FINAL
The Lumberyard Redevelopment Project
Parking Impact Study
Grove City, Ohio

Submitted to:

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Parking Impact Study

Grove City, Ohio

EXECUTIVE SUMMARY

This study analyzes the existing parking activity in the Grove City Town Center and examines how the current supply and demand will be impacted by the proposed Lumberyard Redevelopment Project. It focuses only on on-street spaces and off-street parking facilities that presently are or will be in the future accessible to the general public. Presently there are 984 spaces that comprised the supply of publicly accessible parking. The study found that the overall prevailing demand for parking in the Town Center, which is typified by the peak level of parking activity on a normal weekday at the 11:00 a.m. hour, reached only 43% of the available public parking supply. This level of peak period utilization of parking supported an initial assessment that the Town Center does not have a parking supply shortage.

A new 292-space two level parking structure is included in the plan for the 74,000 square foot mixed use Lumberyard Redevelopment project. A standard industry modeling approach was used to determine the demand for parking to be generated by the anticipated mix of land uses and likely tenants to occupy the commercial development. The model revealed that the planned supply of 334 parking spaces (i.e. 292-space garage and 42 on-street spaces) for the new development will be slightly exceeded by the projected peak period demand (i.e. for 372 spaces) that the project will generate. However, the report concludes that this very slight peak period parking supply deficit will be easily absorbed by the supply of available parking spaces in the immediate vicinity of the project site and that the availability of parking throughout the rest of the Town Center will not be adversely impacted by the project.

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INTRODUCTION

DESMAN Associates was retained by the Stonehenge Company *("the Developer")* in February 2009 to conduct a parking market study of the Town Center area of Grove City, Ohio. The aim of the study was to verify that the City of Grove City's proposed redevelopment plan for the former Lumberyard site in the heart of the Town Center would have adequate parking and to assess how the Town Center as a whole would be impacted by the project. To accomplish this task, DESMAN needed to assess the existing parking supply and demand conditions within the Town Center and to forecast future parking conditions expected to result from the redevelopment project and other anticipated changes in the Town Center.

Background

Grove City is a suburban community with a resident population of approximately 32,122 people located southwest of Ohio's capital city of Columbus. Situated at the convergence of interstate highways I-270 and I-71, the greater Grove City community has transitioned from a small, rural, main street-oriented town to a typical suburban community with the majority of new residential and commercial development concentrated around the Stringtown Road interchange with I-71. While Broadway, the historic main street of the Town Center, has remained picturesque, it has struggled to maintain its commercial viability. Beginning in the late 1980's, the Community built new a City Hall and Safety Complex in the Town Center, supported the revitalization of several historic commercial storefront buildings and completed a comprehensive streetscape project along Broadway, all in an effort to sustain the small town feel and vitality in the Town Center.

The City sought to capitalize on the unique appeal and potential of the Town Center by proposing a modest sized mixed-use development project at the former Lumberyard site west of City Hall. The proposed project consists of retail, office and restaurant space and will also include a multi-level parking structure.

Scope of Work

DESMAN Associates' engagement with the City was two-fold, in addition to being retained to conduct a study of the parking supply and demand throughout the Grove City Town Center, we were also asked to provide the firm of Bird Houk Collaborative, the project Architect, with peer review

consultation related to the functional and structural design of the parking garage proposed as part of the Lumberyard Redevelopment. Documentation and information related to the second part of our service engagement is not contained in this report, however, relevant knowledge about the proposed project and the parking component of the project in particular has been taken into account in this Town Center Parking Study. To complete this Town Center Parking Study assignment, DESMAN agreed to perform the following work tasks:

1. Conduct an organizational meeting with the City, the developer and perhaps others to reaffirm the goals and objectives for the study, to determine the limits of study area and to review and update the work plan and schedule.

2. Collect data, past reports, studies, land use and building occupancy and other information relating to the present and future supply of and demand for parking in the study area.

3. Review and verify the inventory of on-street parking spaces and off-street parking facilities within the study area based on the pre-existing parking supply data recently assembled by the City's Development Department.

4. Conducted a survey to document the utilization of both on-street spaces and off-street parking lots on a typical weekday during regular business hours.

5. Analyze the adequacy of the existing parking supply based on current land uses, building occupancies, and peak period parking supply consumption in order to identify parking supply surpluses and/or deficits across the study area and by city block.

6. Forecast the future need for parking based in part on the existing parking activity levels as well as on anticipated parking activity levels spurred by the proposed redevelopment of the Lumberyard site and other known, planned and proposed projects and assumed land use changes in the Town Center study area.

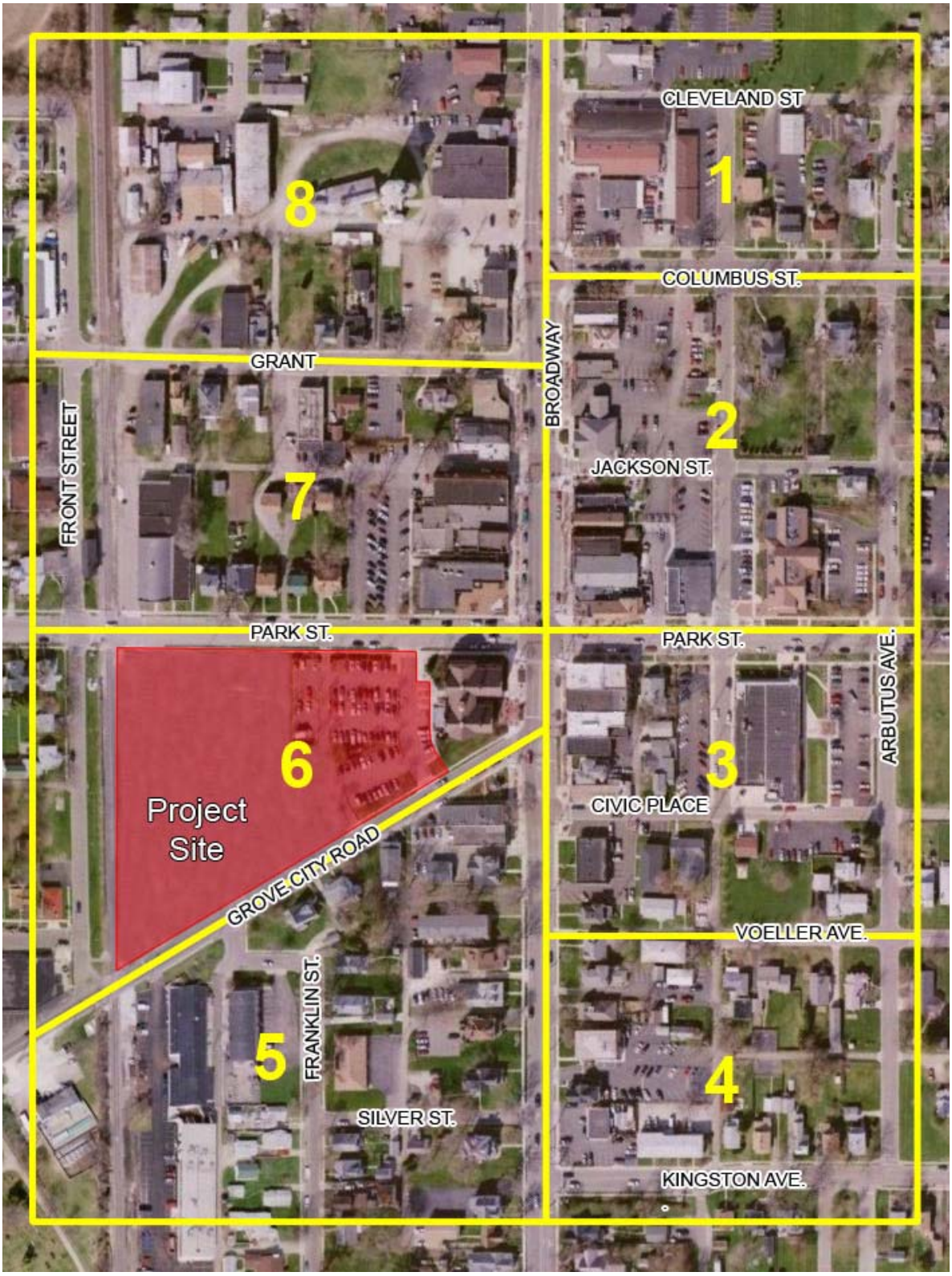
7. Recommend parking related site improvement and supply management initiatives to address cited parking problems and/or supply deficiencies.

8. Prepare and present a draft of the Parking Supply and Demand Study containing the findings and supporting data tables, graphs, maps and plans to the City staff for review.

Parking Study Area

The study area for this assignment is generally bounded by Cleveland Avenue to the north, Arbutus Avenue to the east, Kingston Avenue to the south and Front Street to the west. The study area represents the limits of the Town Center area as defined by the City. **Exhibit 1** depicts the project study area boundary and the site of the proposed Lumberyard Redevelopment project. Also delineated on the map are eight subareas (hereafter referred to as "*Parking Zones*") established by the City in its recently completed Town Center Parking Inventory report. For the purposes of clarity and context, DESMAN has organized all the tabulated statistical data presented throughout this report into these eight Parking Zones.

Exhibit 1 Project Site, Study Area and Parking Subarea Zone Boundaries



THE LUMBERYARD REDEVELOPMENT PROJECT

Plan Overview

The City proposes to construct the Lumberyard Redevelopment Project on the 3.8 acre parcel of land to the rear of City Hall bordered by Park Street, Front Street and Grove City Road. The project boundary limits will encompass the entirety of the existing 86-space surface parking lot which is ancillary to City Hall. Although the tenant program for the mixed used development has not been finalized, the project site plan illustrating the scale, footprints, placement and orientation of the proposed structures, along with the key landscaped features to be developed, are depicted in **Exhibit 2**. The development includes two commercial structures which, when combined, will contain 74,000 square feet of gross floor area and a parking structure which will have two supported parking levels above the grade level and contain 292 parking spaces. The site is also envisioned to include an outdoor plaza.

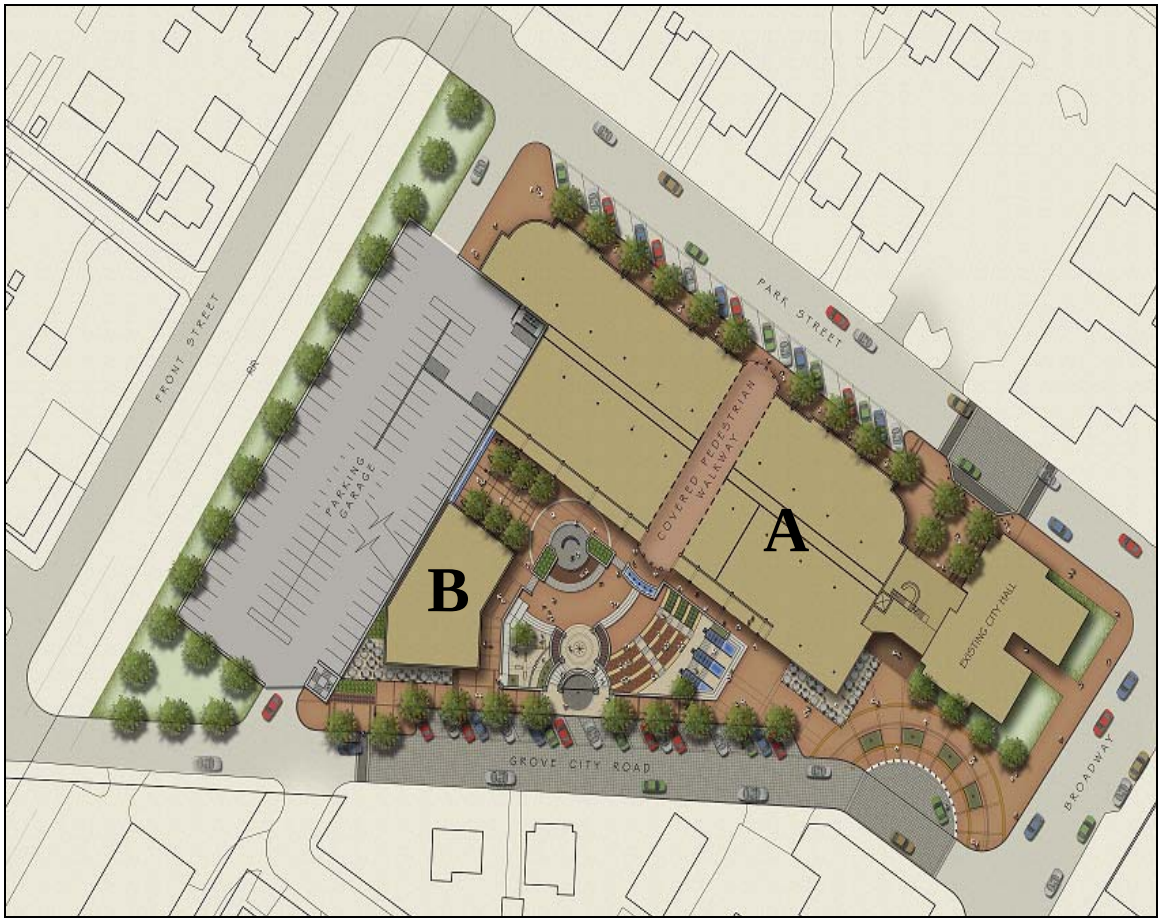
The main commercial structure (i.e. 2-stories with 66,000 SF) will have frontage on Park Street and be lodged between the City Hall building and a new multi-level parking structure that will be oriented in a north-south manner on the site and parallel to Front Street. The second commercial building (8,000 SF) will be positioned near Grove City Road and be oriented toward the outdoor plaza.

Vehicles will be able to access the parking garage from both Park Street and Grove City Road. Also, the right-of-way of Park Street and Grove City Road along the project site will be altered to accommodate head-in, angled parking spaces; Park Street will have 22 angled parking spaces and Grove City Road will have 20.

Preliminary Program and Tenant Mix

Table 1 provides the latest details regarding the breakdown of the types and square footages for the various land uses expected to be accommodated in the commercial buildings. The main commercial building (Bldg A) is programmed to be occupied by retail, office and educational uses, while the secondary building (Bldg B) is envisioned to be occupied by a restaurant use.

Exhibit 2 Lumberyard Redevelopment Project Site



No specific retail, restaurant or office space tenants have yet been identified as likely project tenants, however, the City is negotiating with several higher educational institutions that are interested in establishing a satellite learning center in Grove City. Currently, Columbus State College, Ohio State University and Ashland College have expressed an interest in sharing office space and conducting classes at the facility. The learning center space will include approximately 6,000 SF of office space and 14 classrooms of 1,000 SF that will each seat 25 to 30 students.

Table 1 Preliminary Land Use Mix for the Development

Lumberyard Development Site	Total Site SF	Project Land Use Mix			
		Retail SF	Office SF	College SF	Restaurant SF
Project Bldg. A	**66,000**	12,000	34,000	20,000	
Project Bldg. B	**8,000**				8,000
Total SF	**74,000**	**12,000**	**34,000**	**20,000**	**8,000**

EXISTING PARKING CONDITIONS

The Town Center Parking Inventory

Grove City officials initially provided DESMAN with an inventory of on- and off-street parking facilities within the Town Center that was completed in 2008. **Exhibit 3** depicts the locations of 80 striped, curb-side on-street spaces along Park Street and Broadway and a total of 207 off-street spaces situated at eight City-owned parking lots that were included in the parking inventory provided by Grove City. After reviewing this original survey, DESMAN concluded that in order to accurately assess the current and future parking conditions throughout the Town Center study area, the inventory needed to be expanded to include all the existing parking within the Town Center. Specifically, other off-street parking lots owned by private businesses and other public entities need to be included in the parking inventory along with the estimated number of un-striped spaces available within legal on-street parking zones on streets other than Park Street and Broadway. However, private off-street parking lots devoted to residential properties were not included in the survey because they do not serve the Town Center's employee and visitor populations.

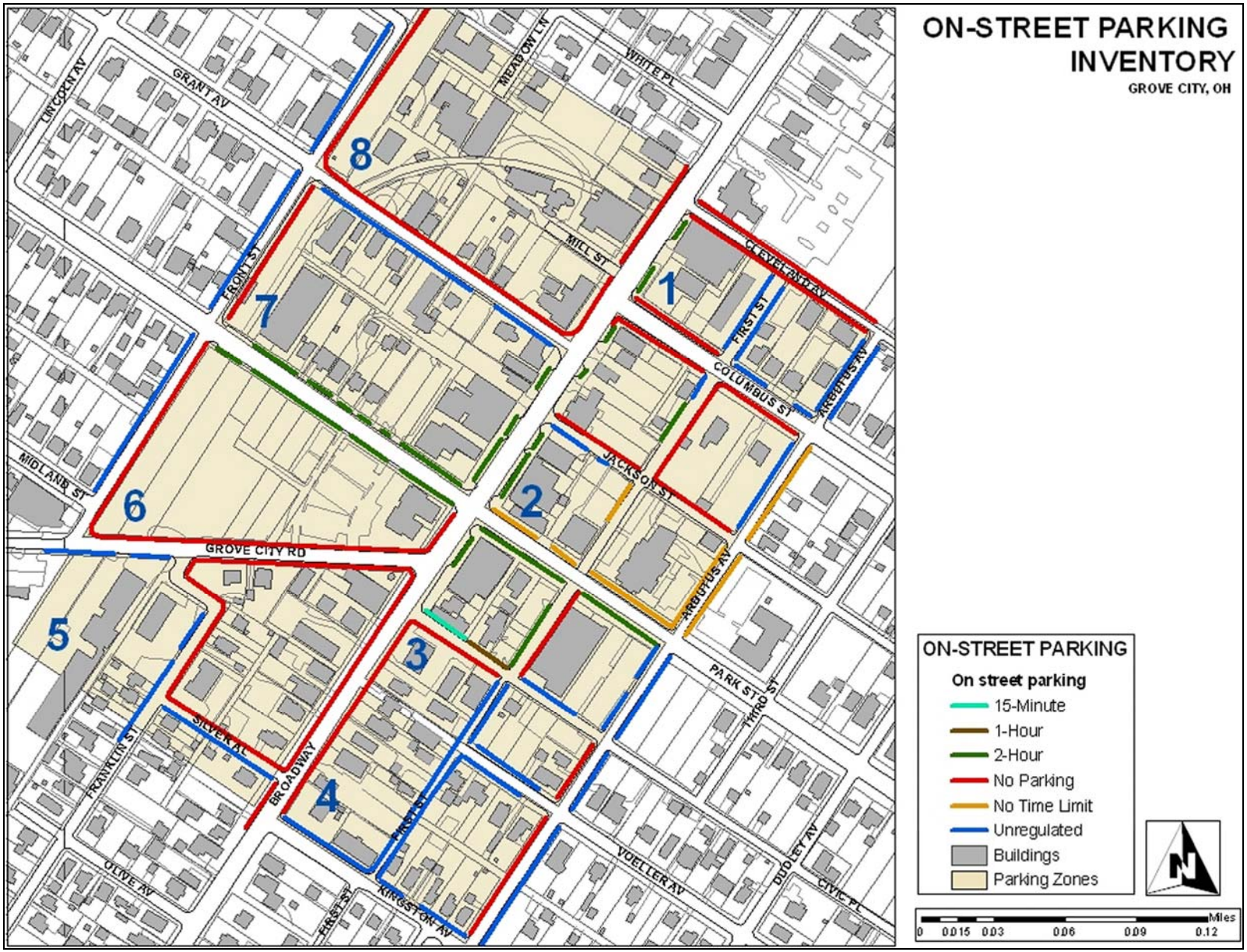
To expand the parking inventory, DESMAN used the 2008 Land Use Inventory produced by Lincoln Street Studios and aerial photos of the Town Center area that included an overlay of property parcel lines to correctly associate the ownership of privately-owned off-street parking lots with the correct business/institution addresses. Additionally, DESMAN relied on field measurements (i.e. 20 linear feet per curbside space) to estimate the number of parking spaces contained within legal, but un-striped, on-street parking zones throughout the Town Center. Following this methodology, DESMAN confirmed the existence of 261 total on-street parking spaces and 44 total off-street parking facilities containing 723 parking spaces.

On-Street Parking Inventory

Exhibit 4 depicts locations where it was determined that on-street parking is allowed and not allowed within the Town Center. Some of the areas have pavement strips that delineate each space and posted signs that specify a particular time limit during which a vehicle is allowed to park at one of the spaces. The time limit set for these signed areas varied between 15 minutes, 1-hr and 2-hrs. Other on-street areas lacked pavement stripping and

Exhibit 3 Original Town Center Parking Inventory documented by Grove City Officials

Exhibit 4


ON-STREET PARKING INVENTORY
GROVE CITY, OH
ON-STREET PARKING
On street parking
15-Minute
1-Hour
2-Hour
No Parking
No Time Limit
Unregulated
Buildings
Parking Zones
Miles
0 0.015 0.03 0.06 0.09 0.12
1
2
3
4
5
6
7
8
LINCOLN AV
GRANT AV
MEADOW LN
WHITE PL
MILL ST
CLEVELAND AV
FIRST ST
COLUMBUS ST
ARBUTUS AV
JACKSON ST
MIDLAND ST
GROVE CITY RD
PARK ST
THIRD ST
FRANKLIN ST
SILVER AL
BROADWAY
KINGSTON AV
VOELLER AV
DUDLEY AV
CIVIC PL
OLIVE AV

parking time limit signs, but did have signs that defined the length of curb side space where on-street parking is allowed. Still other areas where on-street parking was apparently allowed had no parking related signage. Lastly, there were several areas where "No Parking at Anytime" signs were posted.

The 261-space on-street parking inventory that DESMAN created is comprised of the striped and un-striped spaces located within the curb side areas where parking was not expressly prohibited by posted signs. **Table 2** provides a tally of the on-street parking spaces that line each of the curb side areas where on-street parking is not expressly prohibited.

Table 2 Inventory of Legal On-Street Parking Spaces

Parking Zone	Block Face	STREET PARKING	Parking Spaces Located Between	Signage Status	Parking Time Limit	Space Count
1	E	BROADWAY	Cleveland Ave - Columbus St	Posted Signs	2-hr Limit	4
1	E	ARBUTUS AVENUE	Columbus St - Cleveland Ave	No Signs	Unregulated	7
1	W	ARBUTUS AVENUE	Columbus St - Cleveland Ave	No Signs	Unregulated	6
1	N	COLUMBUS ST	Arbutus Ave - First St	No Signs	Unregulated	2
1	E	FIRST STREET	Cleveland Ave - Columbus St	No Signs	Unregulated	1
1	W	FIRST STREET	Cleveland Ave - Columbus St	No Signs	Unregulated	1
2	N	PARK STREET	Broadway - First St	Posted Signs	2-hr Limit	4
2	N	PARK STREET	First St - Arbutus Ave	Posted Signs	No Time Limit	6
2	E	BROADWAY	Columbus St - Jackson St	Posted Signs	2-hr Limit	3
2	E	BROADWAY	Jackson St - Park St	Posted Signs	2-hr Limit	7
2	S	JACKSON STREET	Broadway - First St	No Signs	Unregulated	4
2	E	ARBUTUS AVENUE	Park St - Jackson St	Posted Signs	No Time Limit	7
2	W	ARBUTUS AVENUE	Park St - Jackson St	Posted Signs	No Time Limit	7
2	E	ARBUTUS AVENUE	Jackson St - Columbus St	Posted Signs	No Time Limit	7
2	W	ARBUTUS AVENUE	Jackson St - Columbus St	No Signs	Unregulated	8
2	W	FIRST STREET	Columbus St - Jackson St	No Signs	Unregulated	3
2	W	FIRST STREET	Columbus St - Jackson St	Posted Signs	2-hr Limit	5
2	W	FIRST STREET	Jackson St - Park St	No Signs	Unregulated	3
3	S	PARK STREET	Arbutus Ave - First St	Posted Signs	2-hr Limit	7
3	S	PARK STREET	First St - Broadway	Posted Signs	2-hr Limit	8
3	E	BROADWAY	Park St - Civic Pl	Posted Signs	2-hr Limit	3
3	N	CIVIC PLACE	Broadway - First St	Posted Signs	15-minutes	2
3	N	CIVIC PLACE	Broadway - First St	Posted Signs	1-hour Limit	3
3	N	CIVIC PLACE	First St - Arbutus Ave	No Signs	Unregulated	5
3	E	ARBUTUS AVENUE	Voeller Ave - Civic Pl	Posted Signs	No Time Limit	4
3	E	ARBUTUS AVENUE	Civic Place - Park St	No Signs	Unregulated	8
3	W	ARBUTUS AVENUE	Civic Place - Park St	No Signs	Unregulated	5
3	W	FIRST STREET	Park St - Civic Pl	No Signs	Unregulated	7
3	E	FIRST STREET	Park St - Civic Pl	No Signs	Unregulated	3
3	N	VOELLER AVE	Arbutus Ave - First St	No Signs	Unregulated	5
3	S	VOELLER AVE	Arbutus Ave - First St	No Signs	Unregulated	5
4	E	ARBUTUS AVENUE	Kingston Av - Voeller Ave	Posted Signs	No Time Limit	8
4	N	KINGSTON AVENUE	Broadway - First St	No Signs	Unregulated	4
4	N	KINGSTON AVENUE	First St - Arbutus	No Signs	Unregulated	4
5	S	GROVE CITY ROAD	Front St - Franklin St	No Signs	Unregulated	2
5	W	FRANKLIN STREET	Grove City Rd - Silver Alley	No Signs	Unregulated	5
5	S	SILVER STREET	Broadway - Franklin St	No Signs	Unregulated	9
6	S	PARK STREET	Broadway - Front St.	Posted Signs	2-hr Limit	15
6	W	FRONT STREET	Park St - Grove City Rd	No Signs	Unregulated	8
7	N	PARK STREET	Front St. - Broadway	Posted Signs	2-hr Limit	14
7	W	BROADWAY	Park St - Grant Ave	Posted Signs	2-hr Limit	9
7	W	FRONT STREET	Grant Ave - Park St	No Signs	Unregulated	5
7	S	GRANT AVENUE	Broadway - Front St.	No Signs	Unregulated	19
8	W	FRONT STREET	Cleveland Ave - Grant Ave	No Signs	Unregulated	9
TOTAL ON-STREET PARKING INVENTORY						**261**

Off-Street Parking Inventory

Exhibit 5 depicts the 8 parking zones and the 44 existing off-street parking facilities located throughout the Town Center study area. Eight of the facilities are owned by Grove City, two facilities are owned by the South Western Public Library System and the remaining 34 facilities are owned by private entities. Together these facilities account for a total of 723 off-street parking spaces.

Nearly all of the City-owned spaces are accessible to the general public, but there a few spaces in several city-owned parking facilities which are exclusively reserved for use by City officials or for City vehicle parking. The Library-owned lot located on Civic Place is exclusively reserved for its employees and official vehicles, while the main Library Lot located on Arbutus Avenue is accessible to the general public. The remaining privately-owned off-street parking lots are generally devoted to serving the employees, patrons and visitors of individual businesses occupying commercial or industrial property. **Table 3** provides a tally of the off-street parking spaces verified to exist in each of the 44 parking facilities.

Exhibit 5

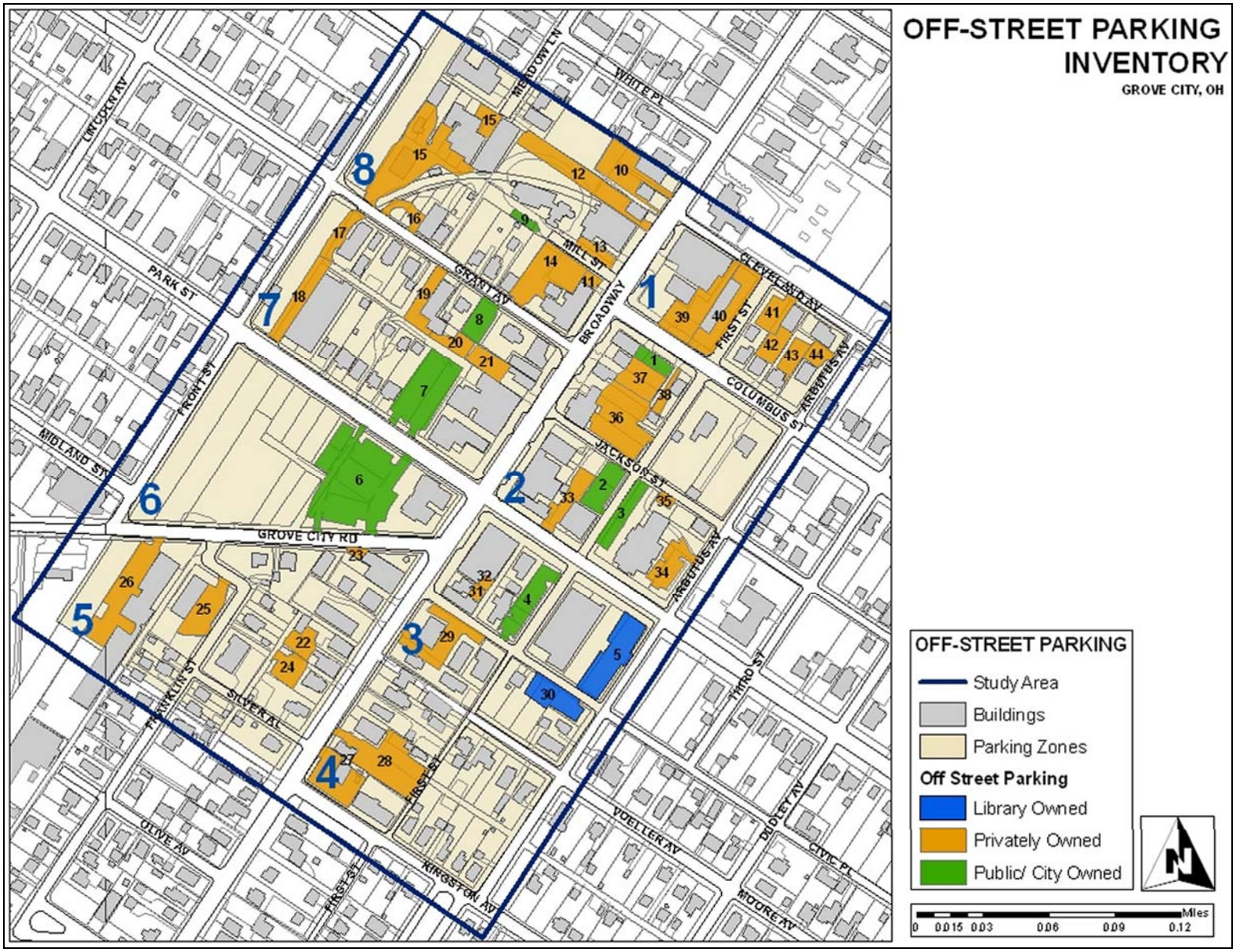

OFF-STREET PARKING INVENTORY
GROVE CITY, OH
OFF-STREET PARKING
Study Area
Buildings
Parking Zones
Off Street Parking
Library Owned
Privately Owned
Public/ City Owned
Miles
0 0.015 0.03 0.06 0.09 0.12
BROADWAY
GROVE CITY RD
PARK ST
FRONT ST
MIDLAND ST
GRANT AV
MILL ST
WHITE PL
MEADOW LN
LINCOLN AV
CLEVELAND AV
FIRST ST
COLUMBUS ST
ARBUTUS AV
JACKSON ST
THIRD ST
DUDLEY AV
CIVIC PL
VOELLER AV
MOORE AV
KINGSTON AV
SILVER AL
FRANKLIN ST
OLIVE AV
1
2
3
4
5
6
7
8

Table 3 Inventory of Off-Street Parking Facilities and Spaces

Fac. #	Faciltiies Type	Business/Institution Name	Street Address	Total Off-Street Spaces
PARKING ZONE 1				
39	Private	Grove City Lanes	3940 Broadway Street	**10**
40	Private	Concrete Contracting Solutions	3338 Columbus Street	**19**
41	Private	Dawg N Sudz Grooming Salon	3966 First Street	**6**
42	Private	Destiny Cleaning Systems	3318 Columbus Street	**9**
43	Private	A Total Image Hair & Nail Shop	3318 Columbus Street	**7**
44	Private	Tristano's Pizzeria	3306 Columbus Street	**3**
PARKING ZONE 2				
1	Public	Grove City - Columbus Street Lot	Columbus Street	**6**
2	Public	Grove City - Jackson Street Lot	Jackson Street	**14**
3	Public	Grove City - Clerk of Court Lot	First Street	**19**
33	Private	Huntington Service Alley	3378 Park Street	**14**
34	Private	Grove City - Police Vehicle Lot 1	3350 Park Street	**20**
35	Private	Grove City - Police Vehicle Lot 2	Jackson Street	**3**
36	Private	Fifth Third Bank	3990 Broadway Avenue	**29**
37	Private	Chris Roach Real Estate	3980 Broadway Street	**16**
38	Private	Hair Shoppe	3343 Columbus Street	**5**
PARKING ZONE 3				
4	Public	Grove City - First Street Lot	4069 First Street	**25**
5	Public	Grove City Library	3359 Park Street	**38**
29	Private	Evan's Floral	4060 Broadway Street	**25**
30	Private	Grove City Library - Staff Lot	35 Civic Drive	**20**
31	Private	Grove City Visitors/Conventions	4052 Broadway Street	**2**
32	Private	Varsity Sporting Goods	4050 Broadway Street	**2**
PARKING ZONE 4				
27	Private	John's Auto Service	4122 Broadway Street	**15**
28	Private	Kiourtsis & Kiourtsis	4104 Broadway Street	**33**
PARKING ZONE 5				
22	Private	MCS Title LLC	4093 Broadway Street	**6**
23	Private	Massaro Heating & Cooling	3449 Grove City Road	**1**
24	Private	Douglas B. Gansl, DDS	4097 Broadway Street	**8**
25	Private	Hannigan Memorial Co.	4071 Franklin Street	**11**
26	Private	PVM Inc	3515 Grove City Road	**53**
PARKING ZONE 6				
6	Public	Grove City - City Hall Lot	4035 Broadway Street	**86**
PARKING ZONE 7				
7	Public	City - Park Street Lot	3448 Park Street	**44**
8	Public	Grove City - Grant Street Lot	3971 Grant Street	**13**
17	Private	Commercial Warehouse	3451 Grant Street	**10**
18	Private	Proposed New Bimco Bldg.	3474-76 Park Street	**20**
19	Private	Grove City - Business Incubator	3425 Grant Street	**8**
20	Private	Sound Communications	3440 Park Street	**7**
21	Private	Vacant Commercial Bldg.	3985 Broadway Street	**5**
PARKING ZONE 8				
9	Public	Grove City - Mill Lot	Mill Street	**11**
10	Private	Met Life	3915 Broadway Street	**15**
11	Private	Allstate Insurance Co.	3951-55 Broadway Street	**8**
12	Private	Broadway Design Group	3929 Broadway Street	**21**
13	Private	Red Letter Journals	3937 Broadway Street	**17**
14	Private	Cut & Buzz For Children	3394 Grant Avenue	**20**
15	Private	Smitty's Body Shop	3422 Mill Street	**15**
16	Private	Star Electric Inc.	3442 Grant Ave	**4**
TOTAL OFF-STREET PARKING INVENTORY				**723**

Parking Utilization

Having verified the total number and location of parking spaces throughout the study area, DESMAN sought to determine the degree to which the spaces were being used on a typical weekday. To accomplish this objective, the hourly occupancy of Town Center parking spaces was documented on Wednesday, April 8, 2009. The survey of space utilization was conducted between the hours of 9:00 a.m. and 4:00 p.m. Besides documenting the occupancy of the on- and off-street parking supply, DESMAN also recorded the turnover of vehicle usage at on-street spaces. This task was accomplished by recording the license plate information of every parked vehicle in order to arrive at a day-long count of the number of times each space was used by a different vehicle. This exercise also exposed the time duration that every vehicle remained parked in a given parking space.

The survey effort revealed that at the 11:00 a.m. hour, the level of parking activity throughout the Town Center peaked when 43% of the 984 public and private parking spaces were found to be occupied. **Exhibit 6** depicts the peak hour parking volumes and percentages within each of the eight parking zones within the study area. Parking Zones 4, 5 and 7 saw peak hour parking utilization levels below the area-wide level, while Parking Zones 1, 2, 3, 6 and 8 experienced parking utilization close to or above the area-wide level.

Exhibit 6

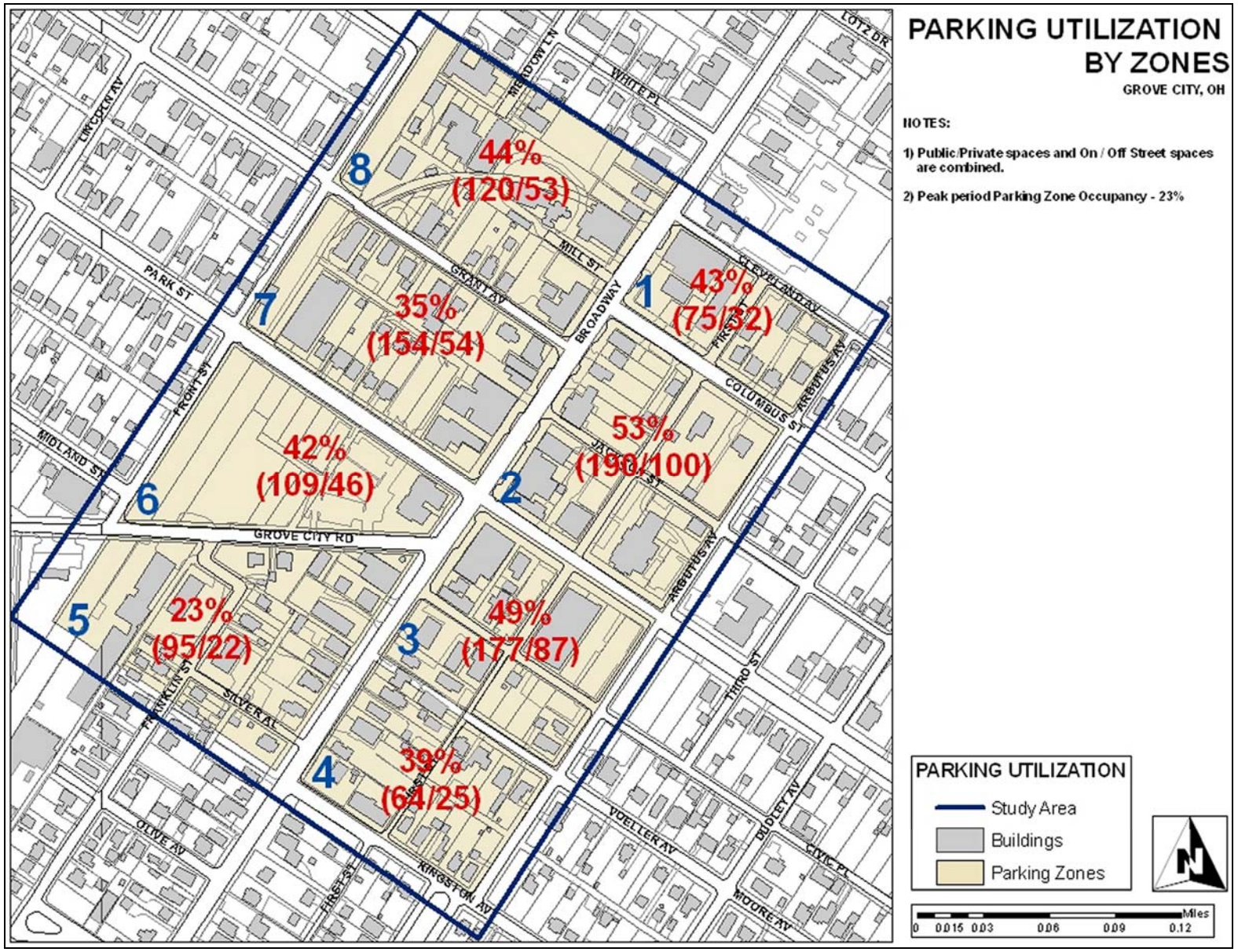

PARKING UTILIZATION BY ZONES
GROVE CITY, OH
NOTES:
1) Public/Private spaces and On / Off Street spaces are combined.
2) Peak period Parking Zone Occupancy - 23%
8
44%
(120/53)
7
35%
(154/54)
1
43%
(75/32)
6
42%
(109/46)
2
53%
(190/100)
5
23%
(95/22)
3
49%
(177/87)
4
39%
(64/25)
PARKING UTILIZATION
Study Area
Buildings
Parking Zones
Miles
0 0.015 0.03 0.06 0.09 0.12
LOTZ DR
WHITE PL
MEADOW LN
LINCOLN AV
PARK ST
MILL ST
GRANT AV
BROADWAY
CLEVELAND AV
FIRST ST
COLUMBUS ST
ARBUTUS AV
FRONT ST
MIDLAND ST
JACKSON ST
GROVE CITY RD
THIRD ST
FRANKLIN ST
SILVER AV
OLIVE AV
FIRST ST
KINGSTON AV
VOELLER AV
DUDLEY AV
CIVIC PL
MOORE AV

Table 4 shows the occupancy rates observed by DESMAN for each type of parking space, separated by zone. In terms of the overall system, the supply of on-street spaces was 28% occupied, the supply of public off-street spaces, which included the City and Library-owned parking spaces, was 50% occupied and the supply of privately-owned parking spaces was 46% occupied. It is not a surprise that Parking Zones 2 and 3, where the Library, and Safety Complex are located, had the highest overall levels of peak hour parking activity; the 190 total spaces in Parking Zone 2 were 53% occupied, while the 177 spaces in Parking Zone 3 were 49% occupied.

Generally, the need to develop additional parking in a given area only becomes an issue when the utilization during the peak parking activity period reaches or exceeds 90% of the total parking supply in the area. Based on this commonly accepted measure, the Grove City Town Center presently has an adequate supply of parking.

Table 4 Peak Hour Parking Activity throughout the Town Center Study Area

Parking Zones	On-Street Spaces			Public Off-Street Spaces			Private Off-Street Spaces			Total Town Center Spaces		
	Space Count	Occupied Spaces	Space Occ. %	Space Count	Occupied Spaces	Space Occ. %	Space Count	Occupied Spaces	Space Occ. %	Space Count	Occupied Spaces	Space Occ. %
1	21	5	24%	0	0	0%	54	27	50%	**75**	**32**	**43%**
2	64	30	47%	28	16	57%	98	54	55%	**190**	**100**	**53%**
3	65	21	32%	63	38	60%	49	28	57%	**177**	**87**	**49%**
4	16	0	0%	0	0	0%	48	25	52%	**64**	**25**	**39%**
5	16	2	13%	0	0	0%	79	20	25%	**95**	**22**	**23%**
6	23	1	4%	86	45	52%	0	0	0%	**109**	**46**	**42%**
7	47	13	28%	57	22	39%	50	19	38%	**154**	**54**	**35%**
8	9	2	22%	11	2	18%	100	49	49%	**120**	**53**	**44%**
8	**261**	**74**	**28%**	**245**	**123**	**50%**	**478**	**222**	**46%**	**984**	**419**	**43%**

Tables 5 and **6** provide location-specific parking space counts and the peak hour (11:00 a.m.) occupancy of spaces observed on-street and at off-street parking facilities within the Town Center study area. Also included in the **Appendix** of this report is a table showing the hour-to-hour count of vehicles parked on-street throughout the Town Center between 9:00 a.m. and 4:00 p.m.

Table 5 Peak Hour Occupancy of On-Street Parking Spaces

Parking Zone	Block Face	STREET PARKING	Parking Spaces Located Between	Signage Status	Parking Time Limit	Space Count	11:00 AM Peak Hour	Percent Occupied
1	E	BROADWAY	Cleveland Ave - Columbus St	Posted Signs	2-hr Limit	4	0	0%
1	E	ARBUTUS AVENUE	Columbus St - Cleveland Ave	No Signs	Unregulated	7	2	29%
1	W	ARBUTUS AVENUE	Columbus St - Cleveland Ave	No Signs	Unregulated	6	1	17%
1	N	COLUMBUS ST	Arbutus Ave - First St	No Signs	Unregulated	2	0	0%
1	E	FIRST STREET	Cleveland Ave - Columbus St	No Signs	Unregulated	1	1	100%
1	W	FIRST STREET	Cleveland Ave - Columbus St	No Signs	Unregulated	1	1	100%
2	N	PARK STREET	Broadway - First St	Posted Signs	2-hr Limit	4	4	100%
2	N	PARK STREET	First St - Arbutus Ave	Posted Signs	No Time Limit	6	4	67%
2	E	BROADWAY	Columbus St - Jackson St	Posted Signs	2-hr Limit	3	2	67%
2	E	BROADWAY	Jackson St - Park St	Posted Signs	2-hr Limit	7	6	86%
2	S	JACKSON STREET	Broadway - First St	No Signs	Unregulated	4	2	50%
2	E	ARBUTUS AVENUE	Park St - Jackson St	Posted Signs	No Time Limit	7	3	43%
2	W	ARBUTUS AVENUE	Park St - Jackson St	Posted Signs	No Time Limit	7	4	57%
2	E	ARBUTUS AVENUE	Jackson St - Columbus St	Posted Signs	No Time Limit	7	3	43%
2	W	ARBUTUS AVENUE	Jackson St - Columbus St	No Signs	Unregulated	8	0	0%
2	W	FIRST STREET	Columbus St - Jackson St	No Signs	Unregulated	3	1	33%
2	W	FIRST STREET	Columbus St - Jackson St	Posted Signs	2-hr Limit	5	0	0%
2	W	FIRST STREET	Jackson St - Park St	No Signs	Unregulated	3	1	33%
3	S	PARK STREET	Arbutus Ave - First St	Posted Signs	2-hr Limit	7	4	57%
3	S	PARK STREET	First St - Broadway	Posted Signs	2-hr Limit	8	5	63%
3	E	BROADWAY	Park St - Civic Pl	Posted Signs	2-hr Limit	3	0	0%
3	N	CIVIC PLACE	Broadway - First St	Posted Signs	15-minutes	2	0	0%
3	N	CIVIC PLACE	Broadway - First St	Posted Signs	1-hour Limit	3	0	0%
3	N	CIVIC PLACE	First St - Arbutus Ave	No Signs	Unregulated	5	3	60%
3	E	ARBUTUS AVENUE	Voeller Ave - Civic Pl	Posted Signs	No Time Limit	4	1	25%
3	E	ARBUTUS AVENUE	Civic Place - Park St	No Signs	Unregulated	8	0	0%
3	W	ARBUTUS AVENUE	Civic Place - Park St	No Signs	Unregulated	5	0	0%
3	W	FIRST STREET	Park St - Civic Pl	No Signs	Unregulated	7	6	86%
3	E	FIRST STREET	Park St - Civic Pl	No Signs	Unregulated	3	2	67%
3	N	VOELLER AVE	Arbutus Ave - First St	No Signs	Unregulated	5	0	0%
3	S	VOELLER AVE	Arbutus Ave - First St	No Signs	Unregulated	5	0	0%
4	E	ARBUTUS AVENUE	Kingston Av - Voeller Ave	Posted Signs	No Time Limit	8	0	0%
4	N	KINGSTON AVENUE	Broadway - First St	No Signs	Unregulated	4	0	0%
4	N	KINGSTON AVENUE	First St - Arbutus	No Signs	Unregulated	4	0	0%
5	S	GROVE CITY ROAD	Front St - Franklin St	No Signs	Unregulated	2	0	0%
5	W	FRANKLIN STREET	Grove City Rd - Silver Alley	No Signs	Unregulated	5	1	20%
5	S	SILVER STREET	Broadway - Franklin St	No Signs	Unregulated	9	1	11%
6	S	PARK STREET	Broadway - Front St.	Posted Signs	2-hr Limit	15	1	7%
6	W	FRONT STREET	Park St - Grove City Rd	No Signs	Unregulated	8	0	0%
7	N	PARK STREET	Front St. - Broadway	Posted Signs	2-hr Limit	14	1	7%
7	W	BROADWAY	Park St - Grant Ave	Posted Signs	2-hr Limit	9	5	56%
7	W	FRONT STREET	Grant Ave - Park St	No Signs	Unregulated	5	1	20%
7	S	GRANT AVENUE	Broadway - Front St.	No Signs	Unregulated	19	6	32%
8	W	FRONT STREET	Cleveland Ave - Grant Ave	No Signs	Unregulated	9	2	22%
TOTAL ON-STREET PARKING INVENTORY/OCCUPANCY						**261**	**74**	**28%**

Table 6 Peak Hour Occupancy of Off-Street Parking Facilities

Map #	Faciltiies Type	Business/Institution Name	Street Address	Public Off-Street Spaces			Private Off-Street Spaces			Total Off-Street Spaces		
				Space Count	Occupied Spaces	Space Occ. %	Space Count	Occupied Spaces	Space Occ. %	Space Count	Occupied Spaces	Space Occ. %
PARKING ZONE 1												
39	Private	Grove City Lanes	3940 Broadway				10	6	60%	**10**	**6**	**60%**
40	Private	Concrete Contracting Solutions	3338 Columbus Street				19	6	32%	**19**	**6**	**32%**
41	Private	Dawg N Sudz Grooming Salon	3966 First Street				6	4	67%	**6**	**4**	**67%**
42	Private	Destiny Cleaning Systems	3318 Columbus Street				9	4	44%	**9**	**4**	**44%**
43	Private	A Total Image Hair & Nail Shop	3318 Columbus Street				7	4	57%	**7**	**4**	**57%**
44	Private	Tristano's Pizzeria	3306 Columbus Street				3	3	100%	**3**	**3**	**100%**
PARKING ZONE 2												
1	Public	Grove City - Columbus Street Lot	Columbus Street	6	5	83%				**6**	**5**	**83%**
2	Public	Grove City - Jackson Street Lot	Jackson Street	11	7	64%	3	3	100%	**14**	**10**	**71%**
3	Public	Grove City - Clerk of Court Lot	First Street	11	4	36%	8	8	100%	**19**	**12**	**63%**
33	Private	Huntington Service Alley	3378 Park Street				14	11	79%	**14**	**11**	**79%**
34	Private	Grove City - Police Vehicle Lot 1	3350 Park Street				20	17	85%	**20**	**17**	**85%**
35	Private	Grove City - Police Vehicle Lot 2	Jackson Street				3	2	67%	**3**	**2**	**67%**
36	Private	Fifth Third Bank	3990 Broadway				29	5	17%	**29**	**5**	**17%**
37	Private	Chris Roach Real Estate	3980 Broadway				16	4	25%	**16**	**4**	**25%**
38	Private	Hair Shoppe	3343 Columbus Street				5	4	80%	**5**	**4**	**80%**
PARKING ZONE 3												
4	Public	Grove City - First Street Lot	4069 First Street	25	7	28%				**25**	**7**	**28%**
5	Public	Grove City Library	3359 Park Street	38	31	82%				**38**	**31**	**82%**
29	Private	Evan's Floral	4060 Broadway Street				25	14	56%	**25**	**14**	**56%**
30	Private	Grove City Library - Staff Lot	35 Civic Drive				20	11	55%	**20**	**11**	**55%**
31	Private	Grove City Visitors/Conventions	4052 Broadway				2	1	50%	**2**	**1**	**50%**
32	Private	Varsity Sporting Goods	4050 Broadway				2	2	100%	**2**	**2**	**100%**
PARKING ZONE 4												
27	Private	John's Auto Service	4122 Broadway				15	5	33%	**15**	**5**	**33%**
28	Private	Kiourtsis & Kiourtsis	4104 Broadway				33	20	61%	**33**	**20**	**61%**
PARKING ZONE 5												
22	Private	MCS Title LLC	4093 Broadway				6	5	83%	**6**	**5**	**83%**
23	Private	Massaro Heating & Cooling	3449 Grove City Road				1	1	100%	**1**	**1**	**100%**
24	Private	Douglas B. Gansl, DDS	4097 Broadway				8	5	63%	**8**	**5**	**63%**
25	Private	Hannigan Memorial Co.	4071 Franklin Street				11	3	27%	**11**	**3**	**27%**
26	Private	PVM Inc	3515 Grove City Road				53	6	11%	**53**	**6**	**11%**
PARKING ZONE 6												
6	Public	Grove City - City Hall Lot	4035 Broadway	86	45	52%				**86**	**45**	**52%**
PARKING ZONE 7												
7	Public	City - Park Street Lot	3448 Park Street	44	20	45%				**44**	**20**	**45%**
8	Public	Grove City - Grant Street Lot	3971 Grant Street	13	2	15%				**13**	**2**	**15%**
17	Private	Commercial Warehouse	3451 Grant Street				10	5	50%	**10**	**5**	**50%**
18	Private	Proposed New Bimco Bldg.	3474-76 Park Street				20	0	0%	**20**	**0**	**0%**
19	Private	Grove City - Business Incubator	3425 Grant Street				8	8	100%	**8**	**8**	**100%**
20	Private	Sound Communications	3440 Park Street				7	4	57%	**7**	**4**	**57%**
21	Private	Vacant Commercial Bldg.	3985 Broadway				5	2	40%	**5**	**2**	**40%**
PARKING ZONE 8												
9	Public	Grove City - Mill Lot	Mill Street	11	2	18%				**11**	**2**	**18%**
10	Private	Met Life	3915 Broadway				15	5	33%	**15**	**5**	**33%**
11	Private	Allstate Insurance Co.	3951-55 Broadway				8	4	50%	**8**	**4**	**50%**
12	Private	Broadway Design Group	3929 Broadway				21	12	57%	**21**	**12**	**57%**
13	Private	Red Letter Journals	3937 Broadway				17	15	88%	**17**	**15**	**88%**
14	Private	Cut & Buzz For Children	3394 Grant Avenue				20	5	25%	**20**	**5**	**25%**
15	Private	Smitty's Body Shop	3422 Mill Street				15	8	53%	**15**	**8**	**53%**
16	Private	Star Electric Inc.	3442 Grant Ave				4	0	0%	**4**	**0**	**0%**
TOTAL OFF-STREET PARKING INVENTORY/OCCUPANCY				**245**	**123**	**50%**	**478**	**222**	**46%**	**723**	**345**	**48%**

Duration of Stay and On-Street Space Turnover

Parking space turnover is simply a measure of the number of new vehicles that park at a single space during the timeframe when parking at that space is permitted. Usually different vehicles account for multiple parking occurrences, however, if one vehicle parks at a space then leaves and subsequently returns to the same parking space, every such event also counts as turnover. Therefore, the identification and space location of every parked vehicle each hour must be recorded to arrive at the turnover of a group of parking spaces.

Table 7 provides a statistical breakdown of the observed on-street parking activity on April 8, 2009. The findings are based on our field determination that there are 261 legal on-street parking spaces within the Town Center study area that are presumably enforced during weekday business hours and thus collectively account for a total of 2,088 hours (261 spaces x 8 hours) of permissible on-street parking time per day. Between the hours of 9:00 a.m. and 4:00 p.m., the DESMAN survey team observed a total of 239 vehicle parking occurrences throughout the Town Center study area. It was also observed that these vehicles collectively parked for a total of 559 hours. Therefore, 27% of the total permissible on-street parking throughout the Town Center study area is being used. The average turnover of on-street parking spaces throughout the study area was .92 and the average duration of stay for all the parking occurrences was 1.3 hours. These numbers indicate that, on average, each on-street parking space was utilized by less than one vehicle per day and that the average vehicle that did park remained in a space for 1.3 hours at a time.

When the on-street parking activity is examined by city block face, the highest turnover was observed on segments of Broadway, Park Street and First Street. While most of the on-street parking spaces lack posted parking time limits, the average duration of stay for vehicles parked in the time limit zones (i.e. 15-minute, 1-hour and 2-hours time limits) revealed that most parkers complied with the posted regulations. This finding indicates that the Town Center does not presently have a problem with long-term or all day parkers using the scarce supply of on-street parking spaces intended to serve transient visitors and business patrons.

Lastly, it is important to note that the DESMAN survey team did not observe any parking enforcement activity taking place by the City's Police patrol units.

Table 7 On-Street Parking Turnover and Vehicle Duration of Stay

Parking Zone	Block Face	STREET PARKING	Parking Spaces Located Between	Signage Status	Parking Time Limit	Space Count	Total Available Parking Hours	Counted Parked Vehicles	Total Hrs of Space Usage	9AM - 4PM Space Usage %	Avg. Space Turnover	Avg. Duration of Stay
1	E	BROADWAY	Cleveland Ave - Columbus St	Posted Signs	2-hr Limit	4	32	2	2	6%	0.50	0.3
1	E	ARBUTUS AVENUE	Columbus St - Cleveland Ave	No Signs	Unregulated	7	56	3	18	32%	0.43	2.6
1	W	ARBUTUS AVENUE	Columbus St - Cleveland Ave	No Signs	Unregulated	6	48	2	7	15%	0.33	1.2
1	N	COLUMBUS ST	Arbutus Ave - First St	No Signs	Unregulated	2	16	0	0	0%	0.00	0.0
1	E	FIRST STREET	Cleveland Ave - Columbus St	No Signs	Unregulated	1	8	3	8	100%	3.00	2.7
1	W	FIRST STREET	Cleveland Ave - Columbus St	No Signs	Unregulated	1	8	1	1	13%	1.00	1.0
2	N	PARK STREET	Broadway - First St	Posted Signs	2-hr Limit	4	32	17	25	78%	4.25	2.1
2	N	PARK STREET	First St - Arbutus Ave	Posted Signs	No Time Limit	6	48	12	34	71%	2.00	3.7
2	E	BROADWAY	Columbus St - Jackson St	Posted Signs	2-hr Limit	3	24	7	8	33%	2.33	1.1
2	E	BROADWAY	Jackson St - Park St	Posted Signs	2-hr Limit	7	56	24	28	50%	3.43	1.2
2	S	JACKSON STREET	Broadway - First St	No Signs	Unregulated	4	32	10	19	59%	2.50	2.6
2	E	ARBUTUS AVENUE	Park St - Jackson St	Posted Signs	No Time Limit	7	56	7	27	48%	1.00	3.1
2	W	ARBUTUS AVENUE	Park St - Jackson St	Posted Signs	No Time Limit	7	56	7	35	63%	1.00	4.6
2	E	ARBUTUS AVENUE	Jackson St - Columbus St	Posted Signs	No Time Limit	7	56	4	21	38%	0.57	3.0
2	W	ARBUTUS AVENUE	Jackson St - Columbus St	No Signs	Unregulated	8	64	0	0	0%	0.00	0.0
2	W	FIRST STREET	Columbus St - Jackson St	No Signs	Unregulated	3	24	3	12	50%	1.00	2.7
2	W	FIRST STREET	Columbus St - Jackson St	Posted Signs	2-hr Limit	5	40	2	2	5%	0.40	0.4
2	W	FIRST STREET	Jackson St - Park St	No Signs	Unregulated	3	24	1	6	25%	0.33	2.0
3	S	PARK STREET	Arbutus Ave - First St	Posted Signs	2-hr Limit	7	56	30	36	64%	4.29	1.3
3	S	PARK STREET	First St - Broadway	Posted Signs	2-hr Limit	8	64	22	32	50%	2.75	1.8
3	E	BROADWAY	Park St - Civic Pl	Posted Signs	2-hr Limit	3	24	10	11	46%	3.33	3.3
3	N	CIVIC PLACE	Broadway - First St	Posted Signs	15-minutes	2	16	3	3	19%	1.50	0.5
3	N	CIVIC PLACE	Broadway - First St	Posted Signs	1-hour Limit	3	24	0	0	0%	0.00	0.0
3	N	CIVIC PLACE	First St - Arbutus Ave	No Signs	Unregulated	5	40	4	24	60%	0.80	4.8
3	E	ARBUTUS AVENUE	Voeller Ave - Civic Pl	Posted Signs	No Time Limit	4	32	2	4	13%	0.50	0.5
3	E	ARBUTUS AVENUE	Civic Place - Park St	No Signs	Unregulated	8	64	0	0	0%	0.00	0.0
3	W	ARBUTUS AVENUE	Civic Place - Park St	No Signs	Unregulated	5	40	1	1	3%	0.20	0.2
3	W	FIRST STREET	Park St - Civic Pl	No Signs	Unregulated	7	56	8	30	54%	1.14	3.5
3	E	FIRST STREET	Park St - Civic Pl	No Signs	Unregulated	3	24	7	13	54%	2.33	2.8
3	N	VOELLER AVE	Arbutus Ave - First St	No Signs	Unregulated	5	40	0	0	0%	0.00	0.0
3	S	VOELLER AVE	Arbutus Ave - First St	No Signs	Unregulated	5	40	0	0	0%	0.00	0.0
4	E	ARBUTUS AVENUE	Kingston Av - Voeller Ave	Posted Signs	No Time Limit	8	64	0	0	0%	0.00	0.0
4	N	KINGSTON AVENUE	Broadway - First St	No Signs	Unregulated	4	32	0	0	0%	0.00	0.0
4	N	KINGSTON AVENUE	First St - Arbutus	No Signs	Unregulated	4	32	1	1	3%	0.25	0.3
5	S	GROVE CITY ROAD	Front St - Franklin St	No Signs	Unregulated	2	16	0	0	0%	0.00	0.0
5	W	FRANKLIN STREET	Grove City Rd - Silver Alley	No Signs	Unregulated	5	40	1	6	15%	0.20	1.2
5	S	SILVER STREET	Broadway - Franklin St	No Signs	Unregulated	9	72	3	42	58%	0.33	0.3
6	S	PARK STREET	Broadway - Front St.	Posted Signs	2-hr Limit	15	120	2	4	3%	0.13	0.1
6	W	FRONT STREET	Park St - Grove City Rd	No Signs	Unregulated	8	64	0	0	0%	0.00	0.0
7	N	PARK STREET	Front St. - Broadway	Posted Signs	2-hr Limit	14	112	6	9	8%	0.43	0.5
7	W	BROADWAY	Park St - Grant Ave	Posted Signs	2-hr Limit	9	72	24	37	51%	2.67	2.1
7	W	FRONT STREET	Grant Ave - Park St	No Signs	Unregulated	5	40	1	8	20%	0.20	1.6
7	S	GRANT AVENUE	Broadway - Front St.	No Signs	Unregulated	19	152	7	33	22%	0.37	1.7
8	W	FRONT STREET	Cleveland Ave - Grant Ave	No Signs	Unregulated	9	72	2	12	17%	0.22	1.3
TOTAL ON-STREET PARKING SPACE TURNOVER AND VEHICLE DURATION OF STAY						**261**	**2088**	**239**	**559**	**27%**	**0.92**	**1.3**

LUMBERYARD REDEVELOPMENT PROJECT PARKING NEEDS ANALYSIS

Development Timetable & Space Absorption Expectations

According to the project developer, buildings "A" and "B" and the parking garage will be completed by the end of the fourth quarter of 2010, with the plaza and public spaces to be completed by April 2011. The 15,380 SF City Hall building will remain as is on the site, however the project development plan will cause the elimination of the existing 86-space surface parking lot which presently serves City Hall. For the purposes of this analysis, DESMAN has assumed that all of the retail, office, restaurant and college space in the new development will be completely occupied immediately following the completion of the project.

Shared Use Parking Demand Model

In order to evaluate and quantify the parking impact of the Lumberyard development, DESMAN relied on the Shared Parking analysis methodology formulated by the Urban Land Institute (ULI). The ULI methodology for shared parking analysis was developed in the early 1980's. The methodology is premised on the fact that parking needs of individual land uses vary by time of year, day of week and hour of day. Since parking needs may peak at different times, fewer parking spaces are required to serve a mixed-use project than if each land use had its own dedicated parking. A common example is that restaurant parking needs usually peak during evening hours, while office parking needs peak in the daytime, thus the same parking spaces devoted to the office space occupants can later be used by restaurant patrons.

The key inputs to the Shared Use Parking Model include: 1) the ***categories and unit measures of land uses***, 2) the ***parking demand factors*** for the various project land uses, 3) the ***captive or synergistic parking ratio*** which is the percentage of parkers visiting multiple land uses during a single auto trip, 4) the ***mode of travel characteristics*** of the population generated by the land uses, and 5) the ***time of day vehicle accumulation patterns*** associated with the various project land uses. The significance of these key inputs to the shared use parking model and how they relate to the Lumberyard development project are defined in the following paragraphs.

Project Land Use Categories
The variety of land uses to be included in the development will be the primary determinant of the project's parking need. While knowledge of the particular parking needs or the distinctive characteristics of confirmed or targeted

tenants for the development would help to refine the results of the shared use parking analysis, such information has yet to be determined by the project developer. Therefore, the land use categories incorporated into the shared use parking model are quite general. However, it is important to note, for example, that the parking demand generated by a retail gift shop will be dramatically different than that generated by a drugstore or bookstore. Similarly, a national, full service chain family restaurant will generate significantly more vehicles than a locally operated pizza parlor. Consequently, it would be advisable to revisit the results of this shared use parking analysis when the probable mix of likely building tenants can be identified.

First hand and specific information was obtained from Columbus State Community College (CSCC), one of the likely tenants to occupy the 20,000 SF of space earmarked for the college land use component. DESMAN talked with CSCC officials to get a sense of the number of students and staff likely to be present at the development on a typical weekday during business hours, after business hours and on weekends.

According to the College officials, the proposed office space and 14 classrooms planned for the Grove City Learning Center will be heavily used. The student and staff presence at the site will be peak in the daytime between 9:00 a.m. and 11:00 a.m. and again in the evening between 5:00 p.m. and 8:00 p.m. with the greatest population being present during the latter timeframe. During these timeframes, each class session is expected to have between 15 and 20 students in attendance. In addition to teaching personnel for each class, three to five office staff and administrative coordinators are also expected to work in the facility during the peak periods. It was also discovered that, based on actual circumstances at the CSCC's Westerville Ohio Learning Center which is similarly sized to the facility proposed for the development, most students will attend one, 1 ½-hour or one, 3-hour class session per trip and that almost all students will drive themselves to the Center. According to College officials, based on the nature of the College's existing learning centers, students are not expected to arrive well in advance of their classes nor linger after class. This behavior could differ for the Grove City Learning Center since the development, unlike the other Learning Centers, will contain restaurants, shops, an outdoor plaza and perhaps some interior congregating space that might lead to more extended stays at the site by students.

While the office space at City Hall is separate from the Lumberyard development, the actual parking demand generated by the municipal building has been included in the shared use parking analysis. Based on the previously discussed results of the parking survey conducted by DESMAN, the hour-to-hour volumes of parked vehicles generated by the City Hall employees and visitors were incorporated into the shared used parking analysis for the development.

Lumberyard Development Site	Total Site SF	Project Land Use Mix			
		Retail SF	Office SF	College SF	Restaurant SF
Project Bldg. A	**66,000**	12,000	34,000	20,000	
Project Bldg. B	**8,000**				8,000
City Hall	**15,380**				
Total SF	**89,380**	**12,000**	**34,000**	**20,000**	**8,000**

Land Use Unit Measures

The amount of Net Square Footage for office, retail and restaurant land space in a project is the unit measure that best equates to the generation of parking. ULI research has concluded that for every 1,000 square feet of net space in a project allowed to each of these three land uses, a specific number of vehicles requiring parking will be generated. However, in the case of space devoted to educational uses, ULI research has concluded that the total worker force and student population of an educational land use component more accurately correlates with the generation of vehicles requiring parking than the amount of square footage devoted to the educational land use component. This means that rather than input the 20,000 square feet of space to be dedicated to the College land use component into the shared use parking model, the combined population of approximately 35 College staff/faculty expected to service the institution and the total enrollment estimate of 2,000 students has been incorporated into the shared use parking model.

Parking Ratios

Each unit measure of land use can be expected to generate a certain level of parking need. This parking need per land use measure is characterized as the *Parking Ratio*. A parking ratio is essentially the number of parking spaces that would be needed during the peak activity period if each distinct land use were located by itself in an area with little or no transit and weak pedestrian connections with other land uses. The parking ratio is different for each land use and can vary depending upon the scale, nature and location of the given land use.

Parking demand ratios must be applied to the various project land uses to estimate the number of spaces necessary to satisfy future parking demand generated by the development project. For this exercise, base ratios were taken from the Urban Land Institute's *Shared Parking: Second Edition*, 2005 and modified to reflect both the land use and demographic characteristics of Grove City as well as prevailing parking activity throughout the Town Center. **Tables 8** and **9** demonstrate the application of the base ratios for both weekday and weekend activity at the development and the recommended adjustments related to vehicle usage, the synergistic phenomenon associated with mixed used developments and the presence of captive parkers used to refine the results of the shared parking analysis so that it more accurately reflects the prevailing parking dynamic of the Grove City Town Center.

Table 8 Recommended (Weekday) Parking Ratios

Land Use Category	Base - Auto Dependent Ratio (1)	Adjustment for Auto Utilization (2)	Mixed Use Synergy and Captive (3)	Recommend Peak Demand Ratio
Retail	2.00	85%	20%	1.36
Professional Office	3.00	95%	5%	2.71
Restaurant	10.00	80%	20%	6.40
College(4)	0.12	95%	0%	0.11
City Hall(5)	3.50	98%	2%	3.36

Notes:
(1) Base Ratios were derived from ULI "Shared Parking"(2nd Edition) and ITE "Parking Generation" (3rd Edition)
(2) Percentage of people who would drive to their destination
(3) Percentage of people who would already be parking in association with other uses
(4) Ratio is on a per school population basis
(5) Treated like Professional Office Space

Table 9 Recommended (Weekend) Parking Ratios

Land Use Category	Base - Auto Dependent Ratio (1)	Adjustment for Auto Utilization (2)	Mixed Use Synergy and Captive (3)	Recommend Peak Demand Ratio
Retail	3.00	75%	10%	2.03
Professional Office	0.35	95%	1%	0.33
Restaurant	12.00	80%	10%	8.64
College(4)	0.15	95%	0%	0.14
City Hall(5)	0.00	98%	2%	0.00

Notes:
(1) Base Ratios were derived from ULI "Shared Parking"(2nd Edition) and ITE "Parking Generation" (3rd Edition)
(2) Percentage of people who would drive to their destination
(3) Percentage of people who would already be parking in association with other uses
(4) Ratio is on a per school population basis
(5) Treated like Professional Office Space

Mode of Travel Adjustments (Vehicle Utilization)

Base Parking Ratios are intended to reflect conditions in a suburban setting with little or no transit and with minimal employee ride sharing. This circumstance generally applies to the Grove City Town Center area therefore 95% of all vehicle trips expected to be generated by the project office space, City Hall and the College, are expected to be made by persons who drive themselves to the site. However, given the proximity of the Lumberyard development to neighboring residential areas and other Town Center

businesses and institutions, it is assumed that between 15% and 20% of the trips generated by the project retail and restaurant space will be made by persons walking or bicycling to the development from other locations in the Town Center area. This assumption is based DESMAN's experience with other similarly located and sized mixed-use developments and the general belief that many of these Town Center area employees and some nearby residents will fine walking to be as, if not more, convenient than driving to the Lumberyard development.

Mixed Used Synergy and Captive On-Site Parkers

Synergy is used to define the fact that some persons who make vehicle trips to the Lumberyard development primarily intend to patronize one retail establishment or restaurant at the development, but may also visit one or more of the other retail or restaurant establishments. When this trip synergy occurs, the secondary patronage of other land uses does not produce a greater need for parking. Similarly, the term "captive parkers" describes the on-site population group who will have already parked at the development site as project tenants, City Hall employees or College staff/faculty/students and thus will not generate any additional parking demand when they patronize the retail shops and restaurants at the site. It is assumed that the parking demand typically generated by the restaurant and retail land uses of the development needs to be reduced by 20% on weekdays and by 10% on weekends because of the synergy and captive parker factors.

Time of Day Vehicle Accumulation Patterns

The daylong activity patterns and peak activity periods associated with the Lumberyard project land uses differ on weekdays and weekends. For example, during weekdays the arrival and departure patterns of vehicles generated by office space will remain high and fairly constant between the hours of 9:00am and 4:00pm, while the vehicle generation by a restaurant use will be highest during the dinner hours between 6:00pm and 8:00pm. **Tables 10** and **11** show the hourly accumulation percentages of vehicles generated by each of the individual land uses planned for the Lumberyard development.

Shared Use Parking Model Calculations

All of these aforementioned inputs to the shared use parking model have yielded the overall tallies of projected hourly vehicle accumulation for the Lumberyard development for weekdays and weekends for the Design Month of October. **Tables 12** and **13** display the projected total hourly parking

demand for the combined land uses of the proposed Lumberyard development project.

Table 10 Hourly Vehicle Accumulation Percentages (Weekday)

Hour of Day	Retail	General Office	Restaurant	College	City Hall Office
6:00 AM	1%	3%	0%	0%	3%
7:00 AM	5%	30%	0%	7%	30%
8:00 AM	15%	75%	5%	54%	75%
9:00 AM	35%	95%	5%	82%	95%
10:00 AM	65%	100%	10%	90%	100%
11:00 AM	85%	100%	40%	85%	100%
12:00 Noon	95%	90%	75%	80%	90%
1:00 PM	100%	90%	75%	75%	90%
2:00 PM	95%	100%	65%	65%	100%
3:00 PM	85%	100%	40%	60%	100%
4:00 PM	80%	90%	50%	45%	90%
5:00 PM	75%	50%	80%	68%	50%
6:00 PM	80%	10%	100%	100%	10%
7:00 PM	75%	5%	75%	95%	5%
8:00 PM	40%	2%	40%	73%	2%
9:00 PM	10%	1%	20%	35%	1%
10:00 PM	0%	0%	0%	0%	0%
11:00 PM	0%	0%	0%	0%	0%
12:00 Midnight	0%	0%	0%	0%	0%

Table 11 Hourly Vehicle Accumulation Percentages (Weekend)

Hour of Day	Retail	General Office	Restaurant	College	City Hall Office
6:00 AM	1%	20%	0%	0%	0%
7:00 AM	5%	60%	0%	7%	0%
8:00 AM	10%	80%	5%	60%	0%
9:00 AM	30%	90%	5%	82%	0%
10:00 AM	50%	100%	10%	100%	0%
11:00 AM	65%	90%	15%	95%	0%
12:00 Noon	80%	80%	50%	76%	0%
1:00 PM	90%	60%	55%	75%	0%
2:00 PM	100%	40%	45%	65%	0%
3:00 PM	100%	20%	45%	60%	0%
4:00 PM	95%	10%	45%	45%	0%
5:00 PM	90%	5%	75%	40%	0%
6:00 PM	65%	0%	100%	0%	0%
7:00 PM	45%	0%	95%	0%	0%
8:00 PM	20%	0%	50%	0%	0%
9:00 PM	10%	0%	20%	0%	0%
10:00 PM	5%	0%	5%	0%	0%
11:00 PM	0%	0%	0%	0%	0%
12:00 Midnight	0%	0%	0%	0%	0%

The highlighted lines on tables 12 and 13 show that a peak of 372 vehicles will accumulate during weekdays at the 11:00 a.m. hour and that on weekends a peak of 315 vehicles will accumulate at the 10:00 a.m. hour. Since the Lumberyard development will include a total of only 334 parking spaces (i.e. 292 garage spaces and 42 on-street spaces) on-site, this shared use parking

analysis indicates that the project is projected to have a 38-space parking supply deficit during the peak hour on weekdays.

However, it is important to note that, while these peak period vehicle accumulation projections represent the extent of the parking demand that will be generated by the Lumberyard development, the figures do not necessarily represent the number of vehicles that must be entirely satisfied by the 334 spaces currently planned as part of the development. The small portion of peak period vehicles generated by the development that exceeds the on-site parking space supply could be accommodated at nearby city-owned lots and in legal on-street parking zones. This conclusion is based on DESMAN's previously discussed finding that close to 50% or more of the existing supply of parking spaces in the parking zones surrounding the project site is presently unoccupied at the 11:00 a.m. peak hour on weekdays.

Table 12 Projected Hourly Accumulation of Parkers (Weekdays)

Hour of Day	Retail 12,000 SF	General Office 34,000 SF	Restaurant 8,000 SF	College 20,000 SF/ 2000 Students	City Hall Office 15,380 SF/ 35 Employees	Total Vehicles
6:00 AM	0	3	0	0	2	4
7:00 AM	1	28	0	16	16	60
8:00 AM	2	69	3	123	39	236
9:00 AM	6	87	3	187	49	332
10:00 AM	11	**92**	5	205	**52**	365
11:00 AM	**14**	**92**	**20**	**194**	**52**	**372**
12:00 Noon	16	83	38	182	47	366
1:00 PM	**16**	83	38	171	47	355
2:00 PM	16	**92**	33	148	**52**	341
3:00 PM	14	**92**	20	137	**52**	315
4:00 PM	13	83	26	103	47	271
5:00 PM	12	46	41	155	26	280
6:00 PM	13	9	**51**	**228**	5	307
7:00 PM	12	5	38	217	3	274
8:00 PM	7	2	20	166	1	196
9:00 PM	2	1	10	80	1	93
10:00 PM	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0
12:00 Midnight	0	0	0	0	0	0

Table 13 Projected Hourly Accumulation of Parkers (Weekends)

Hour of Day	Retail 12,000 SF	General Office 34,000 SF	Restaurant 8,000 SF	College 20,000 SF/ 2000 Students	City Hall Office 15,380 SF/ 35 Employees	Total Vehicles
6:00 AM	0	2	0	0	0	2
7:00 AM	1	7	0	20	0	28
8:00 AM	2	9	3	171	0	185
9:00 AM	7	10	3	234	0	254
10:00 AM	**12**	**11**	**7**	**285**	**0**	**315**
11:00 AM	16	10	10	271	0	307
12:00 Noon	19	9	35	217	0	280
1:00 PM	22	7	38	214	0	280
2:00 PM	**24**	4	31	185	0	245
3:00 PM	**24**	2	31	171	0	229
4:00 PM	23	1	31	128	0	183
5:00 PM	22	1	52	114	0	188
6:00 PM	16	0	**69**	0	0	85
7:00 PM	11	0	66	0	0	77
8:00 PM	5	0	35	0	0	40
9:00 PM	2	0	14	0	0	16
10:00 PM	1	0	3	0	0	4
11:00 PM	0	0	0	0	0	0
12:00 Midnight	0	0	0	0	0	0

CONCLUSION

Mitigation of Lumberyard Parking Supply Deficit

Given the excess supply of parking located in close proximity to the project site, accommodating the 38-vehicle excess demand generated by the development should be possible by more fully utilizing the existing parking assets of the City. In particular, Lots 7 and 8, the north half of Park Street across from the project site, the west side of Front Street to the west of the project site, and portions of Broadway can all be used to satisfy the excess demand generated by the Lumberyard development.

Referring back to **Tables 5** and **6**, not considering any demand being pushed to Broadway, there are at least 68 spaces available in the above areas during the peak demand hour that could be used to satisfy the excess demand generated by the Lumberyard development. Lots 7 and 8 had 24 and 11 vacant spaces, respectively, during the 11:00 a.m. peak hour while the north side of Park Street had 14 and the west side of Front Street had 19.

While it may not be highly desirable to push excess demand into all of these areas, the City needs to be aware that there is available parking capacity in

close proximity to the development site that can be used to service the excess demand expected to be generated by the Lumberyard project.

Parking System Recommendation

DESMAN recommends that Grove City improve and increase the signage it uses to indicate where on-street parking is permitted and not permitted and where parking time limits are applicable. It is also recommended that the City design and install uniform signage at all of its off-street parking lots. Lastly, when the Lumberyard development project is completed, DESMAN advises the City to consider expanding its enforcement of on-street parking regulations as the increased demand for parking may lead to an increase in non-compliant parking habits by Town Center employees and visitors.

APPENDIX

Parking Zone	Block Face	STREET PARKING	Parking Spaces Located Between	Signage Status	Parking Time Limit	Space Count	9:00 AM	10:00 AM	11:00 AM Peak Hour	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
1	E	BROADWAY	Cleveland Ave - Columbus St	Posted Signs	2-hr Limit	4	0	0	0	0	0	0	1	1
1	E	ARBUTUS AVENUE	Columbus St - Cleveland Ave	No Signs	Unregulated	7	1	1	2	2	3	3	3	3
1	W	ARBUTUS AVENUE	Columbus St - Cleveland Ave	No Signs	Unregulated	6	0	0	1	1	1	1	1	2
1	N	COLUMBUS ST	Arbutus Ave - First St	No Signs	Unregulated	2	0	0	0	0	0	0	0	0
1	E	FIRST STREET	Cleveland Ave - Columbus St	No Signs	Unregulated	1	1	1	1	1	1	1	1	1
1	W	FIRST STREET	Cleveland Ave - Columbus St	No Signs	Unregulated	1	0	0	1	0	0	0	0	0
2	N	PARK STREET	Broadway - First St	Posted Signs	2-hr Limit	4	3	1	4	5	5	2	2	3
2	N	PARK STREET	First St - Arbutus Ave	Posted Signs	No Time Limit	6	5	5	4	4	5	6	4	1
2	E	BROADWAY	Columbus St - Jackson St	Posted Signs	2-hr Limit	3	0	2	2	0	2	1	0	1
2	E	BROADWAY	Jackson St - Park St	Posted Signs	2-hr Limit	7	3	6	6	5	1	1	2	4
2	S	JACKSON STREET	Broadway - First St	No Signs	Unregulated	4	1	2	2	3	2	3	4	3
2	E	ARBUTUS AVENUE	Park St - Jackson St	Posted Signs	No Time Limit	7	2	2	3	3	3	4	5	5
2	W	ARBUTUS AVENUE	Park St - Jackson St	Posted Signs	No Time Limit	7	5	5	4	4	5	5	4	3
2	E	ARBUTUS AVENUE	Jackson St - Columbus St	Posted Signs	No Time Limit	7	3	3	3	2	2	2	3	3
2	W	ARBUTUS AVENUE	Jackson St - Columbus St	No Signs	Unregulated	8	0	0	0	0	0	0	0	0
2	W	FIRST STREET	Columbus St - Jackson St	No Signs	Unregulated	3	1	1	1	1	2	2	2	2
2	W	FIRST STREET	Columbus St - Jackson St	Posted Signs	2-hr Limit	5	0	0	0	0	1	0	1	0
2	W	FIRST STREET	Jackson St - Park St	No Signs	Unregulated	3	1	1	1	1	1	1	0	0
3	S	PARK STREET	Arbutus Ave - First St	Posted Signs	2-hr Limit	7	1	5	4	5	6	5	5	5
3	S	PARK STREET	First St - Broadway	Posted Signs	2-hr Limit	8	4	4	5	6	3	2	4	4
3	E	BROADWAY	Park St - Civic Pl	Posted Signs	2-hr Limit	3	1	2	0	3	2	1	1	1
3	N	CIVIC PLACE	Broadway - First St	Posted Signs	15-minutes	2	0	0	0	0	0	1	1	1
3	N	CIVIC PLACE	Broadway - First St	Posted Signs	1-hour Limit	3	0	0	0	0	0	0	0	0
3	N	CIVIC PLACE	First St - Arbutus Ave	No Signs	Unregulated	5	3	3	3	3	3	3	3	3
3	E	ARBUTUS AVENUE	Voeller Ave - Civic Pl	Posted Signs	No Time Limit	4	0	0	1	1	1	0	0	1
3	E	ARBUTUS AVENUE	Civic Place - Park St	No Signs	Unregulated	8	0	0	0	0	0	0	0	0
3	W	ARBUTUS AVENUE	Civic Place - Park St	No Signs	Unregulated	5	0	0	0	0	1	0	0	0
3	W	FIRST STREET	Park St - Civic Pl	No Signs	Unregulated	7	6	5	6	4	3	2	2	2
3	E	FIRST STREET	Park St - Civic Pl	No Signs	Unregulated	3	2	2	2	1	1	2	1	2
3	N	VOELLER AVE	Arbutus Ave - First St	No Signs	Unregulated	5	0	0	0	0	0	0	0	0
3	S	VOELLER AVE	Arbutus Ave - First St	No Signs	Unregulated	5	0	0	0	0	0	0	0	0
4	E	ARBUTUS AVENUE	Kingston Av - Voeller Ave	Posted Signs	No Time Limit	8	0	0	0	0	0	0	0	0
4	N	KINGSTON AVENUE	Broadway - First St	No Signs	Unregulated	4	0	0	0	0	0	0	0	0
4	N	KINGSTON AVENUE	First St - Arbutus	No Signs	Unregulated	4	0	0	0	0	0	0	0	0
5	S	GROVE CITY ROAD	Front St - Franklin St	No Signs	Unregulated	2	0	0	0	0	0	0	0	0
5	W	FRANKLIN STREET	Grove City Rd - Silver Alley	No Signs	Unregulated	5	1	1	1	1	1	1	0	0
5	S	SILVER STREET	Broadway - Franklin St	No Signs	Unregulated	9	1	0	1	1	1	1	1	1
6	S	PARK STREET	Broadway - Front St.	Posted Signs	2-hr Limit	15	0	1	1	0	0	1	1	0
6	W	FRONT STREET	Park St - Grove City Rd	No Signs	Unregulated	8	0	0	0	0	0	0	0	0
7	N	PARK STREET	Front St. - Broadway	Posted Signs	2-hr Limit	14	1	0	1	0	1	3	2	1
7	W	BROADWAY	Park St - Grant Ave	Posted Signs	2-hr Limit	9	0	4	5	8	2	5	4	8
7	W	FRONT STREET	Grant Ave - Park St	No Signs	Unregulated	5	1	1	1	1	1	1	1	1
7	S	GRANT AVENUE	Broadway - Front St.	No Signs	Unregulated	19	5	5	6	7	5	4	4	5
8	W	FRONT STREET	Cleveland Ave - Grant Ave	No Signs	Unregulated	9	2	2	2	2	1	1	1	1
TOTAL ON-STREET PARKING SPACE TURNOVER AND VEHICLE DURATION OF STAY						**261**	**54**	**65**	**74**	**75**	**66**	**65**	**64**	**68**
ON-STREET PARKING OCCUPANCY PERCENTAGE							**21%**	**25%**	**28%**	**29%**	**25%**	**25%**	**25%**	**26%**