The two hour duration is generally successful in meeting a variety of short-term trips (dinning, shopping, business meeting, etc.).

There are no industry standards for fines associated with parking violations. Fine values should be sufficient to affect proper vehicle turnover, durations promote public safety, ensure efficient vehicular and pedestrian circulation, and deter repeat offenders. Therefore, effective fine values differ from community to community depending on their particular socio-economic conditions.

The majority of municipalities nationwide maintain ordinances that permit the enforcement of two-hour durations regardless of meter feeding.

To successfully keep track of vehicles that violate legislated duration of stay parking rules, many municipalities employ handheld ticket writing technology. Regardless of the size of the respective parking operation, implementing ticket-writing technology will greatly benefit a parking program.

The general purpose for instituting the use of handheld ticket-writing devices is to:

- Provide a less labor-intensive ticket issuing system
- Easily track negative parking trends and reassign staff as necessary to affected areas
- Track productivity of enforcement officers
- Increase parking fine collection rates
- Consolidate existing citation management programs
- Use variable rate fine structures
- Identify scofflaws
- Permits greater customer service flexibility in parking enforcement

Information for each vehicle that is issued a warning is entered into the handheld device resulting in a warning being dispensed automatically. At the end of each patrol shift, each officer downloads their device into a personal computer. This information is then assigned the correct owners' names based on the license plate numbers recorded and for any previous warnings. This technology allows the municipality to track the number of warnings that a vehicle has been issued so that appropriate action can be taken should it fall within the criteria for towing. The municipality could program the system to issue warnings as opposed to violations to first offenders. This is a significant element to effective parking management in a downtown that supports tourism and retail activity.

If the Town of Bath were to purchase this type of system, it is recommended that two (2) handhelds be purchased. This will allow for a spare should the need for immediate replacement of a malfunctioning unit arise. The cost of this system ranges from \$20,000 to \$50,000, depending on the level of equipment and software desired.

Sample Handheld Ticket Issuance Devices



4.0 Recommended Changes to On-Street Parking Operations

4.1 Parking Meter Expansion Program

As identified earlier, the town does not own or operate a municipal parking lot resulting in the ability to effectively expand on the supply of on-street parking critically important. It is recommended that the town expand its on-street parking program using the following three phases.

Phase 1- Introduce meters on Wilkes Street between Fairfax and Independence Street and Increase meter rates on Washington Street and Fairfax Street (6 – 12 month implementation timeframe)

In an effort to keep parking manageable and user-friendly, providing consistent time limits within a central business core is recommended in this phase. The Town of Bath must maintain its current 2-hour time limit. While the practice of meter feeding is prohibited by West Virginia State law and also constricts the efficiency of an on-street parking program, it is recommended that Bath continue to permit meter feeding for the time being. Transient parking durations of stays in Bath range from 15 minutes to nearly 4 hours given the type of commercial business in the core study area (restaurants, spas, galleries, etc.). As there are no municipal parking lots to serve long-term public parking activity, the town cannot enforce 2-hour restrictions until long-term public spaces are created. To encourage long-term users to use peripheral metered spaces it is recommended that the most convenient and visible on-street metered spaces be slightly more expensive. Higher parking rates for on-street spaces should encourage a greater distribution of demand where cost conscious individuals

can find inexpensive parking on the periphery of an area while the convenience conscious individuals can find “front door” parking but at a slightly higher price. Exhibit K1 illustrates the recommended Phase 1 meter expansion program on Wilkes, Washington and Fairfax Streets.

Wilkes Street: At present there are approximately 30 spaces on Wilkes Street between Fairfax and Independence Streets most of which are utilized by employees of adjacent blocks. In order to make these highly desirable spaces available to visitors, it is recommended that all spaces on Wilkes Street be converted to pay parking at the rate of \$0.25/hr. Note that residents on Wilkes Street should be allowed to utilize these on-street spaces through implementation of a residential permit program. Long-term parkers would be encouraged to find parking elsewhere.

Washington Street and Fairfax Street: Metered spaces on Washington Street and Fairfax Street are the most convenient and therefore the most valuable parking assets in core of the downtown. Currently, there are 26 metered spaces on Washington Street between Independence Street and Liberty Street and 25 metered spaces on Fairfax between Wilkes Street and Green Street. Parking rates for these 51 spaces should be greater than an equivalent duration in any other on-street area. For example, if the 2-hour meter rate is \$0.25/hr on Congress and Independence Streets, on-street meter rates on Washington and Fairfax Street should be increased to \$0.50/hr.

As noted in the Parking Expansion Opportunities section of this report (see Alternative 1, page 33), as many as 6 parking spaces on Washington Street and 3 spaces on Fairfax Street could be gained through restriping existing parking surfaces. Two-hour meters costing \$0.50/hr should also be installed at these 9 spaces. Overall, after implantation of this phase, as many as 90 metered spaces at a price of \$0.50 per hour could be introduced in the core of downtown.

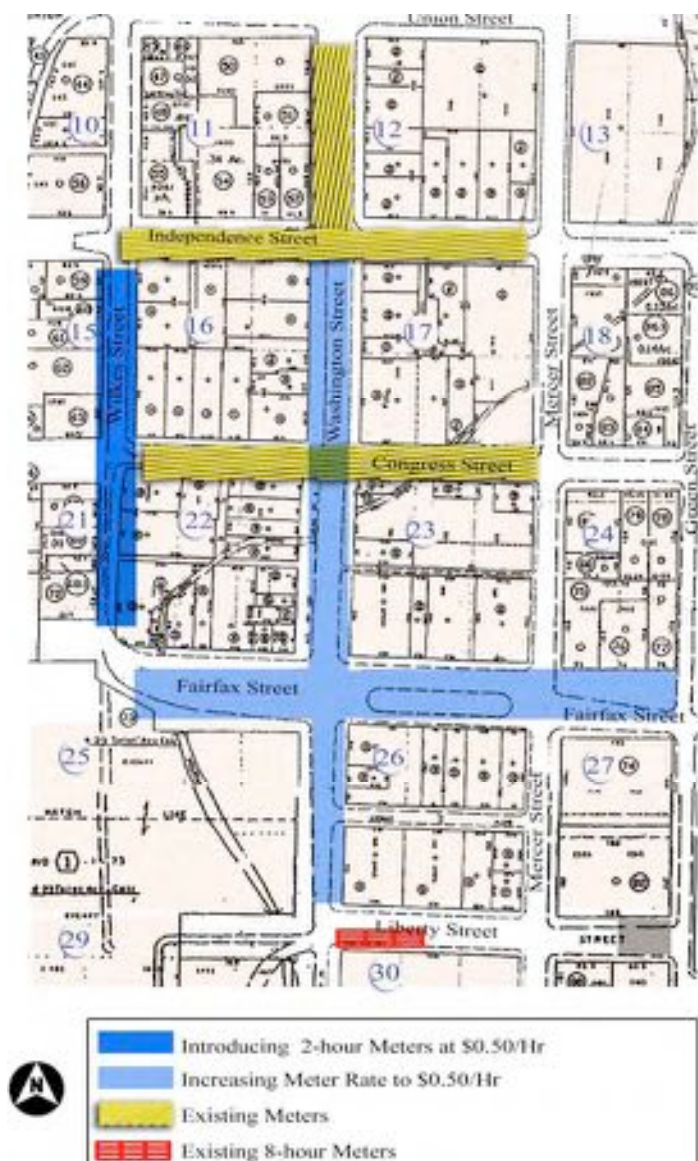
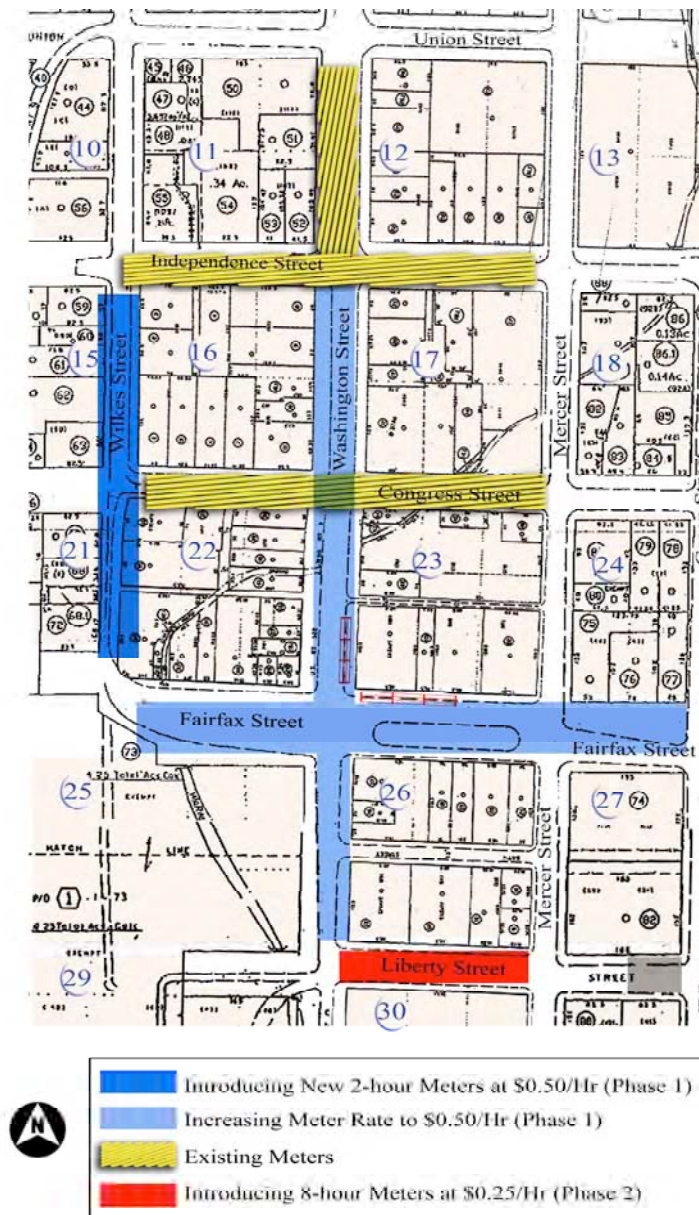


Exhibit K1: Phase 1 Meter Expansion Program

Phase 2- Introduce 8-hour Meters on Liberty Street (1 to 2 year implementation timeframe)

Exhibit K2 illustrates the Phase 2 meter expansion program. As previously identified, it is possible to reclaim and improve the Liberty Street lot for use by the general public. This would add 20 additional parking spaces to the supply of publicly-available parking. The town should encourage long-term parkers to park on this lot by introducing 4 hour metered durations with a \$0.25 per hour rate. Note that under Phases 1 and 2 of the expansion program, meter rates on Congress Street and Independence Street would remain at \$0.25 per hour.

Exhibit K2: Phase 2 Meter Expansion Program



Phase 3-Expand On-street spaces on Congress, Independence, and Union Streets, begin enforcing parking duration regulations and increase meter rates (3 - 5 year implementation timeframe)

Exhibit K3 illustrates the Phase 3 meter expansion program. In order to encourage a higher turnover rate and to offer various time durations and price sensitive options to parkers, the Town should begin enforcing 2-hour regulations at this phase. Introducing 4-hour meters and increasing rates is also recommended.

Parking rates on Washington and Fairfax Street would increase from \$0.50 to \$0.75 per hour. All other meters would increase to \$0.50 per hour. Four hour metered durations should be introduced at various locations including Independence Street, in the section of Wilkes Street between Independence and Congress Streets and on Union Street between Washington and Mercer Streets. Depending on the alternative chosen from the parking expansion recommendation section of this report (either 2A or 2B), as many as twenty-three (23) to forty-four (44) 4-hour metered spaces could be introduced on Independence and Union Streets. In addition, meter duration at the 20 existing meters on Wilkes Street between Independence and Congress should be increased to 4 hours without a change in rates from Phase 2.

As noted, meter rates should be increased from \$0.50 to \$0.75 per hour on Fairfax Street and a section of Washington Street between Independence and Liberty Street (60 meters). Existing meter rates on Washington Street between Independence and Union Streets (7 meters) should be raised from \$0.25 to \$0.50 per hour. It should be noted that under this scenario meter rates on Wilkes Street between Congress and Fairfax Streets (10 meters) and at the Liberty Street lot would remain the same as in Phase 2, at \$0.50 and \$0.25 per hour respectively.

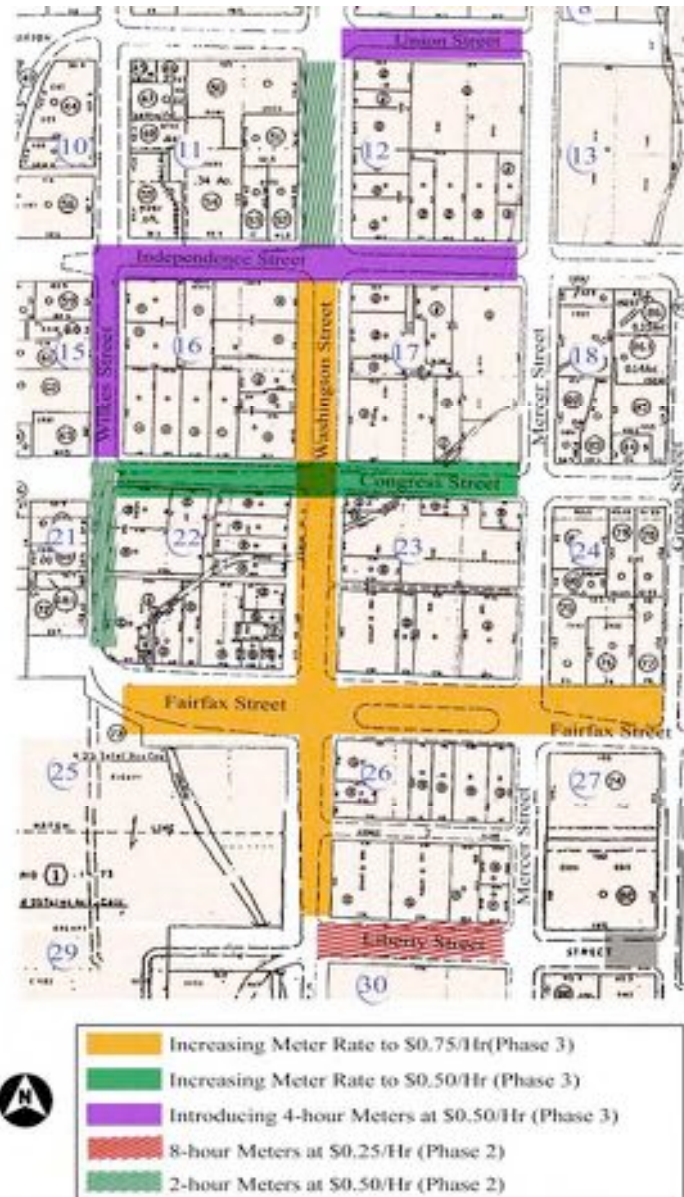


Exhibit K3: Phase 3 Meter Expansion Program

Table 17 illustrates the net gain in metered spaces as a result of the meter expansion program. As many as 90 metered spaces charging \$0.50 per hour would be introduced as part of Phase 1. Twenty (20) long-term metered spaces with rates at \$0.25 per hour would be introduced as a result of Phase 2.

Finally, depending on the town's preference in implementing Option A or B (one-way versus two-way scheme), the following changes in the Town's meter program would take place in Phase 3.

Option A: (Parking Expansions under the Two-way Traffic Flow Pattern)

- Sixty (60) 2-hour meters would be introduced on Fairfax Street and on Washington Street between Independence and Library Streets at \$0.75 per hour
- Introducing eleven (11) 4-hour metered spaces on Independence Street, twelve (12) 4-hour metered spaces on Union Street and twenty (20) 4-hour metered spaces on Wilkes Street all charging a rate of \$0.50 per hour
- Introducing nine (9) 2-hour metered spaces on Congress Street and ten (10) 2-hour metered spaces on Wilkes Street at a rate of \$0.25 per hour

Option B: (Parking Expansions under the One-way Traffic Flow Pattern)

- Introducing sixty (60) 2-hour meters on Fairfax Street and Washington Street between Independence and Library Streets at \$0.75 per hour
- Introducing thirty-two (32) 4-hour metered spaces on Independence Street, twelve (12) 4-hour metered spaces on Union Street and twenty (20) 4-hour metered spaces on Wilkes Street at a rate of \$0.50 per hour
- Introducing twenty-two (22) 2-hour metered spaces on Congress Street and ten (10) 2-hour metered spaces on Wilkes Street at a rate of \$0.25 per hour

Table 17: Meter Expansion Program

Expansion Phase/Location	Number of Existing Metered Spaces	Number of Future Metered Spaces	Net Gain of Metered Spaces
Phase 1			
1-Wilkes Street	0	30	30
2-Washington St (Between Liberty & Independence St.)	26	32	6
3-FairFax St	25	28	3
Sub-total	51	90	39
Phase 2			
Liberty St	7	20	13
Phase 3			
Option A			
1-Union Street	0	12	12
2-Congress Street	8	9	1
3-Independence Street	5	11	6
Option A Sub-total	13	32	19
Option B			
1-Union Street	0	12	12
2-Congress Street	10	22	12
3-Independence Street	12	32	20
Option B Sub-total	22	66	44

4.2 Single-space vs. Multi-space Meter Technology & Cost

Due to current vehicle volumes and parking utilization levels within the downtown, it is recommended that for the immediate future the town continue to use the Duncan single-space parking meters for its on-street parking program versus multi-space meters. The benefit of this recommendation is that there will be no capital costs associated with the purchase and installation of new on-street revenue control devices at this time. However, the Town of Bath must begin preparing to incorporate modern technology as the town grows and parking demand increases.

Each multi-space meter can monitor 10 to 15 on-street parking spaces, depending on the configuration of the parking and street layout. The cost of each meter, depending on the type and features, ranges between \$10,000 and \$15,000 excluding installation. It is estimated that the cost of full replacement of the single-space meters with a multi-space meter system in Bath would be in the range of \$100,000 to \$150,000; this assumes that approximately 10 multi-space meters will be purchased with an approximate combined installation cost of \$25,000. As previously noted, at this time replacing the current on-street metered system is not recommended. However, given the significant benefits associated with this technology, it is recommended that the town plan for the future purchase and installation of multi-space meter technology.

4.3 Long-term/Unrestricted Parking Expansion Program

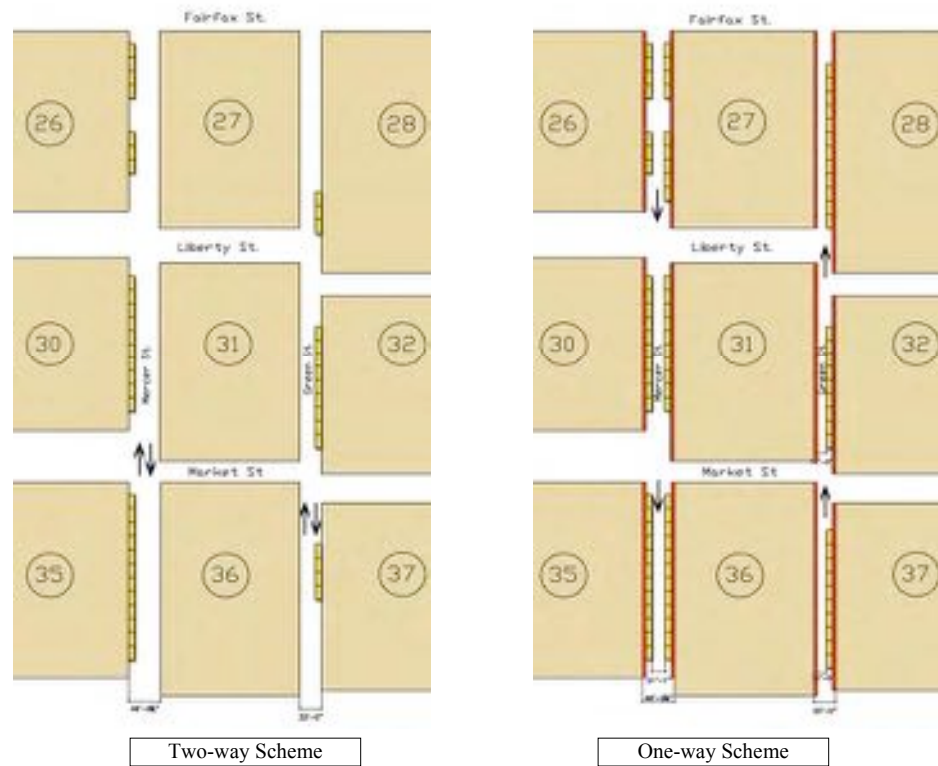
- Parking on Mercer Street between Fairfax Street and Market Street

Currently, there are approximately forty-five (45) un-restricted/unpaved spaces on Mercer Street and Green Street between Fairfax and Market Streets. In order to provide more long-term parking options for individuals, it is recommended that as the streetscaping program extends to Mercer and Green Streets, these lesser-used unpaved spaces be paved and converted to unrestricted spaces to serve both short and long-term parkers. Overnight parking should only be allowed for residential permit holders who live on these two streets.

- Required One-way Traffic Flow Pattern

Another opportunity to create more on-street parking spaces on Mercer Street and Green Street requires conversion of these two streets to a one-way traffic pattern. This would create as many as 90 unrestricted on-street spaces. Exhibit L illustrates the long-term/unrestricted parking expansion program under both one-way and two-way options.

Exhibit L: Long-term/Unrestricted Parking Expansion Program



4.4 Employee and Resident Parking Permit Program

The success of any downtown area often results in the misuse of on-street curbside parking by residents, merchants, vendors and their employees. Service workers find it more convenient to park as close as possible to their location of employment even if it requires them to move their vehicle per the posted time limits for on-street parking. Residents, business owners and employees often monopolize non-metered on-street parking (for example on Wilkes Street) as they arrive downtown before peak demand periods. This is especially true in the Town of Bath as parking enforcement efforts do not begin until 9:00 AM, well after employees begin to arriving downtown. This provides the public with the perception that there is insufficient parking in the area and results in additional traffic congestion due to visitors having to hunt for on-street spaces.

In an effort to reduce the use of the valuable municipal parking inventory by individuals that live and work within the study area, a lower cost employee and resident parking program should be created. The concept of this program is to provide a percentage of long-term parking for residents and employees. Pricing strategies should be developed to encourage this concept. It is strongly recommended that employee parking occur in the areas of least demand. Residents of downtown should be allowed to park at on-street spaces on Wilkes, Mercer and Green Streets at a minimal cost. Signage indicating the availability of these spaces to the intended users should also be put in place.

The cost of this program should be modest depending on the number of residents requesting permits and the number of additional vehicles they wish to register. Given the negative impact that parking rate increases may have, it is recommended that some free parking for both short-term and long-term individuals be made available in a peripheral lot that is to be located and leased by the town based on

the criteria that will be set forth in the following section of this document. Non-restricted spaces on Mercer Street and Green Street could also be used to serve short-term and long-term parkers.

The operation of an Employee and Resident Permit Parking Program would require the issuance of numbered parking decals or hangtags that each user would be required to display in their front windshield. This is necessary to ensure that a parking enforcement officer can verify the user and the validity of a vehicle to be parked in a specified space. Valid and invalid permit numbers can be downloaded into the handheld ticket issuance system so that citations can be issued to users who have not paid for the month or who are parked illegally.

Sample Employee/Resident Parking Decal/Hangtag

Rear View Mirror Hangtag



Windshield Decal



Issuance of this permit would require that the user fill out a form that identifies the rules and regulations of this program. To obtain a permit, a user would be required to either visit the Town of Bath Police Department to complete the form and to pay the appropriate first month's fee or to complete the form and pay for the permit online and have the decal or hangtag sent to the user by mail. In order to obtain a permit, proof of employment or residency should be required. This proof can be in the form of a drivers license, recent utility bill, recent pay stub or timecard, or business card for a local business. A sample of such a registration form is included in the Appendix A of this report.

4.5 Parking Validation Programs

As parking fees increase it often becomes necessary to develop discounted parking program for visitors and shoppers of a downtown area. A merchant validation program allows a shopper to visit a local business and receive discounted parking. Most often, a predetermined dollar amount, determined by the merchant and the parameters of the program, is provided to shoppers who may meet purchasing requirements to be eligible in the program or to clients of professional services provided within the business district. To avoid abuse of the program, the town will be required to monitor the usage of each participant business to ensure that businesses are not providing this reduced cost program to its employees. Validation sales levels for all merchants must be tracked on a monthly basis to identify user trends. After one year of operation, the Town may want to limit the amount of discounted parking based on usage. If the merchant wishes to extend the program above the preset limits, it could do so on its own with no financial participation from the town. Under no circumstance should the Town fully fund the cost of this program. At best, the town should discount the cost of validated parking no more than 25%. The remaining cost should be funded by the local business association or local merchants on an individual basis.

4.6 Non-metered (Punitive) Approach to Parking Management

This section reviews and compares a punitive versus a non-punitive approach to parking management. The foundation of any parking program is the enforcement strategy used to encourage

the proper use of on- and off-street parking. Without proper and consistent enforcement levels an otherwise well-designed parking program will fail.

If meters were to be removed from the core study area and all on-street spaces became time restricted, the success of parking system would rely exclusively on citations and towing as the means to bring about compliance with parking regulations. Under this management strategy, parking fines would become the only revenue generator of the parking system.

It might seem to be sufficient to conduct one patrol to issue parking citations. However, this may create a punitive atmosphere versus a more user-friendly atmosphere where the educational process could potentially reduce the number of illegal parkers and provide a better parking experience for the user by offering price sensitive option to parkers.

5.0 Recommended Changes to Off-Street Operations

5.1 Shared Management of Private Lots

On-street parking recommendations will encourage long-term parkers, i.e., employees to seek other no- and low-cost alternatives. Inevitably, this will increase pressure on private lot owners to manage those properties for the benefit of their customers, employees, and constituents. While many employees and employers will be impacted by this program, the future parking demand analysis noted that county employees may feel this impact most acutely given the demand generated by County government functions in town. It is recommended that the county, with the help of the town, explore the opportunity to lease private parking lots for the purpose of maintaining public/employee parking access. The county has been effective with these types of agreements in the past. Individual lease agreements with those property owners that possess a large volume of parking spaces could be created that would permit part-time or full-time use of that property. However, the county does not have the personnel necessary to manage permits or enforce this program. The town, its parking enforcement program, residential permit program, and its expanding meter program could be used to support county or other employee parking activity on these leased lots. Parking meters or other revenue generating devices could then be installed, presumably generating sufficient parking revenue to fund lease payments and permit management costs. Employees and tenants of those properties that are subject to the lease agreement could be accommodated through the use of no-fee parking permits that could be obtained from the town.

Any lease agreement between the public-sector and the property owner would need to stipulate the hours of operation and define insurance language to mitigate the property owners' liability during off-hours. A sample operation and management lease agreement between the City of College Park, Maryland and private property owners is included as Appendix B of this report.

5.2 Long-range Identification, Acquisition, and Development of a Free Long-term Public Lot

Though the identified parking expansion opportunities focus on changes that the Town, with State Department of Highways (DOH) support, could implement quickly and easily, long-term on-street parking demand estimates suggest that a publicly available off-street parking lot (or lots) is also required in order to meet demand. It is recommended that the vast majority of new on-street parking spaces should be managed to service short-term parkers (shoppers, diners, and visitors). Long-term

users, namely downtown residents and employees, should be redirected away from these most convenient spaces. It is recommended that the Town of Bath begin to explore the leasing or acquisition of a peripherally located property for the development of an employee and resident permit parking lot. A peripheral property is suggested as the availability and cost of land in the core might make acquisition difficult. In addition, residents and employees are generally more willing accept a longer walking distance, particularly is price (fee parking vs. free parking) is an issue.

To support future potential negotiations among the Town, County and private property owners general parameters for the selection of one or more peripheral employee/resident permit lot should include the following criteria:

- The property should be of sufficient dimensions to support a minimum of 50 parking spaces (roughly 20,000 sq.ft.).
- The property should not be more than three blocks from the center of the core study area (the intersection of Washington St. and Congress St.).
- The property/lot design should be able to accommodate appropriate standards for pavement, pavement markings, curbs and gutters, lighting, and landscaping.

6.0 Recommended Changes to the Town's Parking Ordinance

As noted previously, the current parking ordinance lacks a section that pertains to a residential parking permit program and parking design standards. The following modifications to the town's existing parking regulations are recommended.

6.1 Residential Parking Program

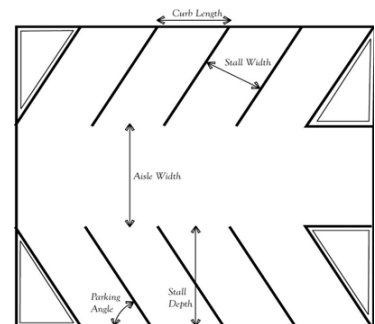
The creation of a residential parking permit program is recommended. Language regarding the residential parking permit program should be incorporated into the parking section of the town's municipal code. The residential parking permit program section should set forth criteria regarding the enforcement of permanently parked vehicles in non-restricted spaces. It is recommended that the town enforce over-night parking where only residential permit holders should be allowed to park over-night at on-street spaces.

6.2 Parking Design Standards

At present, there is no language regarding required parking dimensions in the town's Parking Ordinance. Table 18 illustrates required parking dimensions under angled and parallel parking schemes.

Table 18: Required Parking Dimensions

Angle	Stall Width	Curb Length	One-way Aisle Width	Two-way Aisle Width	Stall Depth
0	23'	23'	12'	20'	9'
45	9'	12'-9"	15'	22'	16'
60	9'	10'-5"	18'	24'	17'
90	9'	9'	20'	26'	18'



DESMAN also reviewed various parking ordinances from other municipalities. A sample parking ordinance for the city of Aurora, CO that contains a design, construction and maintenance section is included as Appendix C of this report.

6.3 Parking Enforcement Hours

According to section 13-1004 of the town's Parking Enforcement regulations, enforcement is to occur between the hours of 9:00AM and 5:00PM. Currently, given the size of Bath's parking system, there is no need to extend parking enforcement hours. However, if the enforcement hours were to be changed in the future based on the extension of after-hour activity, the Town should consider hiring another enforcement officer.

7.0 Wayfinding/ Signage

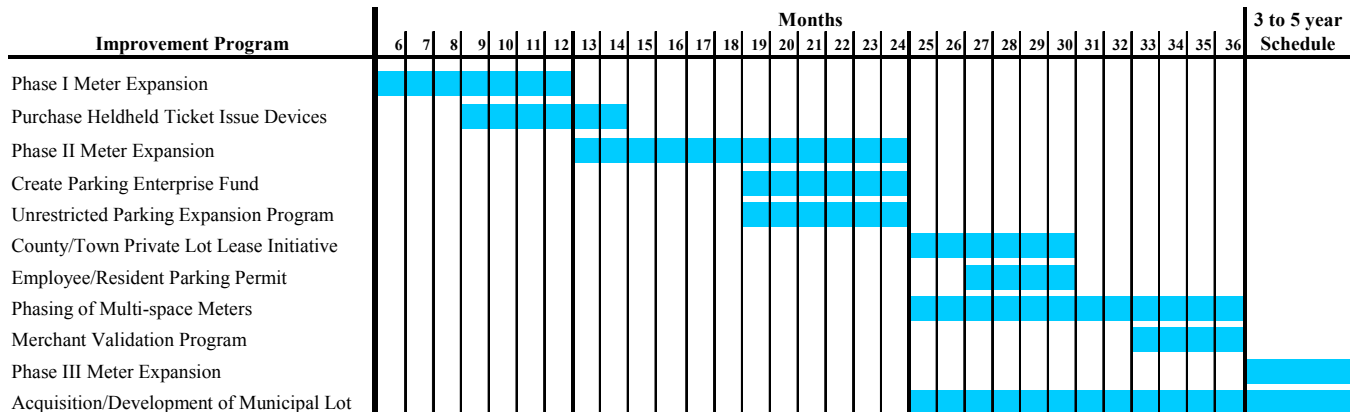
Wayfinding and a lack of unified signage is of great concern to citizens, stakeholders and visitors. However, the core area lacks a definable parking destination, i.e., a centrally located public parking lot or garage, to direct parkers. Furthermore, a wayfinding problem can't be addressed by simply adding more signs. Instead, the Town should create a setting that enables people quickly acclimate from a vehicle to a pedestrian mode of travel. The following are some wayfinding elements that should be considered.

- Identifying entrances to existing and future parking lots.
- Installing proper signage to address on- and off-street parking restrictions such as loading zones, time allowed and effective enforcement days and hours.
- Providing parking maps and guides at town's restaurants, hotels and spas.
- Adding parking maps, rates along with a customer friendly description of parking regulations to the Town's website
- Streetscaping subcommittee to use consistent lighting, surfaces, and architectural finishes in public areas.

8.0 Parking Improvement Implementation Schedule

The recommendations that have been presented represent a series of steps that the Town of Bath must take in order to less current operational inefficiencies and to address long-range parking shortages. These recommendations are linked and the failure to implement any one of them would dramatically weaken the parking program's overall effectiveness. The schedule illustrated on Exhibit M identifies the improvement program and the implementation timeline. For example, its is anticipated that the Phase I Meter Expansion Program along Wilkes Street between Fairfax and Independence Street can be implement within a six month period (capital allocation, meter acquisition, and installation) and can be completed within one year of its approval by the Town and its stakeholders. As the meter program along Wilkes Street expands the town will need to invest in held-held ticket issuance devices and software in an effort to improve parking management and introduce customer service related functions (i.e., a warning for a first violation).

Exhibit M-Parking Improvement Implementation Schedule



9.0 Parking System Revenue and Expense Model and Role of Parking Enterprise Fund

It would be unrealistic to presume that these improvements can be implemented without some discussion of capital cost/amortization, operating costs, and revenue. In municipal parlance “what gets funded gets done”. Additionally, it would be unrealistic to propose a public parking system that becomes a strain on the town’s general fund and financial health. The system should achieve to be at minimum revenue neutral. Moreover, decisions related to parking rates, levels of enforcement, and fine/violation structures can be impacted by political influences. For example, parking meter rates that would be effective in creating turnover may be perceived by some as too high to be competitive with regional malls and big box retailers who have “so called” free parking. A political decision to keep parking rates and fines low would damage the effectiveness of the public parking program and hurt those businesses and residents that the program will benefit. Therefore, the creation of a parking enterprise fund and the treatment of the public parking system as self-financing are critical to the success of the recommendations.

9.1 Role of Parking Enterprise Fund

A parking enterprise fund is a direct unit of municipal government. It is an accounting construct of municipal government that follows a businesslike model and is intended to generate adequate income to be self-sustaining. An enterprise fund approach to parking management offers a municipality the best mix of operational advantages. These include:

- Municipality maintains direct control of parking operations and long-term parking planning goals.
- Financial structure (self-supporting) permits department to sometimes work outside of financial restraints placed on other “general fund” Town departments.
- Parking operations and development usually do not place a tax burden on the citizens of its municipality.

Overall, there are no operational disadvantages to this approach to parking management. Under this operational scenario, revenues generated by the parking enterprise fund would be pledged for the sole purpose of funding the parking program and planned parking improvements. This approach removes the cost of operating the parking program from the General fund and the residents of Bath as it becomes a user supported program. Furthermore, surplus parking revenue can be used for program that might appear unrelated to the parking program. In some communities parking revenue has been

used to support shuttle operations, landscaping and streetscaping program, and the salary of downtown ambassadors, i.e., individual who provide direction to visitors, support public works initiatives (cleaning and the identification of maintenance issues), support public safety initiatives (simply by their appearance), and generally promote the wellbeing of the commercial district.

9.2 Parking Revenue and Expense Model

Table 19 was created to determine the parking system's ability to implement the various recommendations within a revenue neutral Parking Enterprise Fund. The table includes existing salaries and benefits, salaries and benefits of administrative staff that currently dedicate some portion of their time to parking operations, the cost of maintaining existing and recommended parking meters, and the amortization of additional meters, hand-held ticket issuance devices (and software), and new multi-space meters. Additionally, the revenue and expense model includes an Enterprise Fund Reserve for long-term and significant capital improvements including but not limited to streetscaping, signage, land acquisition, and surface lot development.

From a revenue perspective, the model estimates the revenue that would be generated under each of the three parking meter expansion programs. Note that no revenue would be generated under the residential and employee permit program as it is intended to be free of charge. The color code illustrates the timing and duration associated with the parking improvement implementation program and all cost and revenue assumptions are footnoted below the table. Note that this model is simply intended to illustrate the relative strength or weakness of the public parking system and its ability or inability to fund basic improvements. It should not be used for bond calculations or public financing initiatives.

Though annual operating deficits would appear between FY2013 and FY2016, it would appear that the combination of expansion and rate recommendations would be sufficient to fund the cost associated with these and other improvement programs while maintaining an End of Year Cash surplus.

Table 19
Downtown Bath Parking Study
Enterprise Fund Model

	Actual FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
Enterprise Fund Reserve										
Potential Debt Service Payments (1)	\$0	\$0	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Operations & Maintenance Costs										
Staff Salary & Benefits (2)	\$15,400	\$20,900	\$21,500	\$22,100	\$22,800	\$23,500	\$24,200	\$24,900	\$25,600	\$26,400
On-Street Maintenance (3)	\$0	\$10,200	\$13,000	\$16,000	\$16,000	\$18,000	\$18,700	\$19,400	\$20,200	\$21,000
Hand-held Capital Amortization (4)	\$0	\$0	\$0	\$6,400	\$6,400	\$6,400	\$6,400	\$6,400	\$0	\$0
Multi-Space Meter Amortization (5)	\$0	\$0	\$0	\$0	\$10,500	\$10,500	\$21,000	\$21,000	\$21,000	\$21,000
Total O&M Costs	\$15,400	\$31,100	\$34,500	\$44,500	\$55,700	\$58,400	\$70,300	\$71,700	\$66,800	\$68,400
Total Debt Service and O&M Costs	\$15,400	\$31,100	\$44,500	\$54,500	\$65,700	\$68,400	\$80,300	\$81,700	\$76,800	\$78,400
Operating Revenues										
On-Street Meter Revenue (6)	\$31,260	\$32,800	\$42,600	\$51,100	\$53,700	\$56,400	\$67,700	\$71,100	\$74,700	\$78,400
Parking Fines	\$8,500	\$8,500	\$8,500	\$8,500	\$8,500	\$8,500	\$8,500	\$8,500	\$8,500	\$8,500
Residential/Employee Permits	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Operating Revenues	\$39,760	\$41,300	\$51,100	\$59,600	\$62,200	\$64,900	\$76,200	\$79,600	\$83,200	\$86,900
Operating Profit (or Loss)	\$24,360	\$10,200	\$6,600	\$5,100	-\$3,500	-\$3,500	-\$4,100	-\$2,100	\$6,400	\$8,500
End of Year Cash		\$10,200	\$16,800	\$21,900	\$18,400	\$14,900	\$10,800	\$8,700	\$15,100	\$23,600

Note:

- (1) Presumes the creation of Parking Enterprise Fund and retention of \$10,000 per year for long-term capital improvements (streetscaping, land acquisition, etc.)
- (2) Presumes the salary/benefits of parking enforcement officer and partial salary (say \$5,000) of existing administrative time dedicated to parking. Includes a 3% annual Cost of Living increase.
- (3) Presumes a \$100 per space per year maintenance cost (administration cost calculated separately). Meter program expands by 28 spaces in FY11, 30 spaces in FY12, and 20 spaces in FY14. Includes an average annual maintenance cost increase of 4% due to inflation beyond FY14.
- (4) Per unit equipment/software cost estimated at \$10,000 and amortized over a 5 year period. This equals roughly \$3,200 per unit per year.
- (5) Per unit equipment cost estimated at \$15,000, installation cost \$1,500, and amortized over a 5 year period. Assumes 3 units acquired every two years to a maximum of 12. This equals roughly \$3,500 per unit for a 5 year term.
- (6) Presumes 30% meter revenue increase in FY11 with introduction of Phase I meter expansion and Washington/Fairfax rate increase, 20% increase in FY12 with Phase II meter expansion, and 20% increase in FY15 with Phase III meter expansion

SECTION 7- SUMMATION

The Town of Bath/Berkeley Springs, West Virginia recently began a streetscaping program for its historic downtown that could affect the supply of on-street spaces. With reconstruction of the Morgan County Courthouse, expansion of Ice House's cultural events, and continued success of downtown shops, spas, and restaurants there was a need to quantify the impact that increased parking demand would have on available parking.

At present there appears to be sufficient parking capacity to meet current parking needs as only 51% of on-street and off-street spaces were occupied during the surveyed peak weekday and Saturday period. However, this figure includes the availability of private/restricted parking lots. As there are no municipally owned or operated off-street lots, parking that is clearly dedicated for public purposes is limited to on-street spaces. Additionally, the effectiveness of on-street spaces for public parking is in itself limited by the fact that only a small number of spaces are actively managed through meters or handicapped/loading zone restrictions.

Though the increase in overall parking demand associated with the Court House, Ice House, and other properties in the near future is relatively modest, it must be presumed that private off-street lots should not be counted on to meet this need. This increases the value of the on-street spaces and underlines the need for more comprehensive parking management strategies.

While the optimal solution would be the development of one or two centrally located municipal parking lots, given the challenge in land acquisition a more practical solution is to maximize the capacity and efficiency of existing on-street spaces. The study examined three phases of parking improvement. The first phase would increase the number of on-street spaces through basic restriping. The second and third phases are associated with the future of the streetscaping program. If existing two-way traffic patterns are maintained on Wilkes, Congress, Independence, and Union Street then the town would gain a modest number of new spaces. However, those formally designed and defined spaces could accommodate 2-hour and 4-hour meters, thus increasing the supply of publicly managed spaces. With the introduction of one-way traffic on those streets the town would gain a sizable number of new spaces and, with meters, a means to manage them for the community's benefit.

It should be noted that these presently undefined curbside areas are being monopolized by the adjacent property owner for their own purposes. It is likely that those property owners will feel inconvenienced by the formalization of the public right-of-way for publicly available parking. The eventuality of the streetscaping program is going to affect these property owners nonetheless, but the goal of the meter expansion program is to increase access to these businesses through fair and effective parking management. It should also be noted that any metered parking expansion program would displace long-term parkers such as employees and residents during hours of operation (Monday-Saturday, 9AM-5PM). It will be necessary for the town to expand the number of unrestricted on-street spaces along peripheral streets to accommodate long-term parking activity. Additionally, it is recommended that the County, as the largest employer in the downtown, should work with the town and private property owners in the development of shared use parking lease agreements. However defined, long-term parkers will be sorely tempted to park in private lots and the County and town should work with these owners toward the appropriate shared use of their properties during peak and off-peak hours.

With expansion of the on-street parking system and shared management with private lots owners comes increased management complexity. New equipment and management procedures will be

required to provide greater flexibility to planning, operations, maintenance, and enforcement efforts. A key to enforcement flexibility is the acquisition of hand-held ticket issuance devices. These devices will increase administrative efficiency and offer for the first time some customer friendly elements such as a warning for first time violators.

Expansion and increased operational complexity comes at a cost. New meter and hand-held technology can be expensive. Additionally, the town must acquire land for the development of a peripheral employee/resident permit lot in the future (5+ years hence) as on-street parking alone cannot be counted on to meet future parking needs. The cost associated with the various improvement programs can be absorbed by the public parking system presuming the creation of a Parking Enterprise Fund. That Fund, as opposed to the General Fund, would be responsible for all expenses and revenues and would operate in a business-like manner.

Though the Town of Bath's public parking system is small, there is strong supporting evidence to suggest that the program can grow in efficiency and effectiveness without requiring significant increases in parking fees or fines for violations. Bath does not need to re-invent its public parking "wheel"; it simply needs to get its wheel to spin more efficiently.

Appendix A

PARKING SYSTEM
MONTHLY PARKING POLICIES

As a monthly parker in the City of West Palm Beach Municipal Parking System, please familiarize yourself with following monthly parking policy statements.

- Funded through publicly offered revenue bonds, the covenants of the bonds issued mandate the operation parking facility be first come, first served. We cannot guarantee parking availability at anytime.
- The City of West Palm Beach designed the monthly parking program to offer the consistent users of the facility a discounted rate as compared with the daily hourly charges. The card issued to you only control access to your assigned parking facility. Your card is monitored by a state of the art access and revenue control system. Your card has a specific number assignment, which corresponds with your account number.
- The required \$10.00 deposit on each access card is necessary to protect our financial investment in the car to encourage proper use and storage of the card while in your possession. A full refund of the deposit will be given upon the return of the access card in good condition and there are no outstanding charges due, determined by the City of West Palm Beach Parking System.
- The monthly payment is due by the first of every month. For your convenience, exact check payments accepted at the staffed exit lanes of each facility. You must submit cash payments, or payments requiring receipt to our office at 195 N. Narcissus Ave, West Palm Beach, FL. 33401. Access to the assigned parking facility will be denied if payment is not received by the fifth business day of the month. Applicable hourly charges will apply until payment is made.
- It will be the responsibility of the card holder (parker) to submit payment when due, without invoice or other notice from the City of West Palm Beach Parking System.
- A 50% refund will be given only upon return of the access card before the 15th of the month. Monthly parking cancellations received after the 15th of the month are not eligible for a refund of fees.
- Your access card is nontransferable. Only the assigned person to the card may use it for parking in the assigned facility. You cannot enter a facility and then attempt to use the access card for another immediate entry. The access control system will have recorded your entry and will prevent another attempt to enter the facility until you have used the card to first exit the facility. You cannot exit a facility and then attempt to reuse the access card for another immediate exit. The access control system will have recorded your exit and will prevent another attempt to exit a facility until you have used the card to first enter the facility. Anyone who violates this policy will pay the lost ticket fee of \$10.00. Monthly users time zone violations, flat \$5.00.
- During select Special Events, the City of West Palm Beach reserves the right to limit the use of monthly access card holders. During these Special Events, all parkers using the facilities are responsible for all applicable.
- The assigned access card must be present to take advantage of the monthly program. Monthly parkers who fail to produce the assigned access card upon entry or exit are responsible for the appropriate refundable hourly fees. With a ticket fees are: \$1.00 per hour until 6:00PM. After 12:00AM an additional flat rate fee will be added of \$7.00. Without a ticket, the lost ticket fee of \$10.00 will apply.

By following the policies of the monthly parking program, you will find parking in our facilities to be convenient and accessible.

Thank you for your patronage and we encourage you to contact our office at 659-8060 should you have any problems, comments, or suggestions

Monthly Card Holder's Signature / Date

**City of Stamford
Parking Authority
888 Washington Blvd.
Stamford, CT**

MONTHLY ACCESS CARD APPLICATION

USER INFORMATION

Last Name _____

First Name _____

Address _____

City _____

State _____ Zip _____

Contact Telephone # _____

BUSINESS INFORMATION

Company Name _____

Company Address _____

Company Telephone _____

VEHICLE INFORMATION

Make _____ Color _____

Model _____ Tag _____ State _____

Charges are for parking only. We are not responsible for loss or damage due to fire, theft, breakage or collision. Only license is granted and no bailment is created. The City of Stamford reserves the right to restrict the use of access cards. I have received, read and understand the rules set forth by the City of Stamford.

Signature _____ Date _____

Appendix B

LICENSE AGREEMENT

THIS LICENSE AGREEMENT made as of the 18th day of Sept 86 1986 by and between COLLEGE PARK SHOPPING CENTER, Limited Partnership, a Maryland Limited Partnership (hereinafter called "Owner"); and the City of College Park, Maryland, a municipal corporation (hereinafter called the "City").

WITNESSETH:

WHEREAS, the Owner owns various real properties in the City of College Park, Prince George's County, State of Maryland, as more particularly hereinafter described, comprising a shopping center known as College Park Shopping Center (the "Shopping Center") located in the 7300 block of Baltimore Avenue in College Park, Maryland, College Park Office Building # (1) located at 7338 Baltimore Avenue, College Park Office Building # (2) located at 4417 Hartwick Road, and the Owner also owns a certain motion picture theater known as the "College Park Theater" (the "Theater") located at 7242 Baltimore Avenue, College Park, Maryland, the stores in said Shopping Center being leased to various occupancy tenants and the Theater being under lease to a theater operator; and

WHEREAS, in connection with the operation of the Shopping Center and the Theater, the Owner owns and now operates three (3) automobile parking lots, one of which is for use by customers of the Shopping Center, and the other of said lots being for use in common by Theater patrons and occupants of the building known by street address as 4417 Hartwick Road, College Park, Maryland, and also employees of tenants at the Shopping Center, all as more particularly described below, and the Owner and City have agreed that, the operation of said parking lots shall be placed under the supervision, and management of the City pursuant to the terms and conditions hereof for the term and upon the terms and conditions herein set forth.

NOW, THEREFORE, in consideration of the premises and of Ten Dollars (\$10.00) and other valuable consideration paid by each party hereto unto the other the receipt and sufficiency of which are hereby acknowledged, and of the mutual covenants and agreements of the parties as herein set forth, the Owner and the City do hereby covenant and agree to and with each other as follows:

I. DESCRIPTION OF PARKING LOTS

(A) In connection with the operation of the Shopping Center, the Owner now owns and operates the parking lot located immediately adjacent to the stores in the Shopping Center and designated as "Parking Lot #1" on the drawing entitled "College Park Shopping Center, College Park, Berywn District No. 21, Prince George's County, Maryland" prepared by Ben Dyer Associates, Inc., bearing Job No. J5409 dated July 1981, a copy of which marked Exhibit "A" is attached hereto and made a part hereof said parking lot being hereinafter called "Parking Lot #1"), same being intended for the exclusive use of customers of the occupancy tenants in the Shopping Center.

(B) The Owner owns and leases to a theater operator (the "Theater Tenant") the parking lot designated as "Parking Lot #2" on the attached Exhibit "A" (hereinafter called "Parking Lot #2"), for the use in common by patrons of the Theater, employees of the tenants at the Shopping Center, and occupants of the "Office Building".

(C) The Owner owns the parking lot designated as Parking Lot #3 on the attached Exhibit "A" (hereinafter called Parking Lot #3), for the use in common by the tenants of the offices on the upper levels of the shopping center and their patrons.

II. LICENSE TO OPERATE

(A) Subject to the terms, conditions and provisions hereof, the Owner does hereby grant to the City and the City does hereby accept an exclusive license and privilege to operate, manage, supervise and over-see the operation of the aforesaid Parking Lot #1, Parking Lot #2 and Parking Lot #3 (together hereinafter sometimes referred to as the "Parking Lots", and individually as a "Parking Lot"). The City confirms that it has proper authority to execute and perform this Agreement and that the signatory for the City has full authority to bind the City to execute and perform this Agreement.

III. TERM OF AGREEMENT

(A) Subject to the terms and conditions hereof, this License Agreement shall be for an initial term of three (3) years commencing on the 10th day Nov 86 (commencement date) and fully expiring without notice at midnight on the 9th day Nov 89 (expiration date) (the "Initial Term"), unless sooner terminated in accordance with the terms hereof or renewed and extended pursuant to the terms and provisions hereof.

(B) After expiration of the aforesaid three (3) years Initial Term, this Agreement shall be automatically renewed and extended for successive periods of one (1) year each; provided, however, that either the Owner or the City at their option and discretion may terminate this Agreement effective at the end of the Initial Term or at the end of any succeeding one (1) year renewal term thereafter by giving to the other party written notice of such termination at least ninety (90) days prior to the expiration date of the then operative Initial Term or one (1) year renewal term as the case may be.

(C) The Owner at its exclusive option and discretion may terminate this License Agreement in respect of all of the Parking Lots at any time during the Initial Term or any operative renewal term, so long as the Owner pays to the City all costs associated with the meters and their installation plus all direct and indirect personnel costs of the City limited to an amount equal to NINETY EIGHT THOUSAND and 00/100 Dollars reduced by the amount of meter revenue received by the City as of the effective date of termination hereof. The Owner shall give to the City at least ninety (90) days prior written notice of the effective date of termination hereof (including also the Parking Lots or Lot with respect to which this Agreement is being terminated) in the case of any termination for any reasons described in this Paragraph III (C).

IV. INSTALLATION OF PARKING METERS; OPERATION

(A) The City shall use its best reasonable efforts to cause to be installed on the Parking Lots, within One Hundred Eighty (180) days after the date hereof at no cost to Owner coin operated automobile parking meters and meter posts, and parking curb bumpers (identified on Exhibit "A" as "auto stops"), and any necessary parking space striping, all of which installation shall be substantially as shown and designated on Exhibit "A"; subject to changes in such locations as the City may from time to time determine in its reasonable discretion, subject to Owners approval. All maintenance, replacements and repairs necessary for the meters, meter posts and parking curb bumpers installed by or for the City will be performed by the City at its expense when and as necessary. The City will install one (1) meter head for each auto parking space on the Parking Lots.

(B) The City will enforce the violations of parking meter restrictions, and to monitor the meters and use thereof at the subject property. The City will hire staff sufficient to control the Parking Lots as established herein during all hours of operation as set forth in Article IV (F). The City hereby agrees to hire one (1) full-time and two (2) part-time meter attendants initially for this purpose. The City shall indemnify and hold harmless the Owner from any costs or liabilities arising from the acts or omissions of the meter attendants.

(C) The City shall not be responsible for maintaining, operating or repairing the Sovran Bank Parking Lot shown on Exhibit "A", or any sidewalk areas within the parking lot areas.

(D) Parking meters for Parking Lot #1 shall permit a maximum of one (1) hour parking. Parking meters on Parking Lot #2 shall permit parking for a maximum of three (3) hours. Parking meters for Lot #3 shall permit parking for one and one half (1 1/2) hours maximum. Meter charges on the Parking Lots will be consistent with rates charged by the City from time to time on other public parking lots operated by the City, and the City will notify Owner of any changes in meter rates at the Parking Lots ten (10) days prior to implementing such changes. Initially the rates are to be as follows:

.05 (five cents) for 15 minutes, .10 (ten cents)
for 1/2 hour, .20 (twenty cents) for 1 hour
with a .25 (twenty five cents) convenience slot.
The City also agrees that during the term of this
Agreement to a cap of .30 (thirty cents)
per hour during the initial three year term.

All funds collected in said parking meters, all fines and parking ticket payments paid by persons charged with parking violations on the Parking Lots shall belong solely to the City during the term hereof.

(E) During the term hereof, Owner shall establish three (3) automobile parking spaces or the number of parking spaces required by applicable law, whichever is less, on Parking Lot #1 for the exclusive use of handicapped motorists, and will install a sidewalk ramp in the vicinity thereof to accommodate access by such handicapped persons.

(F) During the term hereof, the City will monitor Lots #1 and #3 from 8:00 a.m. through and including 10:00 p.m. Lot #2 will be monitored from 8:00 a.m. through and including 7:00 p.m. This monitoring will be performed on these Parking Lots each day Mondays through and including Saturdays, and on the following City and Federal observed holidays, Martin Luther King's Birthday, George Washington's Birthday, Good Friday, Memorial Day, Labor Day, Columbus Day, Veteran's Day. The days and times for monitoring shall be subject to ninety (90) days review by the Owner at any time during the term of this Agreement, at which time the hours can be adjusted according to demand on the Parking Lots, subject to approval of the City. The City will not be required to monitor on Sundays and any other City and Federal observed holidays.

(G) The City at its expense will furnish to Owner, on request of Owner, parking permits allowing free use of parking spaces on Parking Lot #2 and Parking Lot #3, such stickers to be distributed by Owner to employees of tenants at the Shopping Center and to occupants of the Office Buildings. The employees of the retail tenants, including the Theater, and of Office Buildings #2 will only be allowed to park free on Lot #2. Office tenants and employees of Office Buildings #1 above the Shopping Center will only be allowed to park free on Lot #3. All the tenants will be issued color designated parking permits which will designate which lot they will be allowed to park in. At the expense of the City, these permits will be renewed a minimum of twice yearly.

V. PROMOTION

Approximately one (1) month prior to its operation of the parking meters the City at its own expense will advertise the

establishment of the subject parking meter system at the Parking Lots, and will give notice to the public that said system will take effect the following month. However, any signs or notices whether or not in connection with such promotion, and also the location of such signs, will be subject to Owner's prior approval. In the event the city places signs on the subject property, pursuant to this Article, it shall be solely responsible for the maintenance, repair or replacement of such signs and shall hold the Owner harmless as to any personal injury or property damage related to the signs.

VI. LIENS

In no event shall the City place, cause or permit to be placed, filed or enforced any mechanic's or materialmen's or other liens, claims or encumbrances against or affecting the Shopping Center, the Theater, the Parking Lots or any other properties of Owner in connection with the exercise, performance or use of any of the City's rights, privileges, powers or license hereunder or the installation, purchase, leasing, operation, removal, repair, maintenance or use of any equipment, facilities or systems hereunder.

VII. NATURE OF AGREEMENT

This Agreement constitutes a license only, revocable in accordance with the terms hereof; and is not a lease or rental agreement of any kind. The relationship of Owner and the City hereunder is not that of landlord and tenant, nor that of principal and agent, nor is either to be considered as being the partner or agent of the other; and instead their relationship is strictly and solely that of licensor (Owner) and licensee (City). In no event shall the City have the right to pledge the credit of or obligate the Owner in respect to any matters.

VIII. MAINTENANCE; CLEANING; REPLACEMENTS; ALTERATIONS

(A) During the term hereof, the City at its own expense will, promptly, when and as necessary, perform all of the following services for the Parking Lots, namely: removal of all trash, rubbish, debris, ice and snow therefrom (excluding the removal of trash and rubbish which occupancy tenants at the Shopping Center or Theater are required to remove under the terms of their respective occupancy Leases); the repair and replacement of parking bumpers, and restripe the lots when necessary. During the term hereof, the City at its own expense will contract with competent and qualified companies for the performance of the functions described above in this Paragraph VIII (A), provided that such contracts do not violate any other written agreements to which the City is a party. If the City fails to perform any such removal of snow, ice, trash, rubbish or debris, promptly when and as same accumulates, in accordance with Owner's established procedure, then Owner after giving prior notice to the City at its option and discretion may cause such work to be performed and the City will reimburse Owner upon presentation of paid invoices for the reasonable costs incurred in connection therewith.

(B) All installations, alterations, and replacements on the Parking Lots which change configurations of parking spaces as called for in this Agreement shall be subject to Owner's reasonably exercised prior written consent regarding the details thereof, including all contracts prior to final contracting.

IX. OWNER'S RIGHTS TO PERFORM

Owner reserves the right at its option (but without obligation to do so), upon prior notice to the City to perform any functions herein undertaken by the City, if the City does not so perform; and in such event the City will reimburse the Owner upon presentation of paid invoices for all reasonable costs incurred by Owner in performance thereof.

X. FORCE MAJEURE

All time periods for performance by the City of its agreements hereunder shall be extended by the reasonable periods of delays occasioned by inclement weather or acts of God which in fact interfere with and hinder the performance of such agreements (e.g., difficulty which the City might experience in enforcing the obligation of Shopping Center customers to park within the lined parking spaces, when the spaces are covered by snow prior to the City's prompt removal of snow after accumulation thereof).

XI. INDEMNITY

On or before the earlier to occur of the commencement date of the term hereof, or the commencement of any operation of the Parking Lots by the City, the City will furnish to Owner evidence of a public liability insurance policy to be maintained by the City at all times while this Agreement remains in force in an amount of at least One Million Dollars (\$1,000,000) for death or injury to one or more persons in any one occurrence and at least Fifty Thousand Dollars (\$50,000) for damage to personal property during the term hereof, and the City will include the Owner as an additional insured thereunder with a Certificate of such policy to be delivered to Owner upon request. The City agrees to provide the Owner with thirty (30) days prior notice of cancellation of such policy. Renewal Certificates for such policies will be delivered to Owner by the City at least ten (10) days prior to expiration of any such policy. All premiums for said policies and renewals will be paid by the City.

XII. PUBLIC RIGHTS; TENANTS ACCESS

Owner reserves the right to close temporarily the Parking Lots and/or means of ingress and egress thereto and therefrom, and any walkways and drives of the Theater or Shopping Center and/or the Office Building #2, in order to facilitate alteration, remodeling or renovation of the subject property or to prevent any vesting of rights in the public in any such properties. In no event shall this Agreement be deemed to confer on the City any easements, rights-of-way or ownership interest in any property of the Owner. The City will afford to Owner's tenants and their customers, employees and invitees normal means of ingress, egress and access to the Shopping Center, Theater, the Office Building #2 and the Parking Lots, in the exercise of the City's license hereunder.

XIII. ADDITIONAL TERMINATION RIGHTS; COMPENSATION; REMOVAL BY CITY

(A) In addition to Owner's rights to terminate this Agreement under Article III hereof, commencing with the end of the first year of the Initial Term, Owner shall have the right to terminate this Agreement by giving written certification to the City at least ninety (90) days prior to the effective termination date, in the event that the operation of the Parking Lots hereunder is detrimental to or adversely affects the welfare and optimum operation of the Shopping Center and/or the Theater and/or the Office Building, or the business of Owner's occupancy tenants of any or all of said properties, all as determined by Owner in its exclusive discretion.

(B) In the event the Owner terminates the Agreement at the end of any year of the Initial Term pursuant to Article XIII (A), then the Owner will be responsible to pay an amount not to exceed Twenty-Five Thousand and 00/100 Dollars (\$25,000.00) to be applied by the City to the original capital outlay of Ninety Eight Thousand and 00/100 Dollars, reduced by the amount of meter revenue received by the City. These costs are for the capital outlay of approximately SIXTY THOUSAND DOLLARS (\$60,000.00) for the meters, posts, etc. and THIRTY EIGHT THOUSAND DOLLARS (\$38,000.00) for labor and administration. At such time as the capital outlay of NINETY-EIGHT THOUSAND DOLLARS (\$98,000.00) has been obtained from meter revenue, the City will so notify the Owner by certified mail and the

Owner, in the event it terminates the Agreement, will be released from this dollar commitment.

(C) In no event shall the City be entitled to any such Reimbursement if the reason for termination hereof is any condemnation or taking by the City (permanent or temporary) in whole or in part of the Shopping Center, Theater, Parking Lots or any other property of Owner relating thereto, or due to any sale or other conveyance thereof to the City in lieu of condemnation, or if any such condemnation or related conveyance or sale is made at the request of or for the direct benefit of the City (regardless or whether implemented by another public authority), or is caused by any involuntary conversion, change in grade or closing or widening of any street or other governmental action of the City or for the benefit of the City substantially adversely affecting the Shopping Center, Theater and/or Parking Lots or related property or if this Agreement is terminated by the City pursuant to Article III (B) hereof, or if this Agreement terminates at any time after the expiration of the first year of the Initial Term hereof.

(D) Upon any termination (which term, for purposes of this Paragraph (D) includes final expiration hereof without extension or renewal) of this Agreement by either party for any reason, the "Restoration Work" (as defined hereinbelow) shall be performed and paid for as follows (subject, however, to Article XVIII hereinbelow):

(1) If the termination hereof occurs during the first year of the Initial Term of this Agreement, then Owner at its own expense will perform and pay for the Restoration Work. In the event the City exercises whatever right to terminate it may have hereunder, and if the City terminates this contract at the end of the first year, it will perform the Restoration Work at its own expense.

(2) If the termination hereof occurs during the second year of the Initial Term hereof, the Owner will perform the Restoration Work, and the Owner and City shall each pay one-half (1/2) of the costs of such Restoration Work.

(3) If the termination hereof occurs at any time after the expiration of the second year of the Initial Term hereof (including during the balance of said Initial Term or during any period thereafter), the City alone will perform all such Restoration Work and pay all costs thereof. In performing such Restoration Work, the City will by no later than the effective date of termination hereof fully remove from the Parking Lots all of the meter posts, meter heads, parking curb bumpers installed by or for the City, and will repair, fill and patch-pave all holes in the surfaces of the Parking Lots caused by such removal of the aforesaid items and restripe Lots as previous configuration. However, if such termination hereof becomes effective during the Winter season such that removal of the meter posts, curb bumpers and the repairing, filling and patch-paving of holes caused by such removal cannot practicably be performed because of the presence of ice, snow and/or cold weather, then the City may delay the performance of such removal and Parking Lot repair until the earliest possible date for performance thereof in the immediately ensuing Spring when warm weather returns permitting such patch-paving (whereupon the City will fully and promptly complete such work). However, in any event the meter heads will be removed by the City no later than the effective termination date hereof, regardless of when the termination hereof occurs and whether it occurs by act of Owner or the City or by expiration of this Agreement without same being renewed or extended.

(4) For purposes of this Agreement, the term "Restoration Work" shall mean and refer to all work necessary to fully remove from the Parking Lots all of the parking meter posts and parking

If it is determined by a court of competent jurisdiction that the Owner lacks the lawful right to grant the license intended to be granted hereunder, the City, then, may terminate this agreement upon prompt notice to Owner, and Owner will indemnify the City from any liability, defense or court costs related to such litigation and pay for any and all damages sustained by the City.

XVIII. COSTS /RECORDS

For purposes of confirming the Reimbursement to City called for in Article XIII (B) hereof, the City will maintain at its offices appropriate records of all costs of the items covered by said Reimbursement (including labor, materials and installation work for the parking bumpers and the parking meter equipment leases and rental payments thereunder made and to be made by the City, and all City personnel costs, and all related matters of which the Reimbursement is comprised, and of all related matters) and of payments thereof, and furnish same to Owner upon request, to substantiate the Reimbursement to which the City would make a claim under Article XIII (B). Compliance with this paragraph shall be a further condition precedent to any such Reimbursement.

XIX. NOTICES. All notices and communications which either party desires or is required to give hereunder shall be in writing, sent by certified or registered first class U.S. Mail, postage prepaid, return receipt requested, addressed to Owner at GOODMAN SEGAR HOGAN, INC., Attn: Daniel R. Owen, Agent, 7101 Wisconsin Avenue, Suite 1000, Bethesda, Maryland, 20814, and to the City c/o Mr. Donald L. Byrd, Director of Public Services, City of College Park, 4500 Knox Road, College Park, Maryland, or such other address as either party for itself may designate in writing to the other.

XX. TERMINATION OF SERVICE AGREEMENTS

Upon any termination hereof, City will, effective as of such termination date, cause all of its service contracts for maintenance of the Parking Lots to be terminated.

XXI. CAPTIONS; ETC.

The captions of the paragraphs hereof do not form a part of this Agreement, nor do they define, limit or affect the terms hereof. This Agreement shall be construed under the laws of the State of Maryland.

XXII. ASSIGNMENT

City shall have no right to assign this Agreement or any of its rights or obligations hereunder. Owner shall have the right to assign this Agreement in whole or part to its successors and assigns. The provisions including its obligations hereof shall bind and inure to the benefit of the parties hereto and their successors and assigns (except as aforesaid regarding the City).

XXIII. ENTIRE AGREEMENT

This instrument contains the entire agreement of the parties as to the subject matter hereof, and is a complete integration of all their agreements, and may not be amended other than by writing signed by both parties. The parties shall not be bound by any oral agreements or written correspondence between them, but only by the provisions herein contained.

Appendix C



Parking Ordinance

Article 15, Chapter 146, Aurora Municipal Code
Sec. 146-1512 amended effective 1/15/05
Figure 15.10 added effective 1/15/05

City of Aurora

Planning Department
15151 E. Alameda Pkwy
2nd Floor
Aurora, CO 80012
Phone: 303-739-7250
Fax: 303-739-7268
Email: planning@aurora.gov

This document is available on our web site. Go to www.aurora.gov:
Departments>Planning Department>Ordinances and Design Standards>Parking Ordinance

Electronic File: F:\Dept\Planning\Handouts\PDF -- Code Handouts\CTV_PL_Parking Ordinance.pdf

ARTICLE 15. PARKING

DIVISION 1. IN GENERAL

Sec. 146-1500. Purpose and General Requirements.

- (A) *Purposes.* This article is intended to serve and promote multiple purposes to enhance the protection of the public health, safety, and welfare:
1. To lessen congestion upon the public streets of the city.
 2. To accomplish traffic control.
 3. To ensure that development supplies the parking needed to serve the associated uses, residents, tenants, and visitors.
 4. To achieve design of parking areas resulting in creation of attractive living and working environments.
 5. To achieve an appropriate balance between the demand for and supply of off-street parking.
 6. To promote joint-access and cross-access between adjacent properties.
 7. To protect surrounding neighborhoods.
 8. To accommodate and encourage multi-modal transportation usage.
 9. To assist in the creation of a continuous pedestrian and bicycle environment linking all primary buildings and open space.
 10. To assist in the abatement of excessive noise, heat, and light, and to accomplish erosion control.
- (B) *Applicability.* The regulations in this article support these purposes by requiring the owners and operators of land, structures, and uses to provide parking on their own premises in accordance with the demand generated by the land, structure, or use. The regulations in this article shall apply to all uses in all districts, in addition to any parking requirements imposed by specific zone districts. No land shall be used or occupied, no structures shall be designed or erected, and no use shall be operated unless the requirements in this article are provided and maintained as set forth in this article.
- (C) *Non-conforming Parking.* Conformance to the parking standards in this article for off-street parking or loading spaces for land or structures in use on the effective date of the ordinance from which this article derives, being October 1989, need not be conformed to, but adherence to the article must be achieved for any additions or expansion to the use including shopping centers approved before the effective date of this code. Off-street parking or loading space that has been provided prior to such effective date shall not be permanently reduced or infringed upon in any manner creating conditions not in conformance with the requirements of this chapter. New parking areas required to serve any addition or expansion to the use shall meet all code requirements for supply and design.

- (D) *Conformance with Landscaping Standards.* Landscaping required to meet these parking regulations shall be in conformance with the standards set forth in article 14.

(Ord. No. 2001-72, 12-3-2001)

DIVISION 2. ADMINISTRATION AND ENFORCEMENT

Sec. 146-1501. Use and Place Restrictions.

- (A) *Prohibited Uses.* No parking area shall be used for the sale, storage, repair, dismantling, or servicing of any vehicles, equipment, materials, or supplies. Required parking, vehicle stacking spaces, and off-street loading spaces shall be reserved exclusively for their design purpose.
- (B) *Prohibited Parking.* Parking of any vehicle or part thereof, including but not limited to campers and recreation vehicles, on lawn areas in front or side yards, on areas set aside for landscaping, or on any other area not surfaced for off-street parking as provided in this article is prohibited.
- (C) *Restrictions on Parking of Vehicles.* The following vehicles shall neither be parked nor stored on a residentially zoned lot:

- Commercial truck, trailer or construction vehicle or bus exceeding 7,000 pounds empty weight
- Truck-tractor
- Semi-trailer

This provision shall apply except when the vehicle is being used to render services, such as deliveries, pickups, or construction activity to property within 200 feet of where the vehicle is parked.

- (D) *Vehicles Used for Other Purposes.* The following shall not be used for conduct of business or for a dwelling unless in a mobile home park or campground: travel trailer, tent trailer, pick-up camper or coach, motorized dwelling or van.

(Ord. No. 2001-72, 12-3-2001; Errata of 2-7-2002, 22, 23)

Sec. 146-1502. Parking Plan.

- (A) *Parking Plan Required.* When a site plan is not required, a separate parking plan drawn to scale accurately depicting the area to be allocated to off-street parking shall be filed with the Director of Planning for approval or disapproval. All parking plans shall be filed with any application for a building permit.
- (B) *Submittal Requirements.* Application for approval of a parking plan shall be made in writing on forms furnished by the city and shall include all material required by that form.
- (C) *Owner's Approval.* All applications shall be made by or with the approval of the owner of the entire land area to be included within the parking plan.
- (D) *Appeal of Denial.* If a building permit is denied for failure to comply with this

article, the applicant may appeal such denial.

(Ord. No. 2001-72, 12-3-2001)

Sec. 146-1503. Changes to Parking Plan.

- (A) *Minor Modifications.* Based upon a showing of a change of use or change of condition, minor modifications in any parking plan previously filed may be permitted, subject to the approval of the Planning Director. Such modifications shall be applied for through the Planning Department. Minor modifications are limited to changes in parking supply of 10 percent or less and to changes in parking plan improvements of 10 percent or less measured along the appropriate axis as compared with dimensions on the approval plan.
- (B) *Amendments.* Based upon a showing of a change of use or change of condition, amendments to any parking plan previously filed may be permitted, subject to the approval of the Planning Director. Such amendment shall be filed in the records of the Planning Department. If a building permit is denied for failure to comply with this article, the applicant may appeal such denial.

(Ord. No. 2001-72, 12-3-2001)

DIVISION 3. PARKING AND LOADING SPACES REQUIRED

Sec. 146-1504. Amount of On-Site Parking Required.

- (A) *Requirements by Use.* No site plan shall be approved or any permit for the erection or occupancy of a building or structure issued unless such use conforms with the parking supply requirements of this section including the requirements of Table 15.1, for any building, structure, or premises, the use of which is not specifically mentioned in the table, the parking provisions for a similar use, as determined by the Planning Director, shall apply. For a new use where, in the opinion of the Planning Director, a similar parking rate is not suitable, the Planning Director may determine the appropriate minimum requirements based upon a suitable parking study prepared by the Planning Department.
- (B) *Requirements by Use as Modified by a Shared Parking Agreement.* Where multiple uses are located together in a common building or other integrated building complex containing a minimum of 20,000 sf gfa, the parking requirements listed in Table 15.1 may be modified by applying the reductions listed in Table 15.2 and providing the resulting number of spaces in a permanent common parking facility. This common parking facility shall be cooperatively established, operated, and maintained.
- (C) *Method of Calculating Parking Demand.*
 - 1. When the parking calculation shown in Table 15.1 is expressed in parking spaces per number of employees, the number of employees shall mean the peak number of employees present on the site during any one-hour period. Requirements based on floor area usage shall be calculated on peak seasonal usage assuming full occupancy.
 - 2. Where requirements are stated as a function of "gross floor area" this

term shall mean the sum of the horizontal areas of all the floors of a building or structure as measured from the exterior face of exterior walls, or from the centerline of a wall separating two buildings, but excluding any space where the floor-to-ceiling height is less than six feet. The area of parking garages contained within a building shall not be included in the gross floor area calculation, nor shall basement areas with a finished floor level six feet or more below the adjacent grade.

3. Where requirements are stated as a function of the number of bedrooms, any one-bedroom units with a den, office, or loft shall be classified as a two-bedroom unit.
 4. Where the required parking calculation results in a fractional parking space, the fraction shall be rounded up. Where a shared parking space reduction calculation results in a fractional space, the fractional reduction shall be ignored.
- (D) *Waiver for a Reduction in the Minimum Number of Spaces Required.* Where an unusual use classification situation exists such that an applicant believes that actual demand for parking spaces will be less than the totals required by Table 15.1, the applicant may request a waiver for a reduction in supply as provided for in section 146-1505.
- (E) *Method of Calculating Parking Supply.* For the purposes of meeting the parking supply requirements of Table 15.1, only parking spaces meeting all the following criteria may be counted:
1. *Dimensional requirements.* Only parking spaces meeting the minimum dimensional requirements of this article may be counted.
 2. *Location.* Except as allowed by either the off-site parking provisions of section 146-1510 or items 4 and 5 listed below, only spaces contained within a use's lot area may be counted.
 3. *Tandem parking.* Except as provided for by item 4 listed below, tandem parking spaces shall not be counted.
 4. *Guest parking.* In addition to the number of required resident parking spaces, guest parking for each unit shall be provided as shown in Table 15.1. Requirements for residential guest parking may be met by the provision of parking spaces in any of the following locations:
 - a. On a residential driveway leading exclusively to a dwelling unit's private garage;
 - b. Within a lawful parking space along a public street frontage directly abutting the dwelling unit's lot; or
 - c. Within 200 feet of the unit's entrance on a private street, motor court, loop lane, parking lot, or garage.
 5. *Resident parking.* In the case of resident parking for a single-family attached townhome or a multi-family dwelling, the resident parking requirement may be met by assignment of a non-tandem space or spaces on a private street, motor court, or drive lane directly abutting the dwelling unit's lot, or in a garage or carport.

6. *Handicapped spaces.* Handicapped parking spaces as required by section 146-1507 shall be supplied in addition to the spaces required by this section and Tables 15.1 and 15.2.

TABLE 15.1. AMOUNT OF OFF-STREET PARKING REQUIRED		
	(A) Use Classification	(B) Parking Space Requirements¹
RESIDENTIAL		
1.	Residential dwellings, single-family detached homes including manufactured homes Day care home (child, adult), Group homes, residential care facilities	2 spaces per dwelling unit (spaces can be accommodated in garage or driveway outside the required front yard setback) plus 2 guest spaces per unit.
2.	Two Family homes	2 spaces per unit plus 1 guest space per unit
3.	Single-family attached townhouses	2 spaces per unit plus 1 guest space per each 2 units
4.	Residential dwellings, multiple-family Residential housing for senior citizens	1 space per efficiency unit 1.5 spaces per one-bedroom unit 2 spaces for each two- and three-bedroom unit 2.5 spaces for each unit of 4 bedrooms or more Any one-bedroom unit with den, office, or loft shall be classified as a two-bedroom unit for these purposes. For multiple family dwellings and residential housing for senior citizens, additional spaces equal to 15% of the required residential spaces, shall also be required as guest spaces.
5.	Day care centers, adult, child (small), child (large)	1 space per 5 clients or students
6.	Assisted living, congregate care	0.25 spaces per bedroom
7.	Nursing Homes	1 space per 4 patient beds, plus 1.25 spaces for each staff, visiting doctor, and employee
8.	Manufactured housing parks, mobile home courts	2 spaces per residential unit plus 1 space per 5 dwelling units for guest parking
9.	Fraternity and sorority houses, dormitories, rooming houses or boarding houses	1 space per bedroom plus 1/4 space per bedroom for guest parking
10.	Artspace	1 space per Artspace residence
NONRESIDENTIAL		
A. Motor Vehicle Related Uses		
11.	Car wash, full-service	1 parking space per washing module plus 1 drying space and 2 stacking spaces per washing module. (A space in a washing module is not a parking space)
12.	Car wash, self-service	1 drying space and 2 stacking spaces per washing module. (A space in a washing module is not a parking space)
13.	Motor vehicle sales and repairs	1 space for each 1.5 employees, plus 1 space per 150 gfa of repair or maintenance space, plus 1 space per 600 gfa of showroom, indicating the location of any and all customer parking, vehicular storage and outdoor display areas, if any

TABLE 15.1. AMOUNT OF OFF-STREET PARKING REQUIRED		
	(A) Use Classification	(B) Parking Space Requirements ¹
A. Motor Vehicle Related Uses		
14.	Motor vehicle fuel dispensing stations	1 space per cashier or attendant, plus 2 for each grease rack or similar facility. (A workstation, e.g., grease rack, is not a parking space).
15.	Motor vehicle fuel dispensing stations; combination use including fuel dispensing and one or more of the following - restaurant, drive-through restaurant, convenience store or similar use	The same parking requirement for a motor vehicle fuel dispensing station plus the required spaces listed in this table for each other component use included on the site.
B. Retail		
<i>Shopping centers⁴</i>		
16.	Less than 150,000 gfa ³	4 spaces per 1000 gfa
17.	150,000 - 399,999 gfa ³	3.8 spaces per 1000 gfa
18.	400,000 and greater gfa ³	3.6 spaces per 1000 gfa
<i>Single user retail</i>		
19.	Convenience	1 space per 250 gfa
20.	Large format/low intensity retail (including office showrooms, furniture stores)	1 space per 600 gfa
21.	Large format/high intensity retail (including discount department stores, warehouse clubs)	1 space per 250 gfa
22.	Building supply store, lumber yards	1 space per 600 gfa plus 1/2500 gfa of outdoor area used for display and storage
23.	Restaurants (standard), nightclubs, taverns and lounges	1 space per 3 seating accommodations. An outdoor seating area for a restaurant or tavern up to one-third the floor area of the indoor seating area may be provided without a requirement for additional parking.
24.	Take-out dining with less than 10 seating spaces	1 space per 60 gfa with a minimum of 10 spaces
25.	Restaurants, fast food with drive-through facilities	Same as for restaurant plus requirement for drive-through service: 7 stacking spaces for the drive-through window lane, with a minimum of 4 of the 7 such spaces designated for the drive-through ordering station area
C. Office		
26.	All offices: business, professional and public offices, in all zones except in R-2 zones	1 space per 300 gfa
27.	All offices: business, professional and public, in the R-2 zones	1 space per 500 gfa
D. Industrial		
28.	Industrial, manufacturing, processing and fabrication, research and development	The greater of 1 space per 1.5 employees (largest shift), or 1 space per 800 gfa ⁴
29.	Contractor's yard, junk yard, nurseries for plants and trees	1 space per 1.5 employees (largest shift) plus 1 space per 2500 gfa used for outdoor display and storage
30.	Warehouse (storage)	The greater of 1 space per 1.5 employees, or 1 space per 2000 gfa

TABLE 15.1. AMOUNT OF OFF-STREET PARKING REQUIRED

	(A) Use Classification	(B) Parking Space Requirements ¹
E. Places of Public Assembly and Recreation		
31.	Self-storage and mini-storage garage	One space for each 1.5 employees (two spaces for resident caretaker), plus three spaces conveniently located at the registration area. Where self-storage does not provide customer drive-up access, provide one additional loading space per 100 storage spaces.
32.	Place of worship, schools and places of public assembly, including amusement parks, armories, auditoriums, banquet facility, bingo parlors, community centers, convention centers, gymnasiums, libraries, movie theaters, private clubs and lodges, pool rooms, stadiums, theaters, swimming pools, and all similar places of public assembly	1 space per 4 seats in the auditorium or place of worship or assembly, or 2 spaces per 3 employees, or 1 space per 4 persons maximum occupancy where no fixed seats are provided.
33.	Health Club	1 space per 3 persons maximum occupancy plus 1 space per 100 gfa office/administrative space
34.	Recreational uses (e.g., golf courses, bowling alleys, driving ranges and similar uses)	According to peak hour usage
F. Lodging/Medical		
35.	Hotels, extended stay-hotels, motels, tourist homes and tourist courts	1 space per accommodation plus such spaces as are required for eating establishments, assembly rooms and related facilities
36.	Bed and breakfast residences	2 spaces for the residence innkeepers, plus 1 space for each guest room
37.	Hospital, Urgent Care Facility	1 space per bed
38.	Medical and dental offices and clinics (including animal hospitals or clinics, veterinary offices, and drug or alcohol treatment centers)	1 space per 225 gfa
39.	Ambulance Service	1 space per employee

¹ Expressed as the required number of parking spaces per 1,000 square feet of gross floor area (gfa), unless otherwise noted.

² A group of retail and other commercial establishments that are planned, developed and managed as a single property.

³ A parking study shall be required when the restaurant, entertainment, and/or cinema space exceeds 20% of the shopping center gross floor area.

⁴ Future parking may be counted in meeting the minimum number of spaces. Future parking spaces are defined as spaces delineated on the site plan in truck loading areas. These spaces cannot be included in the parking count for current employee needs. The intent of this future parking provision is to provide relief from otherwise excessive requirements for large industrial use buildings with a low number of employees and visitors.

Table 15.2
Schedule of Shared Parking

How to Determine the Total Parking Requirement for Shared Parking Facilities
For each applicable general land use category, calculate the number of spaces required for a use as indicated in Table 15-1 as if it were the only use. Use those figures for each land use to calculate the number of spaces required for each of the six time periods by multiplying the full parking requirement by the percentage figure shown. For each time period, add the number of spaces required for all applicable land uses to obtain a grand total for each of the six time periods. Select the single time period with the highest total parking requirement and use that total as the shared parking requirement.

General Land Use Classification	Weekdays			Weekends		
	Midnight - 7am	7am - 6pm	6pm - Midnight	Midnight - 7am	7am - 6pm	6pm - Midnight
Office & Industrial	5%	100%	5%	0%	5%	0%
Retail	0%	100%	80%	0%	100%	60%
Restaurant	50%	70%	100%	70%	45%	100%
Lodging	100%	65%	100%	100%	65%	100%
Residential	100%	50%	80%	100%	75%	75%
Theater/Recreation	5%	20%	100%	5%	50%	100%
Place of Worship	0%	30%	50%	0%	100%	75%

(Ord. No. 2001-72, 12-3-2001; Errata of 2-20-2002, 24; Errata of 9-11-2002, 105-107; Errata (4) of 12-30-2002, 4; Ord. No. 2003-50, §§ 10-15, 8-11-2003)

Sec. 146-1505. Parking Reduction Waivers.

(A) *Parking Reduction Waiver Procedures.* Applicants seeking a waiver to allow a temporary or permanent reduction of parking shall submit to the Planning Director a parking reduction report meeting the requirements listed below in this section. Non-residential parking reductions of up to ten percent may be approved by the Planning Director administratively. All other reduction waivers shall require approval by the Planning Commission. When reduction calculations result in a fractional number of parking spaces, the fractional space shall not be counted as a whole space and shall not be used in the reduction.

(B) *Contents of the Parking Reduction Report.*

1. In the case of a non-residential reduction of ten percent or less, the report shall include at minimum a document citing at least three other comparable instances of similar land uses in comparable settings in the Denver metropolitan area where a reduced amount of parking has proven successful. A comparable setting is one where the surrounding neighborhood, use, and availability of public transportation, and neighborhood quality are similar to the setting of the proposed use.
2. In the case of any other reduction request, the report shall at minimum include the comparables report listed in item (1) above, plus a traffic generation study prepared by a professional traffic engineer.

- (C) **Criteria for Approval.** A waiver for parking reduction shall not be approved unless the approving authority finds that the parking needs of the use will be adequately served, and at least one of the following:
1. The character of the use lowers the anticipated need for off-street parking, and data from similar uses establishes that there is not a present need for the parking;
 2. A mix of residential uses with either office or retail uses is proposed, and the parking needs of all uses will be accommodated through shared parking;
 3. If joint use of common parking areas is proposed, varying time periods of use will accommodate proposed parking needs; or,
 4. The applicant provides an acceptable proposal for an alternate mode of transportation program, including a description of existing and proposed facilities and assurances that the use of alternate modes of transportation will continue to reduce the need for on-site parking on an ongoing basis.

(Ord. No. 2001-72, 12-3-2001; Errata of 2-20-2002, 25)

Sec. 146-1506. Off-Street Loading Spaces in Business and Industrial Districts.

- (A) **Location.** Off-street loading spaces shall be located on the same lot or parcel as the structure or use for which it is provided. In no case shall loading areas encroach into a fire lane.
- (B) **Number.** The minimum number of off-street loading spaces, plus an additional area or means for ingress and egress which is adequate for maneuvering, shall be provided pursuant to Table 15.3.
- (C) **Screening.** Service and loading areas visible from residences or streets shall be screened by fences, walls, landscaping, berms, or any combination of those items.

Table 15.3. Off-Street Loading Spaces				
	(A) Use	(B) Gross Floor Area (Square Feet)	(C) Minimum Required Number of Spaces ¹	(D) Minimum Space Size
1.	Office, Manufacturing, Industrial	Less than 40,000	1	50 feet in length, 12 feet in width, 18 feet in height, except that spaces for office uses may have a net area ² of not less than 200 sq. ft.
2.		40,000 through 100,000	2	
3.		100,001 through 160,000	3	
4.		160,001 through 240,000	4	
5.		240,001 through 320,000	5	
6.		320,001 through 400,000	6	
7.		For each additional 80,000 over 400,000	1	

Table 15.3. Off-Street Loading Spaces				
	(A)	(B)	(C)	(D)
	Use	Gross Floor Area (Square Feet)	Minimum Required Number of Spaces ¹	Minimum Space Size
8.	Other business uses including but not limited to retail and restaurants	Less than 20,000	1	Net area ² of not less than 200 sq. ft.
9.		20,001 through 30,000	2	
10.		30,001 through 40,000	3	
11.		For each additional 30,000 over 40,000	1	

¹ The Planning Director may reduce the number of spaces required in two circumstances:

- (A) where an alley exists and is capable of safely providing one or more loading spaces; and
- (B) where loading and unloading occur off-hours (e.g., fast food restaurant).

² "Net area" means the loading space itself exclusive of maneuvering area.

(Ord. No. 2001-72, 12-3-2001)

Sec. 146-1507. Accessible Parking.

(A) *Parking Space Supply.* All off-street parking within the city shall include designated spaces for handicapped-identified vehicles pursuant to the following:

(B) *Design.*

1. *Width.* Accessible parking spaces shall be a minimum of nine feet wide. Access aisles adjacent to accessible spaces shall be a minimum of five feet in width. Two accessible parking spaces may share a common access aisle. One space in every eight accessible spaces, but not less than one, shall be served by an access aisle at least eight feet in width, and shall be designated "van accessible."
2. *Accessible route.* Parking access aisles next to accessible spaces shall be part of the accessible route to the building or facility entrance. Curb cuts or curb ramps shall be required for all new construction commencing with the effective date of the ordinance from which this section derives. Accessible spaces that serve a particular building shall be located on the shortest accessible route of travel from parking to an accessible entrance.
3. *Marking and signage.* Accessible parking spaces shall be marked and maintained with striping or other surface painting to distinguish accessible spaces from other parking spaces. Accessible parking spaces shall also be posted with an above-grade sign at each accessible space incorporating the international symbol of accessibility and the following language: "Reserved Parking. Tow Away Zone." Such sign shall adhere to the provisions of section 2B-31: Urban Parking and Stopping Signs of the Manual on Uniform Traffic Control Devices approved by the state transportation department.
4. *Usability.* All accessible parking spaces shall be kept clear of snow, mud, and debris to the extent practicable, regardless of weather or other

conditions.

5. *Parking privileges.* The privilege to use accessible spaces shall be governed by the following sections of the Model Traffic Code, revised 1995, as well as these code sections: section 148-1204, "Stopping, Standing, or Parking Prohibited in Specified Places" and section 146-1208, "Parking Privileges for Persons with Disabilities."

- (C) *Previously Approved Site Plans.* The city council recognizes that in order to comply with this section, certain modifications and alterations might be necessary for sites that were built in accordance with previously approved site plans and minimum parking space requirements. However, due to the importance of providing adequate accessible parking, the need to submit site plan amendments and the need to adhere to minimum parking space requirements are waived when providing additional accessible spaces, subject to the review and approval of the Planning Director.

15.4. Accessible Parking Spaces		
	(A) Total Parking Spaces in Lot or Garage	(B) Required Minimum Number of Accessible Spaces ¹
1.	1 through 25	1
2.	26 through 50	2
3.	51 through 75	3
4.	76 through 100	4
5.	101 through 150	5
6.	151 through 200	6
7.	201 through 300	7
8.	301 through 400	8
9.	401 through 500	9
10.	501 through 1,000	2 percent of total
11.	More than 1,000	20 plus 1 for each 100 spaces more than 1,000

¹ When parking spaces are used for the parking of vehicles used in the operation of a business or for compliance with handicapped parking requirements, such parking spaces shall be provided in addition to those otherwise required by this article.

Sec. 146-1508. Bicycle Parking.

- (A) *Bicycle Parking Required.* All non-residential uses shall be required to provide bicycle parking. These requirements are in addition to the off-street parking requirements set forth in Table 15.1, "Amount of Off-Street Parking Required."
- (B) *Parking Space Supply.* For non-residential development, a number of off-street bicycle parking spaces shall be provided equal to three percent of the required motor vehicle parking spaces. Each inverted-U bicycle rack will count as two bicycle parking spaces.
- (C) *Parking Space Reduction.* The number of required motor vehicle parking spaces may be reduced at the ratio of one motor vehicle parking space for each two bicycle parking spaces, up to a maximum reduction of five percent of the required motor vehicle parking space.
- (D) *Design.* Bicycle parking facilities, both lockers and racks, as applicable, shall:
1. Be located in convenient, highly visible, active, well-lighted areas but shall not interfere with pedestrian movements. At least 10 percent or 10 bicycle parking spaces, whichever is less, shall be located within 100 feet of the primary building entrance;
 2. Provide for storage and locking of bicycles, either in lockers or medium-security racks or equivalent installation in which both the bicycle frame and wheels may be locked by the user.
 3. Consist of racks or lockers anchored so that they cannot be easily removed, and of solid construction, resistant to rust, corrosion, hammers, and saws;
 4. Be consistent with their environment in color and design, and be incorporated whenever possible into building or street furniture design.
- (E) The required bicycle rack is the "inverted-U" type, or other type approved by the Planning Director. Whatever rack is installed shall:
- a. Be simple, functional and durable;
 - b. Be capable of supporting a bicycle in an upright position;
 - c. Allow the user to lock a bicycle frame and wheel(s) with either a standard U-shaped lock or a chain/cable and lock;
 - d. Have no edges, seams, or hardware to pose a hazard or become unsightly; and,
 - e. Be freestanding units to allow flexibility in the number provided and their placement.

Figure 15.2: Generalized Bicycle Parking Layout

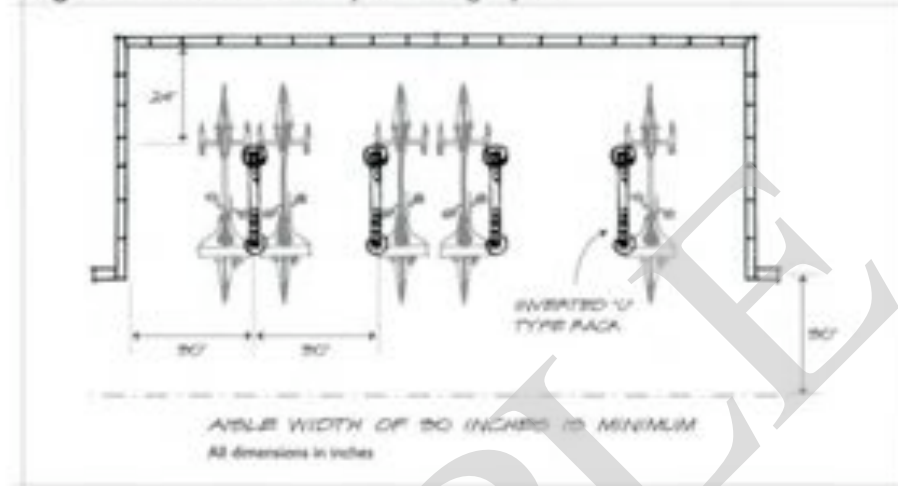


Figure 15.2: Generalized Bicycle Parking Layout

(Ord. No. 2001-72, 12-3-2001)

DIVISION 4. DESIGN, CONSTRUCTION, AND MAINTENANCE

Sec. 146-1509. Parking Area Design.

(A) Generally. The parking layout and pedestrian and vehicular circulation systems within each development shall:

1. Accommodate the safe and convenient movement of vehicles, bicycles, pedestrians and transit throughout the proposed development, and to and from surrounding areas;
2. Contribute to the attractiveness of the development;
3. Reflect the grid pattern of surrounding streets, where applicable;
4. Provide adequate directness, street crossings, and security as defined by the standards in this section;
5. Connect the on-site bicycle system to the city's off-road trail system to the extent reasonably feasible; and,
6. Provide required landscaping in conformance with the landscaping standards of the Planning Department.

(B) Layout

1. Preferred movement. To the extent possible, parking area layouts shall be designed using two-way vehicle movement systems with perpendicular and parallel parking spaces in preference to one-way

systems with angled parking.

2. *Parking space and aisle design standards.* All parking spaces shall meet the minimum size and other dimensional requirements illustrated in Fig. 15.3, *Parking Design Standards*.
3. *Slope.* Those portions of driveways supplying required parking shall not exceed eight percent slope.
4. *Overhangs.* To ensure the proper maintenance and utilization of these facilities, parking areas for public use shall be designed so that a parked vehicle does not overhang the public right-of-way or public sidewalk unless widened by the amount of the overhang. A parked vehicle may overhang a landscaped area, and up to two feet of such landscaped area may be included as a part of the length of the parking stall. Parked vehicle overhangs shall not reduce the width of a required accessible route. In no case shall vehicle overhangs encroach on required buffers or landscaping.
5. *Tandem parking.* All required parking spaces shall be individually accessible except for guest parking in private driveways leading to individual dwellings. Tandem parking for the purpose of meeting parking supply requirements is prohibited.
6. *Access.* Every off-street parking space shall have direct access to a driving lane or aisle. Private driveways leading to dwelling units shall be either a minimum of 20 feet in length or less than 10 feet in length. In no case shall an approach drive allow parking such that parked vehicles encroach on public or private street or sidewalks.
7. *Conventional parking lots.* For conventional parking lots, i.e. those not using the parking block standards, the design standards in Table 15.5, "Conventional Parking Lot Design" apply.
8. *Parking block requirement.* For non-residential developments whose required parking equals or exceeds 120 spaces, the design of parking areas may be based on parking blocks as the organizing design principle. Parking blocks focus the required landscaping and separated pedestrian ways on their perimeters. The design standards in Table 15.6, "Parking Block Design" apply.
9. *Building entrance.* No vehicle shall be parked within six feet of a building entrance or exit.
10. *Shopping cart management.* All retail uses larger than 30,000 sq. ft. gross leasable area shall be provided with a cart control system to ensure that required parking spaces and movement corridors are not encroached on by haphazardly placed shopping carts. Additionally, all carts must have wheel locking devices and site perimeter controls to prevent carts from being taken off-site. The Planning Director may require cart corrals for all parking lots serving retail or commercial uses where the slope of the parking lot exceeds three percent.
11. A concrete or otherwise permanent curb, bumper, wheel stop, or similar device shall be installed which shall be adequate to protect the public

right-of-way, public sidewalk or planters from vehicular overhangs and to protect any structure from vehicular damage. If such protection is provided by means of a method designed to stop the wheel rather than the bumper of the vehicle, the stopping edge shall be placed no closer than two feet from the edges of the public right-of-way, sidewalk, planter, or building. A parked vehicle may overhang a landscaped area, and up to two feet of such landscaped area may be included as a part as a part of the length of the parking stall. Parked vehicle overhangs shall not reduce the clear width of a required accessible route.

Table 15.5. Conventional Parking Lot Design.

1.	Maximum parking row length is 20 parking spaces.
2.	Each parking row shall be terminated by a landscaped island (also known as a "terminal island").
3.	No parking row shall exceed 15 continuous parking spaces.
4.	Landscaped islands shall be placed in parking rows at an overall average of one island per 10 parking spaces or portion of 10 parking spaces.
5.	Each row of parking shall be separated from automobile travel routes or other hard-surfaced paved areas with landscaping islands or landscaped medians. Hard-surfaced paved areas shall mean those areas that are paved for the use of motor vehicles.
6.	A minimum of five percent of the area required to provide the minimum number of parking spaces shall be landscaped. This percentage may be higher in City Center and other PD zone districts. Areas that qualify as internal landscaping are illustrated in Fig. 15.4.
7.	Each landscaped island shall be protected by concrete curbs, a minimum of 171 square feet (9 feet by 19 feet) measured curb face to curb face, and landscaped.
8.	Medians shall be a minimum of 10 feet wide measured curb face to curb face, protected by concrete curbs and landscaped.

(C) **Pedestrian and Bicycle Circulation and Access.** Design of pedestrian and bicycle movement within parking areas shall conform to the following standards:

1. Sidewalks or paths shall be provided from the farthest parking block or bay to the primary entrance of each building which they serve.
2. All developments that contain more than one building shall provide walkways between the principal entrances of the buildings.

(D) **Setbacks and Screening of Parking Areas.** Parking areas shall be set back from property lines and screened in accordance with the standards in Table 15.7.

Table 15.6. Parking Block Design

1.	Threshold for allowing use of parking blocks: 120 parking spaces.
2.	Maximum size of one parking block: 120 spaces.
3.	Minimum internal landscaping required: none.
4.	Minimum standards for pedestrian walkway: each block shall be provided with a grade-separated walkway of five feet minimum unimpeded width linking the farthest perimeter point of the parking area to the primary building entrance. Where this walkway crosses a driving aisle, the aisle shall be raised to the level of the adjoining walkway and/or shall be paved with a distinctive material (not including asphalt).

Table 15.7. Parking Area Setbacks And Screening	
1.	All uses and zone districts: Parking lots shall be visually screened from the public right-of-way and adjacent uses. Such screening can be integrated into buffer yard requirements, and is not in addition to such buffer yard requirements. Standards for such screening are set forth in section 146-1418(B).
2.	R-A, R-E, R-O, R-1 or other area that is restricted to single-family detached residential uses: Whenever off-street parking lots for more than six vehicles are to be located within or adjacent to an R-A, R-E, R-O, R-1, or other single-family detached residential districts, they shall be screened with an opaque ornamental fence, decorative wall, landscaped earth berm, or dense evergreen hedge, having a height of not less than six feet or more than eight feet, measured from the median elevation of the parking lot surface.

(E) Stacking spaces.

1. **Defined.** Vehicle stacking is:
 - a. The minimum required length of an on-site drive aisle necessary to facilitate the safe movement of vehicles between the parking area and the public street; and/or
 - b. The minimum required length of an on-site drive aisle necessary to facilitate movement of vehicles within a parking lot to drive-up window service or other drive-through services.
2. **Stacking distances.** Required stacking distances shall be measured from the flow line to the first parking stall or aisle. Stacking distance for internal drive-up or drive-through services shall be measured from the point of service as shown in Fig. 15.6. Within a designated drive aisle, vehicle stacking shall be provided as necessary to safely enter and exit parking areas and to serve individual uses. The required stacking distance for the site may be distributed between accesses serving the site, provided a minimum stacking of 20 feet is provided at all access points. The stacking distance may be adjusted by the Planning Director for accesses with two approach lanes, and will be subject to traffic impact study findings, roadway geometry, traffic volume, and site layout.
3. **Size.** In no case shall a vehicle stacking space be less than 8- ½ feet wide and 18 feet in length.
4. **Location.** Required vehicle stacking spaces shall not interfere with access to parking spaces. They may be located anywhere on the site provided that traffic impacts on- and off-site are minimized and the location does not create negative impacts on adjacent properties due to noise, light, or other factors.
5. **Drive-through operations.** All drive-through facilities shall have a minimum of three stacking spaces, each at least 20 feet in length, including the first point of service (e.g., a menu board), except that self-serve car washes shall provide a minimum of two such stacking spaces to and including the first point of service (e.g., vacuum pumps). Such stacking of automobiles shall be located in a safe and convenient manner

to allow the unobstructed flow of traffic. Fast food restaurants shall have a minimum of 7 stacking spaces (see Table 15.1 cell #25B). Car wash: full service; and Car Wash: self-service shall comply with stacking requirements contained in Table 15.1, cells 11B and 12B respectively.

SAMPLE

Figure 15.3: Parking Space and Aisle Design Standards

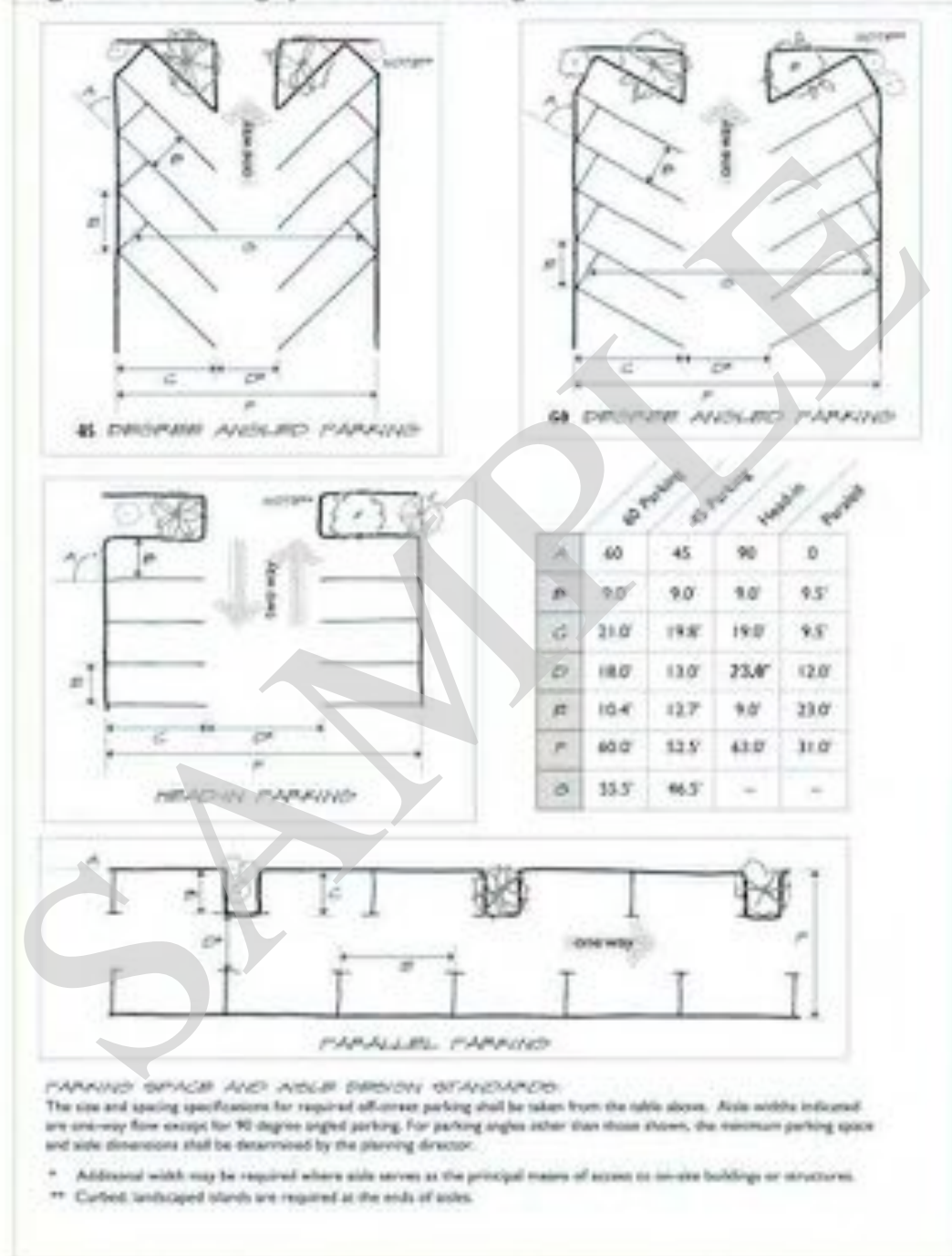


Figure 15.3: Parking Space and Aisle Design Standards

Figure 15.4: Internal Parking Lot Landscaping

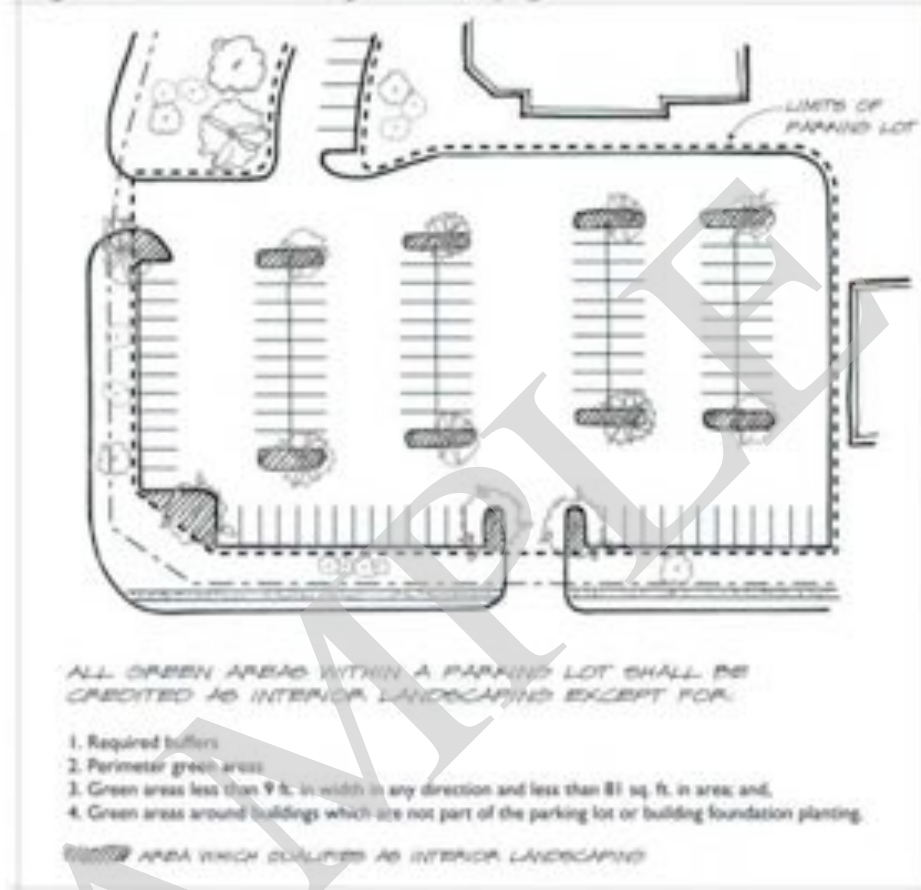


Figure 15.4: Parking Lot Landscaping

Figure 15.5: Parking Block Design

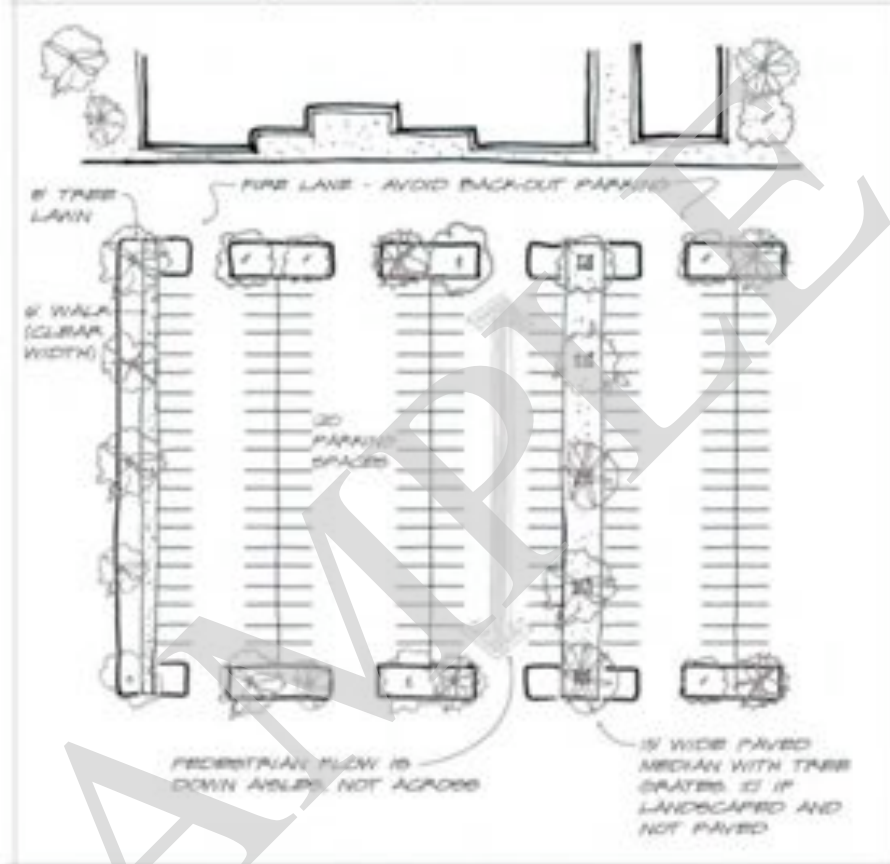


Figure 15.5: Parking Block Design

Figure 15.6: Vehicle Stacking

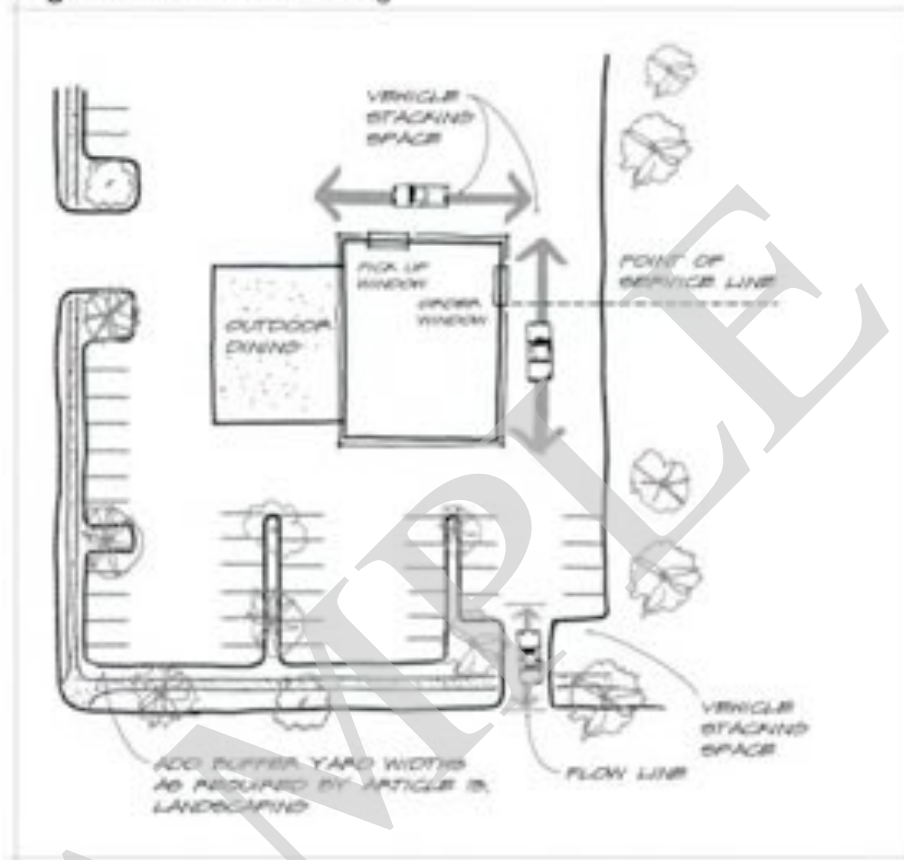


Figure 15.6: Parking Block Design

- (F) **Multi-Family Development.** The following standards apply to single-family attached and multi-family developments:
1. **Surface-to-structure parking ratio.** At least 35 percent of resident parking shall be in garages, and at least 50 percent of those garages shall be attached to a residential structure.
 2. **Convenient location.** All parking in multiple-family residential developments shall be distributed throughout the site to be convenient to dwelling units.
 3. **Guest parking.** To the extent feasible, guest parking shall be located in spaces in front of the units they are serving.
 4. **Landscaped islands.** Landscaped islands with a minimum width of nine

feet shall be provided between every pair of garage doors accessing attached garages.

(G) *Traffic control aids.*

1. *Marking of spaces.* Parking spaces shall be marked on the pavement. Any other directional markings or signs shall be installed as permitted or required by the city to ensure the approved use of space, direction of traffic flow, and general safety.
2. *Colors reserved.* The following colors are reserved for specific uses in parking areas:
 - a. Red: fire lanes.
 - b. Blue: accessible parking signage and pavement striping.
 - c. White: parking space pavement and aisle marking (one-way).
 - d. Yellow: aisle marking (two-way).
3. *Striping style.* Required off-street parking spaces shall be delineated by four-inch-wide single- or double-striped lines in the configurations shown in Fig. 15.8, "Stall Markings and Wheel Stop Locations."

(H) *Lighting.* Parking areas shall be illuminated as unobtrusively as possible to meet the functional needs of safe circulation and of protecting people and property. To accomplish these purposes, lighting of parking areas shall meet or exceed the following standards as demonstrated in the parking plan:

1. *Shielding of lights in commercial parking areas.* Light sources shall be of a full cut-off luminaire type, and concealed or shielded to the maximum extent possible to minimize the potential for glare and unnecessary diffusion on adjacent property. Lighting fixtures for canopies or similar structures shall be recessed or flush-mounted and equipped with flat lenses. For any fixtures adjacent to a residential use or residentially zoned lot, the source of light shall be shielded from sight. This requirement for shielding applies to all light fixtures including security lighting. However, incandescent light sources of 100 watts or less or other light sources of 60 watts or less (gaseous discharge) do not have to be shielded provided they are located at least 150 feet from the property line of a residential district.
2. *Illuminance level.* Maintained average illuminance values in paved, commercial parking areas and multi-family developments shall be no less than two foot-candles. Where adjacent to residential uses, maintained average illuminance shall not exceed 0.5 (one-half) foot-candle at ten feet beyond the property line except where adjacent to walkways, driveways, public and private streets. Illuminance shall be measured using only the light produced on-site. The acceptable uniformity ratio for lighted areas shall be in conformance with recommended ranges adopted by the Illumination Engineering Society of North America (IESNA) for low, medium, and high activity areas.

Figure 15.7: Garage Landscaping

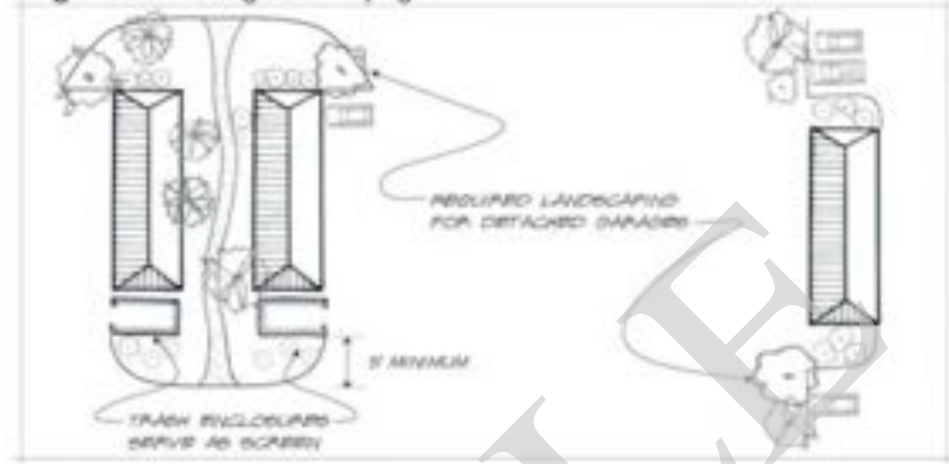


Figure 15.7: Garage Landscaping

Figure 15.8: Alternative Stall Markings and Wheel Stop Locations

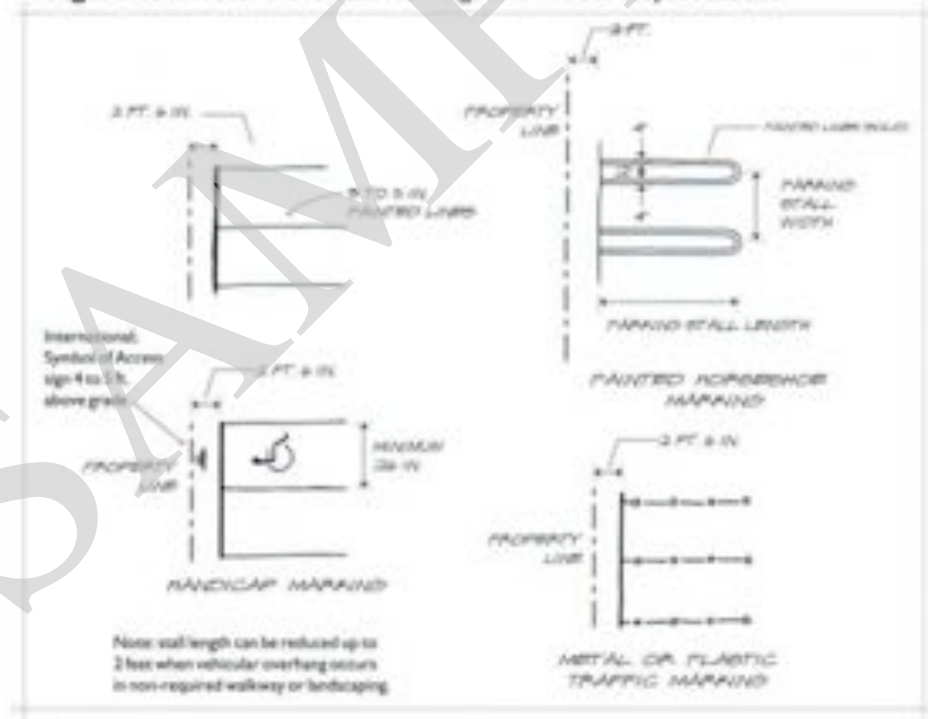


Figure 15.8: Alternative Stall Markings and Wheel Stop Locations

3. *Hours of lighting.* All parking luminaires, except those required for security, shall be extinguished within one hour after the end of business hours and remain extinguished until one hour before the commencement of business hours. However, for reasons of security, a maximum of 25 percent of the total luminaires used for parking lot illumination may remain in operation during such period. Parking area lighting during off-business hours need not conform to the otherwise applicable average-to-minimum uniformity ratio.
4. *Light color.* Light sources shall produce accurate color rendition and shall be compatible with adjacent light sources. Metal halide and high-pressure sodium light sources have high to fair color rendition and are permitted light sources.
5. *Pole location.* Poles shall be located outside of vehicular circulation areas and off-street parking spaces to the extent possible. In no case shall a pole encroach more than six inches into any required parking space. Location of poles shall not interfere with door opening or vehicular movement.
6. *Style and color.* Light poles and fixtures shall be consistent with the style and character of architecture proposed on the site.
7. *Height.* Light poles shall not exceed 30 feet in height. Pedestrian scale standards, of 12 to 16 feet in height, are recommended for use wherever reasonably practicable. In industrial zone districts, light poles located at least 750 feet from residentially zoned properties may be up to 40 feet in height.

Figure 15.9: Fully Cut-off Luminaire

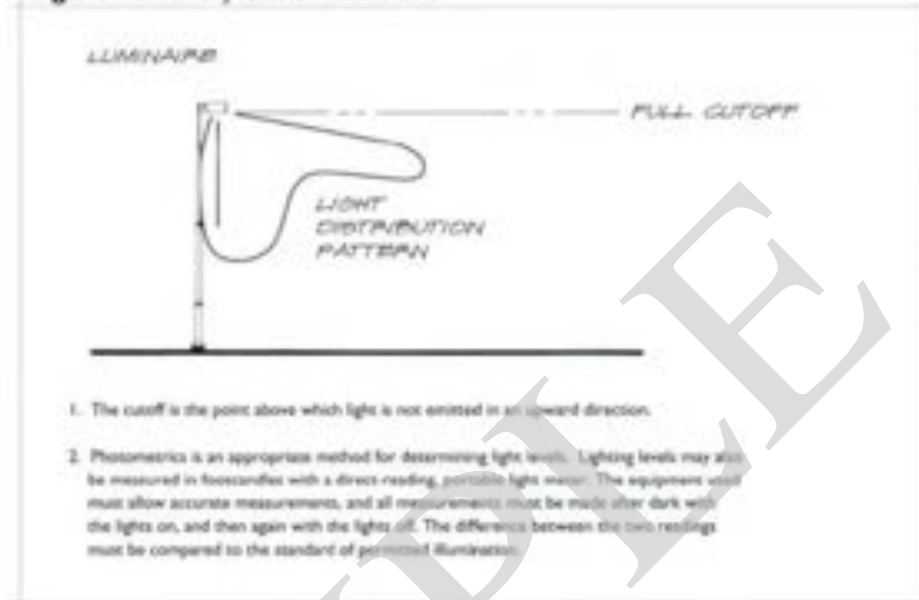


Figure 15.9: Fully Cut-Off Luminaire

(Ord. No. 2001-72, 12-3-2001; Errata of 2-7-2002, 6-11; Errata of 2-20-2002, 26; Errata of 9-11-2002, 108-111; Errata of 9-27-2002)

Sec. 146-1510. Location of Off-Site Parking.

- (A) **Location by Zone.** The entire area comprising required off-street parking areas shall be located in the respective zones as follows:
1. **Residential zones.** The off-street parking area shall be located within 300 feet of the property line, exclusive of street and alley widths, of the principal use for which the off-street parking is being provided, and shall be located in a parking zone district or in the same zone district as the principal use or in a district of greater density as determined by units per acre.
 2. **Business or industrial zones.** Off-street parking shall be located within 300 feet of the property line, as measured by a straight line between the two closest points under consideration, exclusive of street and alley widths, of the principal use for which the off-street parking is being provided, and shall be located only in business, parking, or industrial zone districts.
 3. **Parking districts.** Property to be used for parking that is not contiguous to the generating use must be zoned for a parking district.

- (B) *Multiple Zone Districts.* For lots that have more than one zoning designation, the required parking for the use(s) on the lot may be provided on any portion of the lot provided other dimensional standards are met.

(Ord. No. 2001-72, 12-3-2001)

Sec. 146-1511. Access to Parking from Streets and Alleys.

- (a) *Access.* The purpose of vehicular ingress and egress to arterials from off-street parking shall be to direct traffic to achieve the following goals: convenience, safety, and promotion of the free traffic flow on the streets, without excessive interruption. In addition to the use of flared or channelized intersections, access to parking areas from streets shall conform to the following:
1. *Minimum number of curb cuts.* Only the minimum number of curb cuts necessary to serve the subject parcel is permitted.
 2. *Access drive orientation.* Access drives shall be oriented substantially at right angles (90 degrees) to the street.
 3. *Side street access.* Access to parking lots along arterials shall be from the local side street wherever possible except between commercial parking areas bordered by residential property.
 4. *Access point location.* No entrance or exit is permitted to be located nearer than 50 feet to any intersecting street right-of-way line or nearer than 10 feet to any adjacent property line, except where it is possible to provide one access point that will serve both adjacent properties. If adherence to these requirements would leave a parcel of property without vehicular access, either or both of the setback requirements may be reduced by the Planning Director to permit a single vehicular access point if the Director finds that the intent of this section would be served.
 5. *Backout parking.* Public parking areas for business and industrial districts and multiple-family residential districts, not including single-family and two-family residences, which are nonconforming uses in these districts, shall be designed so that vehicles are not permitted to back out of the parking area onto a public street.
 6. *Side-loaded garages.* On residential lots with side-loaded garages, a minimum back-out dimension of 25 feet is required.
- (B) *Higher Density Residential.* Access to front yard parking in any multiple-family residential district adjacent to any street shall be specifically designated by a driveway of not less than 20 feet or more than 30 feet in width. The number and location of access points on any one street front shall be as approved by the city traffic engineer.
- (C) *Alleyways.* Whenever access to the parking lot or loading areas in any multiple-family residential, business, or industrial district is by way of any alley, the subdivider shall improve such alley access by providing an improved surface thereon for the entire length of the block, up to a maximum of 600 feet. A material approved by the city engineer shall be used. Any such subdivider who first improves such alley, as provided for in this subsection, shall be entitled to a payback agreement for a period of five years and shall be reimbursed by

subsequent developers on a front-footage basis of his or her actual approved costs for such five-year period.

- (D) **Waivers.** Waivers to the access design provisions of this subsection may be made if the Planning Director determines that safe and reasonable access is provided.

(Ord. No. 2001-72, 12-3-2001)

Sec. 146-1512. Construction and Maintenance.

- (A) **Construction.** All parking areas shall be properly graded for drainage and shall be surfaced with concrete or asphaltic concrete, in conformance with specifications on file with the public works department. Each required parking space shall be paved to its full width. Parking areas, including signs and pavement marking, shall be maintained in good condition, free of vegetation, dust, trash, snow, ice, and debris. Driveways or parking surfaces in residential zone districts shall be properly graded for drainage free of chuckholes or ruts and shall be surfaced with concrete, asphalt, brick, or stone pavers.
- (B) **Surfacing Requirements.** In all zones, the following surfacing requirements apply:
1. **Surfacing.** Surfacing for driveways and parking areas shall extend the full width of the vehicle.
 2. **Front yard restrictions.** All driveways or parking surfaces located in the front yard shall be of concrete, asphalt, or brick or stone pavers, and shall not comprise more than 40 percent of the total front yard area.
 3. **Side yard restrictions.** All driveways or parking surfaces located in the side yard shall be of concrete, asphalt, or brick or stone pavers and shall not exceed a width of 10 feet.
 4. **Rear yard restrictions.** All driveways or parking surfaces located in the rear yard shall be of concrete, asphalt, or brick or stone pavers, and shall not exceed 25 percent of the total rear yard area or 500 square feet, whichever is less.
 5. **Driveways and parking surfaces constructed after December 1987.** All driveways and parking surfaces constructed after December 1987 shall be of concrete, asphalt, or brick or stone pavers.
 6. **Driveways and parking surfaces paved since December 1987.** All driveways and parking surfaces that abut public unpaved streets, alleys, or rights-of-way that have been paved since December 1987 shall be paved within one year of the improvement to the public street.
 7. **Exceptions:**
 - a. Driveways or parking surfaces abutting unpaved public rights-of-way in open, natural areas, and agricultural districts, are not required to be of concrete, asphalt, or brick or stone pavers.
 - b. Driveways or parking surfaces abutting unpaved streets in residential zones are not required to be of concrete, asphalt, or

brick or stone pavers. However, driveways or parking surfaces shall be of standards in conformity with those adopted by the Director of Public Works. Standards shall address construction, placement, material, drainage, and containment.

- c. The Director of Planning may grant a waiver from the front and sideyard surfacing restrictions of subsections (B)2 and (B)3 above for the side-loaded garages if the waiver furthers the spirit and intent of the Code, in particular, relative to landscaping and a higher level of architectural design.

(Ord. No. 2001-72, 12-3-2001)

Secs. 146-1513--146-1599. Reserved.