City of Seattle
Strategic Planning Office

Denna Cline, Director
Paul Schell, Mayor

August 21, 2000

Dear Seattle Citizens,

Thank you for your interest in parking issues in Seattle. The City has conducted a Comprehensive Neighborhood Parking Study designed to help citizens, elected officials, and staff develop comprehensive solutions for neighborhood parking issues.

With the assistance of a consulting team, the Strategic Planning Office (SPO) has conducted the study as part of efforts to promote transit-oriented development around the Sound Transit light rail system and to implement the *Transportation Strategic Plan*. Most importantly, the parking study helps the City respond to your parking recommendations in Neighborhood Plans. The parking study purposes have been to:

- Recommend effective parking management strategies that support transit use and vital neighborhood business and residential areas; and
- Provide background information for determining whether changes to the City's parking requirements are warranted to respond to the City's transportation, economic development, environmental, and affordable housing goals.

SPO addressed six broad topics in the parking study. A large amount of on and off-street parking data was collected in 35 study areas. The consultants also reported on how other cities tackle parking issues and how these lessons can apply to Seattle, particularly related to promoting shared parking, developing more flexible parking requirements, marketing off-street parking, and understanding the financial feasibility of neighborhood public parking facilities.

The Comprehensive Neighborhood Parking Study Final Report summarizes the consultants' work, and more information is available in six technical reports. These reports are available to review at SPO and area libraries. The parking study contains recommendations strictly from consultants and is *not* setting new City policy or creating any specific actions in particular area. City staff will use the parking data and the recommendations to work with you to determine how to apply these tools to address your neighborhood parking concerns.

At the beginning, the Final Report also contains a staff memo to City Council highlighting current and future neighborhood plan parking work from SPO, SEATRAN, and the Department of Design, Construction and Land Use.

If you are have questions or comments on the Comprehensive Neighborhood Parking Study or about the City's work on parking management with neighborhoods, please contact Mary Catherine Snyder at 206-684-8110 or Jemae Pope at 206-684-8674 or email to marycatherine.snyder@ci.seattle.wa.us or jemae.pope@ci.seattle.wa.us

Sincerely,

Denna Cline

REVISED BASED ON CITY COUNCIL ACTION IN RESOLUTION 30196

NEIGHBORHOOD PLANNING POLICY DOCKET BRIEFING PAPER Numerous policy issues were raised in the review of the Neighborhood Plan approval and adoption matrices. The Neighborhood Planning Policy Docket was developed to track the discussion of issues raised in more than one neighborhood plan and make recommendations for policy change or clarification. This briefing paper is one in a series of policy issue briefing papers which will be forwarded to the City Council.

DOCKET NO: PD#17- progress report

ISSUE: On and Off-Street Parking

REVISED DATE: august 21, 2000 based on City Council action. Originally delivered to Council on March 28, 2000.

IDT: Parking IDT members - SPO, SEATRAN, DCLU

DESCRIPTION OF ISSUE/BACKGROUND

Many neighborhood plans recommended parking strategies for their neighborhood business district and residential areas. The City Council asked staff to provide options on implementing these strategies. This memo highlights neighborhood plan parking work from SPO, SEATRAN, and DCLU over the last year and recommends further work to implement Light Rail Station Area Planning and the Transportation Strategic Plan in addition to Neighborhood Planning.

Goals

City staff propose these recommendations for the City Council to help the City respond quickly and creatively to the varied parking issues in Seattle's neighborhoods. City staff are proposing the following three goals to guide City work:

- Combine a mix of parking solutions including managing on and off-street parking, making better use of the parking we already have, and introducing more flexibility for meeting code requirements.
- Work directly with neighborhoods to tailor parking solutions that achieve the right amount of residential and retail customer parking.
- Implement these effective, cheap, and quick recommendations to provide more efficient use of existing parking supply before pursuing more expensive options.

Work items in the past year:

- The Strategic Planning Office is conducting a Comprehensive Neighborhood Parking Study to develop transit-oriented parking management strategies for neighborhoods, with DCLU, SEATRAN, and other departments. The study consultants collected parking data in 26 Seattle neighborhoods. The study contains recommendations related to off-street parking, parking management and the feasibility of new parking facilities. Staff would be happy to provide a more complete presentation of the study's results as the information presented here focuses on the next steps for implementing the study.
- SEATRAN has implemented numerous on-street parking recommendations, including processing five additional Restricted Parking Zones (RPZs) and implementing the Transportation Strategic Plan's curb space priorities, as follows: Except when in use as peak period travel lanes, general priorities for curb space in commercial zones are bus zones, loading zones and short-term parking. In residential areas, the first two priorities are the same (bus zones and loading zones) but the third priority is long-term residential parking rather than short-term parking.
- DCLU has provided recommended code changes to Council to respond to the Pike-Pine neighborhood plan. These changes were developed in consideration of the results and recommendations of the parking study.

- In addition, staff formalized a Parking Interdepartmental Team this year to facilitate coordination between departments on parking issues. Since parking management involves City policy, codes, and related issues of transportation, economic development, land use, and housing, the coordinated approach has helped to prioritize work activities and provide integrated solutions to neighborhood parking questions.

Related Neighborhood Plan Recommendations

There are several hundred parking-related neighborhood plan recommendations in adopted Neighborhood Plans. City departments have been reviewing the neighborhood plans as they were adopted and now through the Sector Implementation Plans. The recommendations vary widely, from identifying specific changes to on-street parking restrictions to broad requests to help neighborhood business districts provide convenient parking. Many questioned the existing level of resources and work activities that the City contributes to parking issues in neighborhoods. The policy question of whether the City should participate in financing public parking facilities is handled in Policy Docket 16 and has been delivered to the City Council Transportation Committee. The feasibility of parking garages in specific neighborhoods was analyzed in the parking study.

COMPREHENSIVE NEIGHBORHOOD PARKING STUDY RESULTS

The Tale of Two Neighborhoods

Let's start with the story of two neighborhoods—anecdotally describing their common parking situations, supported by data collected in the parking study. These examples illustrate some of the lessons staff have learned from the parking study.

Capitol Hill

Parking was an important issue even before neighborhood planning. The area described here is along the main business district of Broadway north of Pine, and the residential areas blocks to the east and west of Broadway. In the parking study results, the Broadway and residential areas had some of the highest utilization rates of any of the counted areas. Some observations about how parking typically operates on Capitol Hill around the Broadway district are:

- There is a large supply of unrestricted on-street parking in the residential area (for example near the Lincoln Reservoir) that is filled in part by employees and commuters who are driving to Capitol Hill and working there or hopping a bus to downtown. This makes on-street parking less available to residents and retail customers.
- Even with low prices for off-street public parking [the rates in some lots of Capitol Hill for $3-6 dollars per day are cheaper than neighborhoods in similar distances from downtown Boise, Idaho], the off-street parking lots near this unrestricted on-street parking are often half empty. Because of the availability of unrestricted on-street parking for commuters, the demand for paid off-street parking is low.
- Validated retail customer parking at garages such as the Broadway Market is underused due to poor marketing and signage.
- Time-restricted spaces and parking meters are frequently abused. For example, cars stay in the "1 hour max" parking zones for an average of 2.7 hours. This further challenges retail customers in finding short-term parking. At least twice as many customers could park in the existing short term spaces.
- By managing the existing supply to give priority for short-term customer parking on commercial streets and long-term residential parking on residential streets, we can make more parking available quickly and cost-effectively.

Overall, the study found parking supply and utilization data for the Capitol Hill study areas, as follows:

	Total spaces[1]	Average On-Street Usage	Average Off-Street Usage	Average Total Usage	Peak Hour On-Street	Peak Hour Off-Street	Peak Hour Total
Along Broadway	1,205	69%	51%	55%	75%	65%	66%
Around Residential areas	3,372	75%	40%	49%	83%	50%	58%

North Rainier Neighborhood/McClellan Station Area

In contrast, the parking study showed that majority of Seattle's neighborhoods are using 40-70 percent of their parking supply on average. The North Rainier area is a good example of an area that is using a low percentage of their available parking but could still benefit from better parking management—especially before the light rail station opens. The area described is centered around the intersection of Rainier Ave S and Martin Luther King, Jr. Way and one block east and west of Rainier Ave S.

- The North Rainier study area is using, on average, 40 percent of their on-street and 36 percent of their off-street parking.
- The majority of the existing parking restrictions are not being enforced. The average stay in two-hour maximum space is 2.9 hours; the average stay in a loading zone is 3.5 hours.
- Before light rail comes to this neighborhood, it will be critical to manage this parking to prevent "hide and ride" situations.
- There are several large retail parking lots that have potential to be shared with new mixed-use development, increasing the potential to build more affordable housing units.
- A financial feasibility analysis of building structured parking as part of a McClellan station transit-oriented development showed there was negligible ability to make a new structure "pencil" with the low cost of land and low demand for parking.

Overall, the study found parking supply and utilization data for North Rainier study area, as follows:

	Total spaces1	Average On-Street Usage	Average Off-Street Usage	Average Total Usage	Peak Hour On-Street	Peak Hour Off-Street	Peak Hour Total
North Rainier area	1,692	40%	36%	36%	50%	48%	47%

THE TOP 6 LESSONS FROM THE COMPREHENSIVE NEIGHBORHOOD PARKING STUDY

The lessons below summarize the key conclusions and form the basis for the majority of our recommendations.

1. **More parking capacity can be added quickly and cost-effectively by using the existing parking supply in most neighborhoods.** The majority of neighborhoods use between 40-70 percent of their parking supply on average. Only a few areas (four out of 26) use the majority of their off and on-street parking and meet the "full occupancy" standard of using 80-85 percent of available parking. (These are mainly downtown and inner-city neighborhoods.) In many business districts, twice as many customers could park if turnover of on-street spaces was created through **stronger enforcement.** Even more spaces would be available through **marketing** existing off-street parking by creating better signage and parking validation programs.

[1] The parking study collected hourly counts for off-street public, private (accessory), and on-street parking (including turnover) during representative weekdays and some evening periods in September-October 1999 in sample study areas in 26 Seattle neighborhoods.

2. **The parking "problem" depends on who you are**. Residents want long-term spaces to "store their car," while businesses want short-term spaces in front of their store. Typically, when people "can't find parking" it means they can not find free parking on their own block. The parking study showed the majority of neighborhoods do have parking available at no to low cost within three blocks. Some residents are concerned about increasing commercial parking supply in their neighborhoods because of the traffic it generates in their neighborhood. **City staff will work with residents and businesses to strike the right balance** and make sure parking is managed to serve the City's and neighborhood's desired goals, especially to provide short-term customer and long-term residential parking.
3. **The price of parking is critical to how it is used. In Seattle, short-term parking is often more expensive than all day commuter parking, discouraging retail shoppers and encouraging commuters.** Low cost parking is transit's greatest threat and the number one reason people drive to work alone. In the neighborhoods that are close to downtown, such as Belltown, First Hill and Capitol Hill, parking lot rates are at $4-6 per day in comparison to $8-10 per day in comparable Boise and Olympia neighborhoods.
4. **Cheap on-street unrestricted or un-enforced parking *coupled with* high transit service can attract commuters to use a neighborhood as a park and ride into downtown**. This existing problem may need to be corrected as a precursor to avoiding "hide and ride" problems when light rail opens.
5. **The Land Use Code should allow the right kind of parking to be built at the right time**. The current code needs to be more targeted to adapt to the variety of parking needs of different users in different types of neighborhoods. We need to be able to better specify whether new parking is used for short-term or long-term parking.
6. **There is a high cost to building structured parking that makes it less financially feasible**. Free on-street parking needs to be managed before new facilities can "pencil". New off-street parking should be managed to serve the City's and neighborhood's desired goals, especially to provide short-term customer and residential parking – not necessarily commuter park and ride parking.

RECOMMENDATIONS

From the parking study and from City staff parking expertise, successful parking management for neighborhood business districts needs to be holistic and coordinated in its approach, and no one "silver bullet" can magically address everyone's issues.

Recommendation #1: Neighborhood-Specific Parking Management Assistance

With SPO in the lead, City staff recommend continuing to work with high priority neighborhoods to implement neighborhood-specific parking management strategies and find the right package of tools that balance a neighborhood's parking needs. City staff have been working with some of these neighborhoods already, particularly the Light Rail Station Areas, as work on the parking study proceeded. In addition, staff have briefed the Neighborhood Business Council twice about the parking study.

Because resources are limited, City staff are proposing to prioritize how and when to work with the numerous neighborhood business districts interested in these strategies. The priorities also reflect areas where staff can prepare for future growth with parking management strategies that support that growth (based on the City's Comprehensive Plan Growth Summary draft report). The city-wide Land Use Code tools will also help these urban villages.

1. For the years 2000 and 2001, the first priority will be to work with Station Areas, other high transit areas, those areas with serious parking issues and those areas where the City can leverage other funds, including: U-District, Capitol Hill, Wallingford, Belltown, Fremont, First Hill, Pike-Pine, Denny Triangle, Columbia City, North Rainier/McClellan Uptown/Queen Anne, and Admiral. For example, SPO staff will take the lead in working with the Capitol Hill community and Sound Transit to prepare a parking management strategy for during light rail construction and for the long-term. SEATRAN will be a key participant as well. At the same time, DCLU staff will continue to work with SPO staff to refine the Land Use Code for the Capitol Hill station area.
2. After this work has progressed, staff can focus on other light rail station areas in Southeast Seattle and other neighborhoods who were identified in the parking study results and neighborhood planning as being interested,

including:, Othello/New Holly, Rainier Beach, North Beacon Hill, Roosevelt, Northgate, and Green Lake. With existing staffing resources, assistance to this second group would likely begin in 2002.

3. As the above work is finishing, City staff can work with the following neighborhoods who have less severe parking issues as identified by the parking study, including: West Seattle Junction, Eastlake, South Lake Union, Central Area, Morgan Junction, Westwood, Delridge, South Park, Ballard, Crown Hill, Greenwood/Phinney, Lake City/North District, Aurora-Licton Springs, Broadview-Bitter Lake-Haller Lake, and BINMIC.

In addition, City staff will be developing some concise materials that highlight the parking study lessons and recommendations. This pamphlet could be distributed city-wide by City staff working with neighborhoods on their parking issues, through the City's PAN, the Department of Neighborhoods, and other agencies throughout the city.

The following recommendations provide the tools staff will need to meet the various neighborhood and City goals.

Recommendation #2: Manage the On-Street Parking Supply

By managing the existing supply to give priority for short-term customer parking on commercial streets and long-term residential parking on residential streets, the City can make more parking available quickly and cost-effectively. SEATRAN will take the lead in implementing the neighborhood strategies to:

1. Continue to prioritize and optimize curb space by working with neighborhoods to assign on-street parking principally for nearby land uses and priority for short-term customer parking on commercial streets and long-term residential parking on residential streets. As part of the City and Metro program to improve transit travel speed and reliability, City staff will consider implementing transit priority treatments which may remove on-street parking on either a corridor-wide or spot basis.
2. Design a "On-Street Parking Information Guide" that illustrates priorities, procedures, and options for citizens and community groups to assist them in managing parking in their neighborhoods. This guide will likely be folded into the overall parking management pamphlet described in Recommendation #1.
3. SEATRAN has already started implementing some of these tools in response to neighborhood plan recommendations.

Examples of work in the previous year:

- Neighborhoods that currently have RPZs in process include: Mt. Baker (Franklin High School), Roosevelt High School, Licton Springs (North Seattle Community College), Capitol Hill, Pike-Pine (around Convention Center) and North Beacon Hill (around Amazon.com).
- More than 65 bus zones have been removed and converted to public parking wherever possible. More than 20 truck load or commercial vehicle load zones have been removed and replaced with general purpose parking where appropriate.
- Parallel parking spaces have been converted to back-in angle parking spaces where there is adequate street width.
- Time-limit parking restrictions have been installed where practical to create additional parking turnover.
- SEATRAN is currently reviewing parking restrictions on arterials to ensure that peak hour parking restrictions are consistent and enhance traffic movement.

Recommendation #3: Increase Parking Enforcement

Better management of the City's on-street parking system cannot be successful without effective enforcement of meters, time-limit restrictions, RPZs and the other curb space priorities. Many neighborhood plans requested additional parking enforcement, and the parking study confirmed the rampant abuse of the on-street system in many neighborhoods. In most cities, the cost of parking enforcement pays for itself. It is critical that SPD have the resources to increase parking enforcement to make the other parking management strategies work. Staff are

considering proposing increasing parking enforcement as a budget issue, and this work is being conducted through another Policy Docket, expected to be brought to Cluster and City Council mid-year.

Recommendation #4: Better Use of Existing Off-Street Parking Supply

City staff are developing specific parking management tools for business districts that, combined with better management and enforcement of on-street parking, can add short-term customer parking for businesses. Specifically, with SPO taking the lead, City staff will work with neighborhoods to:

- Identify feasible opportunities for shared parking between various existing businesses, residential, and other developments. The parking study produced specific locations in many of the light rail station areas.
- Develop marketing, parking validation programs, signage and other tools to more effectively use their existing parking, similarly to the University District's and downtown Seattle's parking validation programs.
- Implement Transportation Demand Management tools (including transit pass subsidies, preferential carpool parking, and car sharing) can provide employees with other choices. SEATRAN and SPO staff are already working with the Wallingford business community to better coordinate employee commutes so that more parking stays open for customers. Recently, staff conducted a transportation survey to find out how employees get to their jobs in Wallingford and what some preferable alternatives may be to driving alone such as transit passes, bicycle lockers, and preferential carpool parking spaces. Results showed many employees were interested in these incentives.

Recommendation #5: Refine the Land Use Code

The Land Use Code and the SEPA parking policies are the City's principal tools for influencing management of off-street parking. SPO and DCLU anticipate proposing revisions to Land Use Code parking provisions, in response to a range of initiatives coming from neighborhood plans, light rail and other transit improvements.

Many existing policies and code sections were prepared a number of years ago in response to conditions that have since changed. The parking provisions have not been revised in a comprehensive manner since the mid-1980s. Some lack flexibility to address the different needs of different users, including residents, employees, and consumers, in a manner that makes the most efficient use of parking resources.

The proposed recommendations for off-street parking were formed in consideration of other supportive strategies, such as marketing the availability of public parking. They are intended to meet the following goals, which are consistent with current policy directives related to parking:

- Develop parking requirements that support an appropriate amount of parking and seek to prevent additional spillover parking.
- Encourage efficiency in using parking resources (for existing development or public parking) and flexibility in meeting parking requirements (for new development).
- Review the existing parking requirements in specific geographic areas (e.g., University District parking overlay).
- Consider parking maximums, flexible parking standards and reduced parking in city neighborhoods characterized by proximity to the city center and with good transit access, such as light rail station areas.

City staff will be putting together proposals for code amendments in three different but iterative work efforts: citywide, transit-friendly areas, and other neighborhoods.

City-wide level

Staff will develop proposals for the Land Use Code and SEPA parking policies at the city-wide level, including:

- **Consolidation of Code sections that address parking (parking requirement chart and exceptions sections)**. Currently, different parking requirements apply to over 165 land uses, and the parking chart and

exceptions sections are repetitious and overly complex, according to the parking study consultants. A proposed approach would be to regulate parking requirements by general use categories similar to the downtown system. These proposals also further the City's goals for Land Use Code Simplification.

- **Establish a framework that distinguishes between short-term and long-term parking, similar to the existing downtown Code.** Regulating short-term and long-term parking encourages more efficient uses of limited parking resources for different users (i.e., residents, shoppers, and employees). This is an especially important consideration in older parts of the City, where development predates minimum parking requirements.
- **Revise development standards related to location and access to parking and parking stall dimensions.** These amendments would enhance pedestrian-oriented neighborhood commercial areas and better respond to variations in vehicle ownership patterns.
- **Modifications to bicycle parking requirements**. City staff will examine a parking study proposal to link the bicycle parking requirements directly to land use characteristics instead of the existing standard (percentage of auto parking). Safe and convenient bicycle parking is a key strategy to encourage bike commuting; people are less inclined to bike unless they have a safe place to store their bike at their destination.

Transit-friendly areas

In addition to those presented above, City staff will develop proposals for the Light Rail Station Areas and other neighborhoods with transit-friendly characteristics:

- **Reduction or elimination of minimum parking requirements based on the parking study consultant recommendations**. This would aid in the creation of transit-oriented development and reduce the cost of development by recognizing locations with good access to transit. Changes in parking requirements would be linked to neighborhood characteristics that justify reduction or elimination in minimum required parking. Such characteristics include:
    1. Households with lower average car ownership rates.
    2. Participation in location efficient mortgage programs.
    3. Presence of viable alternatives to single occupancy vehicle travel, such as transit and other non-single occupancy vehicle alternatives.

- **Establish parking maximum limits for uses, such as office**. Introducing parking maximums in combination with a new tool, called *preservation parking*, would encourage new development to provide parking where parking is scarce. This combination of tools would also compensate for the loss of parking resulting from the redevelopment of surface parking lots.

  Preservation parking allows new development to build additional parking to serve buildings with insufficient or no on-site parking or to provide public parking as surface parking lots are re-developed. Preservation parking works by assigning each building a certain amount of entitled parking and assigning maximum parking limits for various uses. Under this scenario, buildings with less parking than their entitlement allows would be able to transfer their parking entitlements to off-site locations, often as part of new development. Essentially, the new development "pre-leases" this parking in order to demonstrate financial feasibility of the additional parking.

  The City of Portland has experienced success with this to encourage the provision of short-term and visitor parking and to prohibit early bird and commuter parking.

Other Neighborhoods

Many neighborhood plans recommend consideration of potential parking code amendments to implement neighborhood-specific parking goals. As indicated above, proposed amendments that would apply within light rail station areas may also be appropriate standards in neighborhoods with similar characteristics. Some of the city-wide parking proposals listed above would also address many parking code-related neighborhood recommendations.

NEXT STEPS

City staff are working on the following specific work programs, in accordance with the recommendations above:

1. DCLU and SPO staff are preparing proposals for Land Use Code amendments for a Light Rail Station Overlay, which will include a revisions to parking requirements, among other items. This work is expected to come to Council in the first part of 2001.
2. SPO, SEATRAN and other staff will begin or continue to meet with the U-District, Wallingford, Fremont and Belltown neighborhood stakeholders on parking management strategies.
3. As part of the parking study pamphlet described in Recommendation #1, SEATRAN will prepare their "On-Street Parking Information Guide" in addition to their on-going work described in Recommendation #2.

SUPPORT WE NEED FROM CITY COUNCIL

1. Managing the on-street parking system as proposed will require increasing and making parking enforcement more effective. Enforcement typically pays for itself, and is one of the most cost effective ways to "add parking supply." It will mean increasing the Police Department's enforcement budget in the midst of competing priorities. However, the on and off-street parking recommendations need to be considered holistically and rely upon parking enforcement to make the whole package work comprehensively.
2. The City needs adequate resources to respond to all the neighborhood and station area planning requests to "solve the parking problem." Staff have prioritized work according to the areas with the greatest need (as described in Recommendation #1). Some of the lower priority neighborhoods may request assistance, even though their parking issues are not as severe as other areas.
3. As neighborhood plan recommendations are reviewed, the Parking IDT will use the results of the parking study and give it substantial weight when determining the appropriate solutions.
4. The preservation parking and parking maximum tools will be examined to help support the region's investment in the Sound Transit light rail system by controlling the amount of long-term commuter parking and providing the appropriate amount of parking supply. The preservation parking tool in particular helps neighborhoods to add public parking through the new development process.

COMPREHENSIVE NEIGHBORHOOD PARKING STUDY

TABLE OF CONTENTS

LIST OF TABLES

INTRODUCTION

Virtually every city recognized for promoting efficient land use development, encouraging transit-supportive development forms, and sustaining the economic viability of its urban areas, also possesses an effective parking management program. Successful parking management strategies provide a clearly defined and fundamental purpose and priority to the parking system.

With the assistance of a consulting team, the City of Seattle has conducted a comprehensive neighborhood parking study in 1999-2000, as part of efforts to promote transit-oriented development around the future Sound Transit light rail system and to implement the *Transportation Strategic Plan* and Neighborhood Planning. The parking study purposes are to:

- Recommend effective parking management strategies that support transit use and vital neighborhood business and residential areas; and
- Provide background information for determining whether changes to the City's parking requirements are warranted to respond to current conditions or to further the City's current transportation, economic development, environmental, and affordable housing goals.

What is Parking Management? Parking management is a set of programs and regulations that affect the supply, demand, location and price of parking. It extends well beyond enforcement of parking meters. Properly managed, the parking system can support economic vitality and make neighborhood business districts more livable. Improperly managed, the parking system can stymie development, jeopardize neighborhood livability, and squander public assets. Given that parking is a tool for economic development and livable communities, there is little doubt that prioritizing parking supply and management must be well thought out and coordinated with Seattle's overall goals.

The parking consultants started out with certain principles to follow for creating effective parking management programs:

- On-street parking is principally intended to support the land uses within the immediate area and must be managed accordingly. It enhances the economic viability, safety, and livability of a district.
- In business areas, priority use of the on-street supply should be reserved for customers, visitors and loading needs, and other needs become secondary. To ensure employee access, support transit, walking and other alternative modes.
- In residential areas, the on-street supply should be managed for residential needs and non-residential access should be limited to short-term stays.
- The availability of relatively inexpensive on-street parking coupled with a high level of transit service, can attract commuters to use an area as a park-and-ride location.
- Enforcement is key. No policy can achieve the desired results without effective and consistent enforcement.
- Development of off-street parking should be managed to ensure it serves desired activities and users. The Land Use Code parking ratios can be set to let the "market" work and set differently in certain areas to realize and enhance strong transit, walking, and dense land use characteristics.

This list is by no means exhaustive, but these principles from the consultants offer insights into the framework and policy-based decision-making necessary to implement effective parking management strategies.

Consultants hired

In the summer of 1999, the Strategic Planning Office (SPO), in conjunction with staff from the Department of Design, Construction and Land Use (DCLU), the Light Rail Station Area Planning team

and the Planning Commission, hired a private consulting team through the City's consultant contacting process. The City contracted with KJS Associates beginning in September 1999 with the following sub-consultants:

- Kittelson & Associates, Inc., Portland, Oregon.
- Huckell/Weinman Associates, Inc., Seattle, Washington.
- Melvin Mark Development Company, Portland, Oregon.
- Michael Kodama Planning Consultants, Burbank, California.
- Bicycle Federation of America, Washington, D.C.

The parking study was funded from two sources: Central Puget Sound Regional Transit Authority (Sound Transit) and Federal Transit Administration's Transportation Planning and Research grant.

Parking study topics

SPO prepared six broad topics to be addressed in the parking study. In addition to data collection, the consultants were tasked with reporting on how other cities tackle parking issues and how these lessons can apply to Seattle. The consultant work is described in six technical reports, which are available by request from the Strategic Planning Office. The reports will also be available at area libraries and from the City of Seattle web site.

- *Data collection activities:* On and off-street public and private parking supply and utilization were collected in 26 Seattle neighborhoods, concentrating on sample areas of residential, neighborhood commercial, and office developments. KJS Associates were the lead for this task.

- *Flexible parking recommendations for Land Use Code:* Flexible parking requirements would allow a developer to build a more appropriate amount of parking because the specific development's characteristics or the area's characteristics have different parking demand (e.g., proximity to a Sound Transit light rail station). Consultant activities included: development of flexible and maximum parking ratios tied to transit, transportation, and land use characteristics; and comparison of the City's parking requirements to observed parking rates and to national and other local data sources. Kittelson and Associates were the lead for this task.

- *Promoting shared parking in Seattle neighborhoods*: Sharing existing parking spaces has many benefits, including reducing the pressure for building costly additional parking. Consultant activities included: identification of feasible opportunities for shared parking between various existing businesses, residential and other developments; and evaluation and recommendations for the City's shared parking covenants system. Melvin Mark Development Company were the lead for this task.

- *Marketing parking in Seattle's neighborhoods:* Marketing and publicity programs for off-street parking could help neighborhood business districts use their existing parking resources more effectively. Consultant activities included: summarizing key characteristics of parking marketing strategies and appropriate conditions for use of each strategy; and, development of case studies (Capitol Hill and University District) for two neighborhood-specific parking management programs. Michael Kodama Planning Consultants were the lead for this task.

- *Refining the City's bicycle parking requirements*: On-site bicycle parking is a major incentive to encourage people to bike to their destination. The consultants were asked to propose how to develop bicycle parking requirements that expand the City's existing requirements to additional land uses and/or zones as appropriate and evaluate other issues related to bicycle parking that encourage its use as a commuting alternative. Activities included: development of new on-site bicycle parking requirements and related policies. Bicycle Federation of America were the lead for this task.

- *Financing public parking facilities in Seattle's neighborhoods:* Parking facilities are expensive, and it is unclear when particular parking projects will financially "pencil." Consultant activities included: financial feasibility analysis of hypothetical parking facilities for short-term neighborhood commercial and long-term residential car storage at certain station areas. Huckell/Weinman and Associates were the lead for this task.

DATA COLLECTION ACTIVITIES

The major effort of the Comprehensive Neighborhood Parking Study was data collection. With the available budget, the consultants recommended the following approach. Counts of occupied parking spaces, both on-street and off-street, were made on an hourly basis from 8 a.m. to 7 p.m. (except for two hours for field breaks) on a weekday for each of 35 study areas in 26 neighborhoods. Counts were conducted in September and October of 1999 for a total of 35 person days of counting. In addition, hourly evening counts were conducted from 7 to 11 p.m. on a weeknight in the Wallingford, University District, and Capitol Hill study areas.

A broad City interdepartmental team chose the study areas for inclusion in the parking study based on the following criteria:

Sound Transit light rail station (as of Fall, 1999).

Urban center or hub urban village designation (residential urban villages are not included unless meeting other criteria).

Neighborhood plan recommendations related to parking management.

Low auto-ownership rates, denoting areas where parking demand for housing is less.

It is critical to know that the study areas are *samples* and comprise only a portion of their respective neighborhoods. The specific blocks were chosen to represent land use characteristics within the larger neighborhood. The interest in collecting as much data as possible in one neighborhood had to be balanced with the higher priority to collect data in as many neighborhoods across the city, given the budget for the parking study.

Parking supply and utilization

Table 1 summarizes the parking supply and usage for average and peak hour (peak parking demand) data by the study areas. As expected, there is considerable variation from one neighborhood to another and even within the urban village categories. However, it is clear that the Urban Center neighborhoods have higher parking usage than the Residential Urban Village and Hub Urban Village neighborhoods.

Table 1 shows the average parking utilization for the on and off-street parking spaces and the combined total. More often than not, the on-street parking is used more than the off-street parking. Only three study areas had average on-street parking usage rates of 85 percent or greater over the course of the day[2], and five areas had usage rates between 75 percent and 85 percent. The off-street parking usage rates were lower on average, and consequently, there were not any study areas that were "full" when the on- and off-street parking rates were combined.

[2] In parking studies, 85 percent occupancy of a parking lot is considered full for all practical purposes (source: ITE Transportation Planning Handbook). At this level, drivers looking for a place to park may have to circulate through several aisles of a parking lot or structure, or drive around one or more blocks for on-street parking, to find an available space. Driver frustration is high, and complaints about the lack of parking increase rapidly above 85 percent occupancy.

Table 1: On-street and off-street parking supply and utilization by study area

		Parking Spaces				Parking Usage					
						Average			Peak Hour		
Area		On-Street	Off-Street	Loading	Total	On-Street	Off-Street	Total	On-Street	Off-Street	Total
Urban Center Neighborhoods											
1	U-District University Way	323	1,280	77	1,680	57%	47%	49%	70%	64%	63%
2	U-District Greek Row	452	1,191	49	1,692	93%	32%	49%	96%	36%	53%
3	U-District West Residential	240	1,573	14	1,827	77%	60%	63%	83%	72%	73%
4	Uptown - Lower Q Anne	376	1,838	40	2,254	69%	66%	66%	76%	81%	80%
5	Uptown West Residential	285	676	15	976	88%	65%	71%	96%	76%	81%
6	Pike-Pine	495	497	35	1,027	84%	59%	71%	91%	79%	81%
10	Northgate	109	793	2	904	62%	57%	58%	77%	74%	72%
13	Capitol Hill - Broadway	269	893	43	1,205	69%	51%	55%	75%	65%	66%
14	Capitol Hill West Residential	260	452	16	728	87%	61%	70%	94%	96%	89%
15	Capitol Hill East Residential	264	297	5	566	75%	33%	53%	84%	40%	58%
16	First Hill	559	2,421	49	3,029	71%	73%	72%	79%	89%	85%
17	Denny Triangle	210	1,540	24	1,773	61%	76%	74%	71%	90%	87%
21	Belltown	361	1,188	55	1,604	62%	68%	66%	87%	75%	73%
Total spaces/Average rates		**4,203**	**14,639**	**424**	**19,266**	**75%**	**61%**	**64%**	**84%**	**75%**	**75%**
Residential Urban Village Neighborhoods											
8	Crown Hill	320	991	4	1,315	31%	34%	34%	40%	43%	40%
18	Rainier Beach	276	879	0	1,155	17%	17%	17%	18%	18%	18%
22a	North Beacon Hill (S. Atlantic)	385	576	0	961	78%	64%	69%	86%	76%	80%
22b	North Beacon Hill (S. Lander)	208	226	3	437	31%	40%	36%	39%	62%	49%
23a	Columbia City (MLK Jr Way S.)	186	134	0	320	61%	29%	48%	74%	39%	58%
23b	Columbia City (S. Rainier)	388	757	13	1,158	45%	41%	43%	52%	52%	52%
24	MLK @ Holly	671	1,615	0	2,286	20%	44%	37%	23%	50%	42%
25	Henderson station area	142	96	3	241	16%	15%	15%	20%	29%	22%
26	Green Lake	181	239	18	438	76%	48%	60%	83%	55%	64%
27	Eastlake	425	971	20	1,416	69%	51%	56%	78%	59%	64%
28	Roosevelt	561	413	20	994	66%	45%	57%	74%	53%	64%
29	Upper Queen Anne	548	499	12	1,059	69%	55%	62%	76%	73%	73%
30	Wallingford	550	382	18	950	56%	47%	52%	62%	60%	61%
Total spaces/Average rates		**4,841**	**7,778**	**111**	**12,730**	**51%**	**42%**	**45%**	**57%**	**51%**	**53%**
Hub Urban Village Neighborhoods											
7	Broadview/Bitter Lk/Haller	347	2,489	0	2,836	32%	28%	28%	40%	37%	37%
9	Ballard	486	1,702	35	2,223	55%	20%	28%	59%	22%	30%
31	North Rainier	248	2,347	3	2,598	38%	36%	36%	50%	47%	47%
32	Fremont - North of Canal	426	1,498	22	1,946	73%	62%	64%	82%	82%	80%
33	Fremont - Sea Pac Univ	400	1,346	15	1,761	57%	73%	69%	67%	83%	79%
34	Lake City	550	1,294	20	1,864	49%	38%	41%	51%	45%	46%
35	South Lake Union - Cascade	398	1,355	21	1,774	73%	47%	53%	88%	67%	72%
36	South Lake Union - Mercer	365	891	31	1,287	73%	37%	47%	91%	48%	60%
37	West Seattle Junction	629	1,338	14	1,981	50%	39%	42%	53%	48%	49%
Total spaces/Average rates		**3,849**	**14,260**	**161**	**18,270**	**56%**	**40%**	**44%**	**64%**	**51%**	**53%**
Grand total spaces/average rates		**12,893**	**36,677**	**696**	**50,266**	**60%**	**49%**	**56%**	**68%**	**61%**	**66%**

Overall, for the on-street *peak* parking hour, only eight of the 35 study areas had full usage rates of 85 percent or greater, but another nine areas had usage rates between 75 percent and 85 percent. Not surprisingly, eleven of these 17 full or near full parking study areas were in Urban Centers. In addition to the Urban Center areas, the North Beacon Hill (around Pac-Med), Green Lake, Upper Queen Anne, Fremont (north of the Ship Canal), Cascade and South Lake Union-Mercer study areas had peak occupancy rates of 75 percent or more for on-street parking. Combined with off-street parking, three study areas had peaks over 85 percent and six study areas parking rates were between 75 and 85 percent.

Parking duration

The study collected extensive data on how long individual drivers used on-street parking (duration). Duration and turnover are opposite measures of parking usage–long parking durations generally mean low turnover (few users) and vice versa. Comparing duration to time limit restrictions can also measure how well parking restrictions are enforced in a given area. Table 2 summarizes average parking duration by the type of on-street parking space (unrestricted, 2-hour time limit/meter, one-hour time limit/meter or loading zone) and for the study area as a whole.

The most interesting finding from Table 2 is that the *average* duration in 1-hour parking spaces was 2.1 hours, or slightly longer than the average for 2-hour parking spaces. Twenty of the 26 study areas with 1-hour spaces had *average* durations greater than 1.5 hours in a 1-hour zone. Since these are average values, many vehicles were parked significantly longer than these times. Although some of these long parking times may be attributed to residents, many overtime parkers were violating the posted time limits outside of residential permit zones.

Perceived versus actual parking usage

There were some marked discrepancies between the parking usage found in the field surveys and the perceived parking problems and levels reported by businesses and residents in some study areas. Certainly as samples of larger neighborhoods, the data should be applied on a broader basis with care.

In addition, two factors contribute to people's perceptions that parking facilities seem full when the data suggests they are not. First, a resident, business owner/worker or visitor to an area generally sees only a small proportion of the total parking available throughout that area. Parking within the chosen destination block may be full, although there might be vacant spaces two or three blocks away. Thus, residents, workers and visitors may often find all parking spaces occupied sometime during the day, and extrapolate that observation to the entire day for all blocks in the areas.

The second factor contributing to perceptions of "parking problems" was not statistically documented by this study, but based on field observations made throughout the consultant contract period. In many study areas, the consultants noted that spaces were often readily open in off-street *pay* lots, although *free* on-street parking was full to overflowing. This was especially true in areas where on-street parking durations were greater than two hours.

Table 2: Average parking duration for on-street parking spaces

	Duration - average time parked in space in hours				
Study Area Name	Unrestricted	2-hour max	1-hour max	load zone	average
U District University Way	4.2	2.4	2.3	2.0	2.3
U District Greek Row	5.3	2.3	4.5	3.7	5.0
U District West Residential	4.5	2.5		2.6	3.9
Uptown Low Queen Anne	2.1	1.7	1.6	1.6	1.8
Uptown W Residential	3.9		2.9	1.8	3.7
Pike-Pine	2.6	1.7	1.6	1.3	2.1
Broadview-Bitter lake - Haller Lake	2.7				2.7
Crown Hill	2.7	1.4	1.8	1.0	2.6
Ballard	2.7	1.3	1.6	1.1	1.8
Northgate	2.6			2.5	2.6
Capitol Hill Broadway	2.8	2.0	2.7	1.0	2.0
Capitol Hill West Residential	5.7		2.3	4.6	5.6
Capitol Hill East Residential	5.5	4.4	2.3	4.5	4.4
First Hill	2.0	1.6	1.3	1.5	1.7
Denny Triangle	3.5	2.4	2.0	2.0	2.5
Rainier Beach	0.3				0.3
Belltown	1.8	1.5	2.3	1.4	1.5
N Beacon Hill (S. Atlantic)	2.0			2.0	1.9
N Beacon Hill (S. Lander)	5.0				5.0
Columbia City (MLK Way S)	4.4				4.4
Columbia City (S. Rainier)	2.5	1.9	1.2	1.4	2.0
MLK @ Holly	3.0	3.4			3.1
Henderson LRT Station	4.2				4.2
Green Lake	2.7	1.3	1.7	1.1	2.0
Eastlake	3.2	1.9	2.4	1.2	2.9
Roosevelt	3.4	1.5	1.6	1.4	2.6
Upper Queen Anne	2.5	1.6	2.8	1.5	2.4
Wallingford	2.7	1.7	1.4	1.4	2.4
North Rainier	3.7	2.9	4.7	3.5	3.7
Fremont (north of canal)	2.9	1.6	1.4	1.6	2.1
Fremont SPU	3.3	2.3	1.8	1.4	3.0
Lake City	1.2		0.7	1.1	1.1
Lake Union Cascade	3.6	2.3	1.3	2.0	3.0
Lake Union Mercer	3.7	2.1	1.9	1.7	3.1
West Seattle Junction	3.1	1.5	3.0	1.1	2.2
Average for all study areas	***3.2***	***2.0***	***2.1***	***1.9***	***2.8***

FLEXIBILITY FOR LAND USE CODE PARKING REQUIREMENTS

The Land Use Code is the primary tool for managing parking on private property. This section presents the consultants' work to summarize and evaluate the City's current parking regulations and compare Seattle's regulations to other west coast American cities. The consultants also made recommendations for modifying the City's parking regulations with a less complex and more flexible framework.

Existing Seattle Land Use Code requirements

Seattle's parking requirements for new development are established in the Seattle Land Use Code, with the key sections noted in Table 3. The City's first modern parking regulations were adopted in 1963. The parking regulations have been revised over time to reflect the sensitivity of parking needs for specific land use types, neighborhood characteristics, and targeted planning processes. The most recent overhaul occurred in the mid-1980s.

Table 3: Seattle Land Use Code parking policies

Code Section	Parking Policy Coverage
23.47.044	Required parking in pedestrian-designated zones
23.48.032	Required parking and loading for Seattle Cascade Mixed zone
23.49.016	Parking quantity requirement for Downtown Seattle
23.54.015	Quantity & design standards for access and off-street parking, city-wide
23.54.016	Major Institutions -- Parking and transportation
23.54.020	Exceptions to the required off-street parking
23.66.170	Parking and access for Pioneer Square Preservation District
23.66.342	Parking and access for International Special Review District
23.71.016	Parking and access for Northgate Overlay District

The consultants developed the following conclusions while reviewing the City's regulations:

- Seattle's parking regulations have been developed over time and in response to changing perceptions of parking's role and affect on the transportation system. The result is a set of complex and at times confusing regulations that can be overly difficult for the City to administer and an obstacle to proponents of innovative development and affordable housing.
- Complexity comes in the form of nine different sections in the City's Land Use Code, with parking quantity and access regulations characterized by a minimum (and in some cases a maximum) ratio, and then modified by a number of exceptions.
- The parking chapter would benefit from consolidation. In some sections, parking regulations for 125 land use categories are listed and in other sections, these land uses are generalized into a few, simple categories. Some interesting examples include "participant sports and recreation, *indoor*" and "participant sports and recreation, *outdoor*" each with a rate of 1 space per 350 square feet; and, airport land-based, airport water-based, heliports and passenger terminals, all with 1 space for each 100 square feet of waiting area.

How appropriate are the City's Land Use Code parking requirements?

The consultants evaluated the City's parking requirements based on the off-street parking data collected. A detailed analysis identified the accessory parking for specific land use categories and computed demand rates for these uses based on the parking counts of the associated parking. Most land use categories showed that they were leading to approximately 30 percent more parking being built then was used during the peak period (when the maximum number of cars are parked).

Table 4 summarizes the parking requirement analysis for land uses, including the auto parts, repair and service stores, fast food and sit-down restaurants, retail, multi-family and warehouse categories. The parking data indicate that parking requirements for the following use in the Seattle LUC should be reviewed for potential revisions:

- Automotive parts or accessory sales – requirements may be too low, although the consultants noted the difficulty in data collection at these land uses.
- Banks and offices (non-medical uses) – requirements may be too high.
- Restaurants and fast-food restaurants – requirements may be too high, particularly in areas where the considerable off-street parking (pay or free joint-use) used by office employees during the day that can be used for restaurants in the evenings.
- General retail sales and services – may be too high, although additional research may be needed to distinguish between individual user, stand-alone, auto-oriented retail buildings and mixed-use retail areas.

Other jurisdictions' parking policies

For the purpose of comparing Seattle to other city's parking policies, the minimum parking ratios for selected land uses in Seattle, Portland, Tacoma, and San Francisco have been summarized in Table 5.

Portland's preservation parking policy. The City of Portland adopted a parking mechanism called preservation parking for their Central City area in 1996. In the downtown Portland area—as well as here in Seattle's older neighborhoods—older and historic buildings generally lack dedicated parking and usually rely on commercial surface lots. Future development projects are likely to displace this surface parking thereby reducing the supply of parking for older and historic buildings. Over time, this could jeopardize the economic viability and competitiveness of these buildings.

A preservation parking policy might have the following characteristics:

- Buildings without on-site parking designated as "Preservation Buildings" and assigned a "parking entitlement," which is a parking ratio deemed reasonable to meet its basic parking demand;
- Preservation buildings would be able to transfer their parking entitlements to off-site locations, often as part of new development. Essentially, the new development "pre-leases" this parking in order to demonstrate financial feasibility of the additional parking.

- Prohibition on the sale of early-bird parking and placing other restrictions to limit the number of commuters parking there and instead allowing underutilized preservation parking spaces to be sold for visitors.

Overall, the consultants recommended that preservation parking serves as a useful mechanism for the City's Land Use Code. Preservation parking is a market-based approach intended to provide an option for buildings without dedicated parking to exercise financing new parking supply when the market for parking reaches a point at which it makes sense. In jurisdictions where the preservation parking option is in effect, the option has been viewed as a private sector tool. Traditionally, preservation parking has been established as a tool for commercial land uses. However, the concept could have applications for residential buildings that are without a dedicated supply of accessory parking for tenants.

When comparing Seattle's to other jurisdictions parking policies, the consultants made several comments:

- Seattle's minimum parking ratios are not strikingly different from those in the comparison cities. As might be expected, the ratios in San Francisco tend to be lower, probably reflecting denser development patterns. Tacoma's ratios tend to be somewhat higher.
- All of the reviewed cities have limitations on the amount of parking that can be provided (at least in some parts of the jurisdiction). For designated mixed-use canters (at least 12 areas in Tacoma), maximum ratios are in place. In San Francisco, the minimum ratios are effectively the maximum ratios, with a variance process that requires Planning Commission review. In Portland, maximum ratios are currently in place in the Central City area and there are no minimum requirements, except for residential development. Portland is very close to adopting maximum ratios for the entire city, consistent with regional government requirements.
- There is less complexity in the number of listed land uses. In Tacoma, minimums are listed for six types of residential development and approximately 33 non-residential land uses.
- There are different parking ratios for different areas. San Francisco, Tacoma, and Portland apply different rules based on different conditions. For instance, the San Francisco parking policies state: "in recognition of the compact and congested nature of the downtown area and portions of Chinatown, the accessibility of this area by public transit, and programs for provision of public parking facilities on an organized basis at specific locations, no off-street parking shall be required for any use, other than dwellings where a requirement is specified, in any C-3, Chinatown Visitor Retail, or Chinatown Residential Neighborhood Commercial Districts."

Table 4. Selection of parking rates for some land use categories

Land Use category	Parcels	spaces required by Seattle LUC	spaces provided	spaces used	Used as percent of LUC req.
Fast food	30	10.00 per 1,000 sf	10.3	6.9	69%
Retail	163	2.86 1,000 sf	2.6	1.7	60%
Restaurant	57	5.00 1,000 sf	4.9	3.7	74%
Warehouse/wholesale	42	0.75 1,000 sf	1.0	0.8	107%
Multi-family 31 to 60 units	62	1.20 du	0.80	0.60	50%

Table 5: Comparison of minimum parking requirements*

Land Use	Seattle	Portland	Tacoma	San Francisco
Multi-Family Residential (spaces per unit)	1.0 to 1.5 Lower for special resident groups	1.0 Lower for group living and special resident groups	0.75 to 2.0	0.25 to 1.0 Lower for group living and special resident groups
Office (spaces per ksf)	1.0 to 2.86	2.5	3.0	1.0 to 2.0
Retail (spaces per ksf)	2.86/ksf	2	2.5 to 5.0	2.0 for up to 20 ksf 4.0 for over 20 ksf
Restaurant (spaces per ksf)	5/ksf	4	10	5.0
Fast Food (spaces per ksf)	10/ksf	4	15	5.0
*Reflects General Code, not Specific Zone or Neighborhood Designations				

Refining the Land Use Code to add flexibility

The consultant recommendations attempt to create appropriate parking requirements for different areas of the city, balanced with an underlying recommendation to simplify the parking regulations. Recommendations are presented that can be applied city-wide, for the Urban Centers outside of downtown, Residential and Hub Urban Villages, and the Sound Transit light rail station areas.

City-wide recommendations:

Simplify the current parking sections to remove redundancy in land use designations and tiered requirements for multi-family developments. Overall, the tiered system adds complexity to the development review process but does not result in significant differences in the amount of total parking that would be built if a single ratio were in place. This is particularly true when the parking requirement is the minimum amount accepted.

Develop a preservation parking policy applicable to residential and non-residential uses in all neighborhoods.

Define and adopt a role, if any, for the City of Seattle to provide (or finance) parking, particularly to assure short-term access needs of shoppers, visitors, customers and clients, in the event that market forces do not provide this access.

Restrict or prohibit new general, principal-use surface lots (particularly for commuters) where appropriate. The benefit of this restriction or prohibition is to promote better urban form in the urban centers and to assure that surface parking is not "memorialized" by long-term parking leases tied to commercial uses. The disadvantage of such a policy is that it adds cost to development in these areas. As new parking is provided, ensure that the parking is not offered as Early Bird or other specials that promote single-occupancy vehicle commuting.

Urban Centers: Urban Centers outside of downtown Seattle (Capitol Hill, U-District, Pike-Pine, First Hill, Queen Anne/Uptown, Northgate) have high-density and mixed-use development (current or planned), frequent transit service, and a high degree of "walkability" similar to the downtown neighborhoods.

- For residential developments, maintain minimum parking ratios in a range between 0.20/unit to 0.60/unit. Allow waivers of minimum parking requirements, based on availability of transit and other substitute transportation modes, and/or a parking demand study identifying that adequate access is available for residential needs.
- Eliminate minimum parking ratios for nonresidential development.
- Restrict the development of off-street, general use parking to serve short-term only.
- Two alternative approaches have been developed to prevent over-development of parking supply. The first is based on establishing maximum parking ratios. The second relies on developing stronger accessory parking restrictions.

Hub and Residential Urban Villages. The land use mix and densities for Hub and Residential Urban Villages reflect a fairly high degree of variability and a correlation could not be found between land uses and observed parking ratios. This precludes the

ability to make extensive recommendations for change in the current parking minimums, based on documented information:

The minimum parking requirements for new development are at appropriate levels and should remain intact.

Given the generally unconstrained parking conditions in Hub and Residential Urban Villages, as revealed by the data analysis, the need for an overall increase in minimum parking ratios for residential development is not indicated.

No minimum parking ratios should be instituted for redevelopment or expansion of existing residential, as this add a significant barrier.

Seattle light rail station areas. The following recommendations should be applied to light rail station areas (as the light rail system comes on line). Although the temptation may be to create regulations for station areas that appear to be unique (under existing conditions), the consultant recommendation is that one, simplified set of parking regulations is most appropriate.

Where parking minimums are in effect, a 50 percent reduction to the minimum should be applied to any portion of a development site within 500 feet of the station.

Parking can be further controlled by stipulating the amount of site coverage that may be dedicated to parking and/or that the parking area must be contiguous to the development (i.e., not separated by a public right-of-way). Such limitations would trigger the need for structured parking earlier than normal and may result in some development forms being cost prohibitive.

Where applicable, recommendations from Urban Centers described above.

PROMOTING SHARED PARKING IN SEATTLE'S NEIGHBORHOODS

What is Shared Parking? Shared parking provides an opportunity to optimize parking supply by coordinating different parking peaks for different land uses and directing peak traffic to the underused parking supply somewhere else. Shared parking generally results in the multiple use of parking facilities across longer segments of the day. It provides the best opportunity to promote the more efficient use of a neighborhood's parking resources, to facilitate more dense development, to promote pedestrian friendliness and livable communities (with fewer surface parking lots). This section addresses ways to promote shared parking in Seattle neighborhoods, including:

Based on the parking data collection, identification of potential shared parking opportunities in selected neighborhoods.

Recommendations for the City of Seattle to use to implement shared parking regulations.

Recommendations for changes to Seattle's existing shared parking agreement.

Shared parking works best in at least two situations. The first is where there are different peaking characteristics of the users–for instance, an office building (9 AM – 5 PM) and a theater (evenings and weekends). The second is where the users of one business are the same as for another (doctor's office and pharmacy or video store and convenience store). The latter, while not addressing code requirements directly, does represent an opportunity to encourage business patrons to "park once, shop twice."

Shared parking sites identified

Several neighborhoods were identified in consultation with City staff for field observations. The primary emphasis during field observation was to evaluate parking surpluses in the affected neighborhoods that could serve as potential shared use locations. To the degree possible, shared use locations (i.e., available supply) were evaluated as to their proximity to potential shared uses and as to their realistic availability to a shared use arrangement. The seven neighborhoods evaluated were (more information can be found in the technical report.): Belltown; First Hill; Pike/Pine; Capitol Hill-Broadway; University District; North Rainer (McClellan); MLK@Holly.

Potential changes to existing shared use parking agreements

The City of Seattle's existing shared parking agreement provides a minimum legal structure to meet code requirements, rather than offering a framework for more creative parking solutions. At a minimum, the agreement should be updated to specifically provide for time-of-day and/or day-of-week sharing of parking resources. Possible wording includes: "The owner of the parking spaces shall provide XX spaces for use by the second party during the hours of XX to XX (weekdays/Saturdays/Sundays)."

To serve both City needs and the various property owners' needs, the agreement could also include the specific financial or other considerations between the two parties, such as maintenance costs, lighting, advertising, lot improvements, or financial considerations. This could be incorporated into the agreement by adding a specific optional section entitled "Considerations between parties." In addition, the

agreement could identify the specific space commitments, the types of parking and time frame allowed, directional sign requirements and an enforcement mechanism.

Role of City in facilitating shared use arrangements

In many cases, the City will hear from community members that parking is inconvenient and unavailable in their neighborhood. An important role for the City will be education and communication. The data collection effort identified a great deal of flexibility within the parking inventory of most neighborhoods. The City's primary roles will be to:

- Communicate the availability of parking.
- Advocate the need for enhanced parking management (i.e., on-street parking controls).
- Identify the real and perceived barriers that prevent a district's patrons/employees/residents from utilizing available parking supply.

From this position, the City can either facilitate parties to consider shared-use arrangements or act as a resource for developing strategies to remove barriers that limit full use of existing parking supplies.

The consultants recommend that the City take an active, leadership role to:

Facilitate information dissemination to interested community members, including data collection results. This can be most effectively applied through local neighborhood and business associations.

Convene parking operators to discuss parking needs, particularly residential evening/overnight demand, and facilitate discussion of solutions for under-used facilities.

Provide sample/model shared parking agreements for existing uses or a model criteria that could assist in formulating a shared parking agreement.

Examine incentives and other "front-end" strategies to be presented to new development projects, in the early design phase, to provide appropriate amounts of parking to meet existing needs.

MARKETING PARKING IN SEATTLE'S NEIGHBORHOODS

How do you market off-street parking? A Parking Management Marketing program requires an extensive and comprehensive effort that involves research and the identification of target markets before developing a marketing plan, and ultimately implementing a marketing campaign with appropriate communication tools to enhance the use of parking resources in a given area. It should also include a timeline and budget. This section outlines the consultant recommendations for potential parking management marketing programs and a methodology for developing specific programs in Seattle neighborhoods.

Elements of a marketing plan

Development of a parking management marketing program involves four tasks. The plan should include:

- Conducting background research
- Identifying a target market
- Analyzing marketing strategies for these target markets
- Finalizing marketing plan to identify appropriate communication tools and strategies

Background research. A background feasibility assessment provides an initial look at key issues and the potential for success of a parking management program. Background research includes conducting parking utilization studies and understanding perceptions about parking, particular from employees and business owners. The checklist in Table 6 can be used to assess the feasibility of a parking management program in a particular neighborhood. It can be used by key community stakeholders to determine the potential for various marketing tools to address a parking problem.

Identifying Target Market. Target markets are the group of people that the marketing program focuses strategy development and implementation and includes the people who will hear the message and the people willing to act upon the message. Since there are different messages for different audiences, it is important to identify the target audience that is being impacted by the proposed program so that the right message can be crafted.

In retail areas, the target market is often the customer or consumer for the retail businesses. Several questions to ask retail building owners or tenants are 1) where are the employees parking? 2) Do they have viable commute options? 3) Are employees using prime parking spaces that may better be used by customers? In many retail areas with demand greater than supply, there is often a need to maximize customer parking and move employees to less desirable parking spaces or to alternative modes of transportation.

An example of understanding target markets involves the relationship between retail business owners, their employees, and their customers. Retail businesses are interested in selling their own products. Parking becomes an issue when their employees or customers cannot find it, when it becomes too expensive or when it impacts the company's profit margin. Since parking is not free, there are costs associated with developing and maintaining parking. Even if there is no price for a

parking space ("free parking"), there is a value to the space (for customers, employees or visitors). To help people better understand the cost of parking, a parking space can be translated to 8 to 10 sales per day. Another study estimated that each retail metered space is worth $5 to $85 per day. Perhaps the simplest way to look at parking spaces is to think of the value of 100 parking spaces and compare the use of parking by either customers or commuters (employees). Generally, over a course of a day and evening, 100 parking spaces could be used by either 400 customers (four customers per space) or 100 employees and no customers.

Analyzing marketing strategies for these target audiences. After conducting the background assessment, identifying the target market, the next step is to identify potential and specific marketing and other parking management strategies to implement. Table 7 lists some appropriate strategies given different target markets and objectives.

Finalizing marketing plan. The final step is to finalize the implementation plan for these marketing strategies designed to meet specific goals and objectives. For example, the marketing plan could emphasize:

- Education and awareness (commute options and location of parking spaces)
- Call-to-action (development of a program)
- Change of behavior (using communication tools and marketing incentives to implement and operate specific program components of a marketing campaign)

The marketing program can use a variety of communication tools to convey the message and give information about parking in the project area. Examples of communication tools include:

- Advertising: placing advertisements in the local print or electronic media to inform people about parking resources, validation programs, or commute options in a project area.
- Brochures: a quick and concise written piece with maps and pictures to educate the public about parking and commute options in an area. It may include a slogan such as "Smart Park" or "Easy Streets."
- Direct mail: sending printed materials directly to customers, residents or employees in the project area. This may include brochures, newsletters, special situations or informational pieces.
- Flyers/posters: flyers and posters can be used to disseminate information. It may contain pictures, graphics, maps or written material.
- Signage: utilizing marquee space or prominent outdoor signage to promote or direct people to parking spaces. Signs should be brief, precise, appropriate and visual. Signs need to be placed in strategic locations that indicate entrances and exits for both pedestrians and vehicles.
- Tokens: to use for parking, taxis, public transit or other commute options. Transit providers or local merchants may distribute them.
- Validations: for local merchants to distribute to customers. Validations can be used to create multiple destination parking lots and create a village approach that encourages shared use of parking.

Table 6. Preliminary parking management feasibility worksheet

Check the appropriate box.	Yes	Probably	Maybe	Probably Not	No
Do the current parking requirements exceed the demand for parking?					
Does the area have a pool of excess parking that could be more efficiently used?					
Is there demand for development that could use unused parking spaces as development sites?					
Are developers encountering high costs in providing parking structures and underground parking facilities?					
Are there mechanisms to address neighborhood spillover parking?					
Does the physical layout of the project area enable shared parking between sites?					
Does the diversity of land uses and peak parking periods support shared parking?					
Are land values rising?					
Are the costs of providing parking limiting the development potential of the project area?					
Are the development and lending communities willing to explore parking management options?					
Does the project area experience significant traffic congestion problems?					
Does the project area experience a parking shortage?					
Does the area support viable alternative modes of transportation?					
Is there rapid growth in the project area?					
Are there areas where a lack of parking has contributed to an economic decline?					

Table 7: Specific marketing and communication tools for different target markets

Target Market	Objective	Communication Tools	Parking Management Tool
Employees	Increase customer parking in a retail area	Presentations to employer and employee groups Brochures	Employee transit program Guaranteed ride home Flex Pass
Merchants	Increase customer parking	Presentations to employer groups Brochures Newsletters Parking updates/ parking roundtable Coupons Storefront stickers	Time restrictions Parking meters Parking validations Valet parking Employee transit programs Tokens
Land owners	Encourage better use of parking resources	Presentations/ workshops with industry associations, community, real estate groups Project negotiation Design standards Signage	Shared parking Unbundled parking Joint development Design guidelines
Residents	Prevent neighborhood spillover	Brochures Signage Presentations/workshops with homeowner associations	Parking permits Daytime parking restrictions
Students	Increase customer parking	Electronic and print media Posters/brochures on parking Courtesy parking program	Parking enforcement Time restrictions Parking meters

REFINING THE CITY'S BICYCLE PARKING REQUIREMENTS

The fear of bike theft and lack of adequate and convenient parking are often cited as two leading reasons why people do not currently travel by bicycle. With the City's Comprehensive Plan transportation goal to double the percentage of bicycle commute trips over the next 20 years, the consultants assert that bicycle parking will need to be supplied at a level that meets current demand and also accommodates future growth in bicycle travel. Along with accessible streets and trails, convenient and safe parking facilities make bicycling a reasonable alternative to autos for many trips.

This section reviews Seattle's current bicycle parking requirements, provides a state of the practice from other American cities, and makes recommendations for changing Seattle's rules.

Seattle's existing bicycle parking requirements

Like other North American cities, Seattle uses bicycle parking requirements indexed primarily to the amount of off-street auto parking. For the most part, bicycle parking is required for neighborhood commercial, mixed use and some commercial zones for certain uses as a percentage of auto parking spaces, for multi-family residential zones based on the number of building units, for institutions as a percentage of auto spaces, and for major institutions as a percentage of employees.

The approach to link bicycle and automobile parking spaces was developed absent other methods to determine the level of bicycle parking demand in different types of development scenarios. There are several primary problems with this approach:

- Levels of automobile use often *do not parallel* levels of bicycle use. In fact, areas where auto use is accommodated and encouraged (i.e., higher speed limits/design speeds, intersection designs oriented toward vehicle capacity) tend to be less bicycle-friendly.
- Variances or flexibility to provide less auto parking are encouraged in areas typically bicycle-friendly. A *lowered auto parking amount through variance translates into less bicycle parking* under this method. Consequently, tying the bicycle parking to the auto parking may work counter to the desired result of encouraging bicycling in areas where automobile parking is restricted or limited (for example, in pedestrian designated zones). Where auto parking is restricted or requirements exempted (for example, the first 2,500 square feet of non-residential development), more bicycle parking should be available to encourage and accommodate this mode shift, not less bicycle parking.
- Certain land uses, such as schools, libraries, and other municipal services, attract a higher percentage of trips by people who have limited or no access to an automobile. Here, bicycle parking requirements should be more appropriately based on a percentage of expected users, and it may be appropriate to have higher requirements in order to accommodate bicycling for youth to schools, libraries, and community centers.

State of the practice

Among bicycle program professionals, several communities are repeatedly referred to as "leaders" in the area of bicycle parking requirements: Palo Alto, Calif.; Madison, Wisc.; Eugene, Ore.; Denver, Colo. More recently, Portland, Oregon

updated its bicycle parking requirements, including significant revision and innovation.

Portland, Oregon: The City of Portland reorganized its requirements for off-street bicycle parking in 1997. Previously, bicycle parking was indexed to site-provided automobile parking, leading to, in the case of reconstruction of historic buildings, to a population of buildings without bicycle parking. The requirements tie bike parking to net building area and land use, with a distinction between short and long-term parking. The new requirements also includes a Floor Area Ratio (FAR) bonus as an incentive to include transition facilities (showers, changing facilities). The city also allows for a certain number of bike spaces to be substituted for required on-site auto spaces.

Madison, Wisconsin: As amended in 1988, the Madison Municipal Code requires off-street bicycle parking for new developments, expansion of existing developments, and changes in use that would require additional parking. These requirements emphasize appropriate design and siting of facilities to improve their visibility and security, and increase their use.

Palo Alto, California: Palo Alto's bicycle parking requirements were adopted originally in 1978, updated in the early 1990s and are currently undergoing revision. The requirements are land-use based, and vary in terms of the mix of the bike parking required. For example, for office uses the requirement is 10 percent of the auto parking, with 80 percent in bike lockers and 20 percent in bike racks. For retail uses, banks, and restaurants with more customers and fewer workers, the ratio is 10 percent of the auto parking, but 40 percent must be provided in lockers and 60 percent as bike racks. The requirements are being administered successfully with some oversight provided by City Planning Department staff, although some changes will be made soon in the classification system.

Eugene, Oregon: The City of Eugene follows the Palo Alto model of designating bike parking type as well as the total supply. Eugene also has important requirements for parking at secondary school sites and special event venues. Currently being updated, the parking requirement proposals include more attention to a performance-based evaluation of bicycle parking specification and installation.

Recommendations

The consultants made the following recommendations to apply the state of the practice to Seattle's current policies:

1. Index bicycle parking requirements to building and area use characteristics instead of auto parking provisions, similar to Portland's recent adjustments. They worked with a broad representatives of community interests to create their new bike parking rules that meets City goals to encourage bicycling as well as developers' and building owners' goals to provide parking that will see regular use. This shift in indexing is important in the context of efforts to promote bicycling while limiting or reducing the supply of auto parking in the urban environment. Table 8 lists some consultant recommendations for bicycle parking requirements for office, retail, residential, and institutional land uses.

2. Apply a type-specific index for providing parking facilities appropriate for different land uses and activities. A growing number of bicycle parking ordinances call for specific types (short-term vs. long-term) and mixes of facility types (as a percentage) at different land use sites. Short-term parking is more widely used, with long-term parking required at places of employment and other locations where the duration of parking exceeds four hours. The greatest impact will be in requiring long-term parking solutions (e.g., lockers) which tend to take slightly more floor area and be more expensive than short-term parking. However, if Seattle intends to meet its explicit commute-mode goals, adequate long-term parking must be made available.
3. Develop guidance to implement the new requirements, similar to Madison and Denver's educational and promotional efforts. The educational program should inform City staff and the development community about the new bicycle parking provisions.
4. Institutionalize bicycle parking. The City should consider several actions to institutionalize how bike parking is provided, including these bike facilities as part of all planning and development (plan reviews, related inspections and evaluation instruments).
5. Enhance incentives for developers and property managers to provide bicycle parking and related facilities. Strategies include a floor-area-ratio (FAR) bonus option for providing additional parking and/or transition facilities, such as in Portland. Other strategies include:

    - Creating a tax incentive (currently being considered as an approach in San Francisco) for businesses providing transition facilities;
    - Using redevelopment funds (from tax differential in redevelopment areas) for shared area or public area bicycle parking to supplement private-area parking or to subsidize the purchase of long-term parking facilities for private areas;
    - Establishing transportation management associations (TMAs) to coordinate purchase of long-term facilities for multiple businesses; use of TMA funds to subsidize purchases. This may include the development of centralized transition facilities, similar to Portland's "Bike Central" project, which use existing fitness facilities showers and changing areas.

Table 8: Recommendations for bicycle parking requirements

Land Use	Current	Proposed	Short-Term	Long-Term
Multi-Family	1 per every 10 units or 5% of the number of required vehicle spaces.	2 per every 10 units, All shall be sheltered from weather and convenient to the dwelling.	-	100%
Hotel/Motel	10% of auto	1 per 20 employees	60%	40%
Lodging/Club	10% of auto	10% of auto or 1 per 40 person/fire-code rated capacity	100%	
School	10% of the maximum students present at peak hour plus 5% of employees	1 per 15 employees and 1 per 10 students (Elementary above 2nd grade), 1 per 8 students (middle and upper grades)	100%	-
Hospital/Secondary Care	2% of employees	5% of employees	60%	40%
Commercial	10% of auto	1 per 20 employees, and 1 per 10,000 sq. ft. of building area	80%	20%
Retail	10% of auto	2, or 1 per 10,000 sq.ft. of building area	80%	20%
Manufacturing	10% of auto	1 per 10 employees	30%	70%
Recreation	10% of auto	1 per 400 sq.ft. of building area	100%	-

FINANCING PUBLIC PARKING FACILITIES IN SEATTLE'S NEIGHBORHOODS

Parking facilities can be considered as special type of real estate, with the primary purpose of storing vehicles for other land uses or for public purposes. The term parking facility can range from surface parking lots to large multi-level or below ground structures. These facilities may be provided by either the public or the private sector, and either as a single-purpose facility or as part of a mixed-use building with housing, office, or other land uses.

This section presents consultant recommendations that address two issues: 1) how parking facilities fit into a neighborhood business district; and, 2) the financial and cost dimensions of providing structured parking (including model pro formas for the University District, Capitol Hill and the North Rainier/McClellan light rail station areas). While no specific parking facilities are proposed for these neighborhoods here, the analysis will help City staff, decision-makers and neighborhood stakeholders to understand the costs of providing structured public parking.

Role of parking facilities in neighborhoods

While surface lots exists in most Seattle neighborhoods outside of the downtown, free standing parking structures or underground parking are rare, particularly for public parking. The private real estate market tends not to provide extensive parking facilities outside of downtown due to the high costs of structured parking. In absence of the private market acting, parking facilities would have to be provided with subsidies or solely by a local jurisdiction. The basic "rule of thumb" is that:

> Parking will be provided in building structures when the price of land (the value of land as determined by market forces) is greater than the cost of building parking facility space.

More specifically, the consultants note that there are three likely scenarios for the provision of public parking:

1. Where market pressures are so strong that the private sector sees a need, and determines that developing a facility (lot or structure) will produce adequate revenues to justify undertaking the total costs of developing (land acquisition, development process, and construction) and operating the facility. There are many examples in downtown Seattle of the private sector providing public parking.
2. Where economics partially work and a public subsidy for construction and/or operation of the facility is possible. In this situation, either the public or private sector party could take the lead role. The Pacific Place garage and the Pike Place Market garage in the downtown Seattle retail core are two examples.
3. When the market for parking and/or market pressures in a specific neighborhood are not strong, there is little, if any, prospect for the private market to consider the development of parking lots much less parking structures. The Land Use Code parking requirements are the mechanism for providing a parking supply that is directly related to particular land uses. If there is a perception for additional parking beyond what the market and these associated land uses are providing, then it will only be built "outside" the market and subsidized by someone. Some public or non-profit entity that does not have to show an

adequate return on investment or make a profit on the parking facility would be required to develop the facility.

Under these scenarios, the price of parking is essential to understand. Parking is expensive to build and is never free, although there may *not* be an explicit price paid by the ultimate parking user. The basic relationship is that as the price of parking increases, less of it is demanded and more will be provided by the market. The costs of free parking are illustrated by a church parking lot. A church likely does not charge church patrons or those using the lot to visit other stores in the neighborhood nearby. There are costs to the church, however, of constructing and maintaining the parking lot, as well as any enforcement and revenue collection system that may be installed.

Test of financial feasibility in Seattle's neighborhoods

In addition to generally discussing the economics of parking facilities in neighborhoods, the consultants tested the financial feasibility of several model parking structures. Several types of parking facilities were tested in three neighborhoods: surface lots, above-ground and below-ground structures, and parking within mixed-use projects. Two neighborhoods where parking structures would most likely appeal to the private sector (Capitol Hill and the University District) were used; and one neighborhood in transition (McClellan/North Rainier) was used.

The specific financial model was based on comparing the value of the land with a parking facility on it to the existing land values in three neighborhoods. If the value of the land with a parking structure on it (residual land value) was greater than the price (market value) of acquiring land at existing land prices, the test of financial feasibility would be met and the parking facility "would make sense" according to typical market criteria.

Data and relationships from the three neighborhoods, typical current real estate development conditions, including parking fee rates and parking study data were used. This type of "pro forma" financial analysis is useful and instructive to inform public policy decision makers. A limitation is the application of typical values, relationships, and assumptions, since specific parcels, developers, and projects could deviate from typical patterns and other results could be obtained. For that reason, these pro formas are to be understood carefully as based on the given assumptions.

A second limitation is that public (including municipal) investment criteria could be much more complex, including many more considerations other than economic objectives. A municipality could use the same kind of financial analysis to evaluate and provide information for specific public policy investment decisions. Specifically, the financial analysis could be used to assess how much a facility would have to be subsidized if undertaken by the government. The financial analysis could also be used to assess how effectively a parking facility could pay back borrowed funds and interest.

Summary of pro forma analysis

The results of the pro forma financial analysis support the "rule of thumb" stated earlier that parking structures could be financially feasible in some neighborhoods

with strong market values for land. In most neighborhoods, however, even surface lots could be problematic, according to private market criteria and they would require subsidies of public development without much prospect for debt repayment or coverage of operating costs. Surface lots faired best, structured parking facilities were feasible only under rare circumstances and underground facilities very unlikely to be built outside of very highly desirable (in market terms) areas. Mixed-use projects with parking available to the public tended to do better, but only because the non-parking elements of the project subsidized the parking costs. Increases in the utilization rates at the projects in strong market areas benefited feasibility. In all but the very strongest (in market terms) neighborhoods, the prospect for providing parking facilities is for partial or complete public subsidies and public financing.

Table 9[3] shows the projected costs and revenues for facilities in the U-District as an example of the amount of subsidy potentially needed to make a neighborhood public parking facility pencil out. It is critical to note that these calculations are entirely dependent on the base assumptions.

Table 10 demonstrates quantitatively the estimated residual land value of the stand-alone parking facilities in comparison to the assumed market land value of each neighborhood. Results of the analysis indicate that all three parking alternatives (surface lot, structured garage, and underground garage) have residual land values beneath the market land value for the neighborhood. Subsequently, without significant financial aid or public subsidy, these projects are determined "unfeasible" to construct and operate at a "break-even" status.

Table 9: U-District stand-alone parking facility alternative

Facility description	Present value of parking revenues*	Total project costs*
Surface lot: 100 spaces, 30,000 sf parking area	$379,520	$270,000
Structured parking: 255 spaces, 90,000 sf building area	$2,530,730	$4,819,500
Underground parking: 255 spaces, 90,000 sf building area	$2,530,730	$13,005,000
* assumes no land cost, and 9% cap rate for over 30-year project life.		

[3] Basic assumptions: Cost of land ($45/square feet) added to total project cost, capitalization rate changed to 6 percent (cost of public borrowing money) over 30 years, subsidy is the net presented value calculated by subtracting costs from revenues.

Table 10: Neighborhood parking facility alternatives for stand-alone facility

	Surface Parking Lot (per square feet)	**Structured Garage** (per square feet)	**Underground Garage** (per square feet)
University District			
Market Land Value (MLV)	45	45	45
Residual Land Value (RLV)	3	-69	-317
Ratio of RLV to MLV	0.07	-1.53	-7.04
Capitol Hill			
Market Land Value (MLV)	41	41	41
Residual Land Value (RLV)	26	-10	-258
Ratio of RLV to MLV	0.63	-0.24	-6.29
McClellan			
Market Land Value (MLV)	20	20	20
Residual Land Value (RLV)	-51	-210	-458
Ratio of RLV to MLV	-2.55	-10.50	-22.90

** The project is feasible where residual land value (RLV) is greater than current market value of land (MLV) or where the ratio is greater than 1.0. Residual Land Value is the value of the project expressed per square foot, and calculated by dividing the projects net present value by the total building area square feet.*