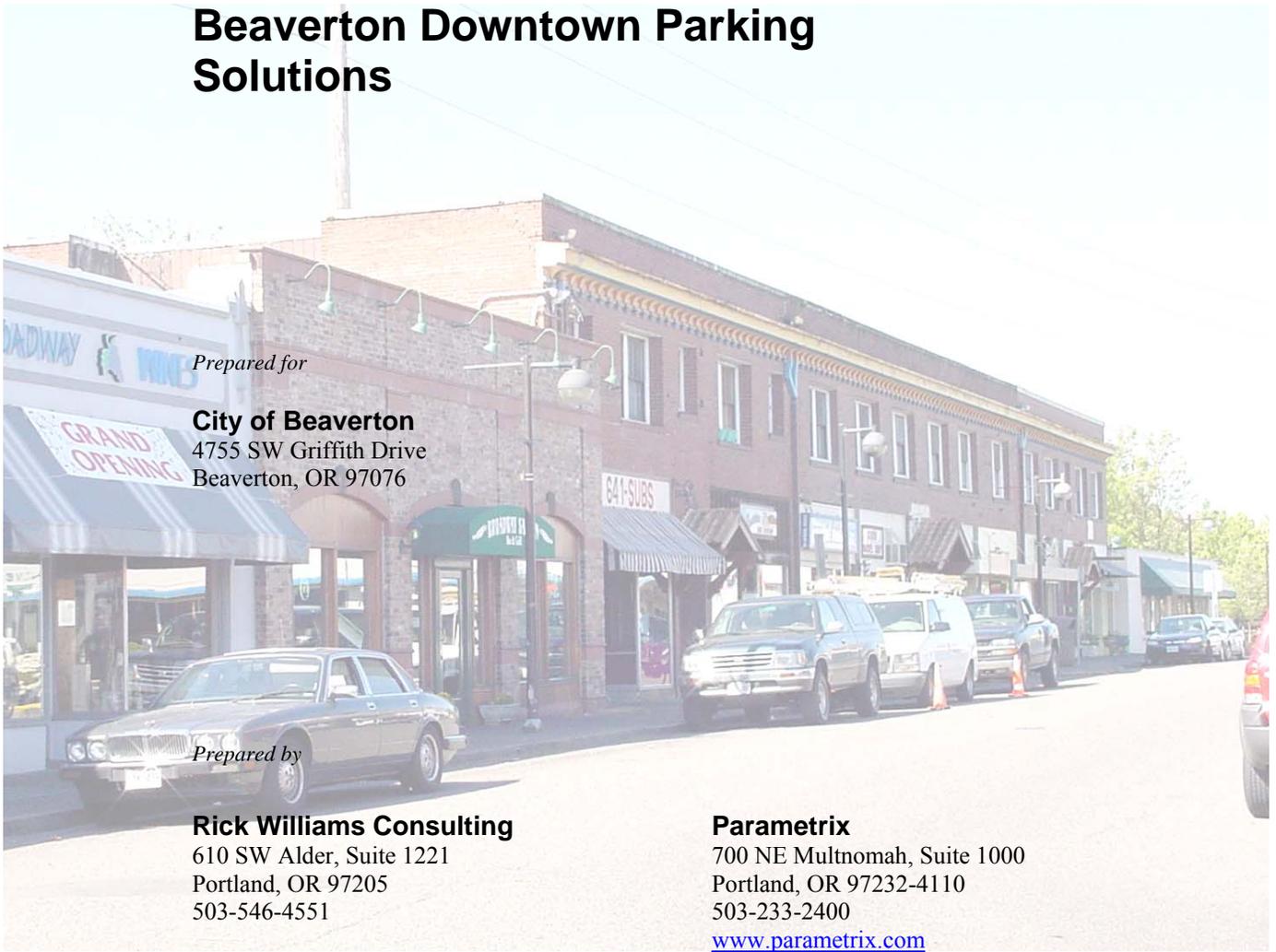


Beaverton Downtown Parking Solutions



Prepared for

City of Beaverton
4755 SW Griffith Drive
Beaverton, OR 97076

Prepared by

Rick Williams Consulting
610 SW Alder, Suite 1221
Portland, OR 97205
503-546-4551

Parametrix
700 NE Multnomah, Suite 1000
Portland, OR 97232-4110
503-233-2400
www.parametrix.com

CITATION

This project is partially funded by a grant from the Transportation and Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development. This TGM grant is financed, in part, by federal Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), local government, and State of Oregon funds.

The contents of this document do not necessarily reflect views or policies of the State of Oregon.

Parametrix. 2007. Beaverton Downtown Parking Solutions. Prepared by Parametrix, Portland, Oregon. April 2007.

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY.....	1-1
1.1 STUDY PURPOSE.....	1-1
1.2 PROCESS.....	1-1
1.3 PARKING MANAGEMENT STRATEGIES.....	1-2
A. POLICY LEVEL ACTIONS (Immediate Implementation).....	1-2
B. PARKING MANAGEMENT STRATEGIES.....	1-3
1.4 SUMMARY.....	1-4
2. INTRODUCTION AND VISION.....	2-1
2.1 THE ROLE OF PARKING IN DOWNTOWN BEAVERTON.....	2-1
2.2 STUDY GOALS.....	2-1
2.3 STAKEHOLDER INVOLVEMENT.....	2-1
2.3.1 SAC Members.....	2-2
2.4 STUDY AREA.....	2-2
2.5 CHALLENGES AND OPPORTUNITIES.....	2-7
2.5.1 Desired Outcomes.....	2-7
2.5.2 Challenges to Access – Consensus Themes.....	2-8
2.5.3 Opportunities – Consensus Themes.....	2-9
2.6 ACCESS PRIORITIES.....	2-10
2.6.1 Key Elements of a Successful Parking Program.....	2-10
2.6.2 Definition of "Priority Customer".....	2-11
2.6.3 "Is" Versus "Should".....	2-12
2.7 SUMMARY.....	2-13
3. DATA COLLECTION – RESULTS.....	3-1
3.1 PURPOSE OF THE PARKING INVENTORY ANALYSIS.....	3-1
3.2 METHODOLOGY.....	3-1
3.3 GENERAL CHARACTERISTICS OF THE INVENTORY - STUDY AREA.....	3-2
3.4 SPECIAL ANALYSES - DATA ANALYSIS BY ZONE AND LOCATION.....	3-8
3.5 PARKING RATIOS – BUILT SUPPLY AND ACTUAL DEMAND.....	3-14
3.6 SUMMARY.....	3-17
3.7 NEXT STEPS.....	3-17
4. IDENTIFICATION AND ANALYSIS OF BARRIERS AND OPPORTUNITIES..	4-1
4.1 BACKGROUND.....	4-1
4.2 EXISTING PRACTICES.....	4-1
4.2.1 Existing Zoning.....	4-1
4.2.2 Development Requirements.....	4-2
4.2.3 Fees.....	4-6
4.2.4 Fines.....	4-7
4.2.5 Transportation Management Association.....	4-7

4.2.6 Subsidizing Transit Passes	4-7
4.3 BEST PRACTICES AND MODEL CODE.....	4-8
4.3.1 Downtown Beaverton Regional Center Community Plan.....	4-8
4.3.2 Beaverton Transportation System Plan	4-8
4.3.3 Regional Growth Management Functional Plan	4-9
4.3.4 Model Development Code for Small Cities	4-11
4.3.5 Best Practices	4-11
4.3.6 Fees.....	4-12
4.3.7 In-Lieu of Fees Programs	4-13
4.3.8 Eliminating Employer-Subsidized Parking.....	4-13
4.3.9 Transferable Parking Entitlements	4-14
4.4 ON-STREET ANGLE PARKING	4-14
4.4.1 Background	4-14
4.4.2 Assessment of Angle Parking Conversions.....	4-15
4.4.3 Additional Research	4-21
4.4.4 Parking Assessment for Downtown Beaverton.....	4-21
4.4.5 Recommendations	4-22
4.5 OPPORTUNITIES AND BARRIERS	4-22
4.6 RECOMMENDATIONS.....	4-24
5. ANALYSIS OF SHARED AND DISTRICT PARKING	5-1
5.1 BACKGROUND	5-1
5.2 EXISTING PRACTICES.....	5-1
5.2.1 Shared Parking	5-1
5.2.2 District Parking.....	5-2
5.3 LOCAL, REGIONAL, AND STATE PARKING DEVELOPMENT REQUIREMENTS	5-3
5.3.1 Beaverton Transportation System Plan	5-3
5.3.2 Downtown Beaverton Regional Center Community Plan.....	5-4
5.3.3 Regional Growth Management Functional Plan	5-4
5.3.4 Model Development Code for Small Cities	5-4
5.4 BEST PRACTICES	5-5
5.4.1 Shared Parking	5-5
5.4.2 District Parking.....	5-6
5.5 RECOMMENDED PLAN AND POLICY AMENDMENTS AND STAKEHOLDER ACTIONS.....	5-6
5.5.1 District Parking.....	5-7
6. DOWNTOWN STRUCTURED PARKING EVALUATION AND RECOMMENDATIONS	6-1
6.1 BACKGROUND	6-1
6.2 EXISTING ZONING AND DEVELOPMENT REQUIREMENTS	6-1
6.3 DEVELOPMENT OF NEW PARKING SUPPLY	6-2
6.4 OPPORTUNITY SITES.....	6-2

6.4.1 Site 1 (Zone A).....	6-3
6.4.2 Site 2 (Zone B).....	6-4
6.5 CURSORY REVIEW OF TRAFFIC CONDITIONS	6-5
6.5.1 Site 1.....	6-5
6.5.2 Site 2.....	6-5
6.6 FINANCIAL FEASIBILITY AND COSTS.....	6-6
6.6.1 Key Assumptions	6-6
6.7 PRO FORMA FINDINGS (PARKING STRUCTURE DEVELOPMENT).....	6-8
6.8 POTENTIAL REVENUE SOURCES.....	6-9
6.9 MOST VIABLE OPTIONS FOR BEAVERTON.....	6-12
6.10 WORK PROGRAM	6-13
6.11 SUMMARY.....	6-13
7. PARKING MANAGEMENT STRATEGIES.....	7-1
I. PARKING MANAGEMENT PLAN.....	7-1
1. Parking Management Zones.....	7-1
2. Operating Principles.....	7-3
1. Operating Principles (Zone A).....	7-4
2. Implementation Framework (Zone A).....	7-4
1. Operating Principles (Zone B).....	7-6
2. Implementation Framework (Zone B).....	7-7
II. AMENDMENTS AND ACTIONS.....	7-8
A. POLICY LEVEL ACTIONS (Immediate Implementation).....	7-8
B. IMPLEMENTATION STRATEGIES.....	7-12
III. SUMMARY.....	7-21

LIST OF FIGURES

Figure 2-1. Downtown Beaverton Parking Study Area.....	2-5
Figure 3-2. Beaverton On-Street Parking Occupancies.....	3-4
Figure 3-3. Beaverton Off-Street Parking Occupancies	3-5
Figure 3-4. Node A.....	3-8
Figure 3-5. Beaverton Nodal Parking Occupancies – Node A.....	3-9
Figure 3-6. Node B.....	3-10
Figure 3-7. Beaverton Nodal Parking Occupancies – Node B.....	3-11
Figure 3-8. Node C.....	3-11
Figure 3-9. Beaverton Nodal Parking Occupancies – Node C.....	3-13
Figure 7-1. Recommended “Core” Parking Management Zone (Zone A).....	7-2
Figure 7-1A. Recommended “Emerging Core” Parking Management Zone (Zone B).....	7-3

LIST OF TABLES

Table 3-1. 2006 Parking Inventory of Downtown Supply	3-2
Table 3-2. On-Street Parking Summary	3-3
Table 3-3. Off-Street Parking Summary	3-5
Table 3-4. General Characteristics of Use – On-Street Parking Stalls	3-7
Table 3-5. Nodal Analysis – Node A	3-8
Table 3-6. Nodal Analysis – Node B	3-10
Table 3-7. Nodal Analysis – Node C	3-12
Table 3-8. Beaverton Study Area Square Footages	3-15
Table 3-9. Study Area Demand – Mixed Land Use to Built Supply	3-16
Table 3-10. Other Cities – Summary of Built Supply to Actual Demand	3-16
Table 4-1. Parking Ratio Requirements for Motor Vehicles	4-2
Table 4-2. Parking Ratio Requirements for Bicycles	4-4
Table 4-3. Parking Fees and Penalties	4-7
Table 4-4. Regional Parking Ratios	4-10
Table 4-5. Parking Management Strategy Matrix	4-22
Table 6-1. Parking Development Scenarios ^a Pro forma Assumptions ^b	6-7
Table 6-2. Parking Structure Action Items	6-13

APPENDICES

- A Data Collection – Results Summary
- B Employer Surveys Summary
- C Stakeholder Interview Summary
- D Final Strategy Recommendations Checklist
- E Technical Memo #6 Attachments

ACRONYMS

BIA	Business Improvement Area
BID	Business Improvement District
FAR	Floor Area Ratio
GO	General Obligation
LID	Local Improvement District
SAC	Stakeholders Advisory Committee
SDC	System Development Charges
SOV	single occupant vehicle
TDM	Transportation Demand Management
TSP	Transportation System, Plan

This page intentionally left blank.

1. EXECUTIVE SUMMARY

1.1 STUDY PURPOSE

The 2040 Growth Concept envisions higher-density, mixed-use, pedestrian oriented development within Centers throughout the Portland Region. The City of Beaverton wants to achieve such greater, urban mixed use intensity within their downtown core area.

Difficulty in providing appropriate parking (due to insufficient space per business or use requirements by local codes) has long been a major barrier to achieving density in the Beaverton Regional Center. Other major barriers include excessive on-site parking code requirements that most downtown core area properties cannot satisfy; downtown buildings constructed during the late 19th and early 20th century when vehicular parking needs were not contemplated by these rural communities; and, extensive downtown parcelization which precludes efficient, code-compliant building renovations and on-site parking accommodation.

The purpose of the Parking Solutions Strategy Project (Project) was to develop strategies and tools that can be used by the City to assist in the transition of Downtown Beaverton from a suburban to an urban community by reducing the existing barriers to revitalization created by inadequate parking.

The goal of this project was to manage the supply and demand for parking to support downtown redevelopment. Formulating and recommending solutions that efficiently and strategically resolve parking needs within the downtown core area of the Beaverton Regional Center can attain this goal.

1.2 PROCESS

The Beaverton parking study is premised in the belief that a full understanding of the role that parking plays in the growth of the area must be informed by active involvement of key stakeholders in the district. Understanding stakeholder concerns and ideas for the downtown is critically important because they are the users of the parking system on a daily basis. In addition, their investment and ownership in downtown Beaverton will be supported as the recommendations of the parking study and management strategy are put in place. Any parking or access changes made to the area will have a direct impact on those who own, work, shop, or live in downtown Beaverton. The City is committed to a plan that has endeavored to be sensitive to, and cognizant of, this relationship. Chapter 2 provides a detailed description of the public involvement process.

The City of Beaverton conducted a capacity/utilization and turnover inventory on Tuesday, September 19, 2006. The survey day was selected in consultation with the City of Beaverton and was reflective of the initial scoping process. The Tuesday parking inventory was conducted between 9:00 a.m. and 6:00 p.m.

The project team's methodological approach to gathering parking utilization/capacity/turnover data began with a physical compilation of all public parking assets (on and off-street) within the study area. This physical assessment was conducted in advance of the survey day and documented all parking by location and type. This was used to create a data template necessary to conduct the utilization assessment.

The Tuesday survey involved an hourly count of each occupied on-street parking stall in the study area using the last four digits of the parked vehicle's license plate. Surveyors collected license plate data at each on-street parking stall located in the study area for every hour over a nine-hour period (9:00 a.m. – 6:00 p.m.). Hourly capacity counts were taken over the same

time frame at 130 off-street facilities within the study zone. Four of the off-street lots are public parking lots and 126 are privately owned. A total of 3,107 on and off-street stalls were physically surveyed.

The data revealed a surplus of parking which provides an opportunity for creative parking management practices., the data also revealed that the City was developing much more parking than it was using, which allows for economic development opportunities including the reduction of required minimums and the tightening of maximums.

1.3 PARKING MANAGEMENT STRATEGIES

As a result of the data inventory process and continuing discussions with the City and stakeholders, specific parking management strategies have been identified and are recommended for implementation. Recommendations for changes in current policy/code and several near-term strategies will optimize the efficiency of the existing parking inventory in Downtown Beaverton. Additional mid- and longer-term strategies are also recommended for consideration. Chapter 7 provides a full explanation of the recommendations and the implementation guidelines.

A. POLICY LEVEL ACTIONS (Immediate Implementation)

The following policy elements have been included to ensure the goals of the parking management plan can be achieved by incorporating parking system management into the City's development policy.

1. Assign the responsibilities of a "Parking Manager/Coordinator" for the City of Beaverton.
2. Establish an advisory role for stakeholders to assist in parking program implementation and review.
3. Adopt policies and rules to guide parking management
 - a. Codify Guiding Principles for Parking Management as elements of City Code.
 - b. Establish "Parking Management Zones" based on desired economic uses and user types.
 - c. Adopt "Operating Principles" and an implementation framework that defines the priority purpose/use for parking in each parking management zone. Adopt the principles and framework as City Code elements.
 - d. Adopt the 85% Rule to facilitate/direct parking management strategies.
4. Eliminate minimum parking requirements for all commercial parking development within Zones A and B.
5. Require a .75 stalls per unit minimum parking standard for residential development within Zones A and B.
6. Where parking is required establish a parking Fee-in-Lieu program to accommodate developments that cannot incorporate parking into development sites (i.e., for reasons of site size, geometries, etc.).
7. Establish a Downtown Parking and Transportation Enterprise Fund as a mechanism to direct funds derived from parking over time into a dedicated fund.
8. Evaluate additional funding sources for future parking development and parking system management.

B. PARKING MANAGEMENT STRATEGIES

Based on the recently completed capacity and usage survey of the parking inventory a number of parking strategies are recommended for near-term implementation. These strategies will assist the City to optimize the use and accessibility of existing parking in Downtown Beaverton.

Near-Term Implementation - (by January 2008)

The following strategies are recommended for near-term implementation.

1. Appoint a Downtown Parking Manager
2. Initiate Parking Advisory process.
3. Eliminate all 1-hour, 4-hour and No Limit on street parking in Zone A and create a uniform on-street time stay of 2 hours within this zone.
4. Standardize on-street parking in Zone B to 3-Hour parking “or by permit” to create longer-term stay options for customers and an all day option for employees and/or residents in need of all day parking.
5. Transition all employee on-street parking permits now issued in Zone A, to on-street locations in Zone B or off-street locations in Zone A or B.
6. Eliminate all time restrictions in existing City owned off-street facilities to encourage greater use of public parking lots. The City should also treat these sites as future parking garage development sites.
7. Initiate a new and comprehensive outreach program to all businesses within the study zone that communicates the parameters of the City’s permit program and access to publicly owned off-street lots.
8. Develop incentives that encourage private sector-led strategies to reduce demand for long-term parking, and make available private parking resources for short-term public customer and other desired uses.
9. Establish commuter mode split targets for employee access in Zones A and B.
10. Conduct a Capacity Study during the Saturday Farmers Market
11. Develop and install a signage package of uniform design, logo and color at publicly available off-street locations.
12. Strategically place new and unique wayfinding signage in the right of way at locations chosen carefully to direct visitors to off-street locations.

Mid-Term Implementation – (by October 2009)

The following strategies are recommended for mid-term implementation.

13. Implement a package of incentives for the private development of publicly available parking supply and TDM options in the downtown.
14. Recommend to the City Council the commuter modes split targets developed in 9, above for adoption as a policy element of the Beaverton transportation and parking management plan.
15. Initiate discussions with downtown businesses to develop a “Customer First” partnership among downtown businesses.
16. Partner with the business community to develop a marketing and communication system for access in Beaverton. The marketing/communication system could include

(but not be limited to): branding; maps; validation program(s); TDM alternatives and valet parking.

17. Negotiate shared use and/or lease agreements with owners of strategically placed private surface lots and parking structures to provide for an interim supply of parking where needed.
18. Evaluate a reduction in current maximum parking ratios for new development in the downtown, to assure that access impacts of new development are meaningfully addressed. Also, parking maximums should be more directly correlated to commuter mode split targets developed/adopted in B. 9 and 12, above
19. Sponsor employer-based initiatives to encourage employee use of alternate travel modes.
20. Identify and complete planning for possible development of new public visitor parking supply in Zone A.

Long-Term Implementation – (three years and beyond)

The following strategies are recommended for long-term implementation.

21. Monitor downtown parking utilization continuously and periodically. Conduct parking inventory analyses.
22. Evaluate the impact of near and mid-term strategies based on an updated utilization and demand study. If and when warranted, develop a pricing policy strategy and implement paid on street parking in Zone A and/or B based on the 85% Rule.
23. Implement Parking Revenue Strategies
24. Lease/acquire strategically located land parcels for use as future public off-street parking locations. This strategy would only be implemented if “strategic” parcels are not already in public ownership/control.
25. Complete development and open new supply in Zone A.
26. Consider street improvement projects incorporating angle parking.

1.4 SUMMARY

The City of Beaverton is striving to promote growth that fits into the future vision of downtown. A strong parking management plan is one tool that can assist the City in attaining its vision.

A strong parking management plan:

- Defines the intended use and purpose of the parking system.
- Manages the supply
- Enforces parking policies
- Monitors use and responds to changes in demand
- Maintains the intended function of and priorities for the overall system.

This plan has been developed to support the guiding principles and operating principles for parking and access in the downtown. As such, the plan and its strategies reflect the fundamental values and objectives stakeholders have for Downtown Beaverton.

2. INTRODUCTION AND VISION

2.1 THE ROLE OF PARKING IN DOWNTOWN BEAVERTON

The role of parking in any business district cannot be seen as a stand-alone solution in and of itself. The key to a successful business environment is truly the land uses that comprise it. A vital business district is an area that has a clear sense of place and identity, comprised of an exciting and attractive mix of uses and amenities. In a nutshell, "people do not come to downtown Beaverton to park." People come to an area to experience an environment that is unique, active and diverse. As such, the true role of parking is to assure that the desired vision for Beaverton's downtown is fully supported.

Parking is just one tool in any City's economic development toolbox. Parking must be managed to assure that priority land uses are supported with an effective and efficient system of access that caters to the needs of priority users.

2.2 STUDY GOALS

The purpose of this study is to develop a workable parking management plan for the downtown business district of Beaverton. First, the plan will need to be specific enough to address known parking and access constraints with immediate to near-term improvements. This will assure ongoing improvements in access opportunities for customers, employees and residents of the downtown business district. The plan will also need to be flexible enough to provide the City and area stakeholders with mid- and long-term solutions (and decision-making guidelines and triggers) to assure that parking management strategies and programs are implemented in a manner that best serves the unique and changing nature of this business district.

2.3 STAKEHOLDER INVOLVEMENT

The Beaverton parking study is premised in the belief that a full understanding of the role that parking plays in the growth of the area must be informed by active involvement of key stakeholders in the district. Understanding stakeholder concerns and ideas for the downtown is critically important because they are the users of the parking system on a daily basis. In addition, their investment and ownership in downtown Beaverton will be supported as the recommendations of the parking study and management strategy are put in place. Any parking or access changes made to the area will have a direct impact on those who own, work, shop, or live in downtown Beaverton. The City is committed to a plan that has endeavored to be sensitive to, and cognizant of, this relationship.

To this end, a Stakeholders Advisory Committee (SAC) was established by the City of Beaverton to provide oversight, guidance and review of the study process. The Committee was also charged with identifying key issues regarding parking, transportation and access in downtown Beaverton and the impact of parking on the continuing economic vitality of the area.

Key stakeholders included local business owners, City staff, staff of other key government agencies, residents, community groups and property owners. These individuals have provided significant assistance in the identification, description, and prioritization of issues to be addressed. They will be instrumental in the development of strategies and plans necessary for implementation of the parking management plan that is the intended outgrowth of this study. Members of the committee (and their affiliation) are listed below.

2.3.1 SAC Members

Business/Property Owners:

Amy Saberiyan (owner of Ava Roasteria)

Carrie Schubert (Beaverton Bakery)

Barbara Vandoorninck (property owner)

Eric Glassard (Ananda Church)

NAC:

Darla King (also a business owner downtown – Tangles and Toes)

Chamber of Commerce:

Domonic Biggi

Rhonda Coakley (Executive Suites at the Round)

Planning Commission:

Marc SansSoucie

Traffic Commission:

Scott Knees

Beaverton School District:

Jerry Green

Jeff Laff (from High School)

Beaverton City Council:

Cathy Stanton

Oregon Department of Transportation:

Lidwien Rahman

Westside Transportation Alliance:

Karen Frost

TriMet:

Jillian Detweiler

Metro:

Marc Guichard

2.4 STUDY AREA

The parking inventory study area was determined in the initial project scoping process and in consultation with the City of Beaverton. The study zone includes the entire area of the Regional Center Old Town zoning designation, generally comprised of the area bounded by SW Stott (on the west), SW Broadway and SW Lombard Avenues, and the railroad tracks to SW 5th Street (on the east), SW Canyon Road (on the north) and SW 5th Street (on the south). The first level of data analysis aggregated all parking data within the entire study area.

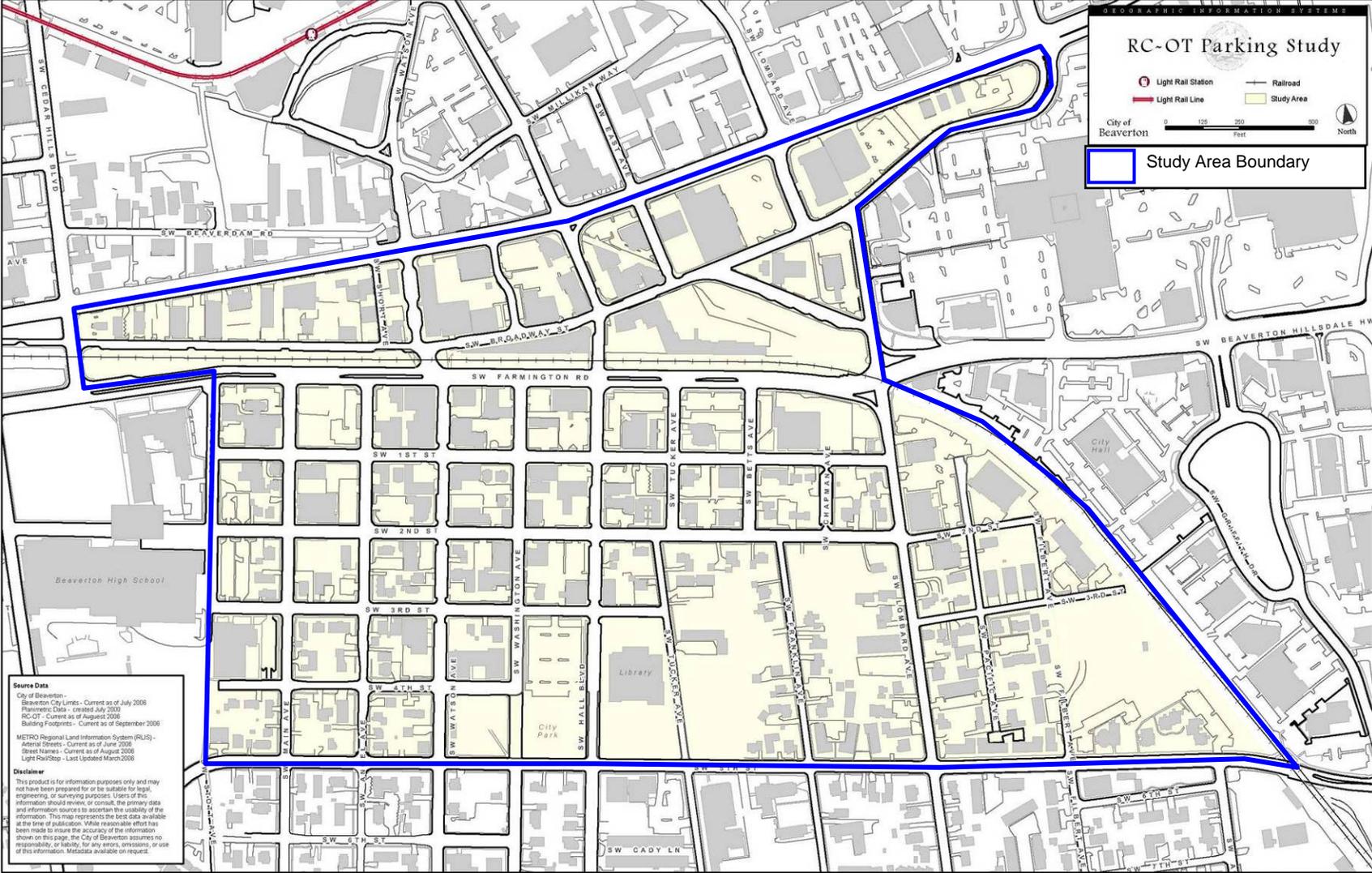
The study zone is reflective of the City’s understanding of current parking activity and land use densities in the area which includes the historic downtown. Quantifying parking activity within this zone allows for a more comprehensive look at parking patterns, trends and surpluses/deficits in this area.

After developing this data summary, three additional “nodal” analyses were conducted at the request of the City and stakeholders to identify areas of more focused parking activity. The nodal analyses are an attempt to find areas within the larger study zone that may be displaying parking activity not reflective of the averages derived from the larger data summary. The results of both these analyses are included in 3.4.

Figure 2-1 illustrates the entire study area examined in the data collection.

This page intentionally left blank.

Figure 2-1. Downtown Beaverton Parking Study Area



This page intentionally left blank.

2.5 CHALLENGES AND OPPORTUNITIES

To develop a parking and access plan for the area, it is first necessary to understand the dynamics of land use, access and growth that are unique to downtown Beaverton. Community perceptions and realities regarding constraints that limit existing businesses from expanding and those that limit the downtown's ability to attract new business and residential growth to the area need to be fully considered. Similarly, opportunities and successful programs/strategies that currently contribute to the area's health need to be understood in order to ensure they are supported and enhanced by any new parking and access strategies developed.

To this end, an initial work session with the Committee was held to begin to establish a consensus view of these challenges and opportunities.

2.5.1 Desired Outcomes

Committee members were asked to take a moment and state what they would like to see as an outcome of this process. For example, if a new parking management program were developed, what beneficial outcomes would be derived? A bulleted list of those desired outcomes is provided below.

- A more unified vision of what we want downtown to look like in the future.
- Improve the perception that parking in the downtown area is limited.
- Better communication between the City and business community on what parking is available (i.e., permit program).
- Changes to, and improvements in, the code to assure that it is not a detriment to people wanting to develop in Beaverton.
- More efficient use of the existing parking supply (i.e., "manage shared uses").
- Greater "collaboration" between the City and private sector in how parking is provided.
- A parking system that is "user friendly" and understandable.
- Keep parking affordable and make sure that new programs are sustainable financially.
- More organized cooperation between businesses on how parking is used (i.e., "get employees in the right places, keep best parking for customers").
- Protect and support Old Town.
- "Create a new culture about parking" through good information, marketing and education/outreach to businesses and customers.
- Improving access to Beaverton in general. "Getting to Beaverton may be more of a problem than parking."

It was clear from the listing of desired outcomes that Committee members feel the current system of parking management lacks the level of integration and consistency necessary to achieve the larger vision of a growing, vibrant and "user friendly" business district. Similarly, the theme of the need to better "understand" parking and change the "culture of parking" runs through many of the stated outcomes. In short, to get to the desired outcome of a very usable,

convenient and efficient parking system requires more clarity and coherency in how parking is, and will be, managed.

2.5.2 Challenges to Access – Consensus Themes

Committee members discussed their insights into the major parking challenges facing downtown today. They were asked to consider these challenges as they influence downtown Beaverton’s ability to remain vital and to attract and retain business. Stakeholders were strong in their desire to capitalize on basic elements in place in Beaverton that give it its unique character. These included free parking, proximity to MAX and future commuter rail, and an improving streetscape. Overall, twenty-five challenges were discussed. These ranged from general perceptions of parking to the need to create a new identity for Beaverton. For purposes of this report, the stated challenges have been condensed into four “consensus themes.” These themes are presented below, with clarifying bullet points taken from the Committee discussion following each theme.¹

- Getting to Beaverton may be more of a problem than the overall issue of parking (congestion and ingress/egress).

A major challenge that ran through stakeholder discussions was the issue of congestion and traffic. The SAC expressed concern that it is difficult for customers coming from outlying areas to access downtown. Dense commuter traffic conditions characterize access portals into the downtown. It will be important to minimize congestion related to parking.

Though outside the scope of the parking study, this challenge theme highlights a more comprehensive access problem for Beaverton’s vision. However, the role that the Light Rail system and future transit service planning can play in parking discussions can help address this challenge.

- It is very difficult to get here because of traffic and congestion in the area (i.e., Canyon Road, Hwy 217, Hwy 26, etc.). This may be more of a problem than parking.
 - Railroad tracks are a barrier.
 - Park and rides are full.
- Beaverton needs to attract a more diverse mix of uses that include residential, employment, street level retail and restaurants as well as more dense office development. Parking needs to be managed to both encourage and support this goal.
 - Need more diverse mix of businesses.
 - Need more businesses that complement each other.
 - You can’t “wander” here.
 - Too destination oriented, not family friendly.
 - Need more restaurants and entertainment.
 - Need more residential growth (creates additional need to manage parking well).

¹ The themes are not listed in any rank order. Each theme has an important impact on Beaverton’s ability to achieve its strategic vision and should be considered equally in the context of multiple challenges.

- More density means more people and parking provided to serve them.
- The parking supply is not managed to maximum potential.²

There was a feeling by some on the SAC that the existing parking supply is not managed or structured to achieve optimum utilization. The downtown parking inventory conducted by the consultant team is intended to help inform understanding of this stated concern.

 - No one knows about the city’s parking permit system.
 - Consolidate the “public” supply in areas of the downtown that provide the best “proximity” to businesses and conveniently serve customers.
 - Parking system needs to be better coordinated between all stakeholders (city to businesses, business to business).
- While recognizing the limitations of the transit system there is a need to better integrate the parking supply with other modes of access.

There was a strong sense that while better parking management needs to be supported, additional modes of access need to be encouraged and supported as well. This includes better transit, pedestrian facilities and bicycle options. The Committee noted that transit service and alternative modes could play an important role in addressing access issues and influencing the overall amount of parking that may need to be built in the future

- Integrate downtown into a better relationship with LRT.
- Need better and more bus/LRT information for employees and customers
- Need for better connectivity to and from the downtown.
- Become even more pedestrian friendly.

2.5.3 Opportunities – Consensus Themes

Committee members discussed programs, strategies or elements that are currently in place and “working for downtown Beaverton” by contributing to its success and supporting business and economic growth. They also took time to discuss what was “unique about downtown Beaverton,” noting features of the downtown that in and of themselves create opportunities that parking should support. Light rail, Farmer’s market, proximity to The Round and many new downtown amenities (i.e., sidewalks, streetscape and lighting) all contribute to a downtown that has a strong foundation for success.

Overall, Committee members mentioned thirteen (13) items. Opportunities ranged from Beaverton’s unique business environment to its strong sense of community. Four opportunity themes were clearly distinguished. They are briefly detailed here:

- The downtown area has a solid foundation to build upon.

The SAC was clear that “Beaverton has a lot to offer,” it just needs a more focused plan designed to attract additional land uses to the downtown and a parking system to support it.

 - Beaverton has “good bones.”

² Copies of the September 19, 2006, parking inventory and capacity analysis are available from the City of Beaverton.

- Parking is free.
 - Wonderful adjacent neighborhoods.
 - Good activity in the downtown now, just need to grow it.
 - A personable and walkable downtown.
 - Solid “destination” businesses (i.e., Beaverton Bakery, Post Office, Farmers Market, Beaverton Music).
 - We can build upon the attractiveness of the Library and park.
- Potential for improving alternative modes
While also mentioned as a challenge above, stakeholders viewed LRT, transit, biking and walking as investments whose potential has not been realized.
 - MAX is an untapped opportunity.
 - Commuter Rail is coming to Beaverton.
 - Good system of bike paths.
 - The downtown is walkable and connected to adjacent neighborhoods.
 - Commitment to the downtown by the City, business community and citizenry.
Committee members applauded the role that the business community and citizens have played in downtown Beaverton’s success and the partnership approach the City is taking in this process.
 - The downtown has an ardent advocate in the Chamber.
 - Parking study process is well represented by all sectors of the community, showing level of concern and interest.
 - There is plenty of supply to work with.
Committee members recognized the abundance of underutilized parking currently available in the downtown study area.

Overall, programs and strategies that continue to support and enhance the opportunity themes developed by the Committee can serve as a framework through which the consensus challenges are best addressed.

2.6 ACCESS PRIORITIES

2.6.1 Key Elements of a Successful Parking Program

Committee members were asked to list elements they would use to describe a successful parking program that, if in place in downtown Beaverton, would facilitate solving the transportation challenges and support/enhance the priority opportunities described above.

Stakeholder input is outlined below.

A successful parking program for downtown Beaverton would be...

- Easy to use and customer friendly.
- Supportive of land uses.
- Supportive of density and diversity of business.

- Well signed and communicated.
- Begin to change the “culture” of parking.
- Connected to other modes (i.e., transit, bike, walk, etc.).
- Financially feasible.
- Remains free/affordable.
- Safe.
- Well-lit.

Stakeholders on the Committee would envision a parking program that is easy to use and customer friendly. They would also strive to assure that the parking provided is managed to support and attract desired land uses. This means that management may need to be flexible and adaptable to the changing demands of an evolving business district. They would also stress the need for an affordable, safe and well communicated parking system. Finally, the parking program should recognize its relationship to other modes of access (particularly transit). Bottom line, a successful parking system for Beaverton will need to be convenient, user friendly and adaptable. The charge of the consultant team and the Committee was to develop a parking strategy that achieves and supports these elements to the highest degree possible.

2.6.2 Definition of "Priority Customer"

The downtown Beaverton parking system currently services a broad mix of users that include employees of the area, retail patrons/visitors/clients and residents. In the future, increasing growth in business and residential development will add to the existing demand on the parking supply. As such, it is important to recognize that a balanced *system* of access needs to be developed and managed to assure the overall vision of a vital, active and mixed-use business district is achieved.

Nonetheless, (for purposes of the management of the publicly controlled supply of parking) the consensus of the Committee was that the priority “customer” of downtown is the ***paying customer***, followed by residents visiting the downtown and employees. As such, the system should be managed to prioritize those who come repeatedly to shop, dine, recreate and be entertained. The general profile of the ***paying customer*** is short-term stays that result in a high turnover of parking in the district.

The Committee indicated that the on-street system is the first point of access for customers and should, over time, be managed to assure that customers are not denied space on-street at the expense of other users (i.e., employees and residents). To this end, the off-street system should recognize that a mix of users will be using this supply. Adequate parking should be provided for employees (but coordinated with alternative mode options) and customers/visitors needing longer term stay opportunities

The fact that the committee has prioritized the “paying customer” as the focal point of parking management is not to downplay the importance of other users of the downtown. The committee has simply defined a standard that allows reasoned decision making to occur when constraints in the supply of parking occur. The committee recognizes that constraints and conflict for demand within the supply will occur and that decisions and strategies will have to

be implemented that guarantee access to the priority customer, with additional options developed for all users.³

2.6.3 “Is” Versus “Should”

The Stakeholder Committee discussed its access priorities for downtown Beaverton. Stakeholders were asked to consider a number of questions regarding the realities of access and use within the current transportation system (i.e., the “is” of today). They were then asked to consider how the transportation system should be accessed and used in the future within the context of the challenges/opportunities discussed above, and incorporate their goals and objectives for developing a vibrant business district.

2.6.3.1 Priority Land Uses

When asked, “what is the priority land use(s) in downtown today?” the Committee responded:

- Destination based retail, services and car lots.

In the future, the Committee agreed the priority for land uses should be a more diverse and dense mix of retail at the ground level with office employment and residential above. There should also be an emphasis on improving the employment base in downtown. Land uses should promote walkability and the desire to stay and stroll.

2.6.3.2 Priority Modes of Access

When asked to define the priority mode of access to downtown by both customers and employees, the Committee responded as follows:

Customer trips

Today, a customer's priority mode of access to downtown is by the single-occupant vehicle.

In the future, while a customer’s primary mode of access will be the single occupant vehicle, there should be a greater mix of access options (i.e., transit, bike, walk) offered, with emphasis on linking all these options together in a manner that is convenient, simple to use and affordable. As stated, “customers should be able to use the most convenient mode of access available to them.” The goal would be to increase the percentage mix of non-SOV trips.

Employee trips

Today, an employee's priority mode of access to downtown is by the single-occupant vehicle.

In the future, an employee's primary mode of access should be through a greater mix of access options (i.e., transit, bike, walk). Transit in particular should bring an increased percentage of total employee trips to the downtown. Employee parking should be in designated areas.

³ The term “publicly controlled supply” will need further discussion by the committee as this plan evolves. The fact that little off-street supply is currently available and/or in public control presents unique challenges for creating a “system” of patron supply. Innovative partnerships and programs will need to be developed, requiring high consensus on priorities and a clear understanding of current parking deficits and surpluses.

2.6.3.3 Priority Use of Parking

On-street

When asked, “who is the on-street parking system currently prioritized for?” the Committee felt that existing on-street parking “is open” and not necessarily managed or enforced to favor any particular user effectively. Customers, employees and permit holders currently use the on-street system.

In the future, the Committee felt that downtown on-street parking should be better managed to prioritize customers in all commercial areas where short-term demand is most prevalent. As stated, “there should be a customer first attitude and approach.” Strong efforts should be made to assure that only short-term customers/visitors are using the on-street system in the commercial zone and that cooperative and coordinated efforts and programs are in place to assure residential priorities in the residentially zoned areas. If employees are misusing the on-street system, then programs and efforts should be made to mitigate problems.

Off-street

As to the question of parking in off-street parking facilities, the SAC noted the priority for lots in downtown is a mix of users, which includes employees and customers. Recognizing the City has limited abilities to influence how private facilities are operated, the SAC believes that privately owned off-street facilities should increasingly prioritize downtown parking for a diverse mix of users. The City should work to facilitate and not restrict the private sector in appropriately accommodating multiple uses. In its own lots, the City should favor the customer but be willing to “manage to a particular audience” if that results in better access for all users.

2.6.3.4 Priorities for Alternative Modes of Access

The Committee considered the role of alternative modes for users of the downtown (customers and employees). When asked what the on-going role of transit/bike/rideshare and walking was for customers and employees, the Committee stated the following:

- Transit, bicycling, ridesharing should become an "option that customers can choose" as a means of accessing downtown if it is the most convenient mode available to them.
- Transit, bicycling and ridesharing should become "an option that a greater percentage of employees will choose" as a means of accessing the downtown.
- Alternative modes for employees should be strongly encouraged, as success in alternative modes will lead to better efficiencies for the supply of customer parking and make downtown more livable.

2.7 SUMMARY

It was clear from the work of the Stakeholders Advisory Committee that there is a strong consensus on the challenges and opportunities that exist for this unique and important center of Beaverton. Most importantly, the Committee was strong in its understanding of access priorities and unified in support of developing programs and strategies necessary to make certain those access priorities are met and desired economic uses are supported. In the area of parking, it is clear the priority of the SAC is to assure continued and balanced accessibility for all users of the downtown, which includes parking as well as other mode options.

This page intentionally left blank.

3. DATA COLLECTION – RESULTS

In every downtown the issue of parking is central to stakeholders as they plan for, and perceive, the downtown's on-going economic success. The need to understand both the perception and reality of parking is essential if a comprehensive, effective and successful parking management strategy is to be developed and implemented. This report focuses on establishment of a clear understanding of the reality of current parking dynamics in Downtown Beaverton.

Our goal is to present data for the downtown study area as a foundation for discussions with the City and stakeholders on potential programs and strategies to maximize the parking supply and plan for the future.

3.1 PURPOSE OF THE PARKING INVENTORY ANALYSIS

The purpose of a parking utilization study is to derive a comprehensive and detailed understanding of actual use dynamics and access characteristics associated with parking in the downtown study area. Important elements of this section include:

- Development of a data template for all parking in the study area, denoting all parking stalls by time stay type, for on and off-street facilities in both public and private control.
- A complete survey of parking use on a “typical day” – a single Tuesday on September 19, 2006.⁴
- Analysis of parking utilization and turnover that included:
 - a. Quantification of total study area parking inventory.
 - b. Hourly occupancy counts (9 a.m. – 6 p.m.) for on and off-street inventory.
 - c. Parking turnover analysis (on-street).
 - d. Parking duration of stay analysis (on-street).
 - e. Derivation of built parking supply to total built square footage (i.e., true parking demand ratio).
- Identification of parking surpluses and constraints in the parking supply.

In short, the purpose of the parking utilization study was to produce a succinct analysis of existing parking dynamics in the Downtown Beaverton study area that can be employed over time to support and inform decision-making related to development and parking.⁵

3.2 METHODOLOGY

The City of Beaverton conducted a capacity/utilization and turnover inventory on Tuesday, September 19, 2006. The survey day was selected in consultation with the City of Beaverton

⁴ This date was chosen in consultation with the City of Beaverton. On this day, public schools were in session and no major events were scheduled for the downtown. Weather conditions were adequate and parking access activity was moderate.

⁵ Copies of all data templates will be provided to the City of Beaverton for future use. The data templates incorporate hourly parking counts for every stall, by block face and lot, in the study area.

and was reflective of the initial scoping process. Overall, the survey day was cloudy, with periods of rain (mid to high 60 degrees), with normal parking activity in all sectors of the downtown. The Tuesday parking inventory was conducted between 9:00 a.m. and 6:00 p.m.

The project team’s methodological approach to gathering parking utilization/capacity/turnover data began with a physical compilation of all public parking assets (on and off-street) within the study area. This physical assessment was conducted in advance of the survey day and documented all parking by location and type. This was used to create a data template necessary to conduct the utilization assessment.

The Tuesday survey involved an hourly count of each occupied on-street parking stall in the study area using the last four digits of the parked vehicle’s license plate. Surveyors collected license plate data at each on-street parking stall located in the study area for every hour over a nine-hour period (9:00 a.m. – 6:00 p.m.). Hourly capacity counts were taken over the same time frame at 130 off-street facilities within the study zone. Four of the off-street lots are public parking lots and 126 are privately owned. A total of 3,107 on and off-street stalls were physically surveyed.

3.3 GENERAL CHARACTERISTICS OF THE INVENTORY - STUDY AREA

A. Supply

A total of 3,107 parking stalls were surveyed within the study area boundaries. Publicly controlled stalls total 1,107 spaces, which include 990 on-street and 117 off-street stalls. Parking in the public supply is primarily provided in the form of both 2-hour and free on-street parking. Approximately 30 percent (128 stalls) of the 2-hour stalls are eligible for all day use with a valid parking permit.

An additional 2,000 stalls were surveyed in private lots. The privately owned lots had range of access allowances (i.e., restricted access, customer parking, generally available to the public, etc.) and were surveyed so as to understand the actual use of these lots and the role they might play in future parking discussions.

Table 3-1 presents a breakout of all the surveyed parking supply in the Downtown Study Zone.

Table 3-1. 2006 Parking Inventory of Downtown Supply

Downtown Beaverton Study Area Parking Stall Breakout		
<i>On-Street Stalls by Type</i>	Number of Stalls	% of Total On-Street Stalls
15 minutes	5	< 1%
20 minutes	3	< 1%
30 minutes	10	1%
1 hour	84	8.5%
2 hours	431	43.5%
4 hours	5	< 1%
No Limit	452	45.7%
Public: On-Street Parking Stalls	990	100%
Public: Off-Street Parking Stalls	117	
<i>Sub-Total Public Supply</i>	<i>1,107</i>	
Private: Off-Street Parking Stalls	2,000	
Total Surveyed Supply	3,107	

As Table 3-1 indicates, the downtown Study Zone maintains a high percentage of No Limit parking stalls, with just under half of the on-street supply (46%) made up of this type of stall. Two-hour time zones comprise 44% of the on-street supply and 1-hour stalls comprise another 9 percent. The remainder of the on-street supply is made up of a small number of 15-minute, 20-minute, 30-minute and 4-hour spaces. The surveyed off-street supply included four public parking lots with a total of 117 stalls and 126 non-public parking facilities with a combined total of 2,000 stalls.

B. Peak Hour and General Occupancies

Peak hour occupancy for the downtown is the period during the business day where the downtown experiences the highest utilization of parking stalls. Peaks may vary between the on and off-street parking systems. This analysis attempts to determine that point in the day at which the greatest numbers of vehicles are parked in the downtown. In the analysis that follows occupancies for all stalls in public on-street and off-street locations are summarized.

1. On-street Parking Summary – Entire Study Area

The peak hour for the on-street public inventory is between 12:00 p.m. and 1:00 p.m. for the combined on-street system (i.e., all stalls, all use types). At this hour, 40.7% of the 990 parking stalls in the study area are occupied. Table 3-2 summarizes occupancies by type of stall, peak hour by stall type, and average length of stay. Figure 3-2 illustrates occupancies for each hour of the 9-hour survey day.

Table 3-2. On-Street Parking Summary

Entire Study Area – All On-street Stalls					
Type of Stall	# of Stalls	Peak Hour	Peak Occupancy	Stalls Available (empty)	Average Length of Stay
All Stalls	990	12 – 1 pm	40.7%	587	2 hr/24 min.
Usage by Time Stay					
15 minutes	5	N/A	N/A	N/A	N/A
20 minutes	3	N/A	N/A	N/A	N/A
30 minutes	10	11 – 12 pm	70.0%	3	N/A
1 hour	84	Noon – 1 pm	65.5%	29	1 hr/30 min.
2 hours	431	Noon – 1 pm	40.4%	257	2-hr/6 min. ^a
4 hours	5	10 – 11am 2 – 4 pm 5 – 6 pm	100%	0	1 hr/42 min.
No Limit	452	1 – 2 pm	38.1%	280	3 hr/42 min.

^a Because all day permit parking is allowed in approximately one-third of all 2-hour stalls, the average length of stay is somewhat biased to a longer average duration. Most likely customer use of these stalls is less than 2 hours, which is consistent with intent of these stalls for short-term use.

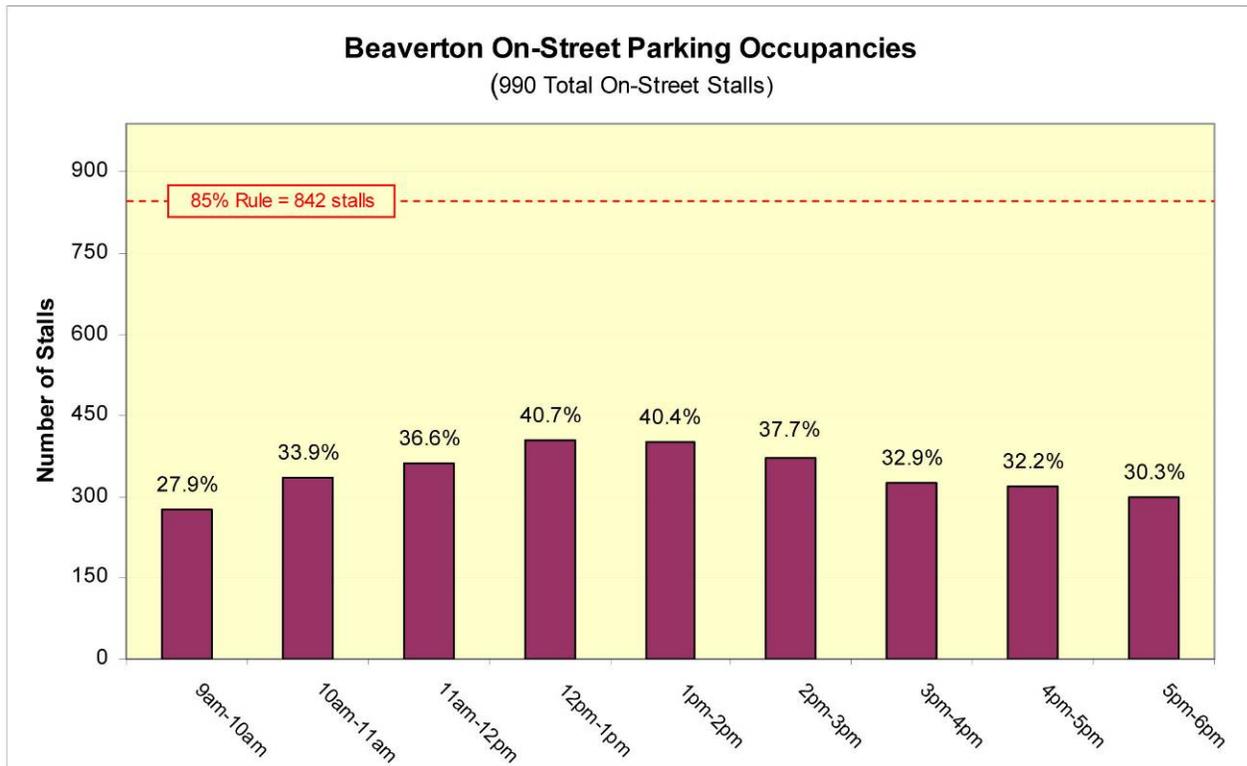
From Table 2-2, the following conclusions can be derived:

- During the 12:00 p.m. – 1:00 p.m. peak hour, 403 stalls are occupied leaving 587 empty stalls available on-street within the entire study area.
- The highest area of significant use is within stalls designated 1 Hour, which achieve peak hour occupancy of 65.5% between noon and 1:00 p.m.
- The average customer duration of stay in an on street parking stall is approximately 2.40 hours (2 hours and 24 minutes), which is somewhat higher than a typical

downtown average. However, the number of no-limit and permit parking stalls allowed influences the average.

- With a peak occupancy of just 40.7%, access to the on-street system (particularly for customers) is not adversely affected by permit parking and no-limit parking. In other words, available on-street stalls are readily available if a user is willing to walk between 1 - 3 blocks.
- One hour stalls have an average time stay of 1 hour and 30 minutes, which means these stalls do not provide a time stay commensurate with demand and might be more appropriately signed as 2-hour stalls.

Figure 3-2. Beaverton On-Street Parking Occupancies



2. Off-Street System

The off-street parking supply operates at peak occupancy of 44% immediately following the lunch hour, from 1:00 p.m. to 2:00 p.m. It is interesting to note the similar occupancy bell curves between on and off-street stalls over the course of the 9-hour study period. Figure 2-3, below, provides an illustration of that similarity.

Table 3-3 provides a summary of the combined peak hour demand for both the public and private off-street supply collected on the survey day.

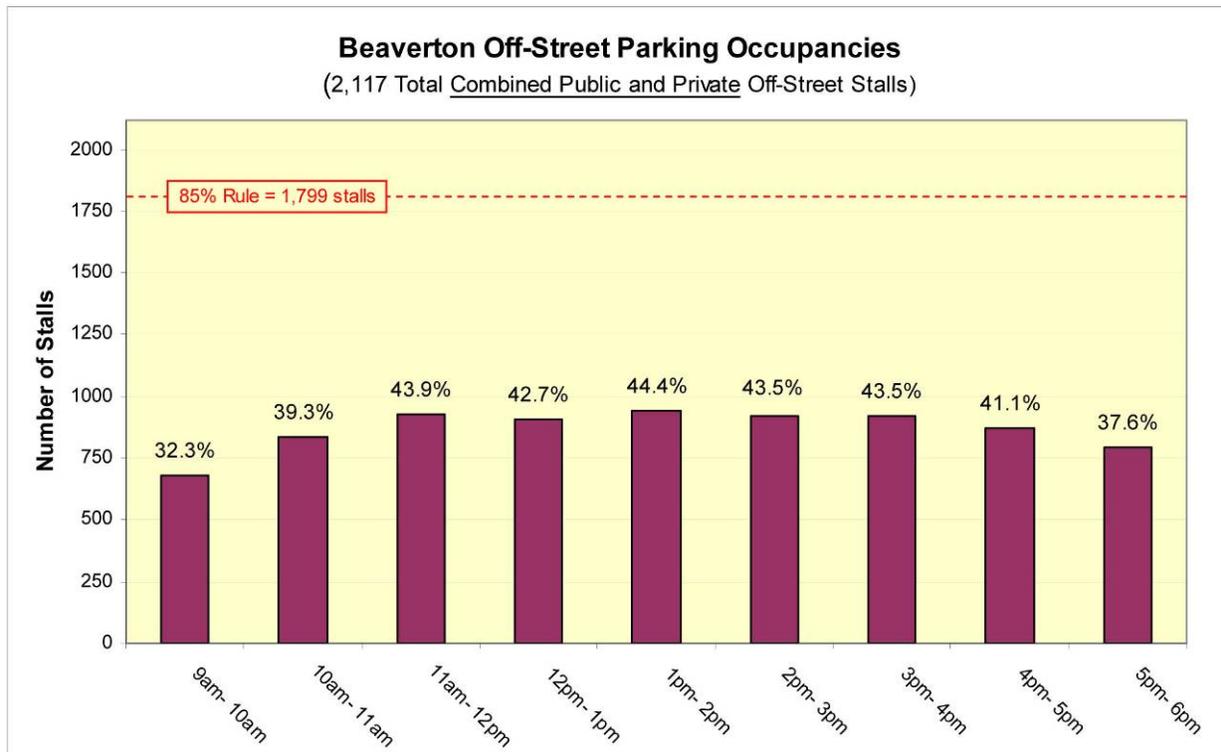
As Table 3-3 illustrates, peak hour occupancy for all off-street facilities (totaling 2,117 stalls) is between 1:00 p.m. and 2:00 p.m. when occupancies reach 44.4%. This is analogous to the on-street system's occupancy peak (41%), which occurs 1 hour earlier. Given the peak occupancy, there is a significant supply of empty and available off-street parking in the peak hour (i.e., 1,176 stalls).

Table 3-3. Off-Street Parking Summary

Combined Public & Private Off-street Stalls Surveyed				
Garage/Lot	# of Stalls	Peak Hour	Peak Occupancy	Stalls Available (empty)
<i>All</i>	<i>2,117</i>	<i>1 – 2 pm</i>	<i>44.4%</i>	<i>1,176</i>
Occupancy Breakout for Public & Private Off-Street Facilities				
Off-Street Designation	# of Stalls	Peak Hour	Peak Occupancy	Stalls Available (empty)
<i>Publicly Controlled (4 lots)</i>	117	11 – 12 pm 12 – 1 pm	29.1%	83
<i>Privately Controlled (126 lots)</i>	2,000	1 – 2 pm	45.6%	1,088

For purposes of demonstrating parking availability in the off-street supply, Table 3-3 also provides a breakout of occupancies for public versus privately owned facilities. Though the number of stalls under public control is limited, the abundance of available supply presents a future opportunity for aggressive marketing/management.

Figure 3-3. Beaverton Off-Street Parking Occupancies



From data derived for the off-street system, the following conclusions can be derived:

- The overall combined occupancy of the off-street system is 44.4% at the peak hour of 1:00 p.m. – 2:00 p.m.

- The combined off-street system is significantly underutilized, having an abundance of available parking during the peak hour.
- The private off-street system operates at a peak of occupancy of nearly 46%, which is considerably higher than peak occupancy in the publicly owned supply, which reaches just 29.1%.
- Low occupancies in off-street facilities suggest that greater efforts to communicate the availability of this supply could result in a transition of long-term parking that is currently on-street into off-street supplies. This will become more important should on-street occupancies create conflicts between customers and employees in the future.

C. Usage Characteristics (Turnover, Duration of Stay, Volume and Exceeding Time Stays)

The Beaverton on-street parking supply is a relatively low turnover system. Several usage characteristics derived from the data underscore this conclusion. A summary of these findings are included in Table 3-4.

Duration of Stay

One would assume that because 54% of the on-street supply is made up of stalls with 2 hour or less time designations, the average time stay at downtown on-street spaces would be fairly short. Interestingly, the average duration of stay at downtown on-street spaces is higher than one might anticipate.

- A typical downtown averages on-street time stays of between 1.25 and 1.75 hours across all stall types. This range is generally reflective of an active retail environment. The average stay in downtown Beaverton for on-street parking is 2 hours and 24 minutes (or 2.4 hours). At this time, time stays indicate that the retail environment is not lively.
- The longest duration of stay is at the No Limit stalls, with stays averaging 3 hours and 42 minutes (or 3.70 hours).
- The average time stay at one-hour stalls is 1.5 hours. This suggests that 1-hour stalls are not appropriate for the needs of the average visitor to downtown Beaverton. It is likely that these stalls are popular because of their location to adjacent businesses, but create potential violation problems because customers require a visit of something less than 2 hours. Converting these time zones to 2 hours would (a) provide a time stay appropriate to customer need and (b) reduce customer violations of these parking zones.

Longer average time stays are often a reflection of the type of user. Typically the on-street system is intended and formatted to serve shorter-term parking for customers and visitors to the downtown. The data suggests that Downtown Beaverton has a higher ratio of employees to customers using on-street parking than is reflective of the average for comparable cities. As on-street occupancies increase in the future, the City will need to be prepared to transition more employees into off-street locations to assure convenient access to visiting customers. Existing low occupancies in both the on and off-street supply allow the City time to prepare plans and establish thresholds and programs that would be implemented as demand increases.

Turnover: Efficiency of the Parking System

Given an average stay of 2.4 hours, an on-street stall in downtown Beaverton will turn 4.2 times in a typical day (10 hour day/2.4 hours duration = 4.16 turns). This is not reflective of comparable urban retail centers.⁶

In most cities, the primary time limit will allow for calculation of an intended turnover rate. For example, if the intended use for a stall is 2 hours, then the stall should be expected to turn a minimum of 5 times over a 10-hour period. As such, if turnover were demonstrated to be at a rate of less than 5, the system would be deemed inefficient. A rate in excess of 5 would indicate a system that is operating efficiently.

With a turnover rate of 4.2, Beaverton would not be considered operating at an efficient level; however, given the low occupancy rates of the on-street system presently, no immediate action is needed. Beaverton’s turnover rate is more commensurate with an urban off-street parking structure intended for longer-term stays.

Volume

On the survey day, 1,299 unique license plate numbers were recorded parking in the on-street system between the hours of 9:00 a.m. and 6:00 p.m.⁷

Exceeding time stays

Approximately 14.8% of unique vehicles parked in 1-hour, 2-hour and 4-hour stalls downtown exceed the posted time stay. For those stall designations only, surveyors recorded a total of 1,709 vehicles hours (the number of hours in the survey day where vehicles were occupying a parking space) during the survey period. Almost 20% (18.3%) of the vehicle hours recorded were in violation of the posted time stays⁸. On the survey day, no tickets and warnings were issued within the study zone.

Table 3-4. General Characteristics of Use – On-Street Parking Stalls

USE CHARACTERISTIC	DATA FINDING
Average duration of stay per unique vehicle	2 hrs 24 minutes
Actual number of unique vehicles (9:00 a.m. – 6:00 p.m.)	1,299
Actual turnover rate (number of cars to use a single occupied stall over a 10-hour period)	4.2
Percent of vehicles violating the posted time stay	14.8%
Number of violations	No tickets issued for time stay violations Occupancy levels do not warrant enforcement action at this time.

⁶ Studies conducted by RWC have shown a range of turnover rates from a high of 7.6 to a low of 5.3 within a 10-hour survey period: Bend, Oregon (7.6 turns), Kirkland, Washington (7.1), Spokane, Washington (6.4 turns), Hood River, Oregon (5.3 turns), Salem, Oregon (7.2 turns).

⁷ It is important to note that this does not represent all vehicles in the downtown, as license plate numbers were not recorded in off-street facilities. The unique vehicle total allows us to calculate turnover.

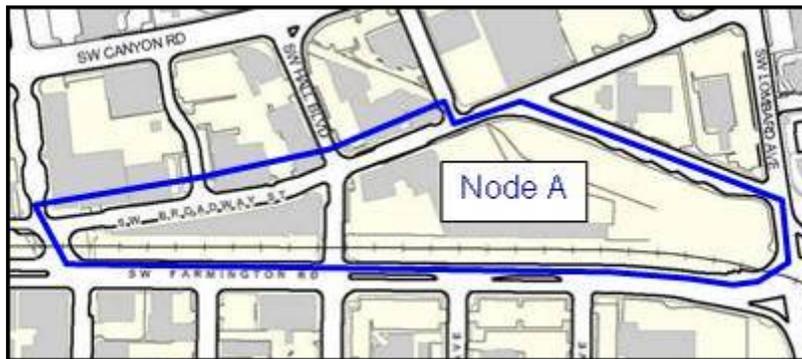
⁸ Two-hour stalls allowing all day parking with the use of a permit (128 total stalls) were removed from the violation calculation, so as to not artificially bias the results.

3.4 SPECIAL ANALYSES - DATA ANALYSIS BY ZONE AND LOCATION

At the request of the City and several stakeholders, the Consultant was asked to conduct “nodal analyses” of more activity-specific areas of the downtown. To this end, three separate nodes were analyzed; both the on and off-street systems were evaluated within the nodes to give a more complete view of the activity center. Again, the nodes were chosen as areas where parking activity might be more concentrated and/or diverse as contrasted to the larger study area, as defined through input from stakeholders and city staff.

A. Node A

This activity area is bound by SW Broadway Street (on the north), SW Farmington Road (on the south), SW Watson Avenue (on the west), and SW Lombard Avenue (on the east). Figure 3-4 provides a map of this activity node.



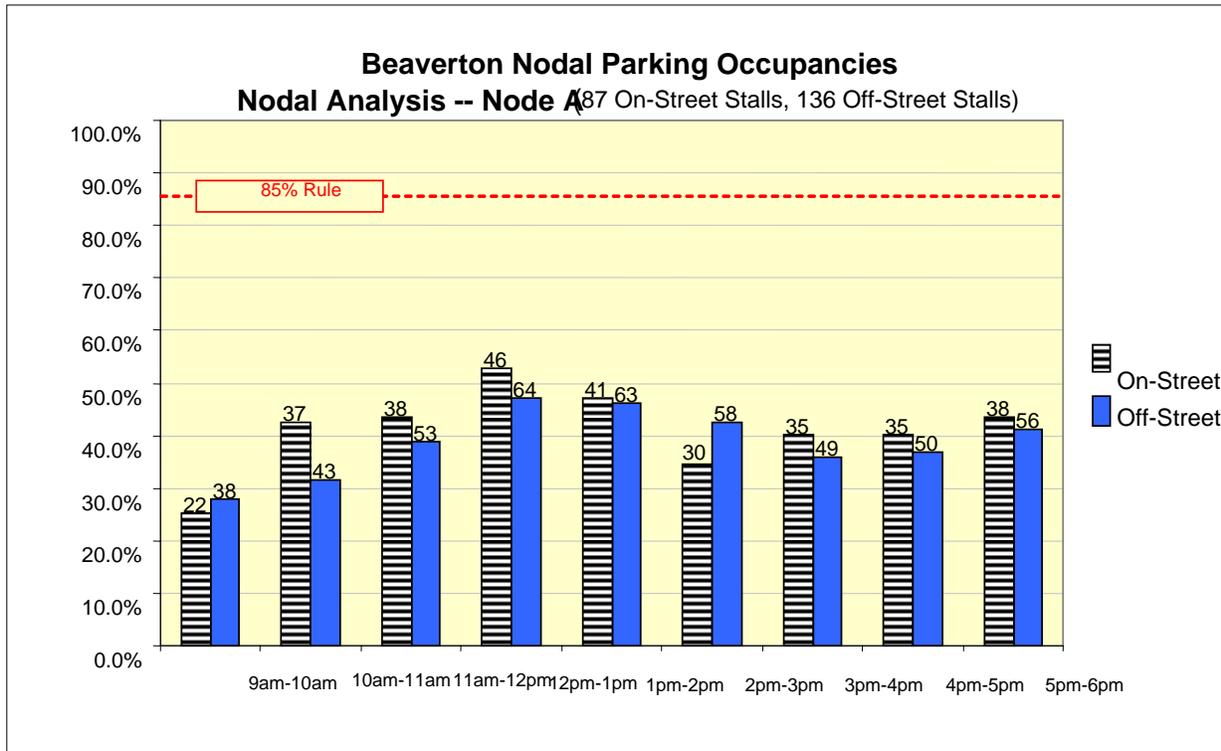
Of the 223 stalls within this node, 136 are private off-street stalls, 87 are on-street. The on-street stalls are comprised of 15-minute (3 stalls), 1-hour (45 stalls) and 2-hour (39 stalls) designations. This node reaches peak occupancy of 52.9%. The peak hour is between 12:00 p.m. – 1:00 p.m., which is the same as the average peak for the entire downtown. Table 3-5, below, summarizes the analysis.

Figure 3-4. Node A

Table 3-5. Nodal Analysis – Node A

Node A – Operational Characteristics					
Type of Stall	# of Stalls	Peak Hour	Peak Occupancy	Stalls Available (empty)	Average Length of Stay
On-Street Stalls	87	12 – 1 pm	52.9%	41	1 hr/42 min.
Off-Street Stalls	136 (6 lots)	12 – 1 pm	47.1%	72	N/A
Downtown Beaverton Node A Parking Stall Breakout					
On-Street Stalls by Type	Number of Stalls		% of Total On-Street Stalls		
15 minutes	3		3.4%		
1 hour	45		51.7%		
2 hours	39		44.8%		
Public: On-Street Parking Stalls	87		100%		
Public: Off-Street Parking Stalls	0				
Sub-Total Supply	87				
Private: Off-Street Parking Stalls	136				
Total Surveyed Supply	223				

Figure 3-5. Beaverton Nodal Parking Occupancies – Node A



Other considerations resulting from this analysis include:

- Both on and off-street systems in this node exhibit ample parking opportunities for customers and visitors throughout the course of the survey day. Empty/available parking is available within two city blocks of any use within the node.
- The average on-street time stay in this node (1 hr 42 minutes) is approximately 42 minutes less than the average time stay for the broader study area (2 hr 24 minutes). This is due to the fact that this node does not provide “no limit” stalls, which are abundant in the larger general supply of on-street stalls.

To better demonstrate the dynamics of the complete parking system within the node, Figure 2-5, above, displays both on and off-street occupancies for each hour of the survey day, which allows for a direct side-by-side comparison. Each bar in the graphic is labeled with the number of occupied stalls at that specific hour.

B. Node B

Node B was the area identified by downtown stakeholders as the “heart” or focal point of downtown Beaverton. Approximately five blocks comprise this node. It is bounded by SW Tucker Avenue (on the east) and SW Third Avenue (on the south). The western boundary bisects three blocks longitudinally halfway between SW Watson and SW Washington Avenues. The northern boundary bisects three blocks laterally halfway between SW Farmington Road and SW First Street.

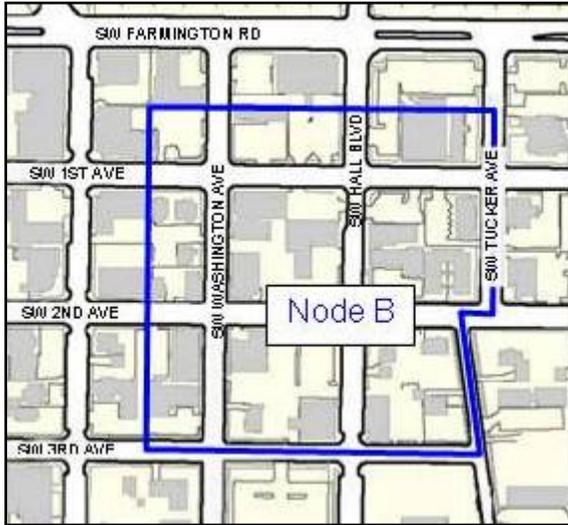


Figure 3-6 provides a map of this node and Table 3-6 summarizes use within the node.

Node B maintains a total of 320 stalls within its boundary. One hundred ninety of the total are private off-street stalls and 130 are on-street. The on-street supply is comprised of 1-hour (2 stalls), 2-hour (99 stalls), 4-hour (39 stalls) and No Limit designations (24 stalls). Occupancies in this node are lower than in Node A, though slightly higher than the overall average for the entire study area. Peak hour differs between the on and off-street systems. On-street reaches its peak of 44.6% between 2:00 p.m. and 3:00 p.m., whereas the off-street peaks between 1:00 p.m. and 2:00 p.m. at 48.4%.

Figure 3-6. Node B

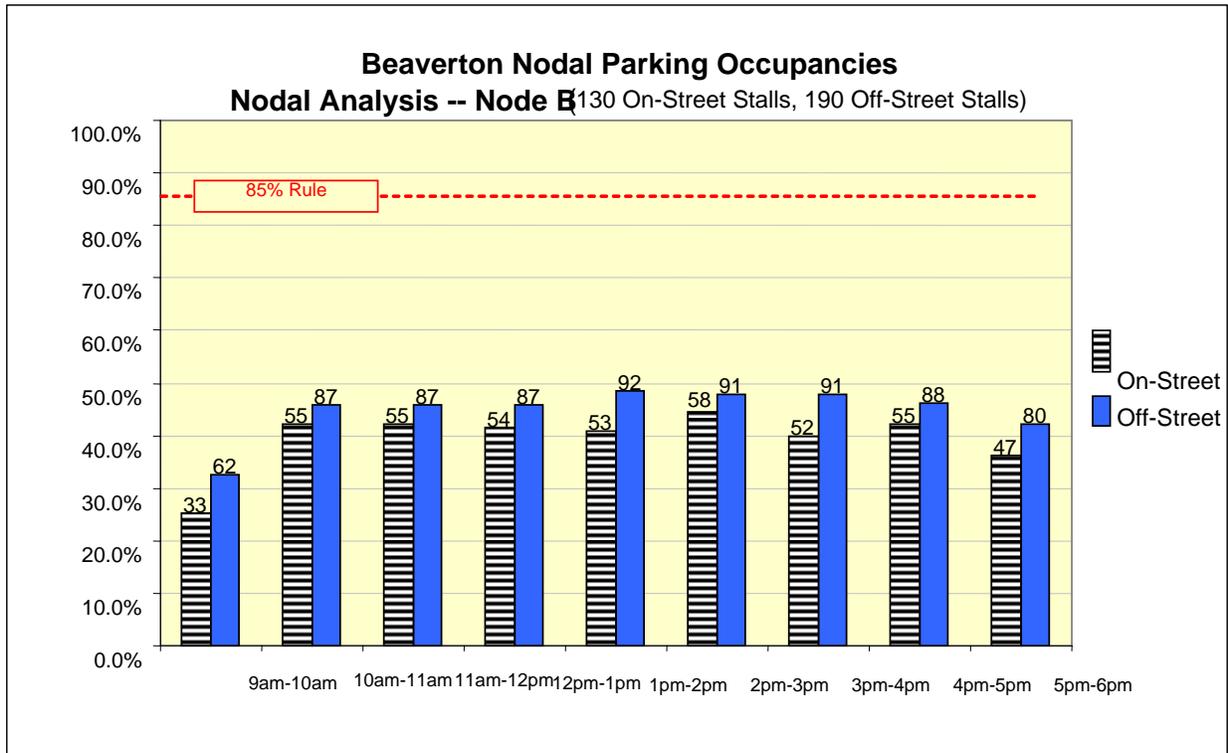
Table 3-6. Nodal Analysis – Node B

Node B – Operational Characteristics					
Type of Stall	# of Stalls	Peak Hour	Peak Occupancy	Stalls Available (empty)	Average Length of Stay
On-Street Stalls	130	2 – 3 pm	44.6%	72	2 hr/12 min.
Off-Street Stalls	190 (13 lots)	1 – 2 pm	48.4%	98	N/A
Downtown Beaverton Node B Parking Stall Breakout					
On-Street Stalls by Type	Number of Stalls		% of Total On-Street Stalls		
1 hour	2		1.5%		
2 hours	99		76.2%		
4 hours	39		44.8%		
No Limit	24		18.5%		
Public: On-Street Parking Stalls	130		100%		
Public: Off-Street Parking Stalls	0				
<i>Sub-Total Supply</i>	130				
Private: Off-Street Parking Stalls	190				
Total Surveyed Supply	320				

Other considerations resulting from this analysis include:

- Both on and off-street systems in this node exhibit ample parking opportunities for customers and visitors throughout the course of the survey day (Figure 3-7). Empty/available parking is available within proximity to any use within the node.
- The average stay in this node is 2 hours and 12 minutes, about 30 minutes longer than Node A and 12 minutes less than the average for the larger study zone.

Figure 3-7. Beaverton Nodal Parking Occupancies – Node B



One observation about this node is that it sustained occupancies in the mid-40% range over the course of the survey day, which is a subtle change from the gradual bell-curved occupancies for the larger study area. For the seven-hour span from 10:00 a.m. to 5:00 p.m. occupancy levels are static, hovering from the low to mid-forties. Despite the unchanging occupancies, the on-street system maintains a more reasonable turnover rate of 4.5 turns (compared to 4.2 for the larger study area), though less than the 5.0 turns that would indicate high efficiency.

C. Node C

This five-block activity node is centered in and around the Post Office. The area is bounded by SW Farmington Road (on the north), SW Second Street (on the south), SW Tucker Avenue (on the west), and SW Lombard Avenue (on the east). These five blocks total 278 parking stalls.

Figure 3-8 provides a map of this analysis node, and Table 3-7 summarizes use.

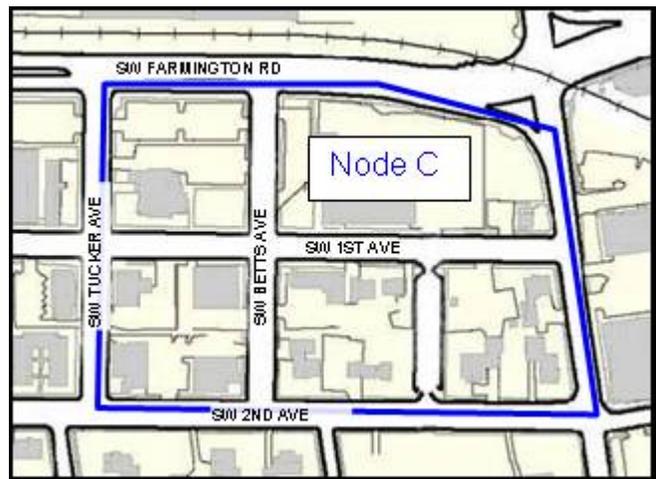


Figure 3-8. Node C

Of the 278 stalls within this node, 191 are located off-street in 15 parking lots. Sixty-one stalls are under public control and 130 are operated privately. There are 87 on-street stalls, comprised of 30 minute (10 stalls), 1-hour (2 stalls), 2-hour (74 stalls) and No Limit (1 stall) designations.

Table 3-7. Nodal Analysis – Node C

Node C – Operational Characteristics					
Type of Stall	# of Stalls	Peak Hour	Peak Occupancy	Stalls Available (empty)	Average Length of Stay
On-Street Stalls	87	1 – 2 pm	43.7%	49	1 hr/18 min.
Off-Street Stalls	191 (15 lots)	1 – 2 pm	48.2%	99	N/A
Downtown Beaverton Node C Parking Stall Breakout					
<i>On-Street Stalls by Type</i>		Number of Stalls	% of Total On-Street Stalls		
30 minute		10	11.5%		
1 hour		2	2.3%		
2 hours		74	85.1%		
No Limit		1	1.1%		
Public: On-Street Parking Stalls		87	100%		
Public: Off-Street Parking Stalls		61			
<i>Sub-Total Supply</i>		148			
Private: Off-Street Parking Stalls		130			
Total Surveyed Supply		278			

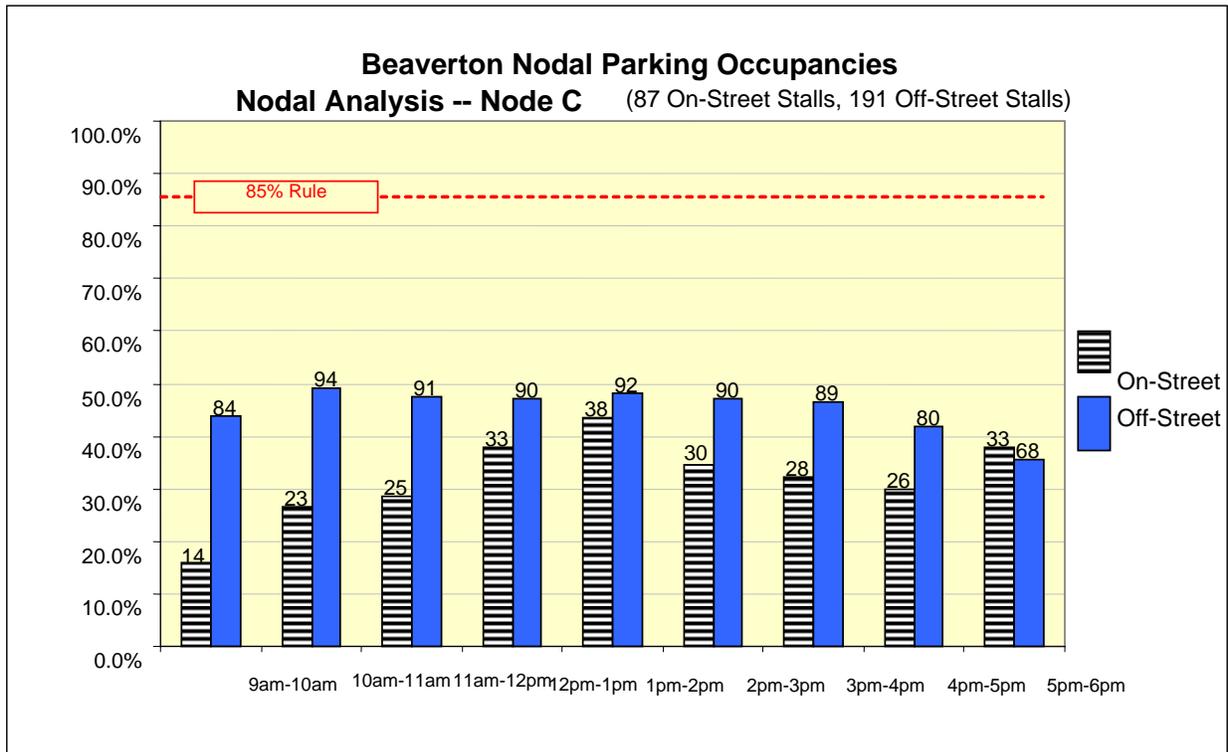
Table 3-7 summarizes the breakout of parking types within this node.

Peak hour occupancy in this node is between 1:00 p.m. and 2:00 p.m. when the system reaches approximately 44% and 48% occupancy for on and off-street parking, respectively. The off-street supply operates similarly to that of Node B where occupancies are maintained throughout the course of the workday. Unlike Node B, the on-street system has a more typical bell shaped curve to its occupancy counts. Figure 2-9 demonstrates these trends.

Other considerations resulting from this analysis include:

- As with all nodes analyzed, the on and off-street systems in this node exhibit ample parking opportunities for customers and visitors throughout the course of the survey day.
- The average stay for the on-street system in this node is 1 hour and 18 minutes, which represents a much more favorable turnover rate of 7.7 turns. This level of turnover is more typical of a vital urban retail center.

Figure 3-9. Beaverton Nodal Parking Occupancies – Node C



D. Summary (Data Analysis)

The data analysis conducted for the downtown Beaverton parking study area demonstrates that the existing parking supply is significantly underutilized. Abundant parking is available within two city blocks of most land uses in the study zone. This is the case in both the on and off-street parking supply. On-street turnover is below a reasonable standard for such parking, averaging about 4.2 turns per day versus a minimum of 5.0 turns (or higher) that characterize downtowns with a more vibrant retail mix. Turns are also affected by the high number of employee permits that are allowed to use the on-street system (in both 2-hour and No Limit zones).

Though on-street turnover is not efficient, it is apparent that this does not have an adverse impact on access to parking. Again, the high availability of parking in the peak hour gives Beaverton time to make changes to the format and mix of parking on-street that better meets its long term objectives for customer access into the downtown. Overall, there are changes that could be made to the system that include:

- Converting 1-hour stalls to 2 hours.
- Concentrate on-street permit parking into No-Limit Zones.
- Consider reducing No-Limit Zones where they abut off-street lots.
- Allow longer term stays in City-owned off-street facilities.
- Augment understanding and use of City-owned off-street facilities.

These changes would help to improve general use of the system, though efforts to increase customer activity with the downtown will need to be coupled with parking program changes.

3.5 PARKING RATIOS – BUILT SUPPLY AND ACTUAL DEMAND

Parking ratios express the actual number of parking spaces available to serve demand for land uses (i.e., office, retail, residential and/or mixed-use development). The number of stalls represented by a parking ratio may exceed actual demand for parking or fall short of that demand. Demand ratios, on the other hand, are generally expressed in the context of peak hour use of a specific built supply of parking. In other words, demand ratios represent an estimate of the actual number of stalls occupied at the peak hour relative to occupied land uses. Effectively managing the relationship between land uses, built and occupied parking supply is a fundamental challenge of parking management.

Understanding the difference between the ratios of built supply and the ratio of actual demand is an important element for parking management. Parking ratios based on actual demand allow cities the ability to plan for parking at a rate consistent with actual use, thereby reducing overall parking development costs over time. An understanding of actual demand also allows a city to estimate the impact of new development on an existing supply of parking.

The example exercise represented in this section is an attempt to develop a better understanding of parking supply and demand for Beaverton. To that end, the consultant team derived two “ratios” from the data analysis.

- The actual Built Ratio of publicly available parking stalls, in relation to total built land uses in Downtown Beaverton.
- The actual current Demand Ratio for parking stalls per total built land use based on actual usage data from the “typical day” survey.⁹

A. Methodology

The consultant team developed a comprehensive list of all land uses within the downtown study area using the most current tax assessor’s data for the downtown. This information was provided by the City of Beaverton. Square footages, of leasable space, were derived for commercial, retail, civic and service land uses. Residential land use square footages were separated from the database, as was the parking associated with this use.¹⁰ This allows for derivation of a demand rate directly associated with a traditional mixed-use commercial environment. Table 3-8, below, provides a breakout of land uses utilized in the demand analysis.

The resultant built ratio of parking to land use then is reflective of the total availability of parking serving a mixed-use environment in the downtown. The demand ratio reflects the public demand for parking stalls associated with that land use using actual peak occupancy data from the 2006 parking survey. The consultant team was then able to express actual parking ratios per 1,000 square feet of mixed-use development for Beaverton’s downtown.¹¹

⁹ Data from the Tuesday, September 19, 2006, was used to develop this analysis.

¹⁰ Specific parking demand rates for residential uses will be derived as a part of this study. However, parking demand rates for more commercial, downtown business-oriented development were the focus of this exercise.

¹¹ This analysis quantified the relationship between land uses, parking occupancy and built parking supply. Though not a definitive measure of demand by specific land use types, this exercise is useful in deriving estimates for overall demand in Beaverton based on actual parking activity in the downtown.

Table 3-8. Beaverton Study Area Square Footages

Land Use Category	Total SF in Study Zone
Civic	106,016
Dining	32,616
Institutional	34,031
Medical	67,810
Service/Commercial	533,598
Total SF Used for Calculation of Parking Demand	774,071
Land Uses and Parking Removed from “Mixed-Use” Parking Demand Calculation	
Residential	206,378
Vacant Land	173,321

B. Findings

Parking demand ratio calculations revealed two different, but equally useful correlations:

- *Built Stalls to Built Land Use.* This represents the total number of existing parking stalls correlated to total existing land use square footage (occupied or vacant) within the study area. According to data provided by the City, there is approximately 774,071 square feet of commercial uses in the study zone. At this time, about **4.01 parking stalls per 1,000 square feet of built land use** have been developed/provided within the study area.
- *Combined Demand to Built Land Use.* This represents peak hour occupancy within the entire study area, combining the on and off-street supply. As such, actual parked vehicles were correlated with actual occupied building area.

The recent utilization update indicated that peak hour occupancy reached 43.3% for the combined on and off-street system, which resulted in 1,344 vehicles parked. Further information from the city estimates that building vacancy in the downtown is approximately 6% (or 46,444 SF vacant), which results in 727,627 of 774,071 gross square feet of building area actually occupied.

From this perspective, actual current peak hour demand stands at a **ratio of approximately 1.85 parking stalls per 1,000 square feet of built land use.**

Table 2-9, below, summarizes the analysis used to determine the ratio of built parking to built land use (i.e., 774,071 total square feet) and general demand for that parking based on the peak hour occupancy/demand for all parking inventoried in the study area.

As Table 2-9 demonstrates, the actual demand for parking is 1.85 stalls/1,000 SF. If in the future parking were only provided at the rate of actual demand absorption (1.85), overall peak hour occupancies would near 100%. This is due to the fact that the actual ratio of demand covers total demand and does not assume a cushion or “buffer” of stalls to address unexpected growth or spikes in parking activity. As such, Table 3-9 also presents “parking demand with a 15% buffer,” which increases the actual ratio of parking demand from 1.85 to 2.13 stalls/1,000 SF.

Table 3-9. Study Area Demand – Mixed Land Use to Built Supply

Sites in Study Zone	Gross Square Footage (Built)/ Gross Square Footage (Occupied)	Total Stalls Inventoried in Study Zone ^a	Built Ratio of Parking (GSF)	Total Stalls Parked in Peak Hour	Actual Ratio of Parking Demand/1,000 SF	Parking "Demand" w/ 15% buffer
167	774,071/ 727,627	3,107	4.01/1,000 SF	1,344	1.85/1,000 SF	2.13/1000 SF

^a This number represents all on-street spaces, public and private off-street lots in operation within the study zone.

To date, parking has been built at an average rate of 4.01 stalls per 1,000 square feet of development in downtown Beaverton. This rate appears to have been far more than necessary, though significant stall availability was created as a result.

Land uses in Downtown Beaverton are generating parking demand ratios of 1.85 stalls per 1,000 SF of commercial/retail development. This number would range upward to 2.13 parking stalls per 1,000 square feet of development if the intent was to assure a continuing buffer or cushion of parking stalls to accommodate unanticipated growth or spikes in parking demand.

Table 3-10, below, provides a summary of built supply to actual demand for other cities that the consultant team has worked with.

Table 3-10. Other Cities – Summary of Built Supply to Actual Demand

City	Minimum Requirement/1,000 SF Or Actual Built Supply	Actual Demand/1,000 SF	Gap Between Parking Provided and Parking Demand for Every 1,000 SF
Bend, OR	3.0	1.7 – 1.9	1.1 – 1.3
Beaverton, OR	4.01	1.85	2.16
Corvallis, OR	2.0	1.50	0.50
Hillsboro, OR	3.00	1.64	1.36
Hood River, OR	1.54	1.23	0.31
Kirkland, WA	2.5	1.98	0.52
Sacramento CA	2.0	1.60	0.40
Salem, OR	3.15	2.04	1.11
Seattle, WA (SLU)	2.5+	1.75	0.75+

As the above table demonstrates, Beaverton falls on the high side of both parking provided and parking utilized (demand ratio) when contrasted to other cities. Kirkland, Washington and Salem, Oregon have higher demand rates, but provide less overall parking compared to actual square feet of land use. Beaverton's "gap" of 2.16 unused stalls to every 1,000 SF of land use is very high when contrasted to other cities.

3.6 SUMMARY

Overall the data analysis of the Beaverton parking inventory indicates that the system is operating at a low level of demand with slow turnover and abundant available supply. There are no “deficits” of parking in the downtown. Overall, the availability of “surplus” parking is well located to the demand for parking throughout the downtown. Whether merchants/businesses can and are willing to direct their employees and customers into off-street locations is a topic for additional discussion with the City and downtown stakeholders.

Also, parking is generally being provided at a rate that exceeds actual demand. The gap between parking built and parking utilized is 2.16 parking stalls per every 1,000 SF of development. In the long-term, it is unlikely that this rate of parking development can continue, particularly if (a) there is a desire to use land more efficiently and (b) the cost of parking development increases as supply transitions from surface facilities to structures.

3.7 NEXT STEPS

Additional work with the City and stakeholders will proceed to ensure that there is an awareness and understanding of the data findings, which will result in development of recommended programs and strategies for improving the existing system and moving toward future new supply.

This page intentionally left blank.

4. IDENTIFICATION AND ANALYSIS OF BARRIERS AND OPPORTUNITIES

4.1 BACKGROUND

The intent of this chapter is to describe the existing parking management strategies in the Beaverton study area and identify and analyze barriers to and opportunities for implementing alternative downtown parking management strategies. The project scope of work requires this chapter to include the following sections.

Existing Practices

This section will review the City's current regulations, required parking requirements, etc.

Best Practices and Model Code

This section will review the state and regional policy guidance and model code language for parking.

On-street Angle Parking

This section discusses the feasibility of redesigning certain streets to allow for angle parking.

Matrix of Opportunities and Barriers

This section provides a matrix format summary of the opportunities and barriers available in the study area.

Recommendations

This section provides the foundation of a parking management plan for the study area.

This builds upon the data analysis and guiding principles developed in previous efforts for this project. It does not specifically address parking districts, shared parking, or parking structures which are addressed later in this report.

4.2 EXISTING PRACTICES

The city, non-profits, and businesses currently use a variety of parking management strategies in the study area. The city primarily manages parking in the area through development requirements, such as minimum and maximum parking requirements and variances and exemptions to those requirements. Additionally, the city collects fines in the area to discourage undesirable parking behaviors. The Westside Transportation Alliance is available to help businesses in Beaverton with implementing programs that discourage single-occupancy vehicle trips. Finally, some businesses in the area subsidize transit passes to encourage their employees to commute by transit. Those parking management strategies are described below.

4.2.1 Existing Zoning

The City of Beaverton designates all of the project area as Regional Center – Old Town. According to the Beaverton Development Code, the “intent for the Regional Center – Transit Oriented (RC-TO) District, which is served by light rail and commuter rail, is to promote a transit-supportive multiple-use land use pattern and to create over time a pedestrian-oriented commercial center within approximately 1/4 mile of the light rail stations while supporting existing and future businesses in moving toward and achieving the vision of a Regional

Center.”¹² Within this zone, parking as a principal land use is conditionally allowed. The code defines parking “as the principal use” as a facility for the temporary parking of automobiles and transportation vehicles which arrive and depart daily and remain for a short term.

4.2.2 Development Requirements

The City of Beaverton requires an application for a Design Review Two for any new or change to existing on-site vehicular parking, maneuvering, and circulation area which adds paving or parking spaces.¹³ A Design Review Two is a Type II procedure and the decision making authority is the Planning Director.

4.2.2.1 Minimum and Maximum Off-Street Parking Standards

The Beaverton Development Code lists the minimum required parking spaces and maximum allowed parking spaces for each land use. The maximum permitted parking spaces are divided into two zones, both of which are within the project study area. Zone A areas include parcels located within a 1/4 mile walking distance of bus transit stops that have 20 minute peak hour transit service or 1/2 mile walking distance of light rail station platforms that have 20 minute peak hour transit service. Zone B includes parcels located within 1/4 mile walking distance of bus transit stops. Zone B also includes those parcels that are located greater than 1/4 mile walking distance of bus transit stops, 1/2 mile walking distance of light rail station platforms, or both.

The Beaverton parking ratio requirements for vehicles is shown in Table 4-1, and for bicycles in Table 4-2.

Table 4-1. Parking Ratio Requirements for Motor Vehicles

Land Use Category	Minimum Required Parking Spaces	Maximum Permitted Parking Spaces	
	Multiple Use Zones	Zone A	Zone B
Residential Uses			
Detached dwellings (per unit)	1.0	n/a	n/a
Attached dwellings			
One bedroom (per unit)	1.0	1.8	1.8
Two bedroom (per unit)	1.0	2.0	2.0
Three or more bedrooms (per unit)	1.0	2.0	2.0
Dwellings, Live/Work (per unit)	1.25	1.8	1.8
Dwelling, Accessory Unit	1.0	1.8	1.8
Mobile Homes (per unit)	1.0	2.0	2.0
Residential Care Facilities (per bed, maximum capacity)	0.25	0.5	0.5

¹² City of Beaverton. Beaverton Development Code (Chapter 20.20.43). Prepared by the City of Beaverton, Beaverton, Oregon.

¹³ City of Beaverton. Beaverton Development Code (Chapter 40.20.15). Prepared by the City of Beaverton, Beaverton, Oregon.

Land Use Category	Minimum Required Parking Spaces	Maximum Permitted Parking Spaces	
	Multiple Use Zones	Zone A	Zone B
Rooming, Boarding, or Lodging Houses (per guest room)	0.5	1.0	1.0
Commercial Amusements			
Arena / Stadium (per seat, maximum occupancy)	n/a	0.25	0.25
Movie Theaters (per seat, maximum occupancy)	0.3	0.4	0.5
Sports Clubs / Recreational Facilities	4.3	5.4	6.5
Tennis / Racquetball Courts	1.0	1.3	1.5
Institutions			
Hospital (per bed)	2.0	3.0	4.0
Public Buildings or other Structures	2.7	3.4	4.1
Welfare or Correctional Institution (per bed)	0.3	0.5	0.75
Commercial Uses			
Retail, including shopping centers	3.0	5.1	6.2
Offices, Administrative Facilities	2.7	3.4	4.1
Bank, Financial Institutions	3.0	5.4	6.5
Service Businesses	3.0	5.1	6.2
Rental Businesses, including vehicle and trailer rental	2.7	3.5	4.1
Medical, Dental Clinics	3.9	4.9	5.9
Mortuaries (per seat, maximum occupancy)	0.25	0.5	0.75
Eating, Drinking Establishments			
Fast Food with drive through service in the RC-TO, SC-MU, and SC-HDR zones.	5.0	12.4	14.9
Fast Food with drive through service in all other zones.	10.0	12.4	14.9
Other eating, drinking establishments in the RC-TO, SC-MU, and SC-HDR zones.	5.0	19.1	23.0
Other eating, drinking establishments in all other zones.	10.0	19.1	23.0
Temporary Living Quarters (per guest room)	1.0	1.25	1.5
Places of Assembly			
Places of Worship (per seat at maximum occupancy)	0.25	0.6	0.8
Auditoria, meeting facilities; Social or Fraternal Organizations (per seat, maximum occupancy)	0.25	0.5	0.5
Educational Institutions: College, University, High School, Commercial School (spaces / number of FTE students and FTE staff)	0.2	0.3	0.3
Educational Institutions: Middle School, Elementary School (spaces / number of FTE staff)	1.0	1.5	1.5
Nursery Schools, Day or Child Care Facilities (spaces / number of FTE staff)	0.8	2.0	2.0
Library, museum, art gallery	2.5	4.0	6.0
Park and Ride facilities	n/a	n/a	n/a
Transit Centers	n/a	n/a	n/a

Land Use Category	Minimum Required Parking Spaces	Maximum Permitted Parking Spaces	
	Multiple Use Zones	Zone A	Zone B
Industrial			
Manufacturing	1.6	2.0	2.0
Storage warehouse, wholesale establishment, rail or trucking terminal, vehicle or trailer storage.	0.3	0.4	0.5
Limited Industrial			
Research Facilities	2.5	3.4	3.4

[ORD 4107; May 2000]

Notes:

1. Parking ratios are based on number of spaces per 1,000 square feet of gross floor area unless otherwise noted.
2. Refer to Section 60.30.10.4 for uses not listed in Section 60.30.10.5.
3. Refer to Section 60.30.10.10 for exceptions.
4. In calculating the required number of vehicle parking spaces, fractions equal to or more than 0.5 shall be rounded up to the nearest whole number. Fractions less than 0.5 shall be rounded down to the nearest whole number.

Table 4-2. Parking Ratio Requirements for Bicycles

Land Use Category	Minimum Required Bicycle Parking Spaces	
	Short Term	Long Term
Residential Uses		
Detached dwellings	Not required	Not required
Two and three attached dwellings	Not required	Not required
4 or more attached dwellings	2 spaces or 1 space per 20 dwellings	1 space per dwelling
One, two and three family dwellings	Not required	Not required
Multi-family dwelling containing 4 or more dwelling units	2 spaces or 1 space per 20 dwelling units	1 space per dwelling unit
Mobile Homes	Not required	Not required
Residential Care Facilities (per bed, based upon maximum capacity)	1 space per 100 beds	1 space per 50 beds
Rooming, Boarding, or Lodging Houses (per guest room)	Not required	1 space for every 10 guest rooms
Commercial Amusements		
Arena / Stadium / Theater (spaces per number of seats)	2 spaces or 1 space per 200 seats	2 spaces or 1 space per 1,000 seats
Bowling Alley	1 space per 4,000 sq. ft. of floor area	1 space per 4,000 sq. ft. of floor area
Dance Hall, Skating Rink	1 space per 500 sq. ft. of floor area	1 space per 4,000 sq. ft. of floor area

[ORD 4224; August 2002]

Notes:

1. Parking ratios are based on number of spaces per 1,000 square feet of gross floor area unless otherwise noted.
2. Refer to Section 60.30.10.4 for uses not listed in Section 60.30.10.5.
3. Refer to Section 60.55.65 for additional bicycle facility requirements.
4. In calculating the required number of bicycle parking spaces, fractions equal to or more than 0.5 shall be rounded up to the nearest whole number. Fractions less than 0.5 shall be rounded down to the nearest whole number.
5. Where an option is provided under bicycle parking, whichever standard results in the greater number of bicycle parking spaces is the minimum.

The city allows variances to the minimum and maximum on-street parking requirements. However, a developer may exceed the maximum permitted number of parking spaces without acquiring a variance from the city provided that the maximum permitted number of parking spaces and any parking in excess of the minimum is located in a parking structure.

The City of Beaverton allows five exceptions for the required vehicle parking ratio requirements, as described below.¹⁴

- Vehicle parking reduction for transit amenities. Under this exception, the City may reduce the number of required vehicle parking spaces by either five percent or ten percent if the property owner provides a pedestrian plaza for any existing use or proposed use on an existing transit route. The percent reduction depends on several factors, including the plaza's distance from a transit stop and the size of the plaza.
- Transportation Management Association Participation. The city may reduce the minimum number of off-street parking by as much as ten percent if the applicant agrees to participate in a transportation management association program that is approved by the city for the area within which the project is located.
- Combination of Shared Parking, No Additional Parking Demand, and Transportation Management Association Participation. The city may reduce the minimum number of off-street parking by as much as thirty percent if the applicant demonstrates that the combination of uses in the development will permit shared parking, the long-term occupancy of the building or use will not generate additional parking demand, and the applicant agrees to participate in a transportation management association program that is approved by the city for the area within which the project is located.
- Special Needs Residential. The city may allow a reduction in the number of required off-street parking spaces in housing developments for elderly or handicapped persons.
- Provision of additional bicycle parking spaces in-lieu of vehicle parking spaces. A developer may provide bicycle parking to reduce minimum vehicle parking requirements at a rate of two long-term bicycle parking spaces per vehicle space, but not more than five percent of the of the total number of required vehicle parking spaces. This exemption only applies to uses located within a 1/4 mile radius of a transit stop. The property owner must provide a parking analysis demonstrating that the vehicle demand will be met with the reduced number of vehicle spaces.

The city may also permit fewer than the minimum required parking spaces if the property owner can demonstrate that a use has an excess of parking spaces. To initiate the process, a property owner would request a parking determination from the City of Beaverton to determine the existence of excess required parking. In order to find that a use has an excess of parking, the owner must demonstrate that excess parking accounts for a minimum of 20% of the required parking for all uses of the site and excess parking has existed for the previous 180 days.¹⁵

¹⁴ City of Beaverton. Beaverton Development Code (Chapter 60.30.10). Prepared by the City of Beaverton, Beaverton, Oregon.

¹⁵ City of Beaverton. Beaverton Development Code (Chapter 40.55). Prepared by the City of Beaverton, Beaverton, Oregon.

4.2.2.2 Carpool and Vanpool Parking Requirements

The City of Beaverton allows employee preferential parking for high occupancy vehicles in industrial, institution, and office developments, including government offices, with 50 or more employee parking spaces. For these uses, at least 3% of the employee parking spaces shall be designated for carpool and/or vanpool parking. The city defines carpool as two or more persons per car and vanpool as five or more persons per van. The carpool and vanpool spaces must be clearly marked and signed for reserved carpool and/or vanpool parking. The reserved carpool/vanpool spaces may be used for general parking if the reserved spaces are not occupied after a specific time period. With the exception of designated parking for persons with disabilities, designated carpool/vanpool spaces must be the closest employee parking spaces to the building entrance normally used by employees.

4.2.3 Fees

The City of Beaverton collects fees from persons or businesses who obtain a vehicle parking permit in the Beaverton Downtown Permit Parking District. The Beaverton Downtown Permit Parking District allows a permitted vehicle to park in excess of the posted parking time limit along specified city streets and city-owned parking lots. A person is eligible to obtain a vehicle parking permit if the person currently resides or is an employee of a business within the parking district. Businesses located within the parking district can also obtain vehicle parking permits for its employees who work within the Beaverton Downtown Permit Parking District eligibility area.

According to the Beaverton City Code, the fee for this permit shall not exceed the City's cost to administer and enforce the program. The vehicle parking permit fee is currently \$30.00 per calendar quarter.¹⁶ If a person misuses a vehicle parking permit, the City may fine the permit holder.

According to a recent survey of businesses in the study area, most businesses (65%) that participated in the survey are not aware of the City's parking permit program. Just over a third (35%) is aware of the program.¹⁷

¹⁶ City of Beaverton. Available at: http://www.beavertonoregon.gov/departments/finance/finance_parkingpermits.html. Accessed October 17, 2006.

¹⁷ RW Consulting. 2006. Technical Memorandum A: Results of Beaverton Business Survey on Parking Demand. Prepared by RW Consulting, Portland, Oregon.

4.2.4 Fines

The City charges fines for several types of parking infractions. A survey of fees and penalties indicates that fees and penalties vary widely by municipality. Table 4-3 summarizes the fees and penalties in comparable cities in the Portland Metropolitan area.¹⁸

Table 4-3. Parking Fees and Penalties

City	Estimated Population	Number of Parking Personnel	Metered Parking	Parking Time Limit Zone/ Overtime	Parking Without Permit	Prohibited Parking / No Parking	Handicap/ Unlawful Parking in Disabled Space	Blocking Access/ Hazard/ Fire Lane	Other
<i>Beaverton</i>	<i>83,100</i>	<i>0.8 FTE</i>	<i>N/A</i>	<i>\$10.00</i>	<i>\$10.00</i>	<i>\$20.00</i>	<i>\$642.00</i>	<i>\$20.00</i>	<i>Several other city ordinance parking violations</i>
Gresham	95,900	3 Code Enforcement / Officers assist as necessary	NA	\$16.00	\$16.00	\$16.00	\$450.00	\$40.00	Semi-parked in residential area: \$100 Abandoned vehicle: \$25.00
Hillsboro	80,000	1 FTE	NA	\$7.50	\$3.00	\$15.00	State Statute	\$15.00	
Tigard	46,000	0 FTE / Officers perform parking function	NA	\$15.00	\$30.00	\$45.00	State Statute	\$50.00	Several other city ordinance parking violations
<i>Averages</i>				<i>\$12.13</i>	<i>\$14.75</i>	<i>\$24.00</i>		<i>\$31.25</i>	

As the table illustrates, the City of Beaverton generally has lower fines than comparable cities in the area other than Hillsboro, with the exception of handicap/unlawful parking in disabled space.

4.2.5 Transportation Management Association

The Westside Transportation Alliance is a transportation management association of businesses and public agencies in Washington County. The Westside Transportation Alliance offers workplace services and programs that support employees commuting to work by means other than single-occupancy vehicles, such as vanpool, carpool, transit, walking, and bicycling.

4.2.6 Subsidizing Transit Passes

According to a recent employer survey in the study area, only four (4) businesses (less than 3%) participating in the survey subsidize employee transit passes for their employees. Only three of the four businesses indicating they provide subsidies responded to a survey question about the amount of subsidy per employee/per month. Within those businesses, actual

¹⁸ Bailey, Tina. 2006. Personal communication [email] of September 1, 2006. Planner, City of Hillsboro, Hillsboro, Oregon.

subsidies range from \$30 to \$50.75 per month. In total, only 17 employees receive subsidies. This represents 1.5% of the total number of employees covered in the survey (1,112).¹⁹

4.3 BEST PRACTICES AND MODEL CODE

There are several local, regional, and state parking plans and policies that address parking development goals and requirements. The Downtown Beaverton Regional Center Community Plan is a regional strategy that lists parking enforcement as an incentive for attracting commercial, residential, and civic uses to the area. The Beaverton Transportation System Plan lists actions for meeting regional and state parking standards. The Regional Growth Management Plan contains the Regional Parking Policy, which addresses parking performance standards that jurisdictions must implement to meet state and federal requirements. The Model Development Code for Small Cities, on the other hand, is an example of code that jurisdictions could use to implement the Regional Parking Policy. The documents and Beaverton's compliance with the parking goals and requirements are described below.

4.3.1 Downtown Beaverton Regional Center Community Plan

The project study area is within the study area for the Downtown Beaverton Regional Center Community Plan²⁰. None of the goals, policies, or actions in the plan specifically address parking management strategies, although one action describes parking enforcement as a potential public investment in the area, as shown below.

Community Plan Goal 2: Create a Regional Center in Downtown Beaverton that is a focus for commerce, high density housing, and civic activities.

Policies:

a) Development in the Downtown Beaverton Regional Center shall be designed to create a distinct Beaverton downtown.

Action 2: Adopt incentives for new development in the Beaverton Regional Center that foster creation of a Downtown Beaverton as a distinct destination with a sense of place. Incentives could include public investments such as public art, parking enforcement, street furniture, and density bonuses.

4.3.2 Beaverton Transportation System Plan

The Beaverton Transportation System Plan describes goals, policies, and actions that guide future transportation system development in the city until 2020. The goals are brief guiding statements, whereas the policies describe the actions to implement the goals. The actions describe in detail how the city will implement the policies.

The Comprehensive Plan describes a policy and set of actions that address the need to limit parking. The goal, policy, and actions are as follows:

¹⁹ RW Consulting. 2006. Technical Memorandum A: Results of Beaverton Business Survey on Parking Demand. Prepared by RW Consulting, Portland, Oregon.

²⁰ City of Beaverton. 2005. Downtown Beaverton Regional Center Community Plan. Prepared by the City of Beaverton, Beaverton, Oregon.

6.2.4. Goal: An efficient transportation system that reduces the percentage of trips by single occupant vehicles, reduces the number and length of trips, limits congestion, and improves air quality.

b) Limit the provision of parking to meet regional and State standards.

Actions: Work to reduce parking per capita per Metro and State requirements, while minimizing impacts to neighborhoods. Implement the motor vehicle and bicycle parking ratios in new development. Develop and implement a Regional Center parking plan and a residential parking permit program as demand increases. Continue to implement shared parking and timed parking through new development and existing programs. Work toward implementing other parking-based transportation demand management strategies such as metered and structured parking to help achieve Metro's 2040 Non-SOV mode split targets.

Beaverton has implemented several of the actions listed in the Transportation System Plan. As described earlier in the chapter, the Beaverton Development Code includes vehicle parking ratios for new development and a residential parking permit program. The Beaverton Development Code also encourages shared parking, which will be discussed in Chapter 4.

Although Beaverton has implemented several actions, it has not implemented a Regional Center parking plan nor developed other parking-based transportation demand management strategies such as metered and structured parking. However, it should be noted that the goal of this parking solutions project is to identify demand management strategies that would be feasible in the project study area, thus coming closer to meeting the provisions of the regional and state standards.

4.3.3 Regional Growth Management Functional Plan

The Regional Parking Policy of Metro's Regional Growth Management Functional Plan addresses state and federal requirements for parking spaces by requiring cities and counties to amend their comprehensive plans and implementing regulations to meet or exceed specific performance standards. Specifically, the policy addresses Oregon's Transportation Planning Rule, Metro's 2040 Growth Concept, and the federally mandated air quality plan. The Transportation Planning Rule requires the reduction in vehicle miles traveled per capita and the restriction on construction of new parking spaces. The Metro 2040 Growth Concept encourages more compact development. Finally, the air quality plan calls for the reduction of vehicle trips per capita and related parking spaces through minimum and maximum parking ratios.²¹

In order to address the state and federal policies, the Regional Parking Policy establishes minimum and maximum parking ratios for specific land uses. The policy distinguishes between two districts when identifying the maximum permitted parking ratios to free surface parking spaces. Zone A is for areas where 20-minute peak hour transit service is available to an area within one-quarter mile walking distance for bus transit and one-half mile walking distance for light rail transit. In addition to minimum and maximum parking ratios, the Regional Parking Policy requires Zone A parking to have good pedestrian access to commercial and employment areas (within one-third mile walk) from adjacent residential areas. Zone B is to be applied to the rest of the region. The regional parking ratios are shown in Table 4-4.

²¹ Metro. 2006. Urban Growth Management Functional Plan. Available at: http://www.metro-region.org/library_docs/about/chap307.pdf. Accessed October 20, 2006.

Table 4-4. Regional Parking Ratios

(Section 3.07.220(A)(1))			
(parking ratios are based on spaces per 1,000 sq. ft of gross leasable area unless otherwise stated)			
Land Use	Minimum Parking Requirements (See Central City Transportation Management Plan for downtown Portland stds) Requirements May Not Exceed	Maximum Permitted Parking - Zone A: Transit and Pedestrian Accessible Areas ^a	Maximum Permitted Parking Ratios - Zone B: Rest of Region
General Office (includes Office Park, "Flex-Space", Government Office & misc. Services) (gsf) ^b	2.7	3.4	4.1
Light Industrial Park Manufacturing (gsf)	1.6	None	None
Warehouse (gsf; parking ratios apply to warehouses 150,000 gsf or greater)	0.3	0.4	0.5
Schools: College/University & High School (spaces/# of students and staff)	0.2	0.3	0.3
Tennis Racquetball Court	1.0	1.3	1.5
Sports Club/Recreation Facilities	4.3	5.4	6.5
Retail/Commercial, including shopping centers	4.1	5.1	6.2
Bank with Drive-In	4.3	5.4	6.5
Movie Theater (spaces/number of seats)	0.3	0.4	0.5
Fast Food with Drive Thru	9.9	12.4	14.9
Other Restaurants	15.3	19.1	23.0
Place of Worship (spaces/seats)	0.5	0.6	0.8
Medical/Dental Clinic	3.9	4.9	5.9
Residential Uses			
Hotel/Motel	1.0	None	None
Single Family Detached	1.0	None	None
Residential unit, less than 500 square feet per unit, one bedroom	1.0	None	None
Multi-family, townhouse, one bedroom	1.25	None	None
Multi-family, townhouse, two bedroom	1.5	None	None
Multi-family, townhouse, three bedroom	1.75	None	None

(Ordinance No. 97-715B, Sec. 1.)

^a Ratios for uses not included in this table would be determined by cities and counties. In the event that a local government proposes a different measure, for example, spaces per seating area for a restaurant instead of gross leasable area, Metro may grant approval upon a demonstration by the local government that the parking space requirement is substantially similar to the regional standard.

^b gsf = gross square feet.

The Beaverton maximum parking ratios are the same as the regional parking ratios. The Beaverton minimum parking ratios in the district are generally the same as the regional parking ratios, with the exception of retail/commercial (including shopping centers), fast food with drive thru, other restaurants, and places of worship. In all cases, the Beaverton minimum parking ratio for those uses is lower than the regional minimum parking ratios.

The Regional Transportation Plan states that cities and counties may exempt the following from maximum parking standards:

- parking spaces in parking structures
- fleet parking, parking for vehicles that are for sale, lease or rent

- employee car pool parking spaces
- dedicated valet parking spaces, spaces that are user paid
- market rate parking
- other high-efficiency parking management alternatives

The Regional Transportation Plan also requires Portland area jurisdictions to form transportation management associations, as appropriate. The work of the Westside Transportation Alliance in downtown Beaverton helps Beaverton meet this requirement of the Regional Transportation Plan.

In addition to the minimum required actions related to parking management strategies, the Regional Transportation Plan lists several optional parking management strategies to be considered and implemented, several of which are discussed below. Those strategies are:

- Parking pricing/parking meters
- Timed parking
- Subsidized parking structures in mixed use areas
- Preferential parking for carpools/vanpools/bicycles
- Shared parking
- Parking lot placement/building

4.3.4 Model Development Code for Small Cities

The *Model Development Code for Small Cities* is a tool that offers guidance on zoning, development standards, review procedures, and the implementation of state planning rules and statutes. The Oregon Department of Transportation's Transportation and Growth Management program created the Model Code to help small cities integrate land use and transportation planning and meet new legal requirements.

A portion of the *Model Code* provides a basic set of minimum parking standards that cities can use in their codes. The code lists several use categories (e.g., residential, commercial, industrial) and provides minimum parking requirements per land use. The minimum parking standards are based on the regional minimum parking ratios in Table 3-4.

4.3.5 Best Practices

As described above, Beaverton employs several parking management strategies in the project study area. However, there are several other strategies for managing parking that are not included in Beaverton's parking management strategy toolbox. For example, some jurisdictions (though few in the Portland metro area) collect fees for parking in downtowns, regional centers, and commercial areas. Parking meters and off-street parking structures are the most common fee collection mechanisms. Additionally, jurisdictions and transportation management associations have programs that encourage employers to eliminate parking subsidies and instead subsidize transit passes or use cash-out programs. Other programs include in-lieu of fees and transferable parking entitlements.

Below is a discussion on alternative parking management strategies, such as those listed above, that Beaverton could use in the study area.

4.3.6 Fees

Many municipalities use parking fees as a method for managing parking demand. They primarily assess parking fees in three ways – on-street metered zones, off-street publicly owned facilities, and off-street privately owned facilities. A report by RW Consulting for the City of Sacramento defines the three elements of parking fees as discussed below.²²

4.3.6.1 On-Street Metered Zones

In areas where the demand for parking access to public curb space is high, cities have moved to employ parking meters, which collect fees. Fees for parking at on-street meters accomplish the following objectives:

- Facilitate turnover at a desired rate.²³
- Manage demand (i.e., the higher the demand, the higher the fee) and disperse non-priority users to (a) other locations and/or (b) other access modes.²⁴
- Generate revenue to cover the cost of equipment, enforcement and on-going maintenance of the on-street system.
- Generate surplus revenue to support other goals and objectives (i.e., preferably transportation related goals and objectives within the area where the fees are collected).²⁵

4.3.6.2 Off-Street Publicly Owned Facilities

The function of fees in publicly owned off-street parking facilities should be “calibrated” with specific goals and objectives established for the facility. Ideally, rates and fees in publicly owned facilities are coordinated with the on-street system through the first 2 – 4 hours to support visitor/customer access demand in areas where visitor traffic is a priority.²⁶ Each parking facility should have specific policies developed for the facility that clarify both its near and long-term objectives. For instance:

- What is the primary intent of the garage (i.e., to serve short-term access demand, long-term commuter demand, event demand, or a combination of access needs)?

²² RW Consulting. 2005. Assess Parking Fees and Penalties. Prepared by RW Consulting, Portland, Oregon.

²³ The “desired rate” of turnover is generally based on assumptions of an appropriate time stay for a priority customer. For instance, a 90-minute meter assumes a desired turnover rate of 5.3 vehicles in an 8-hour period. A 3-hour-meter assumes a desired turnover rate of 2.7 vehicles over the same 8-hour period.

²⁴ Within the parking industry, fees are generally established using the 85% Rule as a threshold for determining market pricing. As such, if an inventory of parking consistently exceeds 85% occupancies, then increasing rates is a viable and low risk option. The greater the occupancy above 85% the more likely that an increase in rate is in order.

²⁵ This is not always the case. In some cities, meter revenue is allocated to general funds. This can lead to rate decisions not associated with the goals and objectives for access in the metered area.

²⁶ In other words, if the facility is primarily directed to commuter parking, attractive short-term hourly rates calibrated to on-street meter rates are not as important.

- What is the desired mix of uses for the facility?
- What are the primary land uses surrounding the facility and what is the role the facility should or should not play in supporting those land uses?

With clear goals and objectives developed, the functions of fees in public off-street facilities are similar to those for the on-street system. They include:

- Generate revenue to cover debt-service, facility maintenance and operations.
- Facilitate turnover at a desired rate.
- Manage demand (i.e., the higher the demand, the higher the fee) and disperse non-priority users to (a) other locations and/or (b) other access modes.
- Generate surplus revenue to support other goals and objectives (e.g., development of new facilities, support for alternative access modes).

4.3.6.3 Off-Street Privately Owned Facilities

It is very difficult and rare that a city would attempt to regulate fees or rates in privately owned facilities. To do so would have impacts on private financing of development. In general, private facilities in downtown areas establish rates and fees to serve longer-term/commuter based access. This is influenced by the private sector priority to provide parking at levels that are attractive and marketable for retaining and recruiting commercial tenants.

4.3.7 In-Lieu of Fees Programs

Some jurisdictions establish in-lieu of parking fees as an alternative to requiring minimum parking ratios. By paying in-lieu of fees, developers are able to avoid constructing the minimum required on-site parking spaces. Typically, the jurisdiction will deposit the fees in a specific fund to be used by the city to acquire and/or develop off-street parking. This type of flexible minimum ratio provides advantages to both planners and developers, such as:

- Overall construction costs may be reduced.
- Construction of awkward, unattractive on-site parking is avoided.
- Redevelopment projects involving historic buildings can avoid constructing parking that would compromise the character of the buildings.
- Planners can ensure that existing parking facilities will be more fully utilized.
- Planners can encourage better urban design with continuous storefronts that are uninterrupted by parking lots.²⁷

4.3.8 Eliminating Employer-Subsidized Parking

RW Consulting's recent survey found that the majority of businesses (82%) in the study area that maintain on-site parking allow their employees to use that parking. Metro's Evaluation of Potential Measures for Achieving Modal Targets maintains that "employer provision of free

²⁷ Forinash, Christopher and Adam Millard-Bell, Charlette Dougherty, and Jeffrey Tumlin. Date Unknown. Available at: http://www.urbanstreet.info/2nd_sym_proceedings/Volume%202/Forinash_session_7.pdf. Accessed on October 30, 2006.

parking to employees is often cited as an important reason why people to [sic] drive alone. Likewise, eliminating these subsidies has a strong correlation with a shift away from SOV travel to other modes of transportation.”

Parking subsidies, such as on-site parking, can be eliminated or altered in a few ways to discourage single-occupancy-vehicle trips. For one, subsidies can be altered by establishing commuter allowances, which allow an employee to use a certain amount of money each month on vehicle parking or transit. Subsidies can also take the form of “cash-out” options. Under this form of subsidy, the employer offers a cash equivalent to the subsidy if the employee uses other modes of travel. Additionally, parking facilities can offer lower rates for high-occupancy vehicles while charging single-occupancy vehicles the full rate.

According to Metro’s *Evaluation of Potential Measures for Achieving Modal Targets*, the effectiveness of the parking pricing strategies, such as employer-subsidized parking, varies. Surveys and parking occupancy data have shown that pricing public parking can reduce solo driving by 25 percent. Data on the effect of eliminating employer parking subsidies on single-occupancy vehicle trips is inconsistent. One study reports that eliminating the subsidies reduces single-occupancy vehicles mode share by 2.5 to 5 percent, whereas another study claims a reduction in single-occupancy trips by as much as 25%. Finally, the report indicated that employer parking subsidy for high-occupancy vehicles increased carpool use from 17 to 58 percent, while transit use declined by 10 percent.²⁸

4.3.9 Transferable Parking Entitlements

The City of Portland makes maximum parking requirements more flexible by using transferable parking entitlements. Under this program, a developer may transfer or sell the unused portion of the allowed number of parking spaces for a particular development to another developer.

4.4 ON-STREET ANGLE PARKING

4.4.1 Background

As a strategy to increase the available parking supply, many cities explore the conversion of parallel parking stalls to angle parking stalls. This conversion is often driven by the need for small downtowns to compete with suburban shopping malls, to provide immediately accessible parking to small businesses, and serves as a traffic calming technique often coinciding with the reduction in the number of lanes on the adjacent roadway.

The opposition to angle parking often arises from the one of the following two factors:

1. The desire to maintain higher street capacity (since the angle parking often consumes enough right-of-way to result in the loss of a travel lane).
2. The safety implications of having motorists back out into traffic when leaving their parking stalls.

Regarding safety, John D. Edwards wrote in the February 2002 ITE Journal: “Many statistics have been quoted comparing the relative accident rates of streets with and without angle on-street parking. Several studies conducted by the author indicate that while accident rates may

²⁸ Metro. 2005. *Evaluation of Potential Measures for Achieving Modal Targets*. Prepared by Cogan Owens Cogan and Alta Planning, Portland, Oregon.

be higher, the severity of the accidents are generally less; and, on low-speed, low-volume streets, accident frequency may not be statistically higher at all.”

Edwards continues with the following methodological guidance for communities that wish to consider the conversion of parallel stalls to angle stalls: “The process of changing parallel to angle parking must consider a number of factors related to the particular street where the change is being considered. These considerations should include area type, the classification or type of facility, street width, current traffic volumes, pedestrian activity, the type of land use, the availability of parking, the impact on adjacent street segments, transit operations and the potential changes in accidents.”

4.4.2 Assessment of Angle Parking Conversions

The following section applies the methodology described above to a cursory review of the significant factors that dictate the type of on-street parking that is suitable in the study area. A brief description of the relevant factors is followed by a preliminary assessment of how that factor relates to the provision of angle parking in Beaverton.

4.4.2.1 Area Type

Just as one would consider the type of area in the calculation of capacity or level of service, one must consider the area in the decision whether to change from parallel to angle parking. Traditional downtowns with closely spaced buildings, pedestrian activity on the street, low vehicle operating speeds and the general expectation of congestion are appropriate for angle parking; suburban areas or secondary strip districts on major traffic facilities are not.

The study area comprises a portion of traditional downtown Beaverton. The area includes small blocks, low-rise urban development, public transit, etc. Much of the area is an attractive, walkable shopping and services environment as is common in traditional downtowns. The area type is suitable for angle parking.

4.4.2.2 Street Width

Perhaps the single most important factor is street width. With parallel parking, a typical minimum width in a business area is 40 feet (ft.) (two 8-foot parking lanes and two 12-foot driving lanes), assuming two-way operation. For angle parking in a business area, a typical minimum width to consider is 60 ft. curb-to-curb with two parking lanes and two driving lanes. In reality, a more comfortable minimum dimension is 68 to 70 ft. (two 18-foot parking lanes, two 16-foot driving lanes). With one-way streets, the above dimensions can be reduced to 51 to 52 ft. if the number of parking and driving lanes is reduced accordingly. The angle of the stalls will determine the needed street width. Stalls that are 45 degrees to the curb require more street width than 30 degree stalls. Curb overhang is somewhat related to street width and the parking angle. Sharp parking angles (approaching 90 degrees) will have front parking overhangs over 2.5 ft., while flatter angles are 2 ft. This may reduce the usable width of sidewalks or increase the driving width.

In the study area, few of the blocks have the existing street width to enact two-sides of angle parking with merely a restriping project. The recommendations for further study, provided in the following section, are for areas which meet many of the criteria for angle parking. The identified streets lack sufficient width and would likely require a redesign of the entire right-of-way for implementation.

4.4.2.3 Parking Angles and Maneuvers

Just as parking angles have an impact on the effective sidewalk width and/or street width, they also impact parking and unpacking maneuvers. Ninety-degree parking or angles

approaching 90 degrees will encourage U-turns from lanes operating in the opposite direction, while flatter angles – 45 degrees or less – discourage this type of traffic maneuver.

Another consideration related to parking angle is the time needed to park and unpack. It is reported that the average time for a "back-in" maneuver for a parallel space is 21 seconds, while the time for a "drive-in" or "back-in" maneuver for an angled space is only 11 to 12 seconds; thus parallel parking has the greatest potential for delaying traffic. This may be another consideration in the decision on conversion to angle parking. A third consideration is the use of very flat angles (30 degrees or less) that may allow the front doors to swing free of the adjacent car. This can allow stall widths of less than 8.5 ft. Highland Park, Illinois, USA, implemented 8-foot angle parking stalls at very flat angles, which appear to work well.²⁹

Angling parking stalls can potentially provide greater parking capacity, but at the cost of consuming a greater portion of the street. In many cases, the additional street width needed by angled parking negates any benefits (even lowering overall capacity) by precluding parking on both sides of the street. For example, a 38 ft wide street could accommodate two 11 ft lanes, and an 8 ft parallel parking lane on both sides of the street. Assuming 200 ft wide blocks with 180 ft feet available for parking, this scenario would provide 18 parking spots (at 20 ft long each). If this parallel parking were converted to 30-degree angled parking, the total capacity would be reduced from 18 stalls to 11 stalls. While angling the stalls increases one side of the street's parking from 9 stalls to 11, the additional street width required by angle (15 ft versus 8 ft) does not allow parking on both sides of the street without removing one of the traffic lanes. Steeper angles (e.g., closer to 45 degrees) further increase the parking capacity of one side of a street but require correspondingly greater street width. Please refer to the figure inserts below for examples of angle parking developed for downtown Milwaukie, Oregon. These provide examples for further discussion and show how more specific impact analyses are required for issues including transit and freight hauler turning movements.

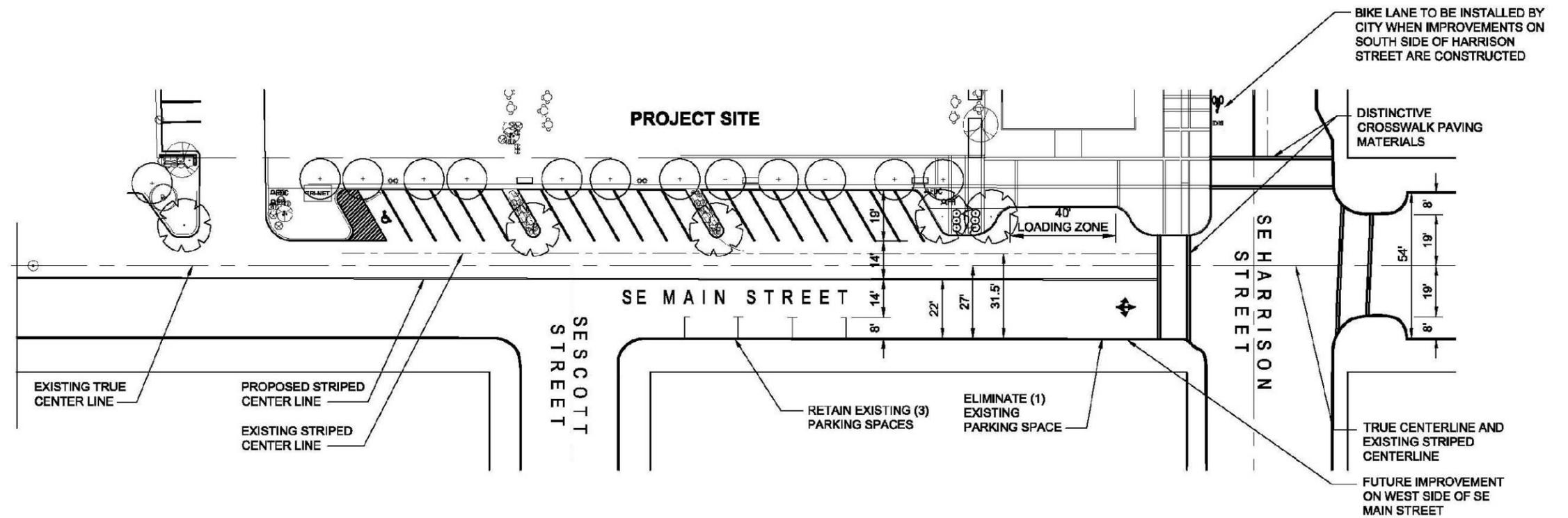
4.4.2.4 Operating Speeds

High operating speeds on downtown streets are a significant deterrent to pedestrian activity. Speeds in excess of 30 mph are considered unsafe by pedestrians and are a negative factor in the revitalization of retail districts. Angle-parking maneuvers dictate lower operating speeds due to the limited sight distance involved in unpacking from an angle-parking space. Therefore, posted and operating speeds must be lower. Posted speeds of 25 mph or less should be considered for streets with angle parking. This is consistent with desirable downtown operating conditions.

The three blocks studied in this analysis likely have speeds which could accommodate the angle stalls. If additional blocks are to be studied in the future, this data should be updated.

²⁹ Evans, 2002

Sample 1, Angle Parking Streetscape design treatment



Parametrix DATE: 11/17/04 5:28pm FILE: PO203002TF-03

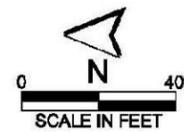
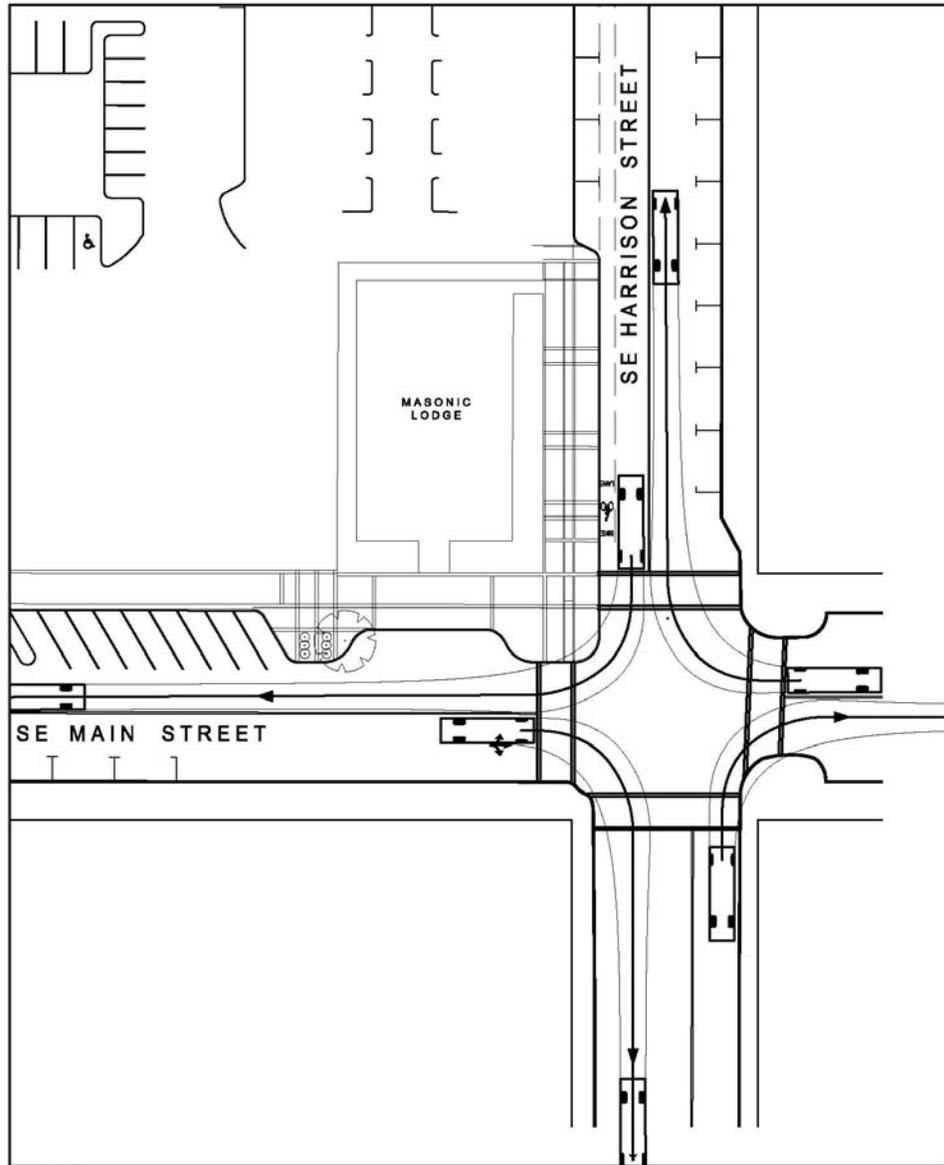
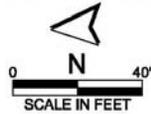


Figure T-2
Main Street Cross-Section
(North of Harrison)

This page intentionally left blank.



Parametrix DATE: 11/18/04 11:11am FILE: P02080021F-09



**Figure T-3
Main at Harrison
Single Unit Trucks, Right Turns**

Sample 2, Angle Parking Streetscape design treatment

4.4.2.5 Type of Land Use

The basic reason for changing parallel to angle parking is to make parking more convenient. Retail districts, with shopping and retail services as the primary use, are the areas where on-street parking is most important. The most successful changes from parallel to angle on-street parking have been where there are several contiguous blocks of primary retail use. Main

Street in Greenville, South Carolina is a good example of what can happen when traffic is diverted and angle parking replaces parallel parking. The result has been significant revitalization of the retail district. There, parallel "diversion" routes took care of traffic movement and Main Street was converted from a through street to a "shopping street."

Given that downtown Beaverton is a walkable area containing shopping and service uses, the land uses in the study area are suitable for angle parking.

4.4.2.6 Availability of Parking

The primary reason to convert from parallel to angle parking is to increase on street parking availability; however, in downtowns where a surplus of parking exists, there is little reason to implement angle parking. Frequently, an area that appears to lack short-term parking is simply an area where enforcement activity is low and long-term parkers are using on-street parking spaces. Before changes are made from parallel to angle parking, a parking turnover survey should be done to determine the character of parking use.

The study area currently has a surplus of parking spaces, indicating that without further justification, conversion to angle parking may not be warranted. As a mid-term strategy, the City could revisit the ability of angle parking to provide additional spaces.

4.4.2.7 Impact on Adjacent Street Segments

The introduction of angle parking will substantially reduce traffic capacity on a street. If that segment is part of a continuous route that has significantly higher capacity in adjacent segments, then care must be taken to divert traffic in the higher capacity segments before the angle parking segment is reached. This will impose higher traffic volumes on parallel streets; therefore, one should be sure adequate capacity exists or can be developed.

4.4.2.8 Transit Operations

In most traditional downtowns, transit operations are present on many of the downtown streets. In the conversion of parallel to angle parking, the presence of transit operations should be considered. This conversion may affect transit operations in several ways: (1) it may increase route time due to additional congestion; (2) it may make the conversion of parallel to angle parking on narrow street widths unfeasible; and (3) the presence of transit stops may reduce the number of potential additional spaces that might be gained with angle parking.

Within the study area, transit operations are prevalent, but not present on every block. However, this should be revisited as transit routes change. Portions of the other roads in the study area accommodate various bus routes and are also unsuitable for angled parking stalls because of buses' need for frequent stops next to sidewalks, additional width, and larger turning-circles.

4.4.2.9 Accident Frequency

As stated earlier, angle parking is usually associated with somewhat higher accident rates. While this may be statistically true, one must be careful not to overemphasize the accident potential because those accidents that do occur are likely to be minor in nature. Before any angle parking designs are developed, a detailed analysis of crash rates and types should be conducted.

4.4.3 Additional Research

The following resources provide a useful context for understanding the issues related to the use of angle parking.

Souleyrette, Reginald R, McDonald, Thomas J, and Tenges, Ryan. 2003. Angle Parking on Iowa's Low Volume Primary Extensions in Small Towns. Center for Transportation Research and Education; Iowa Department of Transportation. This study was undertaken to analyze operational and safety histories in the state of Iowa where various types of on-street parking have existed for many years, concentrating in particular on smaller communities. The authors concluded that there was no evidence that angle parking is less safe than parallel parking. Rather, it should be studied on a case-by-case basis for individual projects.

Edwards, John D. Main Street Parking Initiative. Institute of Transportation Engineers Journal, 11/2006 vol. 76, no. 11.

This study concluded that, with the increased interest and investment in downtowns, there is a need for re-engineering of traffic and parking facilities.

McCoy, T.A., McCoy, P.T., Haden, R.J., and Singh, V.A. 1991. Safety Evaluation Of Converting On-Street Parking From Parallel To Angle. Transportation Research Record No. 1327.

These authors reported on the conversion of parallel parking to angle parking in Lincoln Nebraska, noting that the conversions occurred on streets with enough room to accommodate the additional width required for angle parking through the removal of a traffic lane. They found that the increase in parking-related accidents resulting from the conversion was offset by the increase in parking activity, and that the severity of parking-related accidents did not change significantly..

4.4.4 Parking Assessment for Downtown Beaverton

Parking in cities, particularly central business districts such as downtown Beaverton, can be scarce yet highly desirable for commercial uses that cluster in these areas. The importance of street parking (real and perceived) is especially strong for small businesses in suburban downtowns that must compete with nearby shopping malls. As these areas grow, high land values, resultant development pressures, and desire for pedestrian and streetscape amenities compete with parking for space. While street parking is not currently a limitation for downtown Beaverton, it is prudent for the City to prioritize their goals for this area and plan for how to provide sufficient parking as their downtown develops further.

This paper documents the methodology and findings of a recent assessment of angle parking in downtown Beaverton. The City contracted this assessment to determine how parking could be maximized without disrupting or constricting existing transit, traffic, and pedestrian activity. Specifically, this assessment analyzed the potential for converting parallel parking stalls into angled parking to increase parking capacity on the following blocks:

- 1) 2nd Street between Lombard and Franklin,
- 2) 2nd Street between Hall and Watson, and
- 3) 1st Street between Watson and Stott

This area is part of the core of downtown Beaverton and was considered a useful representation of the City's central business district; it contains bus routes, varying street widths and classifications, and businesses reliant on street parking as well as those with onsite parking facilities.

For the purposes of this assessment, the primary factors used to determine the suitability of specific blocks for angle parking included street width, street classification, transit use, land use, and posted speeds. As noted above, street width became the limiting factor in the blocks for which angle parking was considered feasible. In cases where additional right-of-way is available, street width could be increased to accommodate angle parking. Street widths in the study area were estimated by interpreting paved road surface shown in aerial photography by geographic information system (GIS) software; these estimates were verified through site visits. Average distances between parcels across blocks were used to estimate right-of-way.

Based on the other factors utilized in this assessment, the subject blocks were determined to be feasible for angle parking. The blocks do not have existing pavement width for immediate restriping to angle stalls without losing both sides of parallel parking. However, if the additional width is to be taken from sidewalks, there are other policy and design implications.

4.4.5 Recommendations

Based on the above assessment, it is apparent that there are only a few potential opportunities to effectively employ angled parking spaces in the study area without compromising traffic flows or consuming space dedicated for other uses. For each segment, additional parking capacity is afforded by converting parking on one side of the street from parallel stalls to stalls at a 30-degree angle. The other side of the street would retain parallel stalls. The resulting increase in parking capacity is modest, with only 2 to 6 additional stalls (depending upon stall size) for each segment. Since these potential benefits are modest and parking is not currently a limitation in downtown, there is no immediate need to redesign any streets for angle parking. It would be best for the City to study the potential benefits in greater detail and consider converting parallel stalls to angle parking in concert with other streetscape improvement projects in these areas.

4.5 OPPORTUNITIES AND BARRIERS

Table 4-5 describes the opportunities and barriers for implementing the alternative parking management strategies in the Beaverton study area. This section is meant to support and summarize the key issues. Other sections of this chapter provide the details necessary for full evaluation of management options and for their implementation.

Table 4-5. Parking Management Strategy Matrix

Parking Management Strategy	Definition	Opportunities	Barriers and Constraints
Development Requirements			
Minimum Off-Street Parking Standards	Requires developers to create a minimum number of off-street parking spaces. The minimum number is typically based on building use.	Future off-street parking quantity is predictable.	Potentially could cause an abundance of off-street parking spaces.
Maximum Off-Street Parking Standards	Limits the number of off-street parking spaces that a developer can create. The minimum number is typically based on building use.	Prevents an excess of parking spaces.	
Carpool and Vanpool Parking Requirements	Preferential parking for high occupancy vehicles.	Promotes non single-occupancy vehicle trips.	Not efficient if spaces are required and no carpool users are in place.

Parking Management Strategy	Definition	Opportunities	Barriers and Constraints
Restrictions on Auto-oriented uses	Restricts the development of auto-oriented commercial uses.	Future off-street parking quantity is predictable.	Market conditions, land values.
Design Standards for Off-Street Parking	Provides standards for the location and design of off-street parking.	Existing standards are well crafted.	Can add cost to parking development.
Permit Parking District			
Permits Parking District	Allows a permitted vehicle to park in excess of the posted parking time limit along specified city streets and city-owned parking lots. Permitted vehicles typically belong to residents or employees in a parking district.	Retains parking for residents and employees.	Can create conflicts between users (i.e., employees and customers in commercial districts).
Transportation Management Association			
Transportation Management Association	Runs programs that support employees commuting to work by non single-occupancy vehicles. Typically an association of businesses and public agencies.	Provides support to businesses that would like to encourage employees to not use single-occupancy vehicles to commute to work. Assists business in meeting Oregon Department of Environmental Quality regulations.	TMAs need stable and on-going sources of funding.
Fees			
On-street metered zones	Parking meters collect fees for limited time parking on designated on-street parking spaces.	Facilities turn over at a desired rate. Manages demand (i.e., the higher the demand, the higher the fee). Disperses non-priority users to other locations and/or other modes. Generates revenue.	Prevents employees from using on-street parking. May deter customers if implemented in areas with low demand for parking. Business support.
Off-street Publicly Owned Facilities	Fees are collected in publicly owned parking facilities based on the amount of time a car uses the facility.	Generates revenue. Facilitates turnover at a desired rate. Manages demand (i.e., the higher the demand, the higher the fee).	May deter customers if implemented in areas with low demand for parking. Obtaining land to build parking facilities.
Off-street Privately Owned Facilities	Privately owned parking facilities provide parking for longer-term visitors and commuters.	Provides parking for employees. In comparison to short-term parking, it provides economical parking for long-term visitors.	May deter customers who want inexpensive, short-term parking. Difficult for a jurisdiction to regulate fees. Need market demand for privately owned facilities.

Parking Management Strategy	Definition	Opportunities	Barriers and Constraints
In-Lieu of Fees Programs			
In-Lieu of Fees	In-lieu of parking fees are alternatives to requiring minimum parking ratios. By paying in-lieu of fees, developers are able to avoid constructing the minimum required on-site parking spaces. Typically, the jurisdiction will deposit the fees in a specific fund to be used by the city to acquire and/or develop off-street parking.	Support economic development.	Current parking requirements and lack of fees in-lieu may impede development. Availability of land for shared parking facilities.
Eliminating Employer-subsidized Parking			
Commuter Allowances	Allows an employee to use a certain amount of money each month on vehicle parking or transit.	Incentive for attracting employees.	Employer participation. Requires the involvement of a transportation management association to administer the program.
Lower rates for High-occupancy vehicles	Parking facilities offer lower rates for high-occupancy vehicles while charging single-occupancy vehicles the full rate.	Encourages carpooling.	Perception of unequal parking rates. Enforcement for on-street parking.
"Cash-out" Options	Employer offers a cash equivalent to a parking subsidy if the employee uses modes of travel other than single-occupancy vehicles.	Rewards employees who use other modes of travel. Indirectly increases the supply of parking spaces for customers.	Perception of inequality by employees commuting by single-occupancy vehicles.
Transferable Parking Entitlements			
Transferable Parking Entitlements	A developer may transfer or sell the unused portion of the allowed number of parking spaces for a particular development to another developer.	Developments that require more than the maximum parking allowed may proceed. Developers that need less than the maximum parking allowed will benefit by selling their rights.	Administrative capacity to oversee the supply of parking. Potential for additional parking in undesired areas.

4.6 RECOMMENDATIONS

This Section presents a proposed parking management plan for Downtown Beaverton. The proposed plan strives to remain consistent with the Guiding Principles and give direction to future decision-making for the implementation of parking management strategies. These strategies are designed to assure priority access is maintained in each parking management zone. Overall, the plan is intended to provide a flexible system of parking management that is triggered by demand and implemented within the context of consensus goals and vision for the downtown.

The purpose of the parking management plan is to:

- Clearly define the intended use and purpose of the parking system,
- Manage the supply and enforce the parking policies and regulations,
- Monitor use and respond to changes in demand, and
- Maintain the intended function of the overall system.

5. ANALYSIS OF SHARED AND DISTRICT PARKING

5.1 BACKGROUND

The intent of this chapter is to describe shared and district parking strategies in the Beaverton study area and identify and analyze barriers to implementing these two strategies. Shared parking occurs when two or more uses with different parking peaks share a parking facility. A parking district allows residents and/or employees in an area to have special parking privileges.

This chapter will begin with a description of existing shared and district parking practices in Beaverton. The chapter will then address the local, regional, and state plans and policies on shared and district parking. A discussion of the best practices for implementing shared and district parking will follow, including consideration of revenue generation and business impacts. The project team has also made initial recommendations for parking solutions and suggest policy and stakeholder actions for implementing or amending shared and district parking codes and policies in Beaverton. The recommendations on shared parking are included in this chapter. The recommendations for districts were developed as part of memo #3, and are now part of the recommendations in Chapter 6.

5.2 EXISTING PRACTICES

Beaverton currently uses shared and district parking to manage parking supply and demand in its downtown. Below is a discussion of how the city uses and implements shared and district parking.

5.2.1 Shared Parking

The City of Beaverton allows two or more uses to share required parking spaces by completing a Shared Parking Determination. A Shared Parking Determination establishes the required number of off street parking spaces in advance of, or concurrent with, applying for approval of an application, development, permit, or other action.

In order to approve a Shared Parking Determination, the applicant must demonstrate that several criteria are satisfied, as listed below.

- The proposal satisfies the threshold requirements for a Shared Parking application.
- All City application fees related to the application under consideration by the decision making authority have been submitted.
- The location of the shared off street parking is on an abutting property and is within 200 feet of the subject use which the shared parking is intended to serve, except in Multiple Use zoning districts where the location may be at any distance.
- If multiple properties are involved, the owners of each of the properties has agreed to the shared parking by entering into a shared parking agreement.
- The time of peak parking demand for the various uses located on the subject properties occur at different times of the day.
- Adequate parking will be available at all times when the various uses are in operation.

- Applications and documents related to the request, which will require further City approval, shall be submitted to the City in the proper sequence.³⁰

Additionally, the City allows shared parking users to have a reduction in the minimum number of off street parking spaces. The Beaverton Development Code will allow a reduction of the minimum number of off street parking spaces by as much as 30 percent, subject to all of the following:

- The combination of uses will permit shared parking sufficient to justify a reduction in the parking standard and the design of the site and parking, and the conditions of operation of parking agreed to by the applicant, will promote parking patterns and parking use consistent with the permitted reduction;
- The probable long-term occupancy of the building or use, based upon its design, will not generate additional parking demand; and
- The applicant agrees to participate in a Transportation Management Association approved by the City for the subarea within which the project is located.

5.2.2 District Parking

Portions of the Beaverton project study area are within the Beaverton Downtown Permit Parking District. The portions of the project area within this parking district are bordered on the north by Canyon Road, on the west on Cedar Hills Blvd. from Canyon Road to Broadway, on Broadway from Cedar Hills Blvd. to Stott Ave., on Stott Ave. from Broadway to 3rd St., on the south on 3rd St. from Stott Ave. to Tucker Ave., on 2nd Ave from Tucker Ave. to Lombard Ave., and on the east on Lombard Ave. from 2nd St. to Broadway, and on Broadway from Lombard Ave. to Canyon Rd.³¹

The Beaverton Downtown Permit Parking District allows a permitted vehicle to park in excess of the posted parking time limit along specified city streets and city-owned parking lots. All of the permit parking streets and parking lots are located within the study area, except for one street.

A person is eligible to obtain a vehicle parking permit if the person currently resides or is an employee of a business within the parking district. Businesses located within the parking district can also obtain vehicle parking permits for its employees who work within the Beaverton Downtown Permit Parking District eligibility area. At the time of this report, parking permits are free for residents and cost \$30 per calendar year for district employees.

According to a recent survey by RW Consulting and Parametrix, most businesses (65%) that participated in the survey are not aware of the City's parking permit program. Just over a third (35%) are aware of the program.³²

Section 6.02.080 of the Beaverton Municipal Code enables the designation of a residential permit parking district or an amendment of an existing residential permit parking district.

³⁰ City of Beaverton. Beaverton Development Code (Chapter 40.55.15.2). Prepared by the City of Beaverton, Beaverton, Oregon.

³¹ City of Beaverton. 2005. Beaverton Municipal Code (Section 6.02.390). Prepared by the City of Beaverton, Beaverton, Oregon.

³² Parametrix/ RW Consulting. 2006. Technical Memorandum A: Results of Beaverton Business Survey on Parking Demand. Prepared by RW Consulting, Portland, Oregon.

This section states that a designation of a residential permit parking district or amendment to an existing district requires the following findings:

- The boundary of the proposed residential permit parking district or amendment to an existing district includes one or more public streets and all properties abutting the street(s) to be shown by a text description and a drawing.
- At least 75% of the available parking spaces on the public streets within the proposed district boundaries are occupied at least four days per week for at least 16 weeks in any 52-week period. If parking spaces are not marked, the City shall determine the number of available parking spaces.
- Designation of a residential permit parking district or an amended designation will not diminish traffic safety, substantially increase vehicle miles traveled, or cause occupancy of available parking spaces in any adjacent residential area to rise to the levels stated above in item 2 of this subsection.
- A survey conducted by the City shows that persons representing the owners of at least two-thirds of all residential properties within the district have responded in favor of the proposal.³³

5.3 LOCAL, REGIONAL, AND STATE PARKING DEVELOPMENT REQUIREMENTS

There are few local, regional, and state parking plans and policies that address shared and district parking goals and requirements. The Regional Growth Management Functional Plan contains the Regional Parking Policy, which addresses parking performance standards that jurisdictions must implement to meet state and federal requirements. The Model Development Code for Small Cities, on the other hand, is an example of code that jurisdictions could use to implement the Regional Parking Policy. Beaverton's compliance with the parking goals and requirements are described below.

5.3.1 Beaverton Transportation System Plan

The Beaverton Transportation System Plan also describes goals, policies, and actions that guide future transportation system development in the city until 2020. The goals are brief guiding statements, whereas the policies describe the actions to implement the goals. The actions describe in detail how the city will implement the policies.

The Transportation System Plan describes a policy and set of actions that address shared and district parking, as follows:

- 6.2.4. Goal: An efficient transportation system that reduces the percentage of trips by single occupant vehicles, reduces the number and length of trips, limits congestion, and improves air quality.
 - b) Limit the provision of parking to meet regional and State standards.

Actions: Work to reduce parking per capita per Metro and State requirements, while minimizing impacts to neighborhoods. Implement the motor vehicle and bicycle parking ratios in new development. Develop and implement a Regional Center parking plan and a residential parking permit program as demand increases. Continue to implement shared parking and timed parking through new

³³ City of Beaverton. 2005. Beaverton Municipal Code (Section 6.02.080). Prepared by the City of Beaverton, Beaverton, Oregon.

development and existing programs. Work toward implementing other parking-based transportation demand management strategies such as metered and structured parking to help achieve Metro's 2040 Non-SOV mode split targets.³⁴

Beaverton has implemented several of the actions listed in the Transportation System Plan. As described earlier in this chapter, the city code encourages shared parking. The Beaverton Development Code also implements a parking permit program in the downtown.

5.3.2 Downtown Beaverton Regional Center Community Plan

The project study area is within the Downtown Beaverton Regional Center Community Planning area. The Downtown Beaverton Regional Center Community Plan is part of the Beaverton Comprehensive Plan, and describes policies, goals, and action statements for the development of the downtown regional center. None of the goals, policies, or actions in the plan specifically address shared or district parking.

5.3.3 Regional Growth Management Functional Plan

The Regional Parking Policy of Metro's Regional Growth Management Functional Plan addresses state and federal requirements for parking spaces by requiring cities and counties to amend their comprehensive plans and implementing regulations to meet or exceed specific performance standards. Specifically, the policy addresses Oregon's Transportation Planning Rule, Metro's 2040 Growth Concept, and the federally mandated air quality plan. These policies and goals identify the burden of required parking for small businesses, and recognize the value of shared parking agreements to new businesses. These policies also support the construction of parking structures in regional and town centers. Through the establishment of parking districts, financing, fees, and other management techniques can be designed to raise revenues that will help fund new parking structures. The Transportation Planning Rule requires the reduction in vehicle miles traveled per capita and the restriction on construction of new parking spaces. The Metro 2040 Growth Concept encourages more compact development. Finally, the air quality plan calls for the reduction of vehicle trips per capita and related parking spaces through minimum and maximum parking ratios.³⁵

The Regional Parking Policy recommends that cities and counties count adjacent on-street parking spaces and shared parking toward required parking minimum standards. As described above, Beaverton allows uses to count shared parking toward required parking minimum standards.

5.3.4 Model Development Code for Small Cities

The Model Development Code for Small Cities is a tool that offers guidance on zoning, development standards, review procedures, and the implementation of state planning rules and statutes. The Oregon Department of Transportation's Transportation and Growth Management program created the Model Code to help small cities integrate land use and transportation planning and meet new legal requirements.

A portion of the Model Code provides sample code text for shared parking facilities:

³⁴ City of Beaverton. 2003. Transportation System Plan. Available at: <http://www.beavertonoregon.gov/departments/CDD/ComprehensivePlan/vol4/compplanvol4.html>. Accessed October 20, 2006.

³⁵ Metro. 2006. Urban Growth Management Functional Plan. Available at: http://www.metro-region.org/library_docs/about/chap307.pdf. Accessed: October 20, 2006.

“Required parking facilities for two or more uses, structures, or parcels of land may be satisfied by the same parking facilities used jointly, to the extent that owners or operators show that the need for parking facilities does not materially overlap (e.g., uses primarily of a daytime versus nighttime nature; weekday uses versus weekend uses), and provided that the right of joint use is evidenced by a recorded deed, lease, contract, or similar written instrument establishing the joint use. The City may approve owner requests for shared parking through Land Use Review.”

Although Beaverton does use a Shared Parking Determination to establish the required amount of parking by two or more uses sharing a parking facility, the Beaverton Development Code does not require that uses show no overlap in parking demand or prepare a shared use agreement.

5.4 BEST PRACTICES

As described above, Beaverton uses shared and district parking to manage parking in their downtowns. Although the Cities’ codes and policies allow and sometimes implement shared and district parking, the cities could improve the effectiveness of these two management strategies by following existing best practices. Below is a discussion of best practice recommendations for shared and district parking.

5.4.1 Shared Parking

In a 2000 study of neighborhood parking in Seattle, KJS Associates outlines recommendations for a shared use agreement, as follows:

Shared parking arrangements are generally unique to each site. Time of day/day-of-week requirements, financial terms (if applicable), signage/access restrictions and maintenance/operations standards vary within each agreement. Given this, it is recommended that the City prepare a checklist of agreement criteria that parties to a shared use agreement can use to facilitate development of an agreement.

Critical elements of a shared parking agreement include:

- Specific space commitment (number of spaces).
- Specific uses allowed (for instance: use by customers and/or employees/residents).
- Specific time frame that spaces can be used (hours of the day, days of the week).
- Specific terms related to when vehicles cannot use the space (this is of particular importance to residential uses of commercial space).
- Considerations (monetary and/or other considerations paid for the use of the spaces), including billing and collections (who pays and how money is collected and delinquencies handled).
- Considerations (upgrades to the facility and responsibility for providing such).
- Signage, etc. (who’s responsible; how to communicate availability to authorized users).
- Term of agreement (for a specific term).
- What happens when shared parking agreement expires (renewable, cancelable, requirement to find replacement parking to meet code requirements, etc.).

- Enforcement mechanism (how to insure spaces are available and that spaces are being used for agreed-to purpose)³⁶.

5.4.2 District Parking

Different segments of the downtown have different economic uses and represent different points of access into the downtown. The Guiding Principles developed through the parking study process emphasize that the central core of downtown is an area in which the highest density of economic activity and access is intended to occur. There are also distinct areas of the downtown with differing levels/types of desired economic activity. The desired uses in a particular area of downtown should drive the decision making for the type of parking required.

Parking districts also have the ability of generating revenue for the construction of future garages. This is most easily accomplished in a paid parking environment where a percentage of revenues will continue to go toward the on-going maintenance and enforcement of the existing parking system, and the remaining percentage would be invested in a “parking development fund” dedicated to the expansion and enhancement of the parking environment (i.e., building additional supply, preferably in revenue-generating structures). This can also be accomplished to a lesser degree by applying the same principles to on-street parking permits, specifically in non-residential parking districts. Similarly, any increase in parking enforcement fees should have a significant percentage of the increase obligated to the parking development fund.

In Beaverton, the recently completed parking demand analyses have found there to be a surplus of parking in the study area. A surplus, and a large number of private, no-fee lots will make it difficult to generate significant amounts of revenue for the construction of a garage. As mentioned above, a parking permit program can also be used to generate revenue. However a permit program designed to protect residential users will likely be seen as a new burden, having to get annual permits and manage guest parking. To add to that burden with a high fee may not be acceptable.

5.5 RECOMMENDED PLAN AND POLICY AMENDMENTS AND STAKEHOLDER ACTIONS

This section summarizes the proposed plans related to shared and district parking, which are described in more detailed in Chapter 3. The proposed plans strive to remain consistent with the Guiding Principles and give direction to future decision-making for the implementation of parking management strategies. These strategies are designed to assure priority access is maintained in each parking management zone. Overall, the plan is intended to provide a flexible system of parking management that is triggered by demand and implemented within the context of consensus goals and vision for the downtown.

The purpose of the parking management plan is to:

- Clearly define the intended use and purpose of the parking system,
- Manage the supply and enforce the parking policies and regulations,
- Monitor use and respond to changes in demand, and

³⁶ KJS Associates. 2000. Comprehensive Neighborhood Parking Study: Determine Locations for Shared Parking. Prepared for the City of Seattle, Seattle, Washington.

- Maintain the intended function of the overall system.

As noted in Chapter 3, it is recommend that the city implement several near-, mid-, and long-term strategies for optimizing the use and accessibility of existing parking in downtown Beaverton. One mid-term (by October 2009) strategy specifically addresses shared parking and is described below.

Negotiate shared use and/or lease agreements with owners of strategically placed private surface lots and parking structures to provide for an interim supply of parking where needed.

One hundred twenty six private parking facilities were inventoried during the data survey. These lots are located throughout the study zone and are significantly underutilized, even during peak times (i.e., less than 45 percent occupied). These lots comprise approximately 2,000 stalls and are generally without signage or have signage that is inconsistent and confusing to customers and visitors. The ability of the City to “capture” as many of these stalls as are available in the peak hour for more active management will provide a relatively low cost and effective near to mid-term strategy for mitigating existing access constraints during peak demand periods.

It is recommended that the City:

- a. Initiate an effort to work with owners of private lots to enter into shared use agreements to allow underutilized parking to be made available to customer/visitor or employee uses (as appropriate).
- b. Explore the development of incentives to encourage such agreements (i.e., signage, landscaping, lighting, sidewalk improvements, leasing, etc.).

5.5.1 District Parking

There are two recommended parking management zones for downtown Beaverton, one for the core zone and one for the area surrounding the core, the “emerging core” zone. These zones were derived from the stakeholder outreach process and informed through work and analysis completed in the data collection and inventory elements of the scope of work. These two zones are described in detail in Chapter 3 as parking management Zones A and B.

In short, Zones A and B represent “economic activity zones” in the downtown that are both reflective of existing land uses, in addition to being areas where future growth of specific economic development is anticipated and desired. Zone A is designed for the study area/downtown core, while the emerging areas are considered part of Zone B. From an access perspective, each zone will need to be managed in a manner that supports priority uses and users identified for that zone. As the shape and character of development in the downtown evolve, so too must the zones that help guide their management. Over time, management zones should be refined and redrawn to reflect the characteristics of development and uses appropriate to each zone. Chapter 3 in detail the operating principles and guiding frameworks for implementing the two parking management zones for downtown Beaverton.

This page intentionally left blank.

6. DOWNTOWN STRUCTURED PARKING EVALUATION AND RECOMMENDATIONS

6.1 BACKGROUND

This chapter identifies and evaluates opportunity sites in the Beaverton study area for the conversion of parking lots and other uses to parking structures.

Structured parking can increase the parking supply in a more compact fashion than a series of surface parking lots. In addition, consolidating surface parking into a parking structure introduces the opportunity to incorporate active ground floor uses. Well designed parking structures can create a more active street presence than surface parking lots through the inclusion of pedestrian-serving ground floor uses. Parking structures should be well designed in order to contribute to, rather than detract from, the downtown urban form and the pedestrian environment.

This chapter identifies recommended opportunity sites in each study area and evaluates the existing conditions and potential regulatory or ownership issues for each site. Pro formas are provided for each site along with potential financing mechanisms and revenue sources. In addition, a work program is provided to guide future development of structured parking within the study area.

6.2 EXISTING ZONING AND DEVELOPMENT REQUIREMENTS

The City of Beaverton designates all of the study area as Regional Center – Old Town (RC-OT). This district encompasses the City’s original downtown and is intended to “maintain the mix of uses, scale of development, and appearance that are characteristic of this historically significant area while supporting existing and future businesses in moving toward and achieving the vision of a Regional Center.” Within this district, parking as a principle use is permitted subject to approval of a Conditional Use.

Most streets in the RC-OT district are designated as Class 1 Major Pedestrian Routes, which are routes used by pedestrians to access public transportation including light rail or transit stations. The City’s Development Code requires building frontages along Major Pedestrian Routes to have active first floor commercial uses. Section 60.05.20 of the Code specifically applies this requirement to parking structures; the entire frontage must have active retail or commercial uses.

Building heights within the RC-OT zone are limited to 30 feet, or up to 60 feet with approval of an adjustment or variance. In addition, the Code specifies that the height of buildings along Major Pedestrian Routes shall be a minimum of 22 feet and a maximum of 60 feet. Buildings along Major Pedestrian Routes have no required setbacks, and cannot be set back more than five feet along the front frontage. Non-residential or multiple-use buildings in the RC-OT zone are required to have a minimum floor area ratio (FAR) of 0.35, with no maximum FAR specified.

The City of Beaverton requires Design Review for all Conditional Uses in multiple-use zoning districts. More specifically, Design Review Two is required for any new or change to existing on-site vehicular parking, maneuvering, and circulation area which adds paving or parking spaces. Design Review Three is required for new construction exceeding 50,000 gross square feet of floor area, or 30,000 gross square feet of floor area if abutting a residential zone. Design Review is intended to conserve the City’s visual character by discouraging “monotonous, drab, unsightly, dreary and inharmonious development.”

New development or redevelopment in multiple-use zones is required to meet specified design review principles, guidelines, and standards intended to guide the development of the built environment and the effect of that development on surrounding uses. The code does not provide specific guidance for the design of parking structures; however, such development would be required to comply with the general provisions as part of the Design Review. Among other things, these provisions govern building design and orientation, which should enhance the visual character of the area and create a pedestrian-friendly environment. Circulation and parking design should be “safe and convenient, connect to surrounding neighborhoods and streets, and serve the needs of development.” The standards and guidelines address several issues relevant to construction of a parking structure such as building articulation, roof forms, lighting, pedestrian circulation, and ground floor uses in parking structures.

6.3 DEVELOPMENT OF NEW PARKING SUPPLY

Information from the parking and utilization study indicates that the current supply of parking is very underutilized. Parking in the Core Zone (Zone A) is generally only 40 - 45% occupied in the peak hour, both on- and off-street. Parking in Zone B is also not yet fully maximized, with overall peak hour occupancies in the 40% range as well. In a status quo environment, it is estimated that the entire study area will not reach an 85% utilization rate in the peak hour for many years. Nonetheless, the parking utilization study was able to quantify parking demand that would be associated with new development at approximately 1.85 to 2.13 stalls per 1,000 gross square feet.

Downtown Beaverton’s growing core area will ultimately require development of new parking supply. The timing for adding supply is contingent on a number of factors, which include:

- New development and its associated parking demand.
- Losses of existing parking supply through redevelopment.
- Normal growth in customer, visitor, residential, and employee demand.
- Implementation of parking management strategies.
- Implementation of Transportation Demand Management (TDM) strategies.

To facilitate Beaverton’s ability to move forward in planning for and financing future parking supply, the consultant team undertook a review and evaluation of possible structured parking opportunity sites and development scenarios.

6.4 OPPORTUNITY SITES

For purposes of this review, the consultant team identified two opportunity sites for structured parking, one each in Zones A and B of the study area. These sites are proposed for the purpose of evaluating the potential for structured parking to serve the study area in the future. Inclusion in this chapter does not indicate that a formal decision about whether or where to build a parking structure(s) has been made. These sites present opportunities based on their proximity to downtown activity centers and/or civic uses, public transit, and pedestrian travel networks.

6.4.1 Site 1 (Zone A)

Addresses:	12320 SW 2nd St, 12370 SW 2nd St, 4755 SW Tucker Ave, and 4770 SW Hall Blvd
Location:	Block bounded by SW 2nd St, SW Tucker Ave, SW 3rd St, and SW Hall Blvd
Property ID:	W294953, W294952, W294975, and W294976
Block:	B36 on the Parking Study Inventory Map
Size:	Approximately 30,000 square feet
Zoning:	Regional Center – Old Town

6.4.1.1 Existing Conditions

The first opportunity site is the block bounded by SW Hall Boulevard, SW 2nd Street, SW Tucker Avenue, and SW 3rd Street, located in the southeast sector of Zone A. The approximately 30,000 square-foot site is located directly north of the Beaverton Library and City Park, which includes a farmer’s market from May through October. Hall Boulevard is a major route through the area and connects to the shopping area along Broadway Street.

The site currently contains a surface parking lot as well as residential and commercial uses. All properties are in private ownership, and would require acquisition by the City in order to construct a parking structure. The block narrows toward 2nd Street, creating a somewhat challenging configuration for the design and function of a parking structure.

All streets in this area are designated as Major Pedestrian Routes, and therefore, the parking structure would be required to include commercial uses on the ground floor. The requirement for active ground floor uses also poses a potential financial constraint. Inclusion of such uses is highly desired and recommended in order to create a more engaging pedestrian-friendly streetscape. Ground floor uses help to avoid monotonous architecture often associated with parking structures. However, it should be recognized that the inclusion of ground floor uses typically increases construction costs. The RC-OT zoning district restricts building heights to 30 feet; heights up to 60 feet may be granted with approval of a variance.

6.4.1.2 Development Scenario

The potential parking structure scenario for this site consists of a 343-stall parking facility with four parking levels. As this site is privately owned, the pro forma should be viewed as a “prototype” facility that could be located at any similarly sized site within the study zone. The site currently has 18 stalls of surface parking, so this scenario would result in a net increase of 325 stalls in parking supply for the downtown.

The lot is not rectangular and therefore is slightly smaller than other Old Town lots, but should be large enough for a parking structure of reasonable size. Since the streets surrounding this block are shown as Major Pedestrian Routes, all first floor frontages of a structure would need to have commercial uses. The facility would include 15,000 square feet of ground level retail or active commercial use. Because such a facility is located in the RC-OT zone, the facility would likely exceed the 30-foot maximum building height standard. As such, a facility of this type would require a variance.

All parking would be on four levels, averaging approximately 86 stalls per level. The facility would be a freestanding parking facility with the retail frontage abutting the lot line on all streets fronting this site. This would require a higher end façade design and materials component. The retail component and the higher end design result in a higher per stall development cost.

6.4.2 Site 2 (Zone B)

Addresses:	12875 SW 2nd St, 12855 SW 2nd St, 13000 SW 2nd St, 12870 SW 1st St, 12820 SW 1st St, and 4605 SW Main St.
Location:	Block bounded by SW 2nd St, SW Main St, SW 3rd St, and SW Stott Ave
Size:	Approximately 40,000 square feet
Property ID:	W303342, W303345, W303349, W303324, W303326, and W303328
Block:	B31 on Parking Study Inventory Map
Zoning:	Regional Center – Old Town and R10: Urban Low Density

6.4.2.1 Existing Conditions

The second opportunity site encompasses the block bounded by SW 2nd Street, SW Main Street, SW 3rd Street, and SW Stott Avenue, located in the western sector of Zone B. The western half of the block is currently occupied by a 24-space surface parking lot owned by the Beaverton School District. Privately owned commercial uses occupy the remaining portions of the block. The fact that a portion of the site is owned by a public entity creates an opportunity for a joint public project. However, the remaining portions of the site are in private ownership and would have to be acquired by the City.

The site is adjacent to Beaverton High School to the west and the Beaverton Swim Center to the south. A shared structure at this location would address parking needs for the High School during school hours and special events, while also serving the needs of the surrounding area as it redevelops to higher densities over time. A parking structure at this location would serve these public uses more than it would tie into shopping and entertainment areas such as Broadway Street.

The majority of this site is zoned RC-OT; however, the western portion of the block is zoned R10: Urban Low Density. This zone is intended for low density residential development with provision of full urban services. Public buildings and other structures are allowed as Conditional Uses; a Director's Interpretation may be necessary to ascertain whether a public parking structure would be allowed. As this site includes and abuts residentially zoned land, the level of required design review is affected by the square footage of the proposed structure.

SW 2nd Street and SW Main Street are identified as Major Pedestrian Routes. Any future parking structure on this site would therefore be required to incorporate first floor commercial uses along these frontages. As noted previously, the city should consider the potential financial implications of such uses. The RC-OT zoning district restricts building heights to 30 feet; heights up to 60 feet may be granted with approval of a variance. The R10 zone allows a maximum building height of 30 feet.³⁷ This zone also requires front and rear building setbacks of 25 feet, and side setbacks between five and nine feet.

The split zoning on this site may pose a potential barrier to the development of a parking structure, as such a use is not specifically identified as allowable in the R10 zone. The different height and setback requirements also pose difficulties. Should the City choose to proceed with a structure at this location, it may be advisable to rezone the site as RC-OT to maintain consistency with the surrounding study area.

³⁷ According to the City, it should be assumed that the maximum building height for the entire block is 60 feet, because the R10 part of the block will eventually be zoned RC-OT and that height can be achieved in the RC-OT zone through a variance. That would allow for a four-story structure on the property, as is assumed for Site 1. Costs for additional parking that would come with a taller facility would add between \$48,701 and \$49,494 per stall (see Table 5-1, below).

6.4.2.2 Development Scenario

This is assumed to be a 343-stall parking facility constructed on a 40,000 SF site. The site is currently not under City ownership, so the pro forma should be viewed as a “prototype” facility that could be located at any similarly sized site within the study zone. The facility would include 17,500 square feet of ground level retail or active commercial use. Because such a facility is located in the RC-OT zone, this scenario limits the facility to 30 feet to meet the City’s maximum building height standard.

The site currently has surface parking lots with a combined total of 58 spaces, so the net increase in parking supply for the downtown would be 285 stalls. All parking would be on 3 levels averaging approximately 114 stalls per level. The facility would be a freestanding parking facility with the retail frontage abutting the lot line of the site along both 2nd and Main Streets. This would require a higher end façade design and materials component. The retail component and the higher end design would result in a higher per stall development cost.

6.5 CURSORY REVIEW OF TRAFFIC CONDITIONS

A review of available traffic related materials, primarily the City Transportation System Plan (TSP), was conducted. This traffic information is useful in providing a background of operations for the street network adjacent to each site reviewed. The elements reviewed include road functional classification, presence of bicycle and pedestrian facilities, designation as truck or transit route, and roadway capacity calculations.

6.5.1 Site 1

This site fronts on a variety of classified streets. Tucker and 3rd Street are local access, while 2nd Street is a neighborhood route. Hall Blvd fronts the west side of the site and is classified as an arterial roadway. Hall Blvd is served by multiple transit lines and is designated as regional access bikeway and truck route. In 2020 Hall Blvd is expected to exceed available capacity during the 2-hour peak. To the east of the site Lombard Avenue, a collector roadway, provides connectivity to Farmington Road as well. This roadway is expected to function within acceptable standards in 2020. The site is served by sidewalks and is within an RTP-designated Pedestrian District and Transit/Mixed Use Corridor. The adjacent intersections are not signalized.

6.5.2 Site 2

Four streets front on the proposed site. Main Avenue and 2nd Street are classified as neighborhood routes, while 3rd Street and Stott Avenue are local streets. As neighborhood routes these streets are intended to provide access in and out of neighborhoods. None of the frontage streets are designated bikeways or transit routes. The site is served by sidewalks, and a trail exists along the west side of Stott Avenue adjacent to the school/swim center site. The adjacent intersections are not signalized. The streets access the arterial/collector network at Watson Avenue, which is designated as an arterial street that functions as a one-way couplet with Hall Blvd. In 2020 Watson Avenue is expected to exceed available capacity during the 2-hour peak.

This cursory review of traffic related materials provides the background conditions for each site under consideration and informs potential operational issues. Specific designs for each site will require further review and additional analysis.

6.6 FINANCIAL FEASIBILITY AND COSTS

Detailed pro forma work sheets for each parking development scenario are located in Appendix E. All assumptions for construction costs/financing, equity, demand, revenue generation, and parking operation expenses are based on information from comparable parking projects recently developed in Oregon and additional input from the City and Stakeholder Advisory Committee members. A summary of findings from the pro forma analyses is given below.

6.6.1 Key Assumptions

As with any pro forma exercise, changes in assumptions, or variations in construction costs over time, can significantly affect outputs. This analysis is intended to present a reasonable assessment of costs associated with parking development and estimates of operating costs and potential revenue generation. Moving forward to actual development of a facility would require additional refinement of the work provided here.

Key assumptions underlying the analysis included:

- A standard garage format was evaluated (i.e., multi-storied garages with ground level retail/active uses). Lesser cost “tuck under garage” formats could be pursued in the future, but would create issues related to design, ground floor active use requirements, and achieving the desired density and consolidation of parking assumed in this study.
- Total number of stalls constructed under each scenario was 343 (Zone A and Zone B).
- Land values are not included.
- Actual direct construction costs of \$103.75 per square foot of garage area for a freestanding facility with ground floor retail and high quality urban design components.
- Operating costs derived from Pacific Northwest comparables and national data base averages.
- No revenue assumptions for parking were made at this time pending more detailed discussion by the City and stakeholders on the most appropriate package of funding strategies to pursue for the future support of downtown parking structures.
- The pro forma models prepared for the City contain data fields that will calculate the impact of rate structures and demand once more formal funding decisions have concluded. [NOTE: A summary of revenue/funding options is provided below.]
- Retail rents were estimated at \$5.40 per foot annually, based on comparables for retail in each facility.

Table 6-1 provides a comparison of the two development scenarios and the basic elements of each one.

**Table 6-1. Parking Development Scenarios^a
Pro forma Assumptions^b**

	Scenario 1 Zone A – With Ground Level Retail	Scenario 2 Zone B – With Ground Level Retail
Site size (square footage)	30,000 SF	40,000 SF
Retail Square footage	15,000 SF	17,500 SF
Annual Rent per Square Foot	\$5.40	\$5.40
Number of Total Parking Stalls	343	343
Number of Parking Levels	4	3
Number of “net” new parking stalls	325 ^c	285 ^d
Land Cost	\$0 ^e	\$0
Construction Cost – Parking (Hard)	\$12,455,188	\$12,455,188
Construction Cost – Retail (Hard)	\$1,350,000	\$1,575,000
Additional Construction Costs (Soft)	\$2,899,089	\$2,946,339
Total Project Cost	\$16,704,277	\$16,976,527
Base cost per parking stall	\$36,313	\$36,313
Total cost per stall to construct (with soft costs)	\$48,701	\$49,494
Assumed Rate of Finance/Term	4.5% @ 20 years (publicly funded)	4.5% @ 20 years (publicly funded)
Assumed Monthly Parking Rate	\$0	\$0
Hourly and Daily Rates	None	None
Net Annual Operating Income: Before Debt Service	- \$2,282 ^f	- \$14,588 ^g
Annual Debt Service	- \$1,268,154	- \$1,288,823
Net Annual Operating Income: After Debt Service ^h	- \$1,270,436	- \$1,274,235
Annual Net Income Per Stall/Monthly Net Income Per Stall	- \$3,703 - \$309	- \$3,715 - \$310
Monthly Revenue Necessary to Break Even: Per Stall ⁱ	\$308	\$310

^a The table depicted here represents an industry best estimate of development costs of structured parking in Beaverton. This is not intended to represent a final pro forma for development. This exercise is intended only to facilitate discussion of the feasibilities of structured parking.

^b The pro forma scenarios are not intended to be representative of final construction costs for a specific parking project or a final operating format (i.e., mix of monthly, hourly, and daily users). They represent best-case estimates of costs associated with a possible parking development. These costs are based on financing and operating assumptions derived from comparable projects in other jurisdictions and active input from the City of Beaverton and area stakeholders. Overall, the purpose of the pro forma analyses was to test various options and to develop a solid foundation for the planning and financing of future parking supply. New assumptions and additional information can be input into the draft pro forma models as necessary.

^c The current site maintains 18 surface parking stalls. A 343-stall garage would therefore net 325 stalls.

^d The current site maintains 58 surface parking stalls. A 343-stall garage would therefore net 285 stalls.

^e As stated in Footnote ^a, above, land values in the study zone range from \$3 - \$23 per foot. If land were to be included in an amended pro forma assessment, it is recommended that an average of \$15 per foot be used (pending the outcome of any partnerships that might occur between the City and a private property owner).

^f All revenue for this scenario is associated with retail rents derived from the ground level rentable area annualized at 10 years.

^g All revenue for this scenario is associated with retail rents derived from the ground level rentable area annualized at 10 years.

^h Annualized at 10 years, thereby representing an average annual operating income. In the detailed pro forma for these scenarios (attached to this report) expenses are assumed to increase at about 3% annually.

ⁱ Revenue per stall necessary to cover all costs (operations and debt service).

6.7 PRO FORMA FINDINGS (PARKING STRUCTURE DEVELOPMENT)

- Average construction cost per stall came to \$36,313. This is a higher end number associated with a garage with retail located at the lot line, thereby requiring additional costs related to retail and the façade design. Lower construction numbers are possible for garages of lesser design and exterior quality.
- Fully loaded (with indirect and other development costs) per stall costs range from \$48,701 (Zone A) to \$49,494 (Zone B).
- Retail adds between \$1.35 - \$1.58 million to total construction costs, exclusive of soft costs.
- One scenario nets revenue (before debt service) for retail uses (Zone B). Retail revenue after operating costs is estimated to be between \$2,282 and \$14,588 annually.
- Both scenarios assume that land costs will be provided as equity to the project. If land costs were added, the associated cost of development would increase accordingly.
- Cash flow after debt service ranges from \$1,270,436 to \$1,274,235 annually.
- “Market” monthly parking rates would need to be in the range of \$308 - \$310 per month to break even, if parking charges were assumed necessary to cover the debt financing and operating costs of these facilities.
- All scenarios assume public financing at 4.5% over 20 years.
- With public financing, no property tax expenses are included.

Given the negative cash flow after debt service identified in the pro forma analyses, the pursuit of a publicly initiated garage project will require additional revenue beyond current status quo resources. The parking management strategies outlined in the broader parking study recommend that a process begin in the near to mid-term to identify those sources of revenue to ensure that development of new parking supply occur in a timely manner.

It is important to note that none of the pro forma scenarios assume that parking charges are in place in the garages. This provides a clear bottom line estimate of the total cost of a given garage scenario before revenue and funding options are determined, which is part of a larger community discussion within the recommended parking management plan.

Given that all parking in the downtown is currently provided free of charge and occupancies are well below the 85% threshold, discussion of issues related to pricing structures, assumed rates of turnover, durations of stay and how they would translate into a “market rate” revenue stream is premature and speculative at best. Nonetheless, as the City, its Parking Committee, and the community move forward with an evaluation of future public garage projects, implementing paid parking will be a key discussion item for consideration. Paid parking, combined with other funding/revenue options will need to be pursued (see Potential Revenue Sources and Most Viable Options for Beaverton, below). Before pricing can be assessed and accurately modeled there will need to be a commitment to limiting and enforcing time stays on street and, possibly, implementing paid parking on-street to support the imposition of rates off-street.³⁸

³⁸ The decision to move to paid parking in the downtown would be informed by the 85% occupancy standard discussed and recommended in the larger parking management plan for downtown developed for this study.

Currently, few (if any) suburban cities in the Portland Metro area charge for parking. A few charge off-street rates for monthly permits (usually employee parking), ranging from \$15 - \$45 per month. Examples of smaller towns/cities (not necessarily in the Portland area) that do charge include Bend, Oregon, which has free on-street parking but charges between \$20 and \$50 for off-street permit parking. Hood River, Oregon charges \$0.30 per hour on-street and \$20 - \$35 off-street. Vancouver, Washington charges \$0.30 - \$0.50 per hour on-street and \$60 - \$75 per month for off-street permits. In these example cities, parking averages \$300 - \$1,080 per stall annually (assuming a blending of on- and off-street parking charges). For purposes of illustration, this revenue range could be contrasted to the negative Annual Net Income Per Stall numbers for the two scenarios in Table 5-1, above (i.e., -\$3,703 to -\$3,715 per year per stall). From this perspective, the need to develop multiple garage funding options is further reinforced.

6.8 POTENTIAL REVENUE SOURCES

The fiscal challenges of parking, transportation, and economic development in the downtown area are common to many communities across the country. Rapid changes in development patterns of the past thirty years have significantly altered the urban landscape, and many downtowns have had to revisit the services provided and the revenue sources used to provide them. In most instances, communities use a combination of funding sources to cover transportation capacity needs. A review of several models used in other jurisdictions provides a basis for discussing funding options for the public parking system. It is clear that implementation of one or more of the revenue sources described below will be necessary to assure the feasibility of future structured parking in the downtown.³⁹

This list of potential sources is not necessarily exhaustive, as other communities have used yet additional sources – which may or may not be applicable to Beaverton’s situation. Nor are these sources intended to be mutually exclusive. Funding for parking facilities often requires application of multiple sources – for what might be considered as layered financing.

A. Options Affecting Customers

On-Street Parking Fees – Many cities elect to collect on-street revenues through parking meters and/or sale of permits.

Monthly Parking Fees – Many cities sell monthly parking passes to downtown employees within public facilities. Net revenues would be allocated to a parking facility fund. Revenues are also used to support debt service of existing facilities.

Event Surcharges – Could be encompassed in public facilities district legislation providing for automobile parking charges in conjunction with regional center facilities. Fees are generally buried in the cost of event ticketing.

Parking Fine Revenues – Collected for violations related to overtime and improper parking, and illegal parking in handicapped spaces. Parking fine revenue can be dedicated to a parking district fund for use in covering debt, maintenance and/or marketing, and communications. Beaverton should consider dedicating any net new revenues from parking fine increases to a parking enterprise fund for future parking development.

The revenue generation potential of user fees could be significant and could support expenditures in a Parking Fund. It is important however, that the revenue generated from

³⁹ This list of funding options is not intended to be all-inclusive, but rather a sampling of mechanisms in use in other jurisdictions for the purpose of developing public parking supplies.

these sources be collected into the Parking Fund to reinvest into the parking system. User fees are in place in many jurisdictions. They are most successful when set up to cover specific projects/programs. Portland's Rose Quarter Arena parking garages were underwritten through a fee charged to every ticket sold for events at the complex.

B. Options Affecting Businesses

Parking & Business Improvement Area (BIA) – Businesses pay for parking through an assessment based on parking demand. If a business provides spaces associated with their property, it is credited for the spaces by reducing the assessment. The amount of the tax is based on the demand for spaces. The Parking District assessment is computed by dividing the total revenue required to operate and administer a Downtown Parking District for each fiscal year by the total parking demand by the business uses (i.e. retail, office, etc.) in the Downtown Parking District. Salem, Oregon uses this method.

C. Options Affecting Property Owners

Business Improvement District (BID) – A BID assesses businesses or buildings in a specific geographic area to pay for program development or capital improvements such as parking. Property owners or businesses within the BID contribute money based on an assessment to a fund that is normally managed by a non-profit agency. Several cities in Oregon have formed BIDs to promote downtowns and main street districts, including Portland, Eugene, Gresham, and Medford.

BIDs can be funded through a variety of sources. The most straightforward source is an assessment based on building value or business square footage. Commonly, the City or a non-profit organization can implement property management license fees that are managed. The costs of BIDs vary depending on the reach of the plan and the businesses that join. Typically, commercial BID members pay ten to fifteen cents per square foot.⁴⁰

Local Improvement District (LID) – A well-established mechanism whereby benefiting property owners are assessed to pay the cost of a major public improvement (including parking). A LID is a property tax assessment that requires "buy-in" by property owners within a specifically identified boundary. LIDs usually result as a consequence of a petition process requiring a majority of owners to agree to an assessment for a specific purpose. LIDs are a common funding tool used by municipalities in Oregon.

D. Options Affecting Developers

Fee-in-Lieu – Usually an option given to developers to pay the local jurisdiction an "in-lieu" fee as a way to opt out of providing parking with a new development (usually the fee-in-lieu option is associated with minimum parking standards). Fees-in-lieu can range from a fee assessed at less than the actual cost of construction, to the full cost of parking construction.

Public / Private Development Partnerships – Public parking can be an effective tool to facilitate downtown development.

Development partnerships are most likely found with mixed-use projects where parking is used to reduce the costs of jointly developed private offices; retail or residential use(s) and/or the private development can serve to defray some of the public cost in developing parking.

⁴⁰ *The Livable City: Revitalizing Urban Communities*, Partners for Livable Communities, Washington D.C., 2000.

Public / private development can occur through a variety of arrangements including:

- (1) Public acquisition of land and sale or lease of land/air rights not needed for parking to accommodate supporting private use.
- (2) Private development of integrated mixed-use development with sale or leaseback of the public parking portion upon completion – as a turnkey project.
- (3) Responsibility for public sector involvement directly by the City, through a public development authority (PDA), or other special purpose entity such as a public facility district created for the project or downtown area.

System Development Charges (SDC) – System development charges (SDC) are generally a fee charged to new development based on a “trip generation” formula for use types (i.e., hotel, residential, commercial). New developments are assessed the SDC based on the impact of new development on existing transportation system capacity. Charges are directed to specific projects with the intent to use funds collected to add new capacity to an area impacted by development. SDC fees are used in many Oregon jurisdictions for funding roadway capacity and signalization systems.

E. Options Affecting the General Public

Unlimited Tax General Obligation (UTGO) Bonds – These bonds require voter approval and are secured by, and usually paid from, property taxes levied upon taxable property in the City. These bonds may be used to develop parking facilities. Because these bonds authorize the City to impose an unlimited property tax to pay the bonds, they are considered the strongest credit of the City and lowest cost source of financing.

Oregon statutes limit the amount of UTGO bonds that Oregon cities may have outstanding to three percent of the real market value of taxable property within its boundaries. However, this limitation does not apply to bonds issued for the “acquisition, establishment, construction or reconstruction of any off-street motor vehicle parking facility” (ORS 287.004(4)).

Limited Tax Bonds – These bonds are secured by the full faith and credit of the City, but unlike UTGO bonds, do not require voter approval and do not authorize the City to levy additional taxes to pay debt service on the bonds. Debt service on these bonds may be paid from the City’s general fund or from other revenues pledged by the City. Where the bonds are intended to be paid from non-general fund revenues (such as parking fees), the general fund may act as backup credit support in order to strengthen the security behind the bonds and reduce borrowing costs.

Refinancing Limited Tax Bonds – Involves refinancing existing debt and pushing the savings from the general fund to debt coverage for a new parking facility.

Revenue Bonds – Pledging parking fees and other designated revenue sources to the repayment of bonds, but without the need to pledge full faith and credit of the issuing authority. Revenue bonding is most appropriate where historic and projected parking revenues are sufficient to pay the projected debt service on the bonds with some additional cushion known as “debt service coverage”.. Interest rates on parking revenues bonds are typically higher than UTGO or Limited Tax Bonds due their weaker security. **63-20 Financing** – Identified as a potential alternative to traditional GO bond, revenue bond and LID bond financing. 63-20 financing (after the IRS Revenue Ruling 63-20) allows a qualified non-profit corporation to issue tax-exempt bonds on behalf of a government. Financed assets must be “capital” and must be turned over free and clear to the government by the time that bonded indebtedness is retired.

When a municipality uses this technique to finance a public facility, it can contract for the services of a non-profit corporation (as the “issuer”) and a builder. The issuer acts on behalf of the municipality, but has no real business interest in the asset being acquired.

State and Federal Grants – In the past, a variety of state and federal grant programs have been applied to funding downtown parking structures.

General Fund Contribution – During the fiscal year the City can use monies from the General Fund to support both operating and/or construction costs associated with parking development. The transfers may either take the form of a grant or an interfund loan that must be repaid (the terms of which vary on the purpose of the funds).

City Sales Tax – A sales tax implemented in a specific geographic zone based on retail sales. Apparently, the City of Roseburg, Oregon implements such a tax.

Use of Urban Renewal Funds to make Capital Improvements – Many Oregon cities operate urban renewal districts to finance projects that give the City urban renewal powers. Garages in Portland and Bend have been directly funded from urban renewal funds.

6.9 MOST VIABLE OPTIONS FOR BEAVERTON

From this review of potential parking funding options, several concluding observations are offered as a basis for selecting the most viable options for parking facilities that may be considered by the City of Beaverton:

1. Tailor the funding program to the downtown redevelopment and policy objectives to be served by the proposed public parking facility. In particular, address the question of whether and to what degree fees from parking revenues can or should be expected to cover operating and/or debt service expenses.
2. Of the two principal assessment methods available in the state of Oregon, the LID mechanism is generally preferred for capital development with BIA useful to generate funding for operations and marketing. LIDs offer improved marketability to investors with greater assurance of debt repayment. LID financing can be used as one component of a revenue bond without the need for GO bond backing (and drawing down the available debt capacity of the city). Finally, LIDs offer the advantage of a more established precedent of successful application throughout the state of Oregon.
3. If funding of capital costs requires bonding, revenue bonding is typically preferred by a public agency because the taxing jurisdiction’s debt limits are not affected. However, unless utilization and revenue projections (including sources such as LID) are strong and predictable enough to not only cover debt service and operations but also provide a coverage cushion, the reality is that GO backing may be required.
4. Look to public-private partnerships as a means to better use public parking to leverage downtown redevelopment, assure utilization of the parking facility being developed, and offer financial savings. However, public-private partnerships require clear understanding of the financial feasibility and risks associated with a particular project as well as the public costs and benefits that can be expected.
5. Recent legislative measures serve to strengthen the impetus for downtown redevelopment and create additional flexibility in implementation. However, they appear to offer little new in the way of additional revenue sources that can be dedicated to development and operation of public parking facilities. Because these mechanisms also are largely untested (legally and administratively), they should be considered as supplemental resources rather than the mainstay for securing financially feasible public parking developments – for at least the immediate future.

The City of Beaverton and its stakeholders will need to review the list outlined above and evaluate those options most conducive to, and supportive of, the Guiding Principles and operating vision established for the downtown. It should be noted that, in the case of public parking facility development, the use of multiple funding sources represents the rule rather than the exception for public financing.

6.10 WORK PROGRAM

Although it is unlikely that parking demand within the study area will dictate the need to develop parking structures in the near term, the City can begin taking steps now to plan for that eventuality. The most immediate need is to select funding mechanisms appropriate for Beaverton to ensure that a revenue stream will be in place when the City is ready to construct a structure. In addition, since the identified opportunity sites are privately owned, the City should begin to consider opportunities to acquire them or similarly situated sites. Table 5-2 outlines short-, mid-, and long term action items related to the development of parking structures.

Table 6-2. Parking Structure Action Items

Short-Term Actions 1 Year	Mid-Term Action 2 to 4 Years	Long-Term Actions 5 Years and Beyond
Evaluate parking revenue options and select mechanisms appropriate for Beaverton	Develop and implement a package of financing options	Lease or acquire sites for the development of parking structures
Establish a downtown parking and transportation enterprise fund as a mechanism to direct funds derived from parking over time into a dedicated fund	Identify and complete planning for possible development of new public visitor parking supply in zone A Pursue opportunities as they arise to acquire sites for the development parking structures ^a Identify any needed street improvements and/or traffic enhancements	Complete development and open parking structures in zone A

^a Provisions resulting from the recent passage of Ballot Measure 39 may place limitations on the ability of local governments to use eminent domain to acquire private land to build public facilities that would be leased for private sector use, such as first floor retail in a parking structure. It may be possible to do this under Measure 39, but legal advice should be sought before moving forward with an effort to build future publicly owned parking on what is currently private land(s).

6.11 SUMMARY

It is apparent that as Downtown Beaverton grows, so too will demand for parking. Numerous events and trends can work to accelerate or moderate the need for new parking supply, including: new development, increased per capita driving, losses of current parking supply on surface lots, parking and transportation demand management programs, and/or other events

The current parking market in downtown Beaverton suggests that a new parking structure will require additional sources of revenue beyond parking fees. To this end, the process for considering how a new parking facility will eventually be developed in the downtown needs to be initiated if the downtown is to be prepared to meet future demand and support existing business' continued growth. Similarly, a "package" of funding options will need to be

developed and implemented. This process is recommended as a near to mid-term strategy in the overall parking management plan for the downtown.

7. PARKING MANAGEMENT STRATEGIES

I. PARKING MANAGEMENT PLAN

Different segments of the downtown have different economic uses and represent different points of access into the downtown. The Guiding Principles developed through the parking study process emphasize that the central core of downtown is an area in which the highest density of economic activity and access is intended to occur. There are also distinct areas of the downtown with differing levels/types of desired economic activity.

1. Parking Management Zones

The desired uses in a particular area of downtown should drive the decision making for the type of parking required.⁴¹ Parking, then, becomes a management tool that supports specific economic uses. Implementation of parking management strategies in publicly controlled parking supply is supportive of the economic development plan for the City of Beaverton and its downtown.

Figures 7-1 and 7-1A show two recommended parking management zones for downtown Beaverton, one for the core zone and one for the area surrounding the core, the “emerging core” zone. These zones were derived from the stakeholder outreach process and informed through work and analysis completed in the data collection and inventory elements of the scope of work. These two zones are described below as parking management Zones A and B.

In short, Zones A and B represent “economic activity zones” in the downtown that are both reflective of existing land uses, in addition to being areas where future growth of specific economic development is anticipated and desired. From an access perspective, each zone will need to be managed in a manner that supports priority uses and users identified for that zone. As the shape and character of development in the downtown evolve, so too must the zones that help guide their management. Over time, management zones should be refined and redrawn to reflect the characteristics of development and uses appropriate to each zone.

Each recommended zone is summarized and its primary purpose and priority outlined below.

⁴¹ It is also important to assure that parking in specific zones is managed to be consistent and supportive of current uses, as well as to anticipate new uses as called out in adopted planning and vision plans.

Figure 7-1. Recommended "Core" Parking Management Zone (Zone A)



making and strategy implementation are based over time. As 85 percent occupancy triggers⁴² are activated, these principles and framework guidelines will help future decision-makers through strategy development. Strategies will then be implemented to address specific demand and capacity issues in a manner appropriate to that particular point in time. In this manner, the parking management plan remains fluid and adaptable to changing conditions as the downtown develops and grows.

ZONE A - Core Zone

The core zone of downtown is intended to be the area that attracts the highest density of use and trip generation, and will have a high concentration of retail, restaurant, and entertainment opportunities.

1. Operating Principles (Zone A)

*The primary purpose of parking in Zone A is to serve patron and other short-term visitor needs and support desired economic uses in the zone.*⁴³

- The purpose and priority for publicly owned parking in Zone A is to support and enhance the vitality of the retail core.
- Parking for short-term users is the priority for publicly owned on-street and off-street spaces in Zone A.
- Employees will not be allowed to park on-street in Zone A.
- Over time and as demand increases, employees should be discouraged from parking in publicly owned off-street facilities in Zone A, thereby preserving these resources for patrons.
- Parking will be provided to ensure safe, convenient, economical, and user-friendly access for customers, clients, and visitors to downtown at all hours of the operating day (i.e., weekdays, evenings and weekends).
- All on-street parking in Zone A will be regulated (i.e., time stay and enforced).
- Off-street pricing in publicly owned facilities, particularly for employees, will be reflective of actual occupancies in public facilities. Higher occupancies will result in higher monthly parking costs. Underutilized facilities will charge lower monthly rates.
- On-street pricing (if necessary) will be reflective of actual occupancies in the zone.

2. Implementation Framework (Zone A)

- A. All on-street parking will be 2-hour parking based on the following principles:
1. The 2-hour time stay allows adequate customer, visitor and client access to the retail core based on actual usage data derived for the Beaverton downtown.

⁴² Within the parking industry, it is assumed that when an inventory of parking shows more than 85 percent occupancy in the peak hour, the supply becomes constrained and may not provide full and convenient access to its intended user.

⁴³ A “patron trip” is defined as any trip to the downtown with a duration of less than four hours. Patrons, then, include retail shoppers, visitors, vendors, event goers, clients of public and commercial office and guests of residential units.

2. Uniform time stays foster a parking environment that is easy for the customer, visitor and client to understand.
 3. A specific time stay allowance creates an integrated system between on and off-street resources, encouraging/directing longer term visits into off-street facilities or another parking zone.
 4. Exceptions to 2-hour time stays are appropriate only for very specific business types (see E, below) and strategically managed loading and delivery needs.
- B. The overall priority for **on-street parking** in Zone A will be 2-hour parking. As strategies within this plan are implemented, any on-street spaces of longer duration will be transitioned to off-street locations within the core and immediately adjacent to it.
- C. The priority for **off-street parking in publicly owned parking facilities** in Zone A will be stays of less than 4 hours to accommodate customers, visitors and clients. These facilities are intended to provide for a reasonably longer time stay than allowed on-street. In the long term, employee parking in public core lots/garages is to be discouraged and will be managed using the 85% optimum occupancy standard. Over time, employee parking in publicly owned off-street facilities should be directed to private facilities within the zone, public facilities outside the zone or in satellite/remote parking areas, or to alternative modes of access (transit, bike/walk, ridesharing). It may take a number of years to reach this point.
- D. The City will conduct regular utilization and capacity studies to ascertain the actual peak hour utilization and average turnover of parking resources in the core area. If utilization of on and/or off-street parking in Zone A exceeds 85 percent and turnover meets desired rates, the City will evaluate and implement one, or a combination of, the following implementation steps “triggered” by the 85 percent threshold:
- Increase level and/or duration of enforcement to assure desired rate of turnover and minimize/eliminate abuse (i.e., exceeding time stay, moving to evade).
 - Transition overall mix of parking time stay allowances to a higher percentage of 2-hour stalls to increase patron turnover and encourage use of off-street locations for stays of longer duration.
 - Expand the boundaries of Zone A outward into Zone B to capture additional on-street parking opportunities at stays of 2 hours.
 - Reduce on-street time stays in the zone to increase turnover (e.g., 2 hours to 90 minutes) as appropriate.
 - Evaluate potential areas where on-street parking can be added or increased (i.e., additional angled parking).
 - Transition employee parking in Zone A public lots/garages (that exceed 85%) to underutilized garages/lots in the zone or into other parking zones or remote locations. This can be accomplished through manipulation of rates and/or attrition and/or elimination of monthly permits issued for long-term parking in facilities exceeding 85%.
 - Pursue shared-use agreements with private lots to provide for additional short-term and employee parking in Zone A.
 - Pursue implementation of valet programs (e.g., in partnership with restaurants) to enhance customer/visitor access by shuttling cars to areas with available capacity.

- Initiate and/or increase rates for off-street parking (hourly, daily and monthly rates) to create greater efficiency in actual rate of turnover, provide incentive to use other modes, and create a potential revenue source for new supply.
 - Convert some or all signed time limits (on-street) to metered time limits to create greater efficiency in actual rate of turnover and to create a potential revenue source for new supply. Initially, areas for metering could be “nodal based,” representing “sub-zones” where occupancies are significantly in excess of 85%.
 - Increase non-SOV use above status quo levels (i.e., transit service and fare programs, ridesharing, bike/walk, programs for shuttles, etc.).
 - Create new public supply in Zone A.
- E. The City will establish policy guidelines for exceptions to the on-street short-term parking requirements in Zone A. Exceptions would be evaluated/granted through an application process through which businesses would make specific requests to the City for time stays less than 2 hours.

Handicapped/disabled access (above ADA required)

- 1) 15 - 30 minute zones
- 2) Specific criteria for approval (i.e., by specific business type)
- 3) Specific locations (i.e., end of block versus mid block)
- 4) Number per geographic area (i.e., shared by users in a particular area)

Loading zones

- 1) Maximum number per block face(s)
- 2) Limitation on number per geographic area (e.g., no more than two for every three continuous block faces)
- 3) Evaluation of opportunities for shared loading and customer parking

ZONE B – Emerging Core Zone

Zone B, the emerging core zone, includes a mix of development types, with a relatively higher proportion of office, civic, and professional services (i.e., City Hall area). Expansions of the economic land use characteristics of Zone A are expected and desired to occur in Zone B.

1. Operating Principles (Zone B)

The City’s goal is to continue to encourage the mixed-use development of this zone, particularly as it supports the retail core. As such, on street parking in Zone B is intended to transition over time to serve short-term parking needs and the desired land uses in this zone. In the interim, surplus parking in the zone can be effectively utilized to meet unmet long-term demand.

- Most (if not all) on-street parking in this zone will be transitioned to serve short-term, visitor parking. Off-street parking will continue to provide a mix of short and long-term stay opportunities.
- Underutilized on-street parking in this zone will be made available to employee and/or long-term parking.

- Over time, on-street parking will reflect a balanced mix of short and long-term stay opportunities. All on-street long-term parking may eventually require transition into off-street supply. This may take several years.
- Off-street parking in this zone is intended to provide convenient and cost-effective employee parking supply as a measure to preserve higher access opportunities for customer and patron use in the Core Zone (Zone A).

2. Implementation Framework (Zone B)

- A. The majority of on-street parking will be 3-hour parking, with an appropriate mix of longer-term parking based on capacity considerations (i.e., 85% Rule). This is based on the following principles:
 1. This mix of parking is conducive to both customers and employees and longer term visitor parking for the downtown.
 2. There is adequate on-street capacity in the zone to meet both short and long-term parking demand.
 3. The current economic uses in the zone do not as yet require the type of turnover ratios necessary in Zone A.
 4. The issuance of on-street employee parking permits will be allowed until such time as the 85% occupancy standard is routinely exceeded, requiring transition of such parking into off-street locations.
- B. In the long-term, the overall priority for on street parking in Zone B will be 2-hour parking. As strategies within this plan are implemented, long-term parking (time stays and permits) will be transitioned to off-street locations within the Zone B and immediately adjacent to it. This may take several years to accomplish based on the low level of current (2006) parking demand.
- C. The priority for off-street parking in Zone B will be mixed-use parking to accommodate the full range of users, including employees, customers, visitors and clients. These facilities are intended to provide for a range of time stay opportunities.
- D. The City will conduct regular utilization and capacity studies to ascertain the actual peak hour utilization and average turnover of parking resources in Zone B. If utilization of on and off-street parking in this zone exceeds 85 percent and turnover meets desired rates, the City will evaluate and implement one, or a combination, of the following implementation steps “triggered” by the 85 percent threshold:
 - Increase level and duration of enforcement to assure desired rate of turnover and minimize/eliminate abuse (i.e., exceeding time stay, moving to evade).
 - Increase mix of on-street short-term (2-hour) time stays to increase turnover.
 - Transition block faces adjacent to Zone A from longer-term parking (on-street) to 2-hour parking, thereby expanding Zone A.
 - Pursue shared-use agreements with private lots to provide for additional parking in Zone B or adjacent areas.
 - Transition on-street employee parking in Zone B into available off-street locations within the parking zone or “satellite locations.” This would be accomplished through reduction/elimination or pricing of monthly permits issued for parking in on-street locations.

- Increase non-SOV use by employees (i.e., programs for shuttles, transit, ridesharing).
 - Meter/charge for parking (on and/or off-street) to create greater efficiency in actual rate of turnover and to create a potential revenue source for new supply.
 - Create new mixed-use public parking supply within or adjacent to the zone.
- E. The City will establish policy guidelines for exceptions to the on-street short-term parking requirements in Zone B. Exceptions would be evaluated/granted through an application process through which businesses would make specific requests to the City for handicapped/disabled access (above ADA required), quick stop parking, and loading zone access.
1. Handicapped/disabled access
 2. 15 - 30 minute zones
 - a. Specific criteria for approval (i.e., by specific business type)
 - b. Specific locations (i.e., end of block vs. mid-block)
 - c. Number per geographic area (i.e., should be shared by users in a particular area)
 3. Loading zones
 - a. Maximum number per block face(s).
 - b. Limitation on number per geographic area (e.g., no more than two for every three continuous block faces).
 - c. Evaluation of opportunities for shared loading and customer parking.

II. AMENDMENTS AND ACTIONS

As a result of the data inventory process and continuing discussions with the City and stakeholders, specific parking management strategies have been identified and are recommended for implementation. Recommendations for changes in current policy/code and several near-term strategies will optimize the efficiency of the existing parking inventory in downtown Beaverton. Additional mid- and longer-term strategies are also recommended for consideration.

Mid- and long-term strategies should be incorporated into a process through which such strategies are evaluated within the context of operating principles and zone-based implementation frameworks. Nonetheless, it is believed that all the strategies recommended in this report would assist the City to more effectively manage its parking supply.

These recommendations are organized as follows:

- Policy Level Actions
- Recommended Parking Management Strategies: Near-, Mid- and Long-Term

A. POLICY LEVEL ACTIONS (Immediate Implementation)

The following policy elements have been included to ensure the goals of the parking management plan can be achieved by incorporating parking system management into the City's development policy. Application of the 85 percent occupancy standard as the threshold for decision-making becomes the unifying monitoring device connecting these various policy elements. Formalizing the policy recommendations assures that the life of the parking management plan extends beyond the first round of strategy implementation. As such, it is

recommended that the Policy Recommendations be adopted immediately by the City of Beaverton.

1. Assign the responsibilities of a “Parking Manager/Coordinator” for the City of Beaverton.

The complexity of parking and access will increase as the City and the downtown grows through redevelopment and increased demand for access. A single person should be assigned to oversee and manage all aspects of the parking program associated with Zones A and B. This person will also be responsible for transitioning strategies developed as a part of the 2006 study for downtown to other emerging commercial areas adjacent to the downtown.

Ideally, this person would staff a representative stakeholder group (see below) to routinely review overall parking activity in the downtown as well as by zone. Information developed through periodic update of the parking inventory (i.e. 85% Rule) would be used to evaluate “action triggers” and implement appropriate adopted strategies as necessary. The Parking Manager would also be charged with refining and shepherding the policy recommendations outlined in A. 2 – 9 below through the appropriate City processes.

The City "process" for approving this type of service addition should be completed immediately to facilitate near-term hiring or restructuring of an existing position.

2. Establish an advisory role for stakeholders to assist in parking program implementation and review.

The City should develop a process through which a representative cross section of downtown interests routinely assist the Parking Manager in the review and on-going implementation of the Parking Management Plan. If the Traffic Commission were provided new members who represented the downtown, this could be a subcommittee thereof.

The stakeholder advisory process will (a) assist the Parking Manager in the implementation of the parking management plan; (b) review parking issues over time; and (c) advise City Council on strategy implementation based on the Guiding Principles for parking management and Operating Principles for each management zone.

3. Adopt policies and rules to guide parking management.

a. Codify Guiding Principles for Parking Management as elements of City Code.

The Guiding Principles provide a framework for managing parking and decision making in the downtown over time. “Codifying” the Guiding Principles by incorporating them into the Comprehensive Plan will serve to inform future management decision making as well as development of future public facilities. Incorporating these principles into City Code and policy assures the intent and purpose for parking management, established through consensus in this study, is carried out over time.

b. Establish “Parking Management Zones” based on desired economic uses and user types.

Different segments of the downtown have different economic uses and represent different points of access into the downtown. The heart of downtown should represent the area in which the highest density of economic activity and access is intended to occur. Parking should be seen as a management tool that supports

specific economic uses. The desired economic activity in a particular area of downtown should guide the decision making for the type of parking required.

It is recommended that Beaverton establish two separate parking management zones (within the study zone), each having specific operational priorities.

c. Adopt “Operating Principles” and an implementation framework that defines the priority purpose/use for parking in each parking management zone. Adopt the principles and framework as City Code elements.

The recommended Parking Management Zones should be established and the Operating Principles described in Section I, above, should be used to guide the City, Parking Manager and Parking Advisory Committee in evaluating and managing the day-to-day dynamics of parking activity. Operating principles are established to describe the primary purposes for parking within each parking management zone and to complement and reinforce the Guiding Principles established for the downtown.

d. Adopt the 85% Rule to facilitate/direct parking management strategies.

The 85% Rule is a measure of parking utilization that acts as a benchmark against which parking management decisions are based. Within the parking industry, it is assumed that when an inventory of parking shows more than 85 percent occupancy in the peak hour, the supply becomes constrained and may not provide full and convenient access to its intended user. Once a supply of parking routinely exceeds 85 percent occupancy in the peak hour, the 85% Rule would require that parking management strategies be evaluated and/or implemented to bring peak hour occupancies to a level below 85 percent to assure intended uses are conveniently accommodated. These parking management strategies are outlined within the operating principles and implementation framework established for each zone (as described and supported in c., above).

The parking inventory for Beaverton revealed that existing peak hour occupancies in all zones are generally operating at less than 85 percent at the time of the 2006 study. Having the 85% Rule in effect will assure that a process for evaluating and responding to future parking activity in the downtown is in place.

4. Eliminate minimum parking requirements for all commercial parking development within Zones A and B.

Data from the 2006 parking inventory indicated that parking is currently being supplied at a rate far greater than actual demand. Similarly, Beaverton’s existing code requires a range of different parking minimums for different uses, even though data suggests that demand is fairly consistent for mixed uses within the study zone. For Beaverton, this resulted in an average built supply of 4.01 parking stalls per 1,000 square feet of commercial/retail developed versus an actual demand of 1.85 parking stalls per 1,000 square feet. The result has been oversupply and a proliferation of surface parking. Elimination of minimum parking requirements should result in (a) less parking being built over time, allowing the market to determine an appropriate level of parking for new development, (b) more efficient use of existing supplies of parking and (c) better coordination and synergy with alternative modes of access.

5. Require a 0.75 stall per unit minimum parking standard for residential development within Zones A & B.

As the City moves to encourage more residential development within what is now the commercial zone, competition for on-street parking will create conflicts between customers and residents. Residential units without parking located within commercial

zones increase pressure for implementation of on-street residential permit programs. Per the operating principles for Zones A and B, on-street parking is ultimately prioritized for short-term stays targeted to customers, visitors and client/vendor access. To assure this priority, residential development will need to provide a minimum level of parking to mitigate conflicts on-street in the commercial zones.

6. Establish a parking fee-in-lieu program to accommodate developments that cannot incorporate parking into development sites (i.e., for reasons of site size, geometries, etc.).

Fees-in-lieu provide developers an option should site constraints make parking prohibitive to a project or if a developer chooses not to build the minimum level of required parking. It is recommended that fees-in-lieu would be paid by the developer to the City at a rate of not less than one-half the value of a structured parking stall. The funds generated from a fee-in-lieu program would be allocated to a dedicated parking enterprise fund for development of future public parking facilities (see 8, below). It is likely that fee-in-lieu funds would need to be coupled with other funds (i.e., future parking meter revenue, monthly permit revenue and/or urban renewal funds) to fully fund future parking in strategic locations within the downtown.

7. Establish a Downtown Parking and Transportation Enterprise Fund as a mechanism to direct funds derived from parking over time into a dedicated fund.

As the supply of parking becomes constrained over time, it will be important to direct funds into a specific account intended to support on-going transportation and access in the downtown. This can be done with existing and future parking-related revenue, or with net new revenues generated as a result of implementation of this plan. The Downtown Parking Fund should be dedicated to (not in priority order at this time):

- a) Debt service
- b) Parking operations (on-street/off-street/enforcement)
- c) Garage maintenance
- d) Marketing and communications
- e) Transportation Demand Management programs
- f) New supply

It is recommended that such a fund be established as soon as feasible to ensure that net new revenues are captured within the fund.

8. Evaluate additional funding sources for future parking development and parking system management.

The fiscal challenges of parking, transportation, and economic development in a downtown are common to many communities across the country. Rapid changes in development patterns over the past thirty years have resulted in significant changes to the urban landscape, and many downtowns have had to re-examine services they provide and the revenue sources used to fund them. In most instances, communities use a combination of funding sources to cover transportation capacity needs. It is believed that some combination of revenue sources will be necessary to assure the feasibility of future structured parking in the downtown, particularly funding associated with a publicly owned facility. A single revenue source is unlikely to cover the cost of parking development.

Similarly, many of the recommendations for improvement outlined in strategies below will require revenue sources beyond those generated exclusively from the parking system (see Section B, Strategies 1, 2, 7, 12, 13, 15, 20, 23 & 24 below).

It is recommended that the Parking Manager and Parking Advisory Committee evaluate a range of public and business based fees to supplement public funding for the development of new parking supply and other access improvements within the parking system.

B. IMPLEMENTATION STRATEGIES

Based on the recently completed capacity and usage survey of the parking inventory, a number of parking strategies are recommended for near-term implementation. These strategies will assist the City to optimize the use and accessibility of existing parking in downtown Beaverton.

A number of mid and longer-term recommendations have been developed as well, some of which target the development of new parking supply. The consultant team believes all of the recommendations presented in the report are consistent with the Guiding Principles and Operating Principles for parking in Beaverton. Nonetheless, the mid- and long-term recommendations should be reviewed and forwarded for implementation through the Parking Manager and Parking Advisory Committee process recommended above.

Near-Term Implementation - (by January 2008)

The following strategies are recommended for near-term implementation.

1. Appoint a Downtown Parking Manager.

Upon approval of a budget and service package by the City Council, the City should move forward with the appointment or hiring of a downtown parking manager. This could be done as a new hire or through restructuring of an existing City position. In the early going, the position could very well be part-time (therefore, restructuring of an existing FTE).

This position would be charged with the implementation of the overall parking management plan, monitoring of parking in management zones over time, providing review and assistance to new development, and working with the Parking Advisory Committee to facilitate decision-making based on the 85% Rule, Guiding and Operating Principles for each zone.

2. Initiate Parking Advisory process.

Once the Parking Manager is appointed and established, the process of review, evaluation and decision-making with representative stakeholder input for parking management in downtown should be initiated. A consistent and routine schedule of meetings should be established as well as use of this plan as a template for discussion of parking management and strategy implementation with the Parking Advisory Committee. In the early going, the committee could meet quarterly. As development in downtown increases, meetings and deliberations may require a monthly schedule.

3. Eliminate all 1-hour, 4-hour and No Limit on street parking in Zone A and create a uniform on-street time stay of 2 hours within this zone.

Currently, on-street parking in Zone A is comprised of a mix of 1-hour, 2-hour, 4-hour and No Limit parking. For purposes of convenience, it will be important to establish Zone A as a “customer first” parking zone. This will be best accomplished by standardizing all on-street parking within the zone. A uniform on street time stay allowance of 2 hours

will accommodate customer demand and better communicate and encourage the use of Zone B or off-street parking to visitors/customers and employees in need of a longer duration stay.

- 4. Standardize on-street parking in Zone B to 3-hour parking “or by permit” to create longer-term stay options for customers and an all day option for employees and/or residents in need of all day parking.**

Standardizing time stays in Zone B will create a more simplified and understandable environment for customers visiting downtown. However, allowing on-street permit parking in this zone recognizes the very low demand for parking that currently exists within the 2006 study zone (i.e., peak occupancies of less than 45%).

- 5. Transition all employee on-street parking permits now issued in Zone A to on-street locations in Zone B or off-street locations in Zone A or B.**

To assure that on-street parking in the Core Zone is available to customers and patrons, employee on-street permit parking in the Core Zone will be prohibited.

- 6. Eliminate all time restrictions in existing City-owned off-street facilities to encourage greater use of public parking lots. The City should also treat these sites as future parking garage development sites.**

Given that occupancies in City-owned parking lots are less than 30%, there is no need at this time to control time stays. It is recommended that these lots be (a) better identified through signage and/or “branding” and (b) offered as a convenient long-term, all day or monthly parking option. As demand for on-street parking grows, this would render these facilities more attractive to users requiring longer term stay options. The City should also look at these sites as potential parking garage opportunity sites in the future. Given city ownership and control, the ability to build future structured parking on these sites may be more feasible than other options and/or privately controlled sites.

- 7. Initiate a new and comprehensive outreach program to all businesses within the study zone that communicates the parameters of the City’s permit program and access to publicly owned off-street lots.**

A survey of businesses conducted as a part of the 2006 parking study indicated that 65% of downtown businesses were not aware of the City’s parking permit program. Given the changes recommended in B. 3 – 6 above, a new outreach strategy and communications plan would facilitate more understanding of the options available to businesses and their employees as well as provide a means to educate businesses on changes to the parking program.

- 8. Develop incentives that encourage private sector-led strategies to reduce demand for long-term parking, and make available private parking resources for short-term public customer and other desired uses.**

Developers generally provide and manage parking to serve exclusive accessory uses to their particular site. As such, sites are often developed without benefit of a process or policy that would allow for discussions to maximize both the accessory and public supply of parking in a given private project or to encourage employees to use alternative transportation modes.

Given the cost of parking development and the limited land available for development, it will be important and useful for the City to encourage the development of publicly available parking and transportation demand management (TDM) programs and infrastructure in future private development projects. The opportunity to incent either more flexible management of private supplies (allowing general public access) or

additional supply for public use within a private project should be explored, as well as TDM systems that could reduce overall development costs.

Given the overall priority of customer/patron parking in City-owned facilities, the City should also explore incentives that encourage and support development of residential parking in private off-street locations to ensure that conflicts between future residential parking demand and customer/visitor demand are minimized.

The first step to creating a "toolbox" of incentives requires development of a formal policy that would allow the City to offer incentives if specific public parking and transportation goals were met in the context of a private downtown development. Initiation of those incentives would occur as a mid-term implementation strategy as described in recommendation 13 below.

9. Establish commuter mode split targets for employee access in Zones A & B.

Parking development regulations and requirements need to be supported by a system of access that accounts for all forms of capacity (i.e., auto, transit, bike, walk and rideshare). The Guiding Principles for parking management in Beaverton call for a greater percentage of downtown employees to move into alternative modes of transportation. Quantifying the desired transition of commuters from an established status quo baseline to a desired target will (a) give policy support to the Guiding Principles, (b) inform and facilitate parking strategies, and (c) provide a standard of measurement that can be evaluated in the future.⁴⁴

Currently, about 80% of all commuter trips to the Beaverton Regional Center are by single occupant vehicle (SOV),⁴⁵ with 20% of commuter trips arriving by either transit, bike/walk or carpool/rideshare modes. Metro's 2002 Regional Transportation Demand Management Program Evaluation Report (April 10, 2003) targets a non-SOV mode split of about 40% by 2020. This would reduce SOV commute trips from 80% to 60% over the next 13 years.

It is recommended that the City of Beaverton, through discussions and review with the Parking Advisory Committee, formally incorporate mode split targets for all modes (i.e., SOV, transit, bike, walk and rideshare) into its parking management policy. This would require:

⁴⁴ This recommendation is directed at the area boundary covered by the 2006 Parking Solutions Study. The discussion of commuter mode split targets for areas outside the study zone may be useful as parking management in Beaverton expands over time.

⁴⁵ As per the 2002 Regional Transportation Demand Management Program Evaluation Report: Volume 1 (Metro: April 10, 2003), businesses required to complete the State of Oregon's Employee Commute Options survey reported a commuter single occupant vehicle (SOV) trip rate of 77.5% (see page 39 of the Metro report). Rick Williams Consulting conducted a survey of all businesses within the Beaverton Parking Study zone and derived a commuter SOV rate of 82% (Rick Williams Consulting: Tech Memo A, August 22, 2006).

- a. A reaffirmation/revision of the Metro targets already established.
- b. Establishment of more specific non-SOV targets by mode. In other words, current targets are simply SOV versus non-SOV. The PAC may want to set specific targets for transit, bike, walk and rideshare.

The purpose of this strategy would be to clearly establish a logical link between mode split targets and actual parking maximums as discussed in mid-term recommendation 14, below. Over time, Beaverton's maximum parking ratios should be logically correlated to the mode split targets established for the regional center.

10. Conduct a capacity study during the Saturday Farmers Market

During the public involvement process, stakeholders identified a need to better understand the parking conditions and their impacts on Saturdays. Using a similar methodology to that of this project, the City should complete a capacity analysis. On-street and off-street occupancies should be assessed as well as stakeholder interviews with small business owners in the affected area. The City should look to Metro for possible assistance in conducting and funding this analysis.

11. Develop and install a signage package of uniform design, logo and color at publicly available off-street locations.

Creating a uniform signage package that incorporates a unique logo and color scheme for public parking facilities will establish a sense of recognition, identity and customer orientation for users of the downtown parking system.

It is recommended that the City:

- a. Develop a signage package that incorporates a uniform design, logo, and color scheme into all informational signage related to parking.
- b. Evaluate land use and code implications of the signage package program, particularly size, design and placement issues, and initiate changes as appropriate.
- c. "Brand" each off-street public facility open to public access with the established "logo" package.
- d. Investigate the purchase and installation of such signage for private owners as part of shared use parking agreements (see recommendation 16, below).

12. Strategically place new and unique wayfinding signage in the right-of-way at locations chosen carefully to direct visitors to off-street locations.

The City should develop directional signage on the roadways that direct customers to specific facilities. This will be of greatest importance at primary portals into the downtown, at major traffic intersections, and at primary points of ingress at specific facilities. It is recommended that:

- a. The signage package should be consistent with, and complementary of, the signage package developed for the off-street facilities.
- b. The address of the nearest visitor facility should be incorporated into the roadway signage to assist and direct customers to the nearest parking location.

Mid-Term Implementation – (by October 2009)

The following strategies are recommended for mid-term implementation.

13. Examine and develop a strategy plan that would improve bicycle and pedestrian connections between transit and light rail stations and downtown destinations.

The SAC recommends that a strategic action be developed that assesses and recommends improvements to make connections between transit stops and major downtown destinations more convenient, safe and recognizable. This could include a range of improvements, from pathway infrastructure to attractive and informative signage.

14. Implement a package of incentives for the private development of publicly available parking supply and TDM options in the downtown.

It is recommended that the City create and implement a package of incentives that would be made available to private developers that allow for or add publicly available parking into downtown development projects. Similar incentives would be created for privately initiated Transportation Demand Management programs. The package of incentives would follow adoption of a parking incentive policy described in B.8 above.

Examples of development incentives currently available in other jurisdictions include (but are not limited to):

- Floor Area Ratio (FAR) bonuses
- Height bonuses
- Permit fee waivers
- Impact fee waivers
- Supply/revenue agreements⁴⁶
- Property tax abatements

15. Recommend to the City Council the commuter modes split targets developed in 9, above, for adoption as a policy element of the Beaverton transportation and parking management plan.

The City would adopt as policy goals commuter mode split targets for access in the downtown. These goals should be incorporated into Chapter 6 of the Comprehensive Plan. These targets are intended to create a direct link between actual parking management strategies (particularly parking maximums) and adopted targets for access to the Beaverton Regional Center. These targets also support the overall Guiding Principles for multi-modal access into downtown and support the parking management goal of transitioning greater percentages of downtown employees into alternative modes of access as a means to more efficiently and cost-effectively manage the parking supply. The City would have developed these goals with the Parking Advisory Committee as described in B.9, above.

16. Initiate discussions with downtown businesses to develop a “Customer First” partnership among downtown businesses.

“Customer First” partnerships are in place in other cities, whereby downtown businesses develop and sign a downtown partnership agreement that pledges that their business will actively promote short-term parking priorities in the downtown and aggressively work

⁴⁶ Revenue agreements are lease agreements whereby the City agrees to a guaranteed lease for spaces at a negotiated rate per stall.

with their employees to either park off-street or take alternative transportation modes to work. “Customer First” programs are generally initiated in response to the adoption of a parking management plan and monitored through a downtown business association. Discussions with business community stakeholders can begin with the Parking Advisory Committee.

17. Partner with the business community to develop a marketing and communication system for access in Beaverton. The marketing/communication system could include (but not be limited to): branding, maps, validation program(s), TDM alternatives, and valet parking.

A successful parking system will require on-going marketing and communication. The foundation for a marketing and communication program is the signage and wayfinding package recommended in this report. Support of this system can be facilitated through informational maps and brochures about Beaverton and its parking system distributed through Business Association, Visitor Services, Retail and Lodging networks.

It is recommended that the City:

- a. Partner with the business community to develop a marketing and communication system for access in Beaverton. The marketing/communication system would include (but not be limited to):
 1. Branding. As discussed in Section II, B., 7 & 11 above, all marketing and communications related to the City parking system would occur under a unique and distinct brand that identifies the City facilities and communicates value, convenience and affordability.
 2. Maps. Develop maps that visually represent the parking zones (i.e., blue zone – Core – is customer parking, green zone is long-term parking), and identify the location of visitor versus employee facilities.
 3. Validation program. Evaluate the feasibility of retail validation systems if, and when, the City moves to pricing parking.
 4. TDM alternatives. Incorporate alternative mode options (i.e., shuttles, transit, and bicycle) into parking communications materials.

18. Negotiate shared use and/or lease agreements with owners of strategically placed private surface lots and parking structures to provide for an interim supply of parking where needed.

One hundred twenty six private parking facilities were inventoried during the data survey. These lots are located throughout the study zone and are significantly underutilized, even during peak times (i.e., less than 45 percent occupied). These lots comprise approximately 2,000 stalls and are generally without signage or have signage that is inconsistent and confusing to customers and visitors. The ability of the City to “capture” as many of these stalls as are available in the peak hour for more active management will provide a relatively low cost and effective near- to mid-term strategy for mitigating existing access constraints during peak demand periods.

It is recommended that the City:

- a. Initiate an effort to work with owners of private lots to enter into shared use agreements to allow underutilized parking to be made available to customer/visitor or employee uses (as appropriate).
- b. Explore the development of incentives to encourage such agreements (i.e., signage, landscaping, lighting, sidewalk improvements, leasing, etc.).

19. Evaluate a reduction in current maximum parking ratios for new development in the downtown, to assure that access impacts of new development are meaningfully addressed. Also, parking maximums should be more directly correlated to commuter mode split targets developed/adopted in B. 9 & 15, above.

Data from the parking study indicates that current demand generated by land uses in the downtown is in the range of 1.85 stalls per 1,000 SF of commercial floor area. Maximum ratios in place at this time range from 3.4 to 10 stalls per 1,000 SF for many uses. Per strategies B. 9 & 15 above, the Parking Manager and Parking Advisory Committee will evaluate and recommend new parking maximums for development downtown. These new maximums will be presented to City Council for adoption based on the need to directly correlate parking maximums to actual mode split goals for all modes of access (i.e., SOV, transit, bike, walk and rideshare). The purpose of this strategy is to assure that parking development allowances (i.e., maximums) support investment and development of alternative mode infrastructure.

20. Sponsor employer-based initiatives to encourage employee use of alternate travel modes.

Coupled with B. 14 and 16, above, private sector businesses should be encouraged to provide incentives and subsidies to their employees that result in meaningful changes in employee commute choices. Transit pass subsidies, bike and carpool incentives, and employee trip planning services should all be evaluated by businesses as a contribution toward maximizing the overall supply of parking for customer access. The Parking Manager and Parking Advisory Committee can assist in facilitating development of such programs and partnerships with downtown businesses.

21. Identify and complete planning for possible development of new public visitor parking supply in Zone A.

A strategically located public parking facility in Zone A would assure continued access opportunities for customers and visitors in the future, particularly as on-street parking supply is maximized. To assure continued short-term parking access that supports vital retail growth, the City may need to develop a centralized facility to support customer access.

The purpose of this effort would be to have all components necessary to support initiation of development of a centralized public parking facility in place so that construction could begin in the event that customer demand exceeds available supply. This would likely involve identification of a potential opportunity site(s) [see Chapter 5 of this study] and acquisition of such site(s).

It is recommended that the City, with the Parking Manager and Parking Advisory Committee, initiate an evaluation (both financial and feasibility) of the location and costs necessary to support a City-owned short-term visitor parking facility.

Long-Term Implementation – (three years and beyond)

The following strategies are recommended for long-term implementation.

22. Monitor downtown parking utilization continuously and periodically. Conduct parking inventory analyses.

The recently completed analysis of Beaverton's parking inventory provides excellent information on parking utilization, turnover, duration of stay, and peak hour capacity.

The need for this data is very important as a foundation piece for determining actions to maximize parking supply. Periodic monitoring of parking activity will allow Beaverton to (a) better coordinate enforcement, (b) assure maximum utilization based on intended uses and (c) provide solid evidence for the need to move to higher and/or more aggressive levels of parking management as called for in the Operating Principles for parking management zones.

It is recommended that:

- a. A parking inventory analysis is conducted at least every three years. Information from these updates would be forwarded to the Parking Manager and the Parking Stakeholders Advisory Committee for review, evaluation and strategy implementation.
- b. The City explore technology options that are available that would allow enforcement personnel to gather inventory data on a more frequent and/or targeted basis.

23. Evaluate the impact of near- and mid-term strategies based on an updated utilization and demand study. If and when warranted, develop a pricing policy strategy and implement paid on street parking in Zone A and/or B based on the 85% Rule.

The strategies outlined in Section B above will create changes in access dynamics downtown. If, after nearly three years of growth, parking occupancies in Zone A and/or B continue to exceed 85% in the peak hour, move to meter the Zone(s). If metering is pursued, it is recommended that on-street pay stations be considered rather than single head meters.

The operating principles developed for each parking zone contain options for the implementation of parking pricing. Options can range from pricing parking in specific areas (e.g., off-street only) to pricing specific users (e.g., employees) to a comprehensive system of pricing that would include metering on- and off-street.

The Parking Manager and the Parking Advisory Committee should develop a coordinated strategy for how parking pricing will be implemented as the demand for parking and new parking supply evolve in the mid- to long-term. Once developed, the parking pricing strategy should be presented to the City Council for review and approval.

The outline of strategy issues presented below is intended to inform the City of major decision and management guidelines should pricing become necessary as a means to maximize and facilitate access capacity.

- a. Meter on-street parking to increase efficiency and capacity.

As the 85% Rule triggers additional and more aggressive management of the supply, Beaverton may at some future point consider pricing parking in areas that are currently free. At that point pricing would be intended to (a) facilitate more efficient turnover, (b) encourage use of specific facilities in specific management zones (i.e., short-term vs. employee parking), (c) encourage use of alternative modes, and (d) provide a funding source for improvements to existing supplies, development of new supply and alternative mode options.

In the context of pricing, Beaverton should consider new technologies available and in place in other cities that allow for flexibility in the management of parking pricing and contribute and complement Beaverton's existing and desired urban form. "Multi-space metering" and "pay-and-display" systems are an example of these types of technology, which allow a City to charge for parking without "cluttering" the pedestrian way with individual meters.

b. Charge for parking in publicly owned off-street facilities.

The City should establish a policy for pricing short-term parking in publicly owned or controlled off-street facilities. The framework of such a policy is provided below:

1. "Short-term rate" is equal to hourly fee charged at on-street system
2. Evening rates established to attract/serve appropriate uses
3. Long-term, daily/monthly rates balanced by the 85% Rule
4. Rate manipulation triggered by the 85% Rule
5. Rate manipulation generally at the long-term end to facilitate transition of long-term parkers to appropriate parking locations within the downtown

24. Implement Parking Revenue Strategies

Given Beaverton's size and its estimated growth, it is not anticipated or suggested that the City of Beaverton move to parking pricing for customer access in the near-term. Nonetheless, as new capacity for parking and transportation access (i.e., garages, transit programs, etc.) are considered in the context of a 3 - 7 year plan, the issue of pricing and new revenue sources needs to be incorporated into the City's parking management plan. The decision to move to parking pricing and new revenue sources would be facilitated by the parking pricing and funding strategies developed by the City (see B. 23, above), with input from the Parking Manager and Parking Advisory Committee.

25. Lease/acquire strategically located land parcels for use as future public off-street parking locations. This strategy would only be implemented if "strategic" parcels are not already in public ownership/control.

The City would lease or acquire strategically located land parcels in Zone A for future parking use. Strategically locating future parking sites allows the City to use such sites as (a) interim surface parking locations (until desired development would transition the sites to commercial/retail) and/or (b) future parking structure locations.

26. Complete development and open new supply in Zone A.

Completion of site identification, planning, outreach and funding efforts described in 21 & 25, above, would be finalized and the project completed and opened to the public.

27. Consider street improvement projects incorporating new and/or angle parking.

There are opportunities in the downtown for angle parking to increase the number of on-street stalls. Where other reasons trigger street improvement projects, or when the on-street occupancies exceed 85%, the City should complete preliminary designs based upon the angle-parking recommendations in Chapter 3 and/or seek to add parallel parking as appropriate.

III. SUMMARY

The City of Beaverton is striving to promote growth that fits into the future vision of downtown. A strong parking management plan is one tool that can assist the City in attaining its vision.

A strong parking management plan:

- Defines the intended use and purpose of the parking system.
- Manages the supply.
- Enforces parking policies.
- Monitors use and responds to changes in demand.
- Maintains the intended function of and priorities for the overall system.

This plan has been developed to support the guiding principles and operating principles for parking and access in the downtown. As such, the plan and its strategies reflect the fundamental values and objectives stakeholders have for downtown Beaverton.

The parking management strategies were developed to optimize the use of existing parking resources in downtown Beaverton and to realistically prepare for future new supply. These strategies include policy recommendations, near-term management recommendations, and on-going (mid- and long-term) management recommendations.

The strategies are presented in a logical sequence of activities and decision-making that build upon each other. The parking management plan presented in this report will support on-going and sustainable economic vitality for Beaverton by assuring access for customers and visitors to downtown and strategies that effectively respond to changes in demand over time.

As with any parking management program, the success of the plan is dependent upon its adoption into City policy. Parking management is an on-going process that requires the commitment of time, resources and public/private effort. The plan and its associated policies and strategies need formal endorsement by the City Council to assure implementation and on-going management of the parking system.

This page intentionally left blank.

APPENDIX A

Data Collection – Results Summary

Downtown Beaverton Parking Inventory Analysis

Data Collection – Results

Methodology

The City of Beaverton recently collected parking utilization data in order to evaluate parking conditions within a specific study area of the downtown. On Tuesday, September 19, 2006, from 9:00 a.m. to 6:00 p.m., all on-street parking spaces were surveyed hourly to determine its utilization. Every public off-street facility (4 lots) was surveyed, along with all private off-street parking lots within the study area (126 total).¹ A total of 3,107 on- and off-street parking stalls were surveyed.

Results – Highlights

On-Street

- 990 on-street spaces were surveyed.
 - Noon – 1:00 PM: Peak hour for on-street parking
 - Average duration of stay throughout entire study area: 2-hours/24 minutes.
 - Turnover is below optimum. Turnover rate is 4.16 turns per day. Minimum desired rate would be 5.0.
 - Peak hour occupancy: 40.7%
 - One-hour stalls are ineffective, with average duration of stay of 1.5 hours.
 - Employees are allowed to park in 2-hour stalls with permits, which will create conflicts between customers and employees as parking demand grows over time.
 - There is abundant on-street parking availability throughout the study zone (587 empty stalls at the peak hour).
 - Occupancies do not vary significantly in more concentrated “nodes” within the study area.
 - Violations of time stay average 14.8%, which is a high percentage for a downtown area. However, violations of time stay are not adversely impacting access to parking stalls.
-

¹ The Library parking lots were not considered public parking for this study because the parking was built as a requirement of the building of the library. As a result these stalls were evaluated in the context of the overall supply of private parking in the downtown.

Off-Street	<ul style="list-style-type: none"> • 2,117 off-street spaces were surveyed on 4 public and 126 private lots. • 1:00 – 2:00 PM: Peak hour for off-street parking • Peak hour occupancy: 44.4% • There is substantial unused capacity in the off-street parking system (1,176 empty stalls at the peak hour). • The majority of available off-street parking is in private facilities.
<hr/>	
Demand	<ul style="list-style-type: none"> • The ratio of total parking to total commercial land uses is 4.01 stalls per 1,000 SF • The actual demand for parking based on peak occupancies and occupied building area is 1.85 stalls per 1,000 SF • Parking is being provided at a rate that significantly exceeds demand.

Possible Management Strategies

On-Street	<ul style="list-style-type: none"> • Replace 1-hour on-street parking stalls with 2-hour stalls. • Transfer existing employee permit parking that is now in 2-hour stalls to No-Limit stalls on-street or into off-street facilities. • Replace existing No-Limit stalls that are adjacent to off-street facilities with 2-hour parking. • Transition No-Limit stalls to 2-hour stalls when on-street occupancies approach 85%.
<hr/>	
Off-Street	<ul style="list-style-type: none"> • Implement programs to raise awareness of the City's off-street permit parking program. • "Customers First" policy adopted by downtown employers as a means to move employees to targeted parking locations. • Develop "shared use" agreements with private owners of parking to capture underutilized off-street supply.
<hr/>	
Demand	<ul style="list-style-type: none"> • Consider reducing/eliminating current minimum parking requirements for new development • Consider reducing parking maximums • Begin evaluation of programs, strategies, incentives and funding resources necessary to transition future supply from surface to structured parking.

APPENDIX B

Employer Surveys Summary

Rick Williams Consulting

Parking & Transportation Demand Management Consulting
610 SW Alder, Suite 1221
Portland, OR 97205
Phone: (503) 546-4551 Fax: (503) 236-6164
E-mail: rwilliams@bpmdev.com

MEMORANDUM

TO: Jennifer Polley, City of Beaverton
FROM: Rick Williams
Owen Ronchelli
Derek Chisholm, Parametrix
DATE: August 22, 2006
RE: **Technical Memorandum A: Results of Beaverton Business Survey on Parking Demand**

I. BACKGROUND

The City of Beaverton initiated a survey of area businesses as a precursor to a larger parking study being conducted for the City through a State of Oregon TGM Parking Solutions Grant. The City developed the survey with input from the Parking Solutions Grant consultant team as a means to establish a baseline understanding of current employee parking and access behavior. The survey was distributed to a total of 178 businesses; 159 were returned for a response rate of 89%.

The results of the survey are summarized below. The summary is formatted to follow the actual sequence of questions from the survey.

II. SURVEY RESULTS

1. ***Number of businesses participating in survey: 159 (89% response rate)***

2. ***How many employees (full-time and part-time) do you have?***

Businesses completing the survey employ 1,112 employees. The average number of employees per business is just over 7.0. The largest business surveyed had 160 employees. Many businesses indicated 1 – 2 employees.

3. ***Approximately how many of your employees drive to work in a single occupant vehicle?***

Respondents indicate that 917 of 1,112 employees drive alone to work. That represents a single occupant vehicle (SOV) rate of 82%.

4. ***Does your business have on-site parking?***

Number of Respondents	YES	NO
159	131 (82%)	28 (18%)

The majority of businesses responding to the survey (82%) maintain on-site parking to serve their business.

4a. If yes (on-site parking), how many parking spaces do you have?

Number of Respondents/parking sites	Total Parking Stalls on sites	Average stalls per site	Largest parking site (# of stalls)
116	1,432	12	78

116 businesses responded to this question, collectively maintaining 1,432 parking stalls at their business sites. Businesses average 12 parking stalls per site. The largest single parking site was 78 parking stalls, serving a business of 70 employees.

4b. If yes, do you allow your employees to use your on-site parking?

Number of Respondents	YES	NO
116	95 (82%)	21 (18%)

The majority of businesses (82%) that maintain on-site parking allow their employees to use that parking.

5. Are you aware of the City's current parking permit program?

Number of Respondents	YES	NO
153	54 (35%)	99 (65%)

Most businesses (65%) are not aware of the City's parking permit program. Just over a third (35%) are aware of the program.

5a&b. If yes, do you purchase permits for yourself or your employees? And, how many permits do you purchase quarterly?

Number of Respondents	YES	NO
59	9 (15%)	50 (85%)
Total number of permits purchased	17	

Nine businesses (15%) indicate that they purchase City parking permits. These businesses purchase a total of 17 permits each quarter.

6. Where do your employees park during business hours? (check all that apply)

Total selections	On-site parking	Off-site private parking lot(s)	City parking lot	City street
186	103	19	8	56

The majority of businesses say that employee use on-site parking. A number of businesses have employees parking on street as well. Fewer employees appear to use off-site private lots or the City parking lot.

7. Where do your customers park during business hours? (check all that apply)

Total selections	On-site parking	Off-site private parking lot(s)	City parking lot	City street
211	113	6	7	85

Businesses indicate that customers primarily use on-site parking and the City street system. The survey indicates little use of off-site lots (City or private).

8. How far from your business do you think your customers are willing to park?

Total Responses		114			
< 1 Block	1 Block	2 Blocks	3 Blocks	4 Blocks	> 4 Blocks
4 (3.5%)	83 (73%)	19 (17%)	4 (3.5%)	1 (< 1%)	3 (2%)

A large majority of businesses (76.5%) indicate that their customers are not willing to walk further than a block to patronize a business.

9. Approximately how many of your employees regularly utilize public transportation (bus or MAX) to get to/from work?

Total Responses	153			
Employers w/ no transit use	Employers w/ employees using transit	Total employees using transit	Total employees of surveyed businesses	Estimated transit mode split
126 (82%)	27 (18%)	59	1,112	5.3%

Most businesses (82%) indicate that their employees do not use transit as a means to get to/from work. Twenty-seven businesses indicated that 59 of their employees use transit. Based on the total number of employees covered by the survey (1,112), this would indicate that approximately 5.3% of employees use transit as a commute mode.

10. Does your business subsidize transit passes for employees?

Number of Respondents	YES	NO
149	4 (2.7%)	145 (97.3%)

Only four (4) businesses (less than 3%) subsidize employee transit passes for their employees.

10a. If yes, how much do you subsidize per employee/per month?

Total Responses	3		
Amount of Subsidy	1 business \$50.75/mo. 2 employees	1 business \$40/mo. 14 employees	1 business \$30/mo. 1 employee
Total employees affected by subsidy program(s)			17 (1.5% of total)

Few employers offer a transit subsidy to employees. Only three of the four businesses indicating they provide subsidies responded to this survey question. Within those businesses, actual subsidies range from \$30 to \$50.75 per month. In total, only 17 employees receive subsidies. This represents 1.5% of the total number of employees covered in this survey (i.e., 1,112).

11. How many of your employees regularly walk or bicycle to work?

Total Responses	159		
Employers w/ employees who bike/walk	Total employees that bike/walk	Total employees of surveyed businesses	Estimated bike/walk mode split
29 (18%)	46	1,112	4.1%

12. How many of your employees car pool to work?

Total Responses	159		
Employers w/ employees who carpool	Total employees that carpool	Total employees of surveyed businesses	Estimated carpool mode split
19 (12%)	37	1,112	3.3%

III. SUMMARY

Overall, the survey findings indicate:

- ✓ The majority of businesses have on-site parking that is used by both employees and customers.
- ✓ The most commonly used parking location is on-site parking, followed by use of on-street parking.
- ✓ Businesses are of the strong opinion that customers will not walk more than a block for their visit to Beaverton.
- ✓ The majority of employees (82%) drive alone to work.
- ✓ Few employees use transit (5.3%) and few businesses (2.7%) subsidize transit. Bike/walk (4.1%) and carpooling (3.3%) make up small portions of commute access.
- ✓ About 1/3 of businesses are aware of the City's parking permit program and only nine businesses use the program (totaling 17 permits).

ADDENDUM

Written Comments Included in Surveys

- There is nowhere for customers to park (2).
- Need more handicap spaces
- Permits are not valid in the area of this store. Has used permits but would get tickets because the street used was not included (service business).
- Have issues with clients staying over four hours for services, and then store has to pick up the tab when client gets a ticket (salon).
- Doesn't like it when people using Farmer's Market using business lot.
- City ordinances are not allowing development in Beaverton. Tried to get 10 spots for customer parking and only got four (restaurant).
- Need longer than 2 hour parking (service business).
- Individual cars are required for work (service business).
- Always get a ticket on 2-hour limit. The parking lot in front of building is only for clients, so employee has nowhere to park (service business).
- People are parking illegally in business lot. Saturday Market is terrible, it doesn't feel like the city supports businesses during that time, only care about people coming in from out of town to the market to buy things! (retail)
- Farmer's Market creates a problem with parking, however parking by my office is not a problem (service)
- Need a parking spot for me in front of my store (restaurant)
- I am concerned that the post office employees may park on the street in front of my office so clients can't. (office)
- Would be nice to have a public parking lot close to downtown Beaverton (service).
- We would have made more on site parking, but City ordinance would not allow it. A real shame. (retail)
- Who is paying for this survey? (retail)
- One hour parking is great but needs to be more regularly enforced! Would be great to have a free parking area/structure for customers close to Broadway (restaurant).
- It's unfortunate in a City the size of Beaverton that planners didn't factor parking into the equation – we are certainly paying enough in taxes. (service)
- I am the owner of (left out for confidentiality) here in Beaverton and I would like the City to do something for those stores that don't have parking. My parking lot is being misused for some store such as (left out for confidentiality). All the time vandalism, garbage in the parking lot, broken sign. It is really a problem to do business here in Beaverton, especially with people with such behavior (retail)
- We are a tree service, so we go to the customer's site. I pick up my workers at their residence; so parking is not an issue (office).
- It is extremely difficult for our customers to find parking on our busiest days (i.e., Saturday) especially because our neighbors tow at such fast rates, they cannot simply drop off their child for class easily. We are very concerned this issue is affecting our business! (service)
- High school need a parking structure (service)
- We are near the Farmer's Market so we just need to be sure we have street parking available at that time too (mostly for the Wednesday Market) (service).
- Please recognize that the numbers on this questionnaire may not fit the questions as measured. My business (with two employees) shares parking with two other businesses that have a total of 9 more employees. Also, if employees park in customer spaces – they will be told to move them and vice versa. (office)
- We need more than 1 hour parking on street between Watson and Angel on First! (office)
- Please remove 2-hour signs and replace with metered parking, or reduce cost of permit parking! (restaurant).
- The cobblestone intersections are a waste of money. (service)

- I think Broadway Street from Canyon, all the way through downtown, should be a one way – due to the car dealership and the fact there is not back loading space on Broadway. The large trucks create a jam much of the time at peak business hours. (service)

APPENDIX C

Stakeholder Interview Summary

M E M O R A N D U M

Date: **December 15, 2006**

To: **Jennifer Polley – City of Beaverton**
John Southgate - City of Hillsboro

From: **Derek Chisholm and Lauren Golden - Parametrix**

Subject: **Stakeholder Interviews Summary**

cc: **Rick Williams and Owen Ronchelli - RW Consulting**

Project Number: **277-2395-053**

Project Name: **Beaverton and Hillsboro Parking Solutions Study**

The purpose of this memo is to summarize the stakeholder interviews conducted as part of the Beaverton and Hillsboro Parking Solutions Study. The stakeholders included developers, real estate brokers, and property owners in the downtown areas. Parametrix asked the stakeholders fifteen questions, which addressed current and future parking requirements, parking facilities, how to increase higher density development in the downtowns, and lending requirements in the downtowns. Parametrix conducted the stakeholder interviews in November and December 2006. Among the eight stakeholders who were contacted for an interview, six stakeholders were available for an interview.

This memo will begin with a summary of the most common themes heard during the stakeholder interviews. The memo will then summarize the comments by each question.

COMMON THEMES

A few common themes emerged from the interviews. Common themes included:

- The respondents generally agreed that the primary users of public parking in the downtowns should be retail and office users.
- If the cities do charge for parking, the rates should be competitive with other cities of comparable size. If the rates are too high, Hillsboro and Beaverton will be at a competitive disadvantage.
- Responses varied on whether the cities require too much on-site parking, the right amount, or not enough on-site parking.
- The interviewees agreed with the results of the preliminary analysis, which suggested that there is a relatively ample supply of parking in the downtowns.
- A few respondents commented that a change in the parking minimum and maximum parking requirements alone would not change development patterns in the downtowns. Instead, the respondents said that there are other development constraints that hinder high density development.

- The interviewees agreed that the development of a structured parking facility in the downtowns is a good idea.
- The respondents generally agreed that bankers would still loan money to businesses in the downtowns if the minimum and maximum parking standards were reduced, although it would be more difficult.
- Subsidized office parking would be an incentive for office uses to locate in the downtowns.

RESPONSES TO COMMENTS

Question 1

Is parking a problem for your employees, customers, etc? How did you come to that conclusion?

Two interviewees responded to this question. A property manager for a large office development in downtown Beaverton said that the development's employees and customers do not have trouble finding parking spaces. She said that the parking management report she prepares for the investors proves that there is ample parking. As part of this report, parking counts are taken four times a day and five times a week in the development's parking lots and structures.

She also added that valet parking and additional surface parking in the development ensure that there is ample parking. The property in downtown Beaverton is part of a phased development, and a portion of the site, which is reserved for a future building, is currently used as surface parking. Additionally, several businesses in the development offer valet parking.

Another business in downtown Beaverton also said that parking is not a problem for her employees or customers, as there is an ample supply of on-site parking at the business. However, she did comment that parking on-site is some times a problem during the Saturday Market operating hours. She said that Saturday Market customers are able to use her parking because she does not rope it off.

Question 2

Is parking a problem for others in the downtown area? Who and Where? How did you come to that conclusion?

One business manager answered this question. She said that parking is a problem for others in the downtown area. She said that the main reason for this problem is because there are not a lot of private lots for drivers to use, and drivers must use on-street parking. She also commented that parking is a problem on Main Ave., Angel Ave., and Watson Ave. in Beaverton.

Question 3

In your opinion, who should be the primary users of public parking in the downtown? How much should parking cost downtown? Should there be inexpensive meters, expensive meters, inexpensive garages, expensive garages, etc?

The interviewees agreed that retail and office uses should be the primary users of public parking in the downtowns.

Three interviewees said that suburban users do not expect to pay for parking, and the city would need to consider this when determining structured parking costs. They added that \$35.00 to \$50.00 was the maximum that the city could charge for monthly space rentals in a parking structure. If the city priced the spaces any higher, downtown Hillsboro and Beaverton would be at a competitive disadvantage compared to other areas in the metro region.

Two interviewees specifically said that meters should be located in the downtowns. One interviewee commented that meters would help deter transit riders from using downtown Beaverton public parking spaces as a park-and-ride. Another interviewee said that meters should be located where the city wants the most turnover. However, one interviewee stated that meters should not be located in the downtowns, as suburban users do not expect to pay for parking.

One interviewee commented that the cost of parking in the downtowns should be informed by a comparison study of small cities that are beginning to charge for parking. She gave the City of Eugene as an example.

Question 4

Do you have any experience with the City's parking requirements? If so, do you feel that the City requires too much on-site parking, not enough on-site parking, or just the right amount?

Answers to this question varied. Of the four stakeholders who responded to this question, one said that the city requires too much on-site parking, one said that the city requires the right amount, and two said that city requires less than enough on-site parking.

One of the two interviewees who responded that the city requires not enough on-site parking commented that the maximum parking requirements are unrealistic for businesses without access to transit. Additionally, the interviewee said that the maximum parking requirements place those businesses in the downtown areas at a competitive disadvantage because of the lack of transit access. The interviewee also suggested that the city should allow developers a variance to the maximum parking requirements, and possibly charge developers a higher impact fee if a developer creates more than the maximum allowed parking.

Question 5

Preliminary analysis suggests that there is a relatively ample supply of parking, and that the City of Hillsboro (Beaverton) could reduce its minimum off street parking requirements. Do you share our preliminary conclusions about parking demand in downtown Hillsboro (Beaverton)? If the minimum parking requirements were indeed reduced, do you think you or other developers might develop accordingly, or would you still feel compelled to maximize the supply of off street parking?

The interviewees agreed with the results of the preliminary analysis, which suggested that there is a relatively ample supply of parking in the downtowns.

One interviewee commented that the type of project would dictate whether or not developers would feel compelled to maximize the supply of off-street parking. For example, the interviewee said that a developer would not provide the maximum allowed parking if the development was near a light rail transit stop or if it was proven that the employees would use transit.

Question 6

What impact do the City's current parking requirements have on development in the downtown?

Two interviewees answered this question. One person commented that she is not sure if parking requirements have an impact on development in the downtown. The other interviewee said that although parking requirements will not make or break development decisions, the current maximum is restrictive for certain uses. He suggested that the city revise its parking maximums for uses that it would like to attract to the downtowns. He also commented that the cities need to have a variable maximum requirement that should be based on proximity to transit.

Question 7

In the long term the City contemplates development of one or more structured parking facilities. Please offer your perspective on this prospect. Where should such a structure be located? How might such a structure help make new higher density development more likely/feasible?

The interviewees agreed that the development of a structured parking facility in the downtowns is a good idea. A few interviewees suggested that the structure parking facility should be centrally located with easy access, located near an anchor, and visually attractive (e.g., parking garages in Bend with retail on the bottom floor). One person said that a structured parking facility should be located near the Health Professions Campus. Another said that structured parking should be located near the light rail transit stops to accommodate park-and-ride users. Another said that structured parking should not be located on Main Street in Hillsboro, as that land should be saved for office development.

The interviewees agreed, with one exception, that a parking structure would help make higher density development more feasible.

One interviewee commented that structured parking with dedicated office parking would be an incentive for office uses to locate in the downtowns.

Question 8

Are there other measures that the City could take with respect to parking, either from an investment perspective and/or policy/code changes (i.e. modifications to the regulation of on-street parking, reduced minimums etc.) that would assist you or other developers in moving forward with higher density development projects?

The interviewees had several ideas for measures that the city could take with respect to parking that would assist developers in moving forward with higher density development projects. The cities could:

- Include dedicated office parking in the structured parking facility as a means to attract office uses to the area
- Use shadow platting, whereby the city provides surface parking on city owned land until it is ready to build a structured parking facility
- Require some covered parking or attached garages in the residential zones downtown - covered parking is an amenity that could help attract people to relocate downtown
- Create urban renewal areas in the downtowns
- Use fee waivers to lower project costs
- Engage in public/private partnerships
- Allow variances to the maximum parking requirements if the development project meets certain criteria, such as develops a LEED certified building or helps the jurisdiction manage the additional traffic associated with additional parking spaces.

Question 9

What are your perceptions of the development constraints to new higher density "regional center" type development in downtown Hillsboro (Beaverton), both in general and then in particular related to parking and access.

Respondents commented more on general development constraints rather than constraints related to parking and access. General development constraints include:

- Need for a crossing at light rail tracks in Hillsboro
- Land prices
- Small lots
- Lack of sense of space
- Need for a catalyst site
- Lack of public/private partnerships
- Beaverton is known for its high level of congestion

In relation to parking and access, one interviewee commented that the lack of parking lots or structures for large office space is a development constraint to new higher density type of development. Another interviewee commented that if the cities require more parking, development costs will rise and higher density will become less attractive.

Question 10

Development is not proceeding as quickly as planned in downtown Beaverton/ Hillsboro. If we changed the parking requirements, would it make a difference?

Interviewees did not indicate that a change in the parking requirements alone would help development proceed quicker. Rather, two respondents commented that a change in the parking requirements was just one in a series of policy changes that would help development proceed quicker. Additionally, one interviewee commented that shortening the permitting process timeframe would help development proceed more quickly than if the city changed its parking requirements.

Question 11

If we reduce our parking minimums and maximums, would bankers still loan money to businesses in our downtowns?

The respondents generally agreed that bankers would still loan money to businesses in the downtowns if the minimum and maximum parking standards were reduced, although it would be more difficult. Some interviewees commented that banks would be apprehensive about reduced parking requirements because they want to ensure that there will be enough parking if and when uses change. One interviewee suggested that if the city does reduce the minimum and maximum parking requirements, the city should outreach to the banks and let them know that reduced minimums and maximums are acceptable in the downtowns.

Despite the above comments, one representative of a lending institution commented that banks do not base loan decisions on a proposed parking amounts. She said that her lending institution has loaned money to several businesses in downtown Beaverton, and parking was never an issue when determining the terms of the loan.

Question 12

Lenders on Portland projects do not seem to require the same amount of parking per sq ft or per unit as they do for projects in Hillsboro or Beaverton. Is this perception correct? How could the cities work with the lender and/or developer community to get a more "reasonable" parking requirement from a lender standpoint?

Among the interviewees who answered this question, most agreed with the perception that lenders on Portland projects do not require the same amount of parking as they do for projects in Hillsboro or

Beaverton. The interviewees suggested that the city conduct outreach to the lender and developer community about realistic parking requirements.

Question 13

How should parking be provided in the future (i.e., continue on surface lots, transition to garages).

Suggestions for future parking included:

- Adequate street parking with a mix of long-term and short-term parking.
- Surface lots for short-term and daily parking.
- Garages

One interviewee commented that an interim solution could be for the city, Metro, or Tri-Met to build the structure and subsidize some of the spaces by allocating spaces for new office development. Over a period of time, the office development would return unused parking spaces to the city. Alternatively, the city could offer financial incentives to return unused parking spaces to the city. The city could then market those unused spaces to potential new developers.

Question 14

Are there particular problems that you would like this study to address?

Two interviewees commented that they would like the study to address how to provide parking for MAX users and creating pedestrian friendly paths in between stops.

Question 15

Are there particular solutions that you would like this study to explore?

One interviewee suggested that the study explore commuter rail. Another interviewee suggested that the study explore how to allocate structured parking to new development. A third interviewee commented that the study should evaluate successful downtown redevelopment tools used by comparable cities. Finally, a fourth interviewee encouraged the study to continue exploring parking garages.

APPENDIX D

Final Strategy Recommendations Checklist

**DOWNTOWN BEAVERTON, OREGON
EXECUTIVE SUMMARY
FINAL STRATEGY RECOMMENDATIONS CHECKLIST**

PARKING MANAGEMENT STRATEGIES

As a result of the data inventory process and continuing discussions with the City and stakeholders, specific parking management strategies have been identified and are recommended for implementation. Recommendations for changes in current policy/code and several near-term strategies will optimize the efficiency of the *existing* parking inventory in Downtown Beaverton. Additional mid- and longer-term strategies are also recommended for consideration.

A. POLICY LEVEL ACTIONS (Immediate Implementation)

The following policy elements have been included to ensure the goals of the parking management plan can be achieved by incorporating parking system management into the City's development policy.

1. Assign the responsibilities of a "Parking Manager/Coordinator" for the City of Beaverton.

The complexity of parking and access will increase as the City and the downtown grows through redevelopment and increased demand for access. A single person should be assigned to oversee and manage all aspects of the parking program associated with Zones A and B. This person will also be responsible for transitioning strategies developed as a part of the 2006 study for downtown to other emerging commercial areas adjacent to the downtown.

2. Establish an advisory role for stakeholders to assist in parking program implementation and review.

The City should develop a process through which a representative cross section of downtown interests routinely assist the Parking Manager in the review and on-going implementation of the Parking Management Plan. If the Traffic Commission were provided new members who represented the downtown, this could be a subcommittee there of.

3. Adopt policies and rules to guide parking management

a. Codify Guiding Principles for Parking Management as elements of City Code.

"Codifying" the Guiding Principles by incorporating them into the Comprehensive Plan will serve to inform future management decision-making as well as development of future public facilities.

b. Establish "Parking Management Zones" based on desired economic uses and user types.

Different segments of the downtown have different economic uses and represent different points of access into the downtown. It is recommended

that Beaverton establish two separate parking management zones (within the study zone), each having specific operational priorities.

- c. **Adopt “Operating Principles” and an implementation framework that defines the priority purpose/use for parking in each parking management zone. Adopt the principles and framework as City Code elements.**

Operating principles are established to describe the primary purposes for parking within each parking management zone and to complement and reinforce the Guiding Principles established for the downtown.

- d. **Adopt the 85% Rule to facilitate/direct parking management strategies.**

Within the parking industry, it has been demonstrated that when an inventory of parking exceeds 85 percent occupancy in the peak hour, the supply becomes constrained and may not provide full and convenient access to its intended user. Once a supply of parking routinely exceeds 85 percent occupancy in the peak hour, the 85% Rule would require that parking management strategies be evaluated and/or implemented to bring peak hour occupancies to a level below 85 percent to assure intended uses are conveniently accommodated.

- 4. **Eliminate minimum parking requirements for all commercial parking development within Zones A and B.**

Data from the 2006 parking inventory indicated that parking is currently being supplied at a rate far greater than actual demand. Elimination of minimum parking requirements should result in (a) less parking being built over time, allowing the market to determine an appropriate level of parking for new development, (b) more efficient use of existing supplies of parking and (c) better coordination and synergy with alternative modes of access.

- 5. **Require a .75 stalls per unit minimum parking standard for residential development within Zones A & B.**

As the City moves to encourage more residential development within what is now the commercial zone, competition for on-street parking will create conflicts between customers and residents. Residential units without parking located *within commercial zones* increase pressure for implementation of on-street residential permit programs. Per the operating principles for Zones A and B, on-street parking is ultimately prioritized for short-term stays.

- 6. **Where parking is required establish a parking Fee-in-Lieu program to accommodate developments that cannot incorporate parking into development sites (i.e., for reasons of site size, geometries, etc.).**

Fees-in-lieu provide developers an option should site constraints make parking prohibitive to a project or if a developer chooses not to build the minimum level of required parking.

7. Establish a Downtown Parking and Transportation Enterprise Fund as a mechanism to direct funds derived from parking over time into a dedicated fund.

As the supply of parking becomes constrained over time, it will be important to direct funds into a specific account intended to support on-going transportation and access in the downtown. This can be done with existing and future parking-related revenue, or with net new revenues generated as a result of implementation of this plan.

8. Evaluate additional funding sources for future parking development and parking system management.

Some combination of revenue sources will be necessary to assure the feasibility of future structured parking in the downtown, particularly funding associated with a publicly owned facility. A single revenue source is unlikely to cover the cost of parking development.

B. PARKING MANAGEMENT STRATEGIES

Based on the recently completed capacity and usage survey of the parking inventory a number of parking strategies are recommended for near-term implementation. These strategies will assist the City to optimize the use and accessibility of existing parking in Downtown Beaverton.

Near-Term Implementation - (by January 2008)

The following strategies are recommended for near-term implementation.

1. Appoint a Downtown Parking Manager

Upon approval of a budget and service package by the City Council, the City should move forward with the appointment or hiring of a downtown parking manager. This position would be charged with the implementation of the overall parking management plan.

2. Initiate Parking Advisory process.

Once the Parking Manager is appointed and established, the process of review, evaluation and decision-making with representative stakeholder input for parking management in downtown should be initiated.

3. Eliminate all 1-hour, 4-hour and No Limit on street parking in Zone A and create a uniform on-street time stay of 2 hours within this zone.

Currently, on-street parking in Zone A is comprised of a mix of 1-hour, 2-hour, 4-hour and No Limit parking. For purposes of convenience, it will be important to establish Zone A as a “customer first” parking zone. A uniform on street time stay allowance of 2 hours will accommodate customer demand and better communicate and encourage the use of Zone B or off-street parking to visitors/customers and employees in need of a longer duration stay.

- 4. Standardize on-street parking in Zone B to 3-Hour parking “or by permit” to create longer-term stay options for customers and an all day option for employees and/or residents in need of all day parking.**

Standardizing time stays in Zone B will create a more simplified and understandable environment for customers visiting downtown. However, allowing on-street permit parking in this zone recognizes the very low demand for parking that currently exists within the 2006 study zone (i.e., peak occupancies of less than 45%).

- 5. Transition all employee on-street parking permits now issued in Zone A, to on-street locations in Zone B or off-street locations in Zone A or B.**

To assure that on-street parking in the Core Zone is available to customers and patrons, employee on-street permit parking in the Core Zone will be prohibited.

- 6. Eliminate all time restrictions in existing City owned off-street facilities to encourage greater use of public parking lots. The City should also treat these sites as future parking garage development sites.**

Given that occupancies in City owned parking lots are less than 30%, there is no need at this time to control time stays. It is recommended that these lots be (a) better identified through signage and/or “branding” and (b) offered as a convenient long-term, all day or monthly parking option. The City should also look at these sites as potential parking garage opportunity sites in the future. Given city ownership and control, the ability to build future structured parking on these sites may be more feasible than other options and/or privately controlled sites.

- 7. Initiate a new and comprehensive outreach program to all businesses within the study zone that communicates the parameters of the City’s permit program and access to publicly owned off-street lots.**

A survey of businesses conducted as a part of the 2006 parking study indicated that 65% of downtown businesses were not aware of the City’s parking permit program. Given the changes recommended in B. 3 – 6 above, a new outreach strategy and communications plan would facilitate more understanding of the options available to businesses and their employees.

- 8. Develop incentives that encourage private sector-led strategies to reduce demand for long-term parking, and make available private parking resources for short-term public customer and other desired uses.**

Given the cost of parking development and the limited land available to development, it will be important and useful for the City to encourage the development of publicly available parking and transportation demand management (TDM) programs and infrastructure in future private development projects. The opportunity to incent either more flexible management of private supplies (allowing general public access) or additional supply for public use within a private project should be explored as well as TDM systems that could reduce overall development costs.

9. Establish commuter mode split targets for employee access in Zones A & B.

Parking development regulations and requirements need to be supported by a system of access that accounts for all forms of capacity (i.e., auto, transit, bike, walk and rideshare). Quantifying the desired transition of commuters from an established status quo baseline to a desired target will (a) give policy support to the Guiding Principles and (b) inform, facilitate parking strategies and (c) provide a standard of measurement that can be evaluated in the future.¹

10. Conduct a Capacity Study during the Saturday Farmers Market

During the public involvement process, stakeholders identified a need to better understand the parking conditions and their impacts on Saturdays. Using a similar methodology to that of this project, the City should complete a capacity analysis. On-street and off-street occupancies should be assessed as well as stakeholder interviews with small business owners in the affected area. The City should look to Metro for possible assistance in conducting and funding this analysis.

11. Develop and install a signage package of uniform design, logo and color at publicly available off-street locations.

Creating a uniform signage package that incorporates a unique logo and color scheme for public parking facilities will establish a sense of recognition, identity and customer orientation for users of the downtown parking system.

12. Strategically place new and unique wayfinding signage in the right of way at locations chosen carefully to direct visitors to off-street locations.

The City should develop directional signage on the roadways that direct customers to specific facilities. This will be of greatest importance at primary portals into the downtown, at major traffic intersections and at primary points of ingress at specific facilities.

Mid-Term Implementation – (by October 2009)

The following strategies are recommended for mid-term implementation.

13. Examine and develop a strategy plan that would improve bicycle and pedestrian connections between transit and light rail stations and downtown destinations.

The SAC recommends that a strategic action be developed that assesses and recommends improvements that make connections between transit stops and major downtown destinations more convenient, safe and recognizable. This could include a range of improvements that include pathway infrastructure to attractive and informative signage.

¹ This recommendation is directed at the area boundary covered by the 2006 Parking Solutions Study. The discussion of commuter mode split targets for areas outside the study zone may be useful as parking management in Beaverton expands over time.

14. Implement a package of incentives for the private development of publicly available parking supply and TDM options in the downtown.

It is recommended that the City creates and implements a package of incentives that would be made available to private developers that allow for or add publicly available parking into downtown development projects. Similar incentives would be created for privately initiated Transportation Demand Management programs. The package of incentives would follow adoption of a parking incentive policy described in B, 8 above.

15. Recommend to the City Council the commuter modes split targets developed in 9, above for adoption as a policy element of the Beaverton transportation and parking management plan.

The City would adopt as policy goals commuter mode split targets for access in the downtown. These goals should be incorporated into Chapter 6 of the Comprehensive Plan. These targets are intended to create a direct link between actual parking management strategies (particularly parking maximums) and adopted targets for access to the Beaverton Regional Center.

16. Initiate discussions with downtown businesses to develop a “Customer First” partnership among downtown businesses.

“Customer First” partnerships are in place in other cities, whereby downtown businesses develop and sign a downtown partnership agreement that pledges that their business will actively promote short-term parking priorities in the downtown and aggressively work with their employees to either park off-street or take alternative transportation modes to work.

17. Partner with the business community to develop a marketing and communication system for access in Beaverton. The marketing/communication system could include (but not be limited to): branding; maps; validation program(s); TDM alternatives and valet parking.

A successful parking system will require on-going marketing and communication. The foundation for a marketing and communication program is the signage and wayfinding package recommended in this report. Support of this system can be facilitated through informational maps and brochures about Beaverton and its parking system distributed through Business Association, Visitor Services, Retail and Lodging networks.

18. Negotiate shared use and/or lease agreements with owners of strategically placed private surface lots and parking structures to provide for an interim supply of parking where needed.

One hundred twenty six private parking facilities were inventoried during the data survey. These lots are significantly underutilized, even during peak times (i.e., less than 45 percent occupied). The ability of the City to “capture” as many of these stalls as are available in the peak hour for more active management will provide a relatively low cost and effective near to mid-term strategy for mitigating existing access constraints during peak demand periods.

- 19. Evaluate a reduction in current maximum parking ratios for new development in the downtown, to assure that access impacts of new development are meaningfully addressed. Also, parking maximums should be more directly correlated to commuter mode split targets developed/adopted in B. 9 & 15, above**

Data from the parking study indicates that current demand generated by land uses in the downtown is in the range of 1.85 stalls per 1,000 SF of commercial floor area. Maximum ratios in place at this time range from 3.4 to 10 stalls per 1,000 SF for many uses. Per strategies B. 9 & 15 above, the Parking Manager and Parking Advisory Committee will evaluate and recommend new parking maximums for development downtown.

- 20. Sponsor employer-based initiatives to encourage employee use of alternate travel modes.**

Coupled with B. 14 and 16, above, private sector businesses should be encouraged to provide incentives and subsidies to their employees that result in meaningful changes in employee commute choices. The Parking Manager and Parking Advisory Committee can assist in facilitating development of such programs and partnerships with downtown businesses.

- 21. Identify and complete planning for possible development of new public visitor parking supply in Zone A.**

A strategically located public parking facility in Zone A would assure continued access opportunities for customers and visitors in the future, particularly as on-street parking supply is maximized. To assure continued short-term parking access that supports vital retail growth, the City may need to develop a centralized facility to support customer access.

Long-Term Implementation – (three years and beyond)

The following strategies are recommended for long-term implementation.

- 22. Monitor downtown parking utilization continuously and periodically. Conduct parking inventory analyses.**

The recently completed analysis of Beaverton's parking inventory provides excellent information on parking utilization, turnover, duration of stay and peak hour capacity. Periodic monitoring of parking activity will allow Beaverton to (a) better coordinate enforcement, (b) assure maximum utilization based on intended uses and (c) provide solid evidence for the need to move to higher and/or more aggressive levels of parking management as called for in the Operating Principles for parking management zones.

- 23. Evaluate the impact of near and mid-term strategies based on an updated utilization and demand study. If and when warranted, develop a pricing policy strategy and implement paid on street parking in Zone A and/or B based on the 85% Rule.**

The strategies outlined in Section B above will create changes in access dynamics downtown. If, after nearly three years of growth, parking occupancies in Zone A and/or

continue to exceed 85% in the peak hour, move to meter the Zone(s). If metering is pursued, it is recommended that on-street pay stations be considered rather than single head meters.

24. Implement Parking Revenue Strategies

Given Beaverton's size and its estimated growth, *it is not anticipated or suggested* that the City of Beaverton move to parking pricing for customer access in the near-term. Nonetheless, as new capacity for parking and transportation access (i.e., garages, transit programs, etc.) are considered in the context of a 3 - 7 year plan, the issue of pricing and new revenue sources needs to be incorporated into the City's parking management plan. The decision to move to parking pricing and new revenue sources would be facilitated by the parking pricing and funding strategies developed by the City (see B. 23, above), with input from the Parking Manager and Parking Advisory Committee.

25. Lease/acquire strategically located land parcels for use as future public off-street parking locations. This strategy would only be implemented if "strategic" parcels on not already in public ownership/control.

The City would lease or acquire strategically located land parcels in Zone A for future parking use. Strategically locating future parking sites allows the City to use such sites as (a) interim surface parking locations (until desired development would transition the sites to commercial/retail) and/or (b) future parking structure locations.

26. Complete development and open new supply in Zone A.

Completion of site identification, planning, outreach and funding efforts described in 21 & 25, above, would be finalized and the project completed and opened to the public.

27. Consider street improvement projects incorporating new and/or angle parking.

There are opportunities in the downtown for angle parking (on-street diagonal) to increase the number of on-street stalls. Where other reasons trigger street improvement projects, or when the on-street occupancies exceed 85%, the City should complete preliminary designs based upon the angle-parking recommendations in Technical Memorandum #3 and/or seek to add parallel parking as appropriate.

III. SUMMARY

The City of Beaverton is striving to promote growth that fits into the future vision of downtown. A strong parking management plan is one tool that can assist the City in attaining its vision.

A strong parking management plan:

- Defines the intended use and purpose of the parking system.
- Manages the supply
- Enforces parking policies
- Monitors use and responds to changes in demand
- Maintains the intended function of and priorities for the overall system.

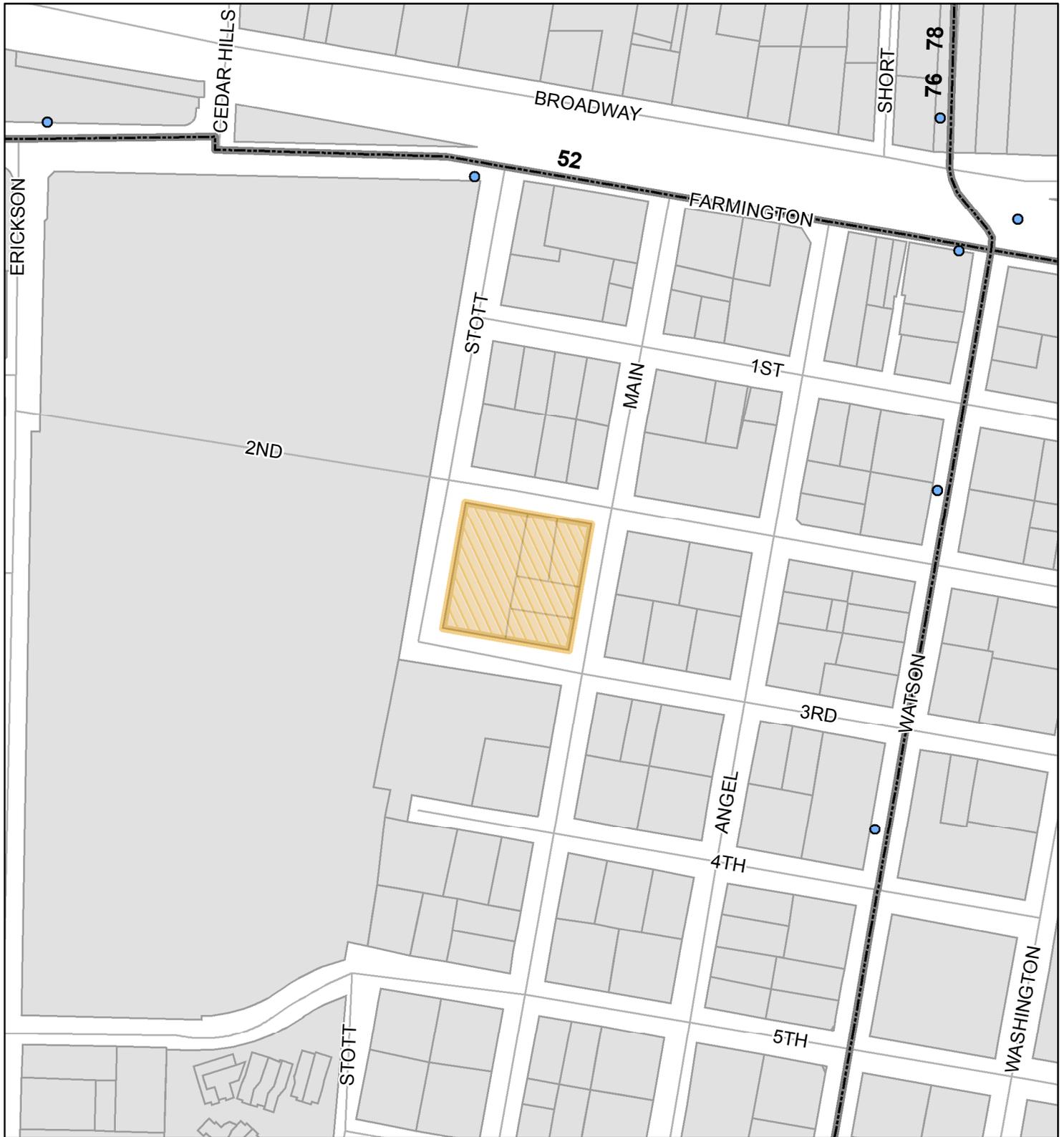
This plan has been developed to support the guiding principles and operating principles for parking and access in the downtown. As such, the plan and its strategies reflect the fundamental values and objectives stakeholders have for Downtown Beaverton.

APPENDIX E

Technical Memo #6 Attachments

ATTACHMENT A, MAPS OF SUBJECT SITES

Figure 2
City of Beaverton : Site 2



0 180 360 Feet

- Proposed Site
- Bus Lines
- Parcels
- streets
- Bus Stops

Figure 1
City of Beaverton : Site 1



0 180 360 Feet

- Proposed Site
- Bus Lines
- streets
- Bus Stops
- Parcels

ATTACHMENT B, PRO FORMAS SUPPORTING DOCUMENTATION

PROJECT DESCRIPTION	Amount
Project Component	
Total Land Area (square feet)	30,000
Parking (Public Garage)	120,050
Total Spaces	343
Parking Levels	4.00
Retail	
Gross Square Feet	15,000

CAPITAL ASSUMPTIONS	Amount
Construction Costs:	
Demolition/Relocation	\$0
Site Acquisition (sf) 30,000 s.f. @ \$0.00 per s.f.	\$0
Site Readiness (enviormental/utilities) See construction SF #	\$0
Drainage See construction SF #	\$0
Street Improvements See construction SF #	\$0
Sub-total Site Costs	\$0
Parking Spaces	
Total number of spaces to construct @ \$103.75 per s.f.	343
Square foot per stall 350.00 SF per stall	0
Parking cost per space constructed	\$36,313
Sub-total Parking Construction Cost	\$12,455,188
Retail Space	
Gross Square Feet	15,000
Cost per square foot	\$90.00
Sub-total Retail Construction Cost	\$1,350,000
Total Direct Construction Costs:	
Combined Site, Parking and Retail/Residential	\$13,805,188
With Sales Tax @ 0.0%	\$0
INDIRECT COSTS @ 21% of direct costs	\$2,899,089
GROSS DEVELOPMENT COST	\$16,704,277
Project Equity @ 0% of gross development cost	\$0
Additional Equity Contributions	\$0
TOTAL PROJECT EQUITY	\$0
PROJECT AMOUNT FINANCED	\$16,704,277

REVENUE ASSUMPTIONS	Amount
Parking:	
Number of Spaces Constructed	343
Estimated Revenue Per Stall (monthly pass per month)	\$ -
Estimated Revenue Per stall (cash - per stall per mo.)	\$ -
Retail	
Total Area (square feet)	15,000
Average Rental Rate (per square foot per year)	\$ 5.40
Average Annual Rental Rate Increase	3%
Initial Vacancy Rate	45%
Normalized Vacancy Rate	95%
Years to Normal	1

MAJOR EXPENSE ASSUMPTIONS	Amount
Parking:	
Operations cost(annual per stall)	\$ -
Valet Expneses (annual per stall)	\$ -
Security costs (annual per stall)	\$ 51.00
Maintenance Cost (annual per stall)	\$ 28.00
Electricity (annual per stall)	\$ 88.00
Administration (annual per stall)	\$ 50.00
Replacement/Repair (annual @ 3% of gross revenue)	\$ 1,904
Retail:	
Percent of Gross Operating Income	10%
Residential	
Percent of Gross Operating Income	35%
FINANCIAL BREAKOUT (Impact on Rates)	Amount
Parking:	
Estimated Income before Debt Service (annualized @ 20 yrs)	(\$85)
Actual gross monthly revenue per stall (Yr 2)	\$25
Actual net monthly revenue per stall (Yr 2)	(\$308)

Basic Project Assumptions

- 30,000 square foot site pad
- 120,050 total floor area
- 343 parking spaces
- \$36,313 base development cost per parking stall
- \$48,701 fully loaded cost per parking stall/with retail
- \$0 cost of land
- \$0 per stall cost for land
- 0.00 sales tax on construction costs at 0.0%
- \$25.45 per month revenue per stall (including retail rents) - Year 2
- \$0.00 Rate per hour for customer/visitor business
- \$0.00 Daily Maximum Rate (all day stay)

Demand indicators

(if a paid parking schedule is implemented)

- 4 Average duration of stay (hours) weekend visit
- 3 Average duration of stay (hours) for evening
- 2.5 Average duration of stay (hours) for retail
- 2.9 Average turns per stall per weekday (8 a.m. - 6 p.m.)
- 2.0 Average turns per stall per evening (6 p.m.. - 11:00 p.m..)
- 2.8 Average turns per weekend (11:00 a.m. - 10:00 p.m.)
- 0 Monthly passes sold
- 0 Weekday "daily max" rate stays @ 15% of all stalls

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30	TOTAL
INCOME																															
Parking Income (monthly passes)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Parking Income (cash sales)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Retail Income	\$36,450	\$76,950	\$81,636	\$84,085	\$86,608	\$89,206	\$91,882	\$94,639	\$97,478	\$100,402	\$103,414	\$106,517	\$109,712	\$113,004	\$116,394	\$119,886	\$123,482	\$127,187	\$131,002	\$134,932	\$138,980	\$143,150	\$147,444	\$151,867	\$156,424	\$161,116	\$165,950	\$170,928	\$176,056	\$181,338	\$3,618,120
Retail Tenant Reimbursement (Tax and Ins. only)	\$27,000	\$27,810	\$28,644	\$29,504	\$30,389	\$31,300	\$32,239	\$33,207	\$34,203	\$35,229	\$36,286	\$37,374	\$38,496	\$39,650	\$40,840	\$42,065	\$43,327	\$44,627	\$45,966	\$47,345	\$48,765	\$50,228	\$51,735	\$53,287	\$54,885	\$56,532	\$58,228	\$59,975	\$61,774	\$63,627	\$1,284,536
Total Income	\$63,450	\$104,760	\$110,281	\$113,589	\$116,997	\$120,507	\$124,122	\$127,845	\$131,681	\$135,631	\$139,700	\$143,891	\$148,208	\$152,654	\$157,234	\$161,951	\$166,809	\$171,814	\$176,968	\$182,277	\$187,745	\$193,378	\$199,179	\$205,154	\$211,309	\$217,648	\$224,178	\$230,903	\$237,830	\$244,965	\$4,902,656
EXPENSES																															
Operator Cost	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Valet Expense	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Protective Service	\$17,493	\$18,018	\$18,558	\$19,115	\$19,689	\$20,279	\$20,888	\$21,514	\$22,160	\$22,824	\$23,509	\$24,214	\$24,941	\$25,689	\$26,460	\$27,254	\$28,071	\$28,913	\$29,781	\$30,674	\$31,594	\$32,542	\$33,518	\$34,524	\$35,560	\$36,626	\$37,725	\$38,857	\$40,023	\$41,223	\$832,237
Sweeping	\$2,610	\$2,689	\$2,769	\$2,852	\$2,938	\$3,026	\$3,117	\$3,210	\$3,307	\$3,406	\$3,508	\$3,613	\$3,722	\$3,833	\$3,948	\$4,067	\$4,189	\$4,314	\$4,444	\$4,577	\$4,714	\$4,856	\$5,001	\$5,152	\$5,306	\$5,465	\$5,629	\$5,798	\$5,972	\$6,151	\$124,183
Administration Fee	\$17,150	\$17,665	\$18,194	\$18,740	\$19,302	\$19,882	\$20,478	\$21,092	\$21,725	\$22,377	\$23,048	\$23,740	\$24,452	\$25,185	\$25,941	\$26,719	\$27,521	\$28,346	\$29,197	\$30,073	\$30,975	\$31,904	\$32,861	\$33,847	\$34,862	\$35,908	\$36,986	\$38,095	\$39,238	\$40,415	\$815,918
Electricity	\$30,184	\$31,090	\$32,022	\$32,983	\$33,972	\$34,992	\$36,041	\$37,123	\$38,236	\$39,383	\$40,565	\$41,782	\$43,035	\$44,326	\$45,656	\$47,026	\$48,436	\$49,890	\$51,386	\$52,928	\$54,516	\$56,151	\$57,836	\$59,571	\$61,358	\$63,199	\$65,095	\$67,047	\$69,059	\$71,131	\$1,436,016
Minor Maintenance/Janitorial	\$9,604	\$9,892	\$10,189	\$10,495	\$10,809	\$11,134	\$11,468	\$11,812	\$12,166	\$12,531	\$12,907	\$13,294	\$13,693	\$14,104	\$14,527	\$14,963	\$15,412	\$15,874	\$16,350	\$16,841	\$17,346	\$17,866	\$18,402	\$18,954	\$19,523	\$20,109	\$20,712	\$21,333	\$21,973	\$22,632	\$456,914
Water and Sewer	\$1,521	\$1,978	\$2,038	\$2,099	\$2,162	\$2,227	\$2,294	\$2,362	\$2,433	\$2,506	\$2,581	\$2,659	\$2,739	\$2,821	\$2,905	\$2,993	\$3,082	\$3,175	\$3,270	\$3,368	\$3,469	\$3,573	\$3,680	\$3,791	\$3,905	\$4,022	\$4,142	\$4,267	\$4,395	\$4,526	\$91,383
Elevator Maintenance	\$3,067	\$3,180	\$3,275	\$3,373	\$3,474	\$3,579	\$3,686	\$3,797	\$3,911	\$4,028	\$4,149	\$4,273	\$4,401	\$4,533	\$4,669	\$4,809	\$4,954	\$5,102	\$5,255	\$5,413	\$5,575	\$5,743	\$5,915	\$6,092	\$6,275	\$6,463	\$6,657	\$6,857	\$7,063	\$7,275	\$146,865
Retail Operating Expense	\$6,345	\$10,476	\$11,028	\$11,359	\$11,700	\$12,051	\$12,412	\$12,785	\$13,168	\$13,563	\$13,970	\$14,389	\$14,821	\$15,265	\$15,723	\$16,195	\$16,681	\$17,181	\$17,697	\$18,228	\$18,775	\$19,338	\$19,918	\$20,515	\$21,131	\$21,765	\$22,418	\$23,090	\$23,783	\$24,496	\$490,266
Total Operating Expenses	\$88,394	\$94,987	\$98,074	\$101,016	\$104,047	\$107,168	\$110,383	\$113,694	\$117,105	\$120,618	\$124,237	\$127,964	\$131,803	\$135,757	\$139,830	\$144,025	\$148,346	\$152,796	\$157,380	\$162,101	\$166,964	\$171,973	\$177,132	\$182,446	\$187,920	\$193,557	\$199,364	\$205,345	\$211,505	\$217,850	\$4,393,782
OWNERSHIP EXPENSES																															
Property Taxes	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Insurance	\$4,802	\$4,946	\$5,094	\$5,247	\$5,405	\$5,567	\$5,734	\$5,906	\$6,083	\$6,266	\$6,453	\$6,647	\$6,847	\$7,052	\$7,263	\$7,481	\$7,706	\$7,937	\$8,175	\$8,420	\$8,673	\$8,933	\$9,201	\$9,477	\$9,761	\$10,054	\$10,356	\$10,667	\$10,987	\$11,316	\$228,457
Professional Services	\$3,430	\$3,533	\$3,639	\$3,748	\$3,860	\$3,976	\$4,096	\$4,218	\$4,345	\$4,475	\$4,610	\$4,748	\$4,890	\$5,037	\$5,188	\$5,344	\$5,504	\$5,669	\$5,839	\$6,015	\$6,195	\$6,381	\$6,572	\$6,769	\$6,972	\$7,182	\$7,397	\$7,619	\$7,848	\$8,083	\$163,184
Reserves for Replacements/Repairs	\$1,904	\$1,961	\$2,019	\$2,080	\$2,142	\$2,207	\$2,273	\$2,341	\$2,411	\$2,484	\$2,558	\$2,635	\$2,714	\$2,795	\$2,879	\$2,966	\$3,055	\$3,146	\$3,241	\$3,338	\$3,438	\$3,541	\$3,647	\$3,757	\$3,869	\$3,986	\$4,105	\$4,228	\$4,355	\$4,486	\$90,560
Total Ownership Expenses	\$10,136	\$10,440	\$10,753	\$11,075	\$11,408	\$11,750	\$12,102	\$12,465	\$12,839	\$13,225	\$13,621	\$14,030	\$14,451	\$14,884	\$15,331	\$15,791	\$16,265	\$16,752	\$17,255	\$17,773	\$18,306	\$18,855	\$19,421	\$20,003	\$20,603	\$21,221	\$21,858	\$22,514	\$23,189	\$23,885	\$482,201
NET OPERATING INCOME	(\$35,080)	(\$666)	\$1,454	\$1,498	\$1,542	\$1,589	\$1,636	\$1,686	\$1,736	\$1,788	\$1,842	\$1,897	\$1,954	\$2,013	\$2,073	\$2,135	\$2,199	\$2,265	\$2,333	\$2,403	\$2,475	\$2,549	\$2,626	\$2,705	\$2,786	\$2,869	\$2,956	\$3,044	\$3,136	\$3,230	\$26,673
Debt Service	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$1,268,154)	(\$25,363,081)
NET INCOME	(\$1,303,234)	(\$1,268,820)	(\$1,266,700)	(\$1,266,656)	(\$1,266,612)	(\$1,266,565)	(\$1,266,518)	(\$1,266,469)	(\$1,266,418)	(\$1,266,366)	(\$1,266,312)	(\$1,266,257)	(\$1,266,200)	(\$1,266,141)	(\$1,266,081)	(\$1,266,019)	(\$1,265,955)	(\$1,265,889)	(\$1,265,821)	(\$1,265,751)	\$2,475	\$2,549	\$2,626	\$2,705	\$2,786	\$2,869	\$2,956	\$3,044	\$3,136	\$3,230	(\$25,336,408)

ASSUMPTIONS			
Assumes Land and Building Cost of:	\$16,704,277	Assumes Monthly Per Stall Pass Revenue of----->	\$ -
PLUS Capital Expenses	\$0	Assumes Monthly Per Stall Cash Sales Revenue of ----->	\$0.00
TOTAL Project Cost	\$16,704,277	Assumes Annual Groundfloor (x,xxx sf) Retail Rent of-->	\$ 5.40
Condo Provided Equity (Debt Coverage)	\$0		
Port Debt = Total Project Cost MINUS Equity:	\$16,704,277		
Assumes Lending Rate of:	4.50%	First Year Debt Coverage Ratio	
Term of Loan (years):	20 Years	(0.03) %	

(\$1,270,435.72)
(\$2,281.67)

Escalation @ 3%	1	1.03	1.0609	1.092727	1.12550881	1.159274074	1.194052297	1.229873865	1.266770081	1.304773184	1.343916379	1.384233871	1.425760887	1.468533713	1.512589725	1.557967417	1.604706439	1.652847632	1.702433061	1.753506053	1.806111235	1.860294572	1.916103409	1.973586511	2.032794106	2.09377793	2.156591268	2.221289006	2.287927676	2.356565506
Escalation @ 5%	1	1.05	1.1025	1.157625	1.21550625	1.276281563	1.340095641	1.407100423	1.477455444	1.551328216	1.628894627	1.710339358	1.795856326	1.885649142	1.979931599	2.078928179	2.182874588	2.292018318	2.406619234	2.526950195	2.653297705	2.78596259	2.92526072	3.071523756	3.225099944	3.386354941	3.555672688	3.73456322	3.92129138	4.116135595

Debt Percentage----->	1.00	Project Cost	\$ 16,704,277
Debt----->	\$ 16,704,277		
Interest----->	4.5%		
Term----->	20		
Owner Equity----->	\$0		
Additional Equity Contributions	\$0		
Annual Debt----->	(\$1,268,154)		
Groundfloor retail sf----->	15,000		
rent per sf----->	\$ 5.40		
Parking Stalls Constructed	343		

TENANT IMPROVEMENT FINANCING		
Debt----->		
Interest----->		
Term----->		
Annual Debt		
Monthly debt		

\$0.00

Actual monthly parking demand	0
Demand yr2 - 3	0
Demand yr 4 -7	0
Demand 8 -10	0
Demand 11 - 30	0

Land Cost 30,000 sf
0

(\$85.13) 20 year annual income before debt service
(\$1,268,239.17) 20 year annual income after debt service

PROJECT DESCRIPTION	Amount
Project Component	
Total Land Area (square feet)	40,000
Parking (Public Garage)	120,050
Total Spaces	343
Parking Levels	3.00
<i>Retail</i>	
Gross Square Feet	17,500

CAPITAL ASSUMPTIONS	Amount
Construction Costs:	
Demolition/Relocation	\$0
Site Acquisition (sf) 40,000 s.f. @ \$0.00 per s.f.	\$0
Site Readiness (enviormental/utilities) See construction SF #	\$0
Drainage See construction SF #	\$0
Street Improvements See construction SF #	\$0
Sub-total Site Costs	\$0
<i>Parking Spaces</i>	
Total number of spaces to construct @ \$103.75 per s.f.	343
Square foot per stall 350.00 SF per stall	0
Parking cost per space constructed	\$36,313
Sub-total Parking Construction Cost	\$12,455,188
<i>Retail Space</i>	
Gross Square Feet	17,500
Cost per square foot	\$90.00
Sub-total Retail Construction Cost	\$1,575,000
Total Direct Construction Costs:	
Combined Site, Parking and Retail/Residential	\$14,030,188
With Sales Tax @ 0.0%	\$0
INDIRECT COSTS @ 21% of direct costs	\$2,946,339
GROSS DEVELOPMENT COST	\$16,976,527
Project Equity @ 0% of gross development cost	\$0
Additional Equity Contributions	\$0
TOTAL PROJECT EQUITY	\$0
PROJECT AMOUNT FINANCED	\$16,976,527

REVENUE ASSUMPTIONS	Amount
Parking:	
Number of Spaces Constructed	343
Estimated Revenue Per Stall (monthly pass per month)	\$ -
Estimated Revenue Per stall (cash - per stall per mo.)	\$ -
Retail	
Total Area (square feet)	17,500
Average Rental Rate (per square foot per year)	\$ 5.40
Average Annual Rental Rate Increase	3%
Initial Vacancy Rate	45%
Normalized Vacancy Rate	95%
Years to Normal	1

MAJOR EXPENSE ASSUMPTIONS	Amount
Parking:	
Operations cost(annual per stall)	\$ -
Valet Expneses (annual per stall)	\$ -
Security costs (annual per stall)	\$ 51.00
Maintenance Cost (annual per stall)	\$ 28.00
Electricity (annual per stall)	\$ 88.00
Administration (annual per stall)	\$ 50.00
Replacement/Repair (annual @ 3% of gross revenue)	\$ 2,221
Retail:	
Percent of Gross Operating Income	10%
Residential	
Percent of Gross Operating Income	35%
FINANCIAL BREAKOUT (Impact on Rates)	Amount
Parking:	
Estimated Income before Debt Service (annualized @ 20 yrs)	\$20,116
Actual gross monthly revenue per stall (Yr 2)	\$30
Actual net monthly revenue per stall (Yr 2)	(\$310)

Basic Project Assumptions

- 40,000 square foot site pad
- 120,050 total floor area
- 343 parking spaces
- \$36,313 base development cost per parking stall
- \$49,494 fully loaded cost per parking stall/with retail
- \$0 cost of land
- \$0 per stall cost for land
- 0.00 sales tax on construction costs at 0.0%
- \$29.69 per month revenue per stall (including retail rents) - Year 2
- \$0.00 Rate per hour for customer/visitor business
- \$0.00 Daily Maximum Rate (all day stay)

Demand indicators

(if a paid parking schedule is implemented)

- 4 Average duration of stay (hours) weekend visit
- 3 Average duration of stay (hours) for evening
- 2.5 Average duration of stay (hours) for retail
- 2.9 Average turns per stall per weekday (8 a.m. - 6 p.m.)
- 2.0 Average turns per stall per evening (6 p.m.. - 11:00 p.m..)
- 2.8 Average turns per weekend (11:00 a.m. - 10:00 p.m.)
- 0 Monthly passes sold
- 0 Weekday "daily max" rate stays @ 15% of all stalls

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30	TOTAL
INCOME																															
Parking Income (monthly passes)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Parking Income (cash sales)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Retail Income	\$42,525	\$89,775	\$95,242	\$98,100	\$101,043	\$104,074	\$107,196	\$110,412	\$113,724	\$117,136	\$120,650	\$124,270	\$127,998	\$131,838	\$135,793	\$139,867	\$144,063	\$148,384	\$152,836	\$157,421	\$162,144	\$167,008	\$172,018	\$177,179	\$182,494	\$187,969	\$193,608	\$199,416	\$205,399	\$211,561	
Retail Tenant Reimbursement (Tax and Ins. only)	\$31,500	\$32,445	\$33,418	\$34,421	\$35,454	\$36,517	\$37,613	\$38,741	\$39,903	\$41,100	\$42,333	\$43,603	\$44,911	\$46,259	\$47,647	\$49,076	\$50,548	\$52,065	\$53,627	\$55,235	\$56,893	\$58,599	\$60,357	\$62,168	\$64,033	\$65,954	\$67,933	\$69,971	\$72,070	\$74,232	
Total Income	\$74,025	\$122,220	\$128,661	\$132,520	\$136,496	\$140,591	\$144,809	\$149,153	\$153,628	\$158,236	\$162,983	\$167,873	\$172,909	\$178,096	\$183,439	\$188,942	\$194,611	\$200,449	\$206,463	\$212,656	\$219,036	\$225,607	\$232,375	\$239,347	\$246,527	\$253,923	\$261,541	\$269,387	\$277,468	\$285,792	
EXPENSES																															
Operator Cost	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Valet Expense	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Protective Service	\$17,493	\$18,018	\$18,558	\$19,115	\$19,689	\$20,279	\$20,888	\$21,514	\$22,160	\$22,824	\$23,509	\$24,214	\$24,941	\$25,689	\$26,460	\$27,254	\$28,071	\$28,913	\$29,781	\$30,674	\$31,594	\$32,542	\$33,518	\$34,524	\$35,560	\$36,626	\$37,725	\$38,857	\$40,023	\$41,223	
Sweeping	\$2,610	\$2,689	\$2,769	\$2,852	\$2,938	\$3,026	\$3,117	\$3,210	\$3,307	\$3,406	\$3,508	\$3,613	\$3,722	\$3,833	\$3,948	\$4,067	\$4,189	\$4,314	\$4,444	\$4,577	\$4,714	\$4,856	\$5,001	\$5,152	\$5,306	\$5,465	\$5,629	\$5,798	\$5,972	\$6,151	
Administration Fee	\$17,150	\$17,665	\$18,194	\$18,740	\$19,302	\$19,882	\$20,478	\$21,092	\$21,725	\$22,377	\$23,048	\$23,740	\$24,452	\$25,185	\$25,941	\$26,719	\$27,521	\$28,346	\$29,197	\$30,073	\$30,975	\$31,904	\$32,861	\$33,847	\$34,862	\$35,908	\$36,986	\$38,095	\$39,238	\$40,415	
Electricity	\$30,184	\$31,090	\$32,022	\$32,983	\$33,972	\$34,992	\$36,041	\$37,123	\$38,236	\$39,383	\$40,565	\$41,782	\$43,035	\$44,326	\$45,656	\$47,026	\$48,436	\$49,890	\$51,386	\$52,928	\$54,516	\$56,151	\$57,836	\$59,571	\$61,358	\$63,199	\$65,095	\$67,047	\$69,059	\$71,131	
Minor Maintenance/Janitorial	\$9,604	\$9,892	\$10,189	\$10,495	\$10,809	\$11,134	\$11,468	\$11,812	\$12,166	\$12,531	\$12,907	\$13,294	\$13,693	\$14,104	\$14,527	\$14,963	\$15,412	\$15,874	\$16,350	\$16,841	\$17,346	\$17,866	\$18,402	\$18,954	\$19,523	\$20,109	\$20,712	\$21,333	\$21,973	\$22,632	
Water and Sewer	\$1,921	\$1,978	\$2,038	\$2,099	\$2,162	\$2,227	\$2,294	\$2,362	\$2,433	\$2,506	\$2,581	\$2,659	\$2,739	\$2,821	\$2,905	\$2,993	\$3,082	\$3,175	\$3,270	\$3,368	\$3,469	\$3,573	\$3,680	\$3,791	\$3,905	\$4,022	\$4,142	\$4,267	\$4,395	\$4,526	
Elevator Maintenance	\$3,087	\$3,180	\$3,275	\$3,373	\$3,474	\$3,579	\$3,686	\$3,797	\$3,911	\$4,028	\$4,149	\$4,273	\$4,401	\$4,533	\$4,669	\$4,809	\$4,954	\$5,102	\$5,255	\$5,413	\$5,575	\$5,743	\$5,915	\$6,092	\$6,275	\$6,463	\$6,657	\$6,857	\$7,063	\$7,275	
Retail Operating Expense	\$7,403	\$12,222	\$12,866	\$13,252	\$13,650	\$14,059	\$14,481	\$14,915	\$15,363	\$15,824	\$16,298	\$16,787	\$17,291	\$17,810	\$18,344	\$18,894	\$19,461	\$20,045	\$20,646	\$21,266	\$21,904	\$22,561	\$23,238	\$23,935	\$24,653	\$25,392	\$26,154	\$26,939	\$27,747	\$28,579	
Total Operating Expenses	\$89,452	\$96,733	\$99,912	\$102,909	\$105,997	\$109,176	\$112,452	\$115,825	\$119,300	\$122,879	\$126,565	\$130,362	\$134,273	\$138,301	\$142,450	\$146,724	\$151,126	\$155,659	\$160,329	\$165,139	\$170,093	\$175,196	\$180,452	\$185,866	\$191,441	\$197,185	\$203,100	\$209,193	\$215,469	\$221,933	
OWNERSHIP EXPENSES																															
Property Taxes	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Insurance	\$4,802	\$4,946	\$5,094	\$5,247	\$5,405	\$5,567	\$5,734	\$5,906	\$6,083	\$6,266	\$6,453	\$6,647	\$6,847	\$7,052	\$7,263	\$7,481	\$7,706	\$7,937	\$8,175	\$8,420	\$8,673	\$8,933	\$9,201	\$9,477	\$9,761	\$10,054	\$10,356	\$10,667	\$10,987	\$11,316	
Professional Services	\$3,430	\$3,533	\$3,639	\$3,748	\$3,860	\$3,976	\$4,096	\$4,218	\$4,345	\$4,475	\$4,610	\$4,748	\$4,890	\$5,037	\$5,188	\$5,344	\$5,504	\$5,669	\$5,839	\$6,015	\$6,195	\$6,381	\$6,572	\$6,769	\$6,972	\$7,182	\$7,397	\$7,619	\$7,848	\$8,083	
Reserves for Replacements/Repairs	\$2,221	\$2,287	\$2,356	\$2,427	\$2,499	\$2,574	\$2,652	\$2,731	\$2,813	\$2,898	\$2,985	\$3,074	\$3,166	\$3,261	\$3,359	\$3,460	\$3,564	\$3,671	\$3,781	\$3,894	\$4,011	\$4,131	\$4,255	\$4,383	\$4,514	\$4,650	\$4,789	\$4,933	\$5,081	\$5,233	
Total Ownership Expenses	\$10,453	\$10,766	\$11,089	\$11,422	\$11,765	\$12,118	\$12,481	\$12,856	\$13,241	\$13,638	\$14,048	\$14,469	\$14,903	\$15,350	\$15,811	\$16,285	\$16,774	\$17,277	\$17,795	\$18,329	\$18,879	\$19,445	\$20,029	\$20,629	\$21,248	\$21,886	\$22,542	\$23,219	\$23,915	\$24,633	
NET OPERATING INCOME	(\$25,879)	\$14,721	\$17,659	\$18,189	\$18,735	\$19,297	\$19,876	\$20,472	\$21,086	\$21,719	\$22,370	\$23,042	\$23,733	\$24,445	\$25,178	\$25,933	\$26,711	\$27,513	\$28,338	\$29,188	\$30,064	\$30,966	\$31,895	\$32,852	\$33,837	\$34,852	\$35,898	\$36,975	\$38,084	\$39,227	
Debt Service	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	(\$1,288,823)	
NET INCOME	(\$1,314,702)	(\$1,274,102)	(\$1,271,163)	(\$1,270,633)	(\$1,270,088)	(\$1,269,526)	(\$1,268,947)	(\$1,268,351)	(\$1,267,736)	(\$1,267,104)	(\$1,266,452)	(\$1,265,781)	(\$1,265,090)	(\$1,264,378)	(\$1,263,645)	(\$1,262,889)	(\$1,262,111)	(\$1,261,310)	(\$1,260,484)	(\$1,259,634)	\$30,064	\$30,966	\$31,895	\$32,852	\$33,837	\$34,852	\$35,898	\$36,975	\$38,084	\$39,227	

ASSUMPTIONS	
Assumes Land and Building Cost of:	\$16,976,527
PLUS Capital Expenses	\$0
TOTAL Project Cost	\$16,976,527
Condo Provided Equity (Debt Coverage)	\$0
Port Debt = Total Project Cost MINUS Equity:	\$16,976,527
Assumes Lending Rate of:	4.50%
Term of Loan (years):	20 Years

(\$1,274,235.14)
\$14,587.56

Escalation @ 3%	1.03	1.0609	1.092727	1.12550881	1.159274074	1.194052297	1.229873865	1.266770081	1.304773184	1.343916379	1.384233871	1.425760887	1.468533713	1.512589725	1.557967417	1.604706439	1.652847632	1.702433061	1.753506053	1.80611235	1.860294572	1.916103409	1.973586511	2.032794106	2.09377793	2.156591268	2.221289006	2.287927676	2.356665506
Escalation @ 5%	1.05	1.1025	1.157625	1.21550625	1.276281563	1.340095641	1.407100423	1.477455444	1.551328216	1.628894627	1.710339358	1.795856326	1.885649142	1.979931599	2.078928179	2.182874588	2.292018318	2.406619234	2.526950195	2.653297705	2.78696259	2.92526072	3.071523756	3.225099944	3.386354941	3.555672688	3.733456322	3.920129138	4.116135595

Debt Percentage----->	1.00	Project Cost	\$ 16,976,527
Debt----->	\$ 16,976,527	Interest----->	4.5%
Term----->	20	Owner Equity----->	\$0
Additional Equity Contributions	\$0	Annual Debt----->	(\$1,288,823)
Groundfloor retail sf----->	17,500		
rent per sf----->	\$ 5.40		
Parking Stalls Constructed	343		

TENANT IMPROVEMENT FINANCING	
Debt----->	
Interest----->	
Term----->	
Annual Debt	
Monthly debt	

Actual monthly parking demand	0
Demand yr 2 - 3	0
Demand yr 4 - 7	0
Demand 8 - 10	0
Demand 11 - 30	0

Land Cost 40,000 sf
0
\$20,116.39 20 year annual income before debt service
(\$1,268,706.31) 20 year annual income after debt service