SDOT
Seattle Department of Transportation

Gregory J. Nickels, Mayor
Grace Crunican, Director

June 20, 2008

To Center City parking stakeholders:

Thank you for your interest in the Center City Parking Program. The Seattle Department of Transportation (SDOT) is releasing the Center City Parking Study Technical Report for those interested in background information about the Center City Parking Program. The Center City Parking Program's goal is to provide easy-to-access short-term parking with transparent pricing that keeps the Center City moving and contributes to a sustainable transportation system by 2012.

This technical report is based on work conducted with consultant resources in 2006-2007. The effort began with the intent to develop specific mitigation measures for the Alaskan Way Viaduct and Seawall Replacement Project (AWVRSP) environmental study documents. The AWVRSP is now moving forward with six mobility projects and a solution for the Central Waterfront portion is being further studied. Because of the change in direction, parking data tables and other references to the 2006 environmental documents were removed from the draft report. The report is relevant as a launching point to understanding program strategies. The Center City Parking Program workplan provides the strategies, schedule and budget, having incorporated information from the Technical Report as well as from Parking Advisory Committee discussions.

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Sincerely,

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# Center City Parking Program

# FINAL Technical Report

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**June 2008**

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# Chapter 1. Introduction

The Alaskan Way Viaduct and Seawall Replacement Program (AWVSRP) is an impetus for examining customer and employee parking systems in downtown Seattle. Regardless of the alternative choices with the central waterfront portion of the Viaduct project, construction will result in a considerable loss of low-cost and temporary parking spaces for downtown customers and visitors, especially in the Pioneer Square and Central Waterfront areas. The Seattle Department of Transportation (SDOT) is studying strategies for mitigating these impacts during the multiyear construction process and for permanently improving the accessibility of the Center City customer parking system. This report details strategies for managing parking resources in the Center City during the AWVSRP construction period and beyond.

## Project Background

The Alaskan Way Viaduct section of State Route (SR) 99 is an important north-south connector for the Puget Sound region. It carries an estimated 20 to 25 percent of the traffic traveling to and through downtown. The 1950s-era viaduct is vulnerable since the 6.8-magnitude Nisqually earthquake shook it in 2001 and the City of Seattle, Washington State Department of Transportation have been working steadily on addressing its replacement.

According to a Supplemental Draft Environmental Impact Statement issued for a previous design for overall replacement of the Viaduct and seawall in July 2006, there are 3,700 on- and off-street parking stalls in the entire project corridor from South Lake Union to South Downtown that could be eliminated or unavailable during the construction period.[1] In addition to parking lost in the construction area and along detour routes outside the construction area (all included in the 3,700-space count), planned transit and transportation projects will also remove or restrict some amount of on-street parking to allow bus or general purpose traffic use either all day or during peak hours.

Parking impacts of the AWVSR project bring to the forefront a long-standing discussion about the need for more transparent customer (short-term) parking in Seattle's Center City. Parking strategies presented in this report show how investments triggered by the Viaduct replacement mitigation and other transportation projects provide an opportunity to develop a more cohesive, clear, and transparent parking system in Seattle.

[1] July 2006. SR99: Alaskan Way Viaduct and Seawall Replacement Project Supplemental Draft Environmental Impact Statement. Appendix C Transportation Discipline Report, p. 94.

# Project Purpose

This *Center City Parking Program Study Technical Report* contains strategies for managing customer parking in two critically impacted areas: Pioneer Square and the Central Waterfront as well as the downtown retail core. The report also details strategies to improve information, marketing and technology programs that will improve parking accessibility in the Center City. Commuter parking is addressed, particularly where better management of off-street parking facilities could lead to the creation of new short-term supply. The strategies were developed using current parking data and recommendations from an expert parking panel. The strategies reflect the City's desire to look beyond construction mitigation and support a long-term parking management strategy for the Center City that will decrease automobile congestion, link parking to transit and non-motorized transportation alternatives, and support economic development. This plan will assist the City in realizing its goals for maximizing access to the entire Center City, with a particular focus on downtown visitors and customers.

The City of Seattle Department of Transportation's Transportation Strategic Plan (TSP) was carefully reviewed and used as a basis for addressing parking impacts:[2]

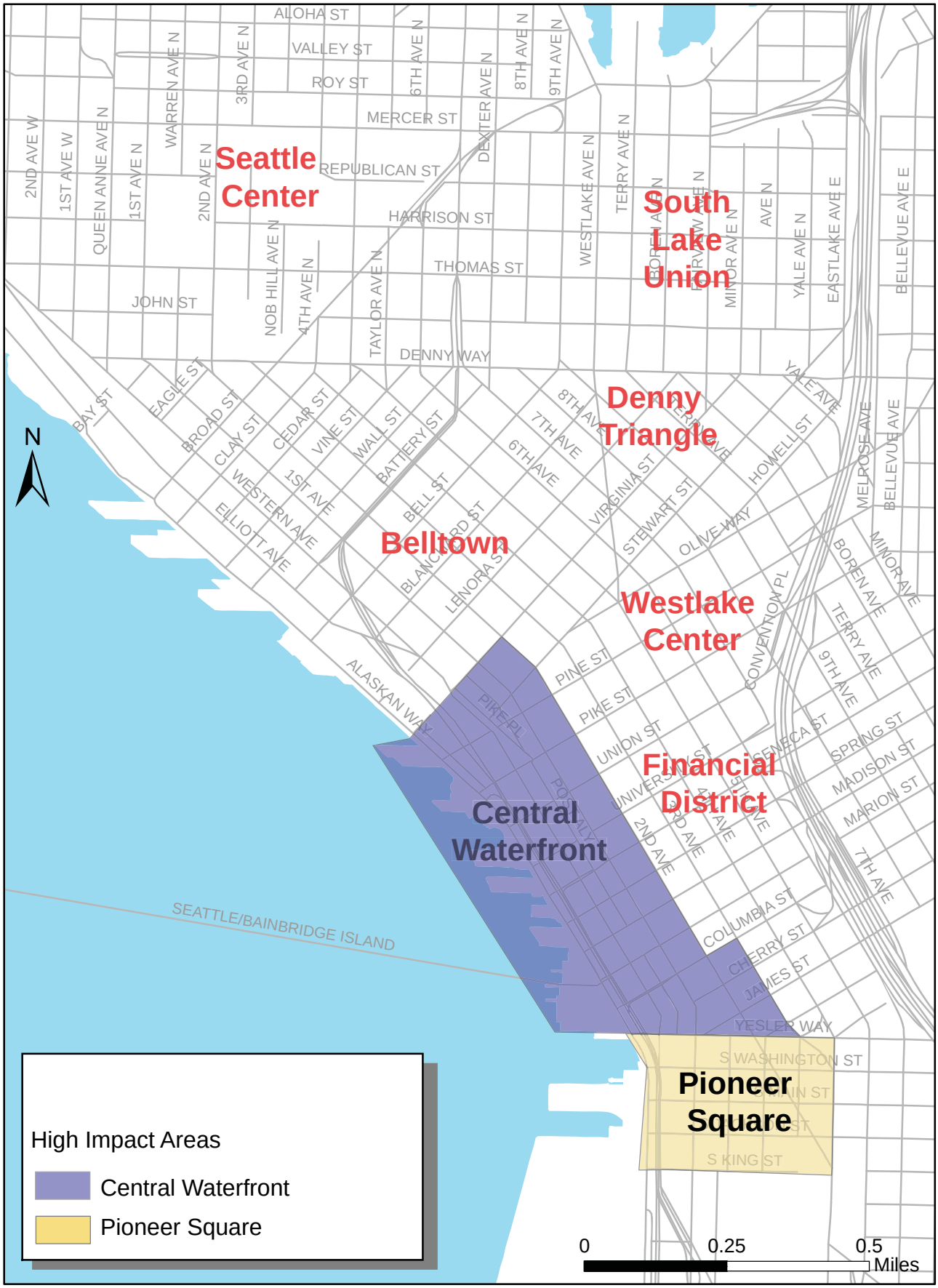
1. Make the best use of the streets we have to move people, goods and services
2. Increase transportation choices
3. Make transit a real choice
4. Encourage walking and biking—they're the easy, healthy way to get around
5. Price and manage parking wisely
6. Promote the economy by moving freight and goods
7. Improve our environment
8. Connect to the region
9. Protect our infrastructure
10. Make the most of transportation investments

The parking principle is to: "Price and manage parking to support healthy business districts and transit use. Manage curb space to recognize the importance of principle arterials in moving people, goods and services."

# Definition of Study Area

Strategies presented in this report address several geographic areas. Figure 1-1 illustrates each of the key areas as it is referred to in this report.

## Figure 1-1 Study Area

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# Report Structure

The body of this report is divided into six chapters in addition to this introductory chapter:

**Chapter 2** provides a brief summary of existing parking capacity and utilization.

**Chapter 3** establishes a framework for evaluating off-street parking strategies presented in Chapters 4 - 7.

**Chapter 4** presents strategies for managing customer parking in the Central Waterfront area.

**Chapter 5** presents strategies for managing customer parking in the Pioneer Square area.

**Chapter 6** examines strategies to maximize the capacity and functionality of on-street parking in downtown areas near or adjacent to AWVSRP construction.

**Chapter 7** covers Center City parking management strategies, including commuter parking as well as marketing and informational strategies to make the short-term parking system function better.

# Chapter 2. Existing Parking Capacity

This chapter details parking capacity and utilization in the Central Waterfront and Pioneer Square areas. The consultant team used a series of resources provided by the City and the AWVSRP Project Team to analyze existing conditions, including the 2004 *AWVSRP Draft Environmental Impact Statement,* the *2006 AWVSRP Supplemental Draft Environmental Impact Statement*, and SDOT's 2002 *Parking Management Plan*. The 2006 *Parking Inventory for the Central Puget Sound Region* was developed by the Puget Sound Regional Council, a regional governmental agency. Another resource was the *King County Metro Transit Blueprint*, which outlines a strategy for public transit in Seattle's Central Business District.

These documents were all put together in 2004-2006 for the AWVSRP as it was defined at that time. Summary of potential parking impacts from the 2006 Supplemental Draft Environmental Impact Statement that were in the draft report were taken out of the final report because that information has changed or is being updated on a separate track. More information about the Viaduct project is available at http://www.wsdot.wa.gov/Projects/Viaduct/default.htm.

## Existing Off-Street Parking Capacity

The project area has focused is on two areas: (1) the Central Waterfront (Virginia Street south to Yesler Way) and (2) Pioneer Square (Yesler Way south to King Street). The Central Waterfront area is bounded by Second Avenue to the west, but only includes parking facilities that have entrances on First Avenue. This boundary is driven by standard acceptable walk distances of under one-quarter mile for retail business customers.

Figure 2-1 shows the capacity and occupancy of off-street parking facilities based on the Puget Sound Regional Council *Parking Inventory for the Central Puget Sound Region* in the Central Waterfront and Pioneer Square study areas. The inventory, which the PSRC conducts semi-annually, does not include employee parking that is available on waterfront piers. The data show about 6,300 total parking spaces in the Central Waterfront, which operate at 82 percent maximum occupancy. Similarly, Pioneer Square has a bit more than 1,000 off-street spaces and operates at 86 percent maximum occupancy. Maximum occupancy values are the higher of a.m. or p.m. peak occupancy levels noted on a typical weekday. Roughly 540 stalls lie near to the Alaskan Way Viaduct structure.

**Saturday Parking Demand**

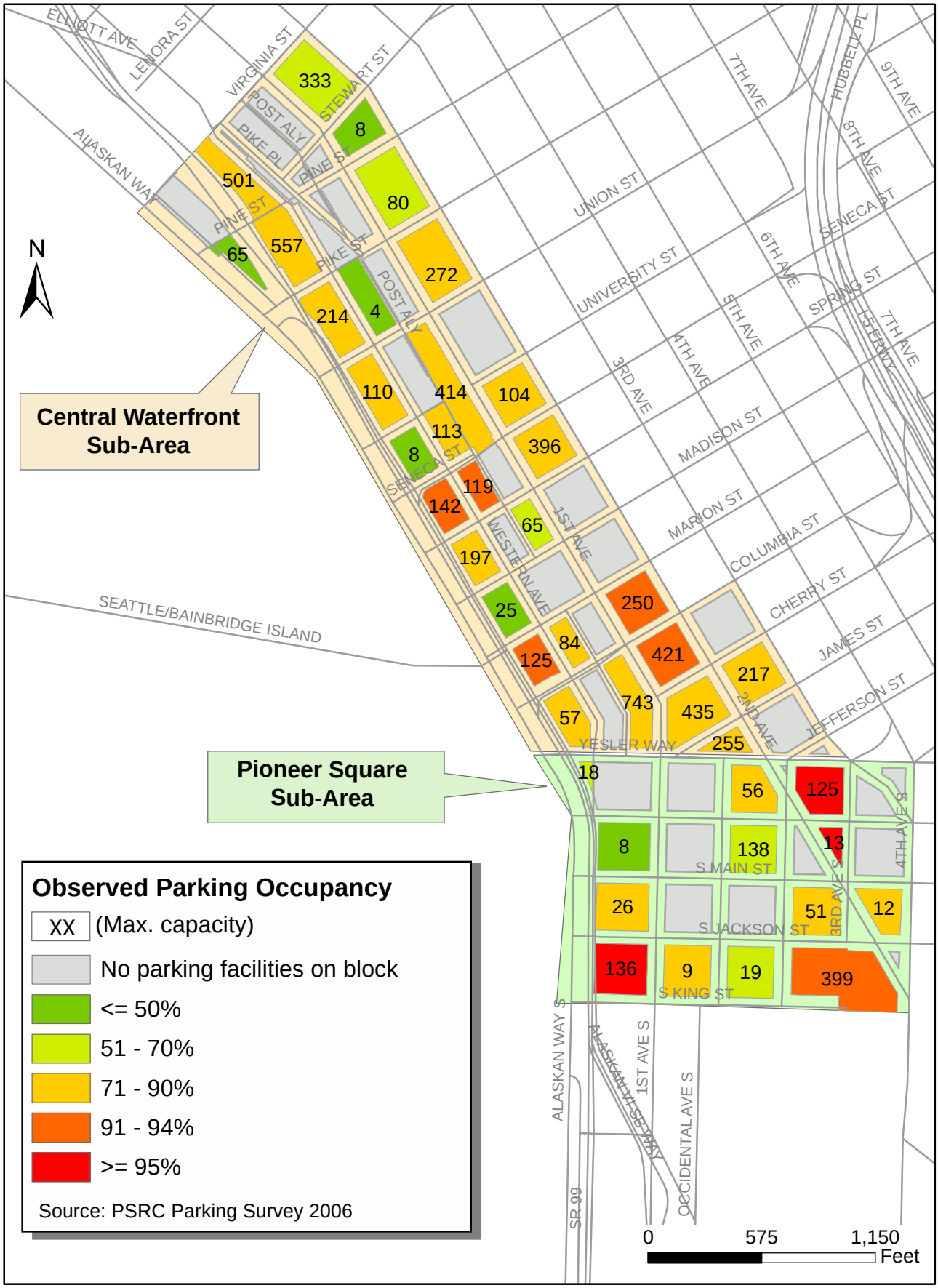
SDOT conducted a parking study on a Saturday in August 2006 to augment existing parking data to include parking demands for a busy summer weekend near the Central Waterfront. Figure 2-2 presents data on seven off-street parking facilities at three different times on Saturday, August 26, 2006. The seven facilities are as follows:

- Pier 66/Art Institute garage at Alaskan Way and Bell Street
- Pike Place Market garage east of Post Alley
- Watermark Garage at Spring Street and Western Avenue
- Surface lot behind the Watermark at Alaskan Way and Spring Street
- Surface lot at 72 Yesler Way
- "Sinking Ship" parking garage at 3rd Avenue and James Street

The following parking data were observed:

- The surface lots were fullest, especially the lot behind the Watermark Building where valet parking made capacity technically over 100%.
- The Pike Place Market garage was filled to near capacity at 2 P.M., but was below 50% capacity both at 10 am and 6 pm.
- The US Bank was between 10 - 15% over all three counting periods
- The Art Institute / Pier 66 parking garage had valet parking for cruise access.

# Figure 2-1 Existing Off-Street Capacity & Occupancy

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## Figure 2-2 Busy Summer Saturday Parking Demand Study Results

| FACILITY | GARAGE OR SURFACE | PERCENTAGE CAPACITY<br><br>10 a.m. | PERCENTAGE CAPACITY<br><br>2 p.m. | PERCENTAGE CAPACITY<br><br>6 p.m. |
|---|---|---|---|---|
| Pier 66/Art Institute | Garage | 57% | 64% | 52% |
| Pike Place Market | Garage | 48% | 97% | 42% |
| Watermark | Garage | 34% | 92% | 52% |
| “Sinking Ship” | Garage | 7% | 24% | 32% |
| US Bank | Garage | 11% | 15% | 16% |
| Behind Watermark | Surface Lot | 49% | 116% | 102% |
| 72 Yesler | Surface Lot | 31% | 97% | 81% |

# Chapter 3. Strategy Development and Evaluation Framework

This chapter provides a brief summary of work done prior to the development of this report to identify a wide range of potential parking mitigation strategies. The chapter also outlines criteria used for evaluating these potential parking mitigation strategies and developing plan recommendations.

## Summary of Work to Date

### Initial Strategy Development

In August 2006, the project team developed a broad list of potential mitigation strategies for consideration. Several brainstorming sessions were held with staff, consultants and key experts in the field to develop a *Draft Parking Mitigation and Management Strategies* document. Strategies outlined in this document fell into five primary categories: (1) Supply Management, Infrastructure and Operations, (2) Pricing, (3) Public Information and Wayfinding, (4) Marketing and Outreach and (5) Transportation Demand Management (TDM) and Employee Transportation Management.

### Expert Panel Session and Outcomes Summary

Later in August, a Parking Expert Panel convened to inform City and AWVSRP staff of potential parking mitigation strategies and to learn about the experiences of other cities that have undertaken major roadway reconstruction projects. Panel members with experience in construction mitigation in a number of major U.S. cities participated.[1]

Panel members concluded that parking mitigation efforts should focus on short-term customer access, supporting the message that "Seattle Center City is open for business." To achieve this goal, the panel advised:[2]

- Replacing lost and displaced short-term parking at a rate slightly less than existing supply.

[1] Expert Panel members were: Todd Litman (Victoria Transport Policy Institute); Glen Berkowitz (Boston); Dr. Dirk Serwill (IVV Germany); Jeff Tumlin (Nelson\Nygaard); Doug Wright (San Francisco); Dennis Woods (Santa Barbara)

[2] It should be noted that these are recommendations by an expert panel brought together for one week to provide ideas and input on AWVSRP parking mitigation. These comments are not fully researched, nor do they reflect the opinions of City of Seattle staff.

- Managing parking replacement through conversion of long-term supply to short-term use if feasible and sustainable; if this cannot be assured, however, the City should consider acquisition or construction of new facilities.
- Considering the long-term impacts of a permanent facility on the urban design/context of the area, if the City/AWVSRP chooses to construct a new parking facility near the Central Waterfront.
- To the extent possible, minimizing parking restrictions on First Avenue and retaining or expanding on-street parking on intersecting east-west streets to reduce impacts on this vital retail corridor.
- Developing a Center City electronic parking guidance system, focusing initial installations in retail/visitor areas close to the Waterfront.
- Developing a Center City parking pricing strategy that creates more transparency between on- and off-street parking and standardizes short-term parking rates in off-street facilities.
- Working to develop an association/organization of parking property owners to partner with in developing effective short-term customer parking programs.
- Creating a universal logo and rate structure for all short-term public parking.
- Developing programmatic incentives, such as ITS, wayfinding, joint marketing, signage programs, administrative support, technology assistance and technology subsidies, that would encourage private sector parking owners/operators to participate in branding, marketing and management programs.

The panel also considered commuter and construction worker parking management. Because long-term employee parking demand is less elastic than short-term customer demand, panelists recommended that the City focus on shifting Center City employees to transit and higher-occupancy modes to create opportunities for short-term customer and visitor parking. The City, King County Metro and WSDOT are actively developing transit and other incentive programs to reduce the numbers of auto commuters into downtown.

## Evaluating Parking Mitigation Strategies

Parking management strategies for the Central Waterfront and Pioneer Square, described in Chapters 4 and 5, are evaluated based on a set of criteria developed by the consultant team and agreed upon by SDOT. The following criteria are used to rate the effectiveness of these alternatives:

1. **Increase Short-Term Parking Supply** (optimizes existing or creates new supply)
2. **Location Efficiency** (proximity to demand or transportation services)
3. **Parking User Understanding** (promotes transparency, access and improves user information)
4. **Ease of Implementation** (time, major obstacles)
5. **Feasibility of Implementation** (private sector support)
6. **Cost/Cost Effectiveness**
7. **Improves Modal Connectivity** (pedestrian, transit and wayfinding improvements)
8. **Reduces traffic congestion**

# Chapter 4. Central Waterfront Parking Strategies

Spanning the area between Colman Dock and the Seattle Aquarium, the Central Waterfront attracts more than two million visitors a year to its shops, docks, restaurants, entertainment events and public spaces. The area is a vital part of Seattle's tourist economy—Pier 54's Ivar's Restaurant and the 100-year-old Ye Olde Curiosity Shop are examples of signature businesses that have operated in this area for many years. According to a survey conducted as part of the *Waterfront Parking Strategy* (2002),[1] 50 percent of visitors come for sightseeing purposes, and overall, people spend an average of 20 minutes searching for parking to stay for an average of four hours. The Central Waterfront is also an important transportation hub. The Colman Dock Ferry Terminal is Seattle's busiest multimodal terminal, handling thousands of passengers and more than 500 vehicles per hour during peak p.m. commute times. The Central Waterfront's visitor-oriented businesses depend on short-term parking. On- and off-street parking occupancy rates are high in this area, particularly in the summer visitor season. Research shows that people park under the Viaduct to access the piers, but also to walk uphill to shop, dine or do business in downtown Seattle. A short-term parking deficit spaces is expected in the Central Waterfront area although quantitative figures will be developed as part of the Viaduct project to update the work done in the previous EIS process..

The following sections discuss two packages of strategies to improve parking and access conditions in the Central Waterfront during AWVSRP construction.

- **Strategy Package 1.** New Short-Term Parking Supply Using Existing Off-Street Parking Supply
- **Strategy Package 2.** New Waterfront Parking Garage and Supporting Programs

Both strategies are viable options for replacing short-term parking supply and are not mutually exclusive. In fact, it is unlikely that either strategy would fully satisfy the estimated Central Waterfront area parking deficit. A number of supporting measures are identified for each package, many of which are discussed in more detail in Chapter 7: Center City Parking Mitigation Plan.

## Strategy Package 1: New Short-Term Parking Supply Using Existing Off-Street Parking Supply

This package of strategies for accommodating short-term parking demand in the Central Waterfront addresses a broad range of initiatives, revolving primarily

[1] *Seattle Central Waterfront Parking Strategy*, Department of Planning and Development, 2002.

around the conversion of existing long-term employee parking to short-term use. This approach focuses on two coordination strategies:

- to transition long-term supply to short-term use
- to more efficiently manage existing supply

This strategy relies on the initiative and cooperation of private property owners and operators that control parking and major businesses who lease much of the existing supply. The City's role is to educate these parties about the critical importance of creating an effective short-term parking system and, where possible, to provide incentives that make it more viable for private garages to restructure the ratio of employee (long-term) and transient (short-term) supply. *The success of these strategies is underscored by the need for the private sector to manage parking to maximize parking revenue. Any management strategy that threatens profitability for the private sector is not likely to be implemented.*

These strategies are the same as recommended in Pioneer Square and the Downtown retail core areas, described in Chapters 5 and 7, including implementing an electronic parking guidance system.

### Strategy #1a: Convert Existing Employee Parking to Short-Term Use

**Description:** This strategy focuses on converting supply that is currently unavailable to the public or is in use as long-term employee parking to short-term use. The City would pursue multi-party partnership efforts to move employees in targeted lots/facilities to alternative modes using employees incentives. Business participation may be based on a willingness to make a positive contribution to an important community project and potentially to have a rare opportunity to offer a valuable transportation benefit to employees.

Interviews with parking owners and operators to date have revealed that converting publicly available long-term parking to short-term supply would require complex partnerships (see Appendix B, summary of stakeholder interviews). However, interviewees feel that it can be accomplished. Several private property owners have indicated that they are not well positioned to release parking for short-term use, because they are locked into up to seven-year tenant leases and much of their parking supply is oversold years in advance (at up to 130 percent).

*Pursuing a Partnership Approach*

The City and its partner providers should pursue transit and other alternative commute incentives for employers and building owners to feel more comfortable in shifting away from monthly parking.

Monthly employee parking is often underutilized, because employees pay monthly for parking that is available for their use everyday, even if people do not need or want to travel to work every weekday by car. This represents a sold,

but unused supply of parking that could be made available for short-term customer parking if managed more effectively. Pricing programs that allow employees to buy 10 or 15 days at a lower price (but higher per day cost), could be used to allow private garages to program more parking for short-term use. The ultimate goal is to encourage people to drive less and to choose the days they will drive in advance so unused stalls can be sold.

The University of Washington administers a program that allows students, staff and faculty to pay per use. Under this voluntary program participants pay only for days they park in one particular facility on campus (on a space-available basis), but at a rate comparable to monthly costs. Transit pass holders pay lower prices. This allows parkers to save money on vacation days, sick days, personal holidays or days when they commute via an alternate method. It also allows parking managers to program supply more effectively.

The following steps should be initiated to identify employers, contact them and develop partnerships that could result in new short-term supply:

- Identify and approach employers and/or building owners with significant numbers of employees parking in key parking facilities with incentive packages.
- Offer employers/employees subsidized transit pass products, such as FlexPass and/or parking at designated park-and-ride facilities in exchange for releasing parking guaranteed through lease agreements.
- Work with the private sector to establish innovative parking programs that reduce or account for employee demand, allowing excess leased supply to be used as short-term parking.

This program will require private sector initiative to succeed unless the City imposes regulations requiring long-term parking rate structures to include a pay-per-use option. Any attempt by the City to regulate rates is likely to be met with opposition from the private sector and could undermine other efforts to create an effective system of short-term customer parking in the Center City. A risk-fund that would back any short-term losses for private operators that agreed to pilot new pricing programs could also be considered.

*Potential to Create New Supply*

This strategy relies on the availability of existing parking supply for conversion to short-term use. While the transition of any parking to exclusive short-term use will help to address projected deficits, larger blocks of 100 or more spaces are required for a facility to be effectively incorporated in universal branding and marketing programs or for inclusion in Center City parking guidance and wayfinding systems.

Based on a review of current facilities, occupancy and management, the following facilities are identified as having potential for conversion and are potential targets for surveying near the Central waterfront area:

| Garage Name | Address | Number / Type Stalls | Currently Occupied |
|---|---|---|---|
| Pike Place Market | 1531 Western Ave | 540 stalls | 82% |
| Hillclimb Garage | 1422 Western Ave | 150 garage stalls | NA |
| Watermark Garage and lot | 1011 Western and 1101 Western | 170 stalls | NA |
| WAMU Garage | University St. and 2nd Ave. | 700 | NA |
| Second and Seneca Bldg. | 1109 2nd Ave. | 400 garage stalls | 70% |
| Newmark Bldg. | 1415 2nd Ave., enter on Union St. and Pike St. | 250 surface stalls | 69% |

It is important to note that, given current peak occupancy rates and relatively low stall counts, it might be difficult to create blocks of 100 or more short-term stalls in these facilities.

**Costs:** Costs associated with marketing, negotiations with private operators, as well as transit and other transportation demand management incentives..

**Evaluation:** The key indicator of success for programs under this strategy is conversion of existing supply from management as long-term parking to short-term (transient) parking. However, piecemeal conversions at geographically scattered facilities will not be sufficient to develop an effective, transparent and marketable short-term parking system. Therefore, the ultimate goal is to transition larger blocks of supply to managed short-term use.

The lack of publicly managed parking or publicly owned land in the Central Waterfront combined with the existing dynamics of the parking industry will make parking conversion challenging. Additionally, the suggested methods might meet some resistance. Convincing parking operators to participate could be the most difficult element of this process. Key operators should be contacted at the outset and should participate in the negotiations. The market uncertainty created by the AWVSRP construction is also a challenge. At least one major parking operator has indicated that it assumes visitation to the waterfront will decline and therefore plans to rely on employee parking to support its operations during AWVSRP construction.

A successful pilot of flexible pricing program by a major parking manager in downtown might be necessary to encourage other facilities to adopt similar programs. The City could move forward quickly to identify a facility and property

manager that would pioneer this program. The success of this effort will be an indicator of feasibility for broader implementation.

### Strategy #1b: Use Parking Technology and Facility Management Tools to Maximize Short-Term Parking Capacity

**Description:** By providing incentives to private lot owners to use parking lot attendants to valet park in a tight formation rather than allowing drivers to self-park in larger parking stalls, the City could create a net increase in short-term parking supply. Valets can be used in combination with car stackers to further increase parking supply. Car stackers use various types of mechanical elevators to increase the number of vehicles that can fit in an existing parking facility—either on existing surface lots or on top decks of parking structures, as discussed in detail in Chapter 7: Center City Parking Mitigation Plan. Valet service is one way to put a human face on car-stacking machinery, which might intimidate or confuse new users.

Curbside Valet

City programs that guarantee compensation for any revenue loss associated with increased staffing needs could be implemented to encourage lot owners and managers to move to attended parking. More simply, the City could cover all or some portion of additional operating costs for a target facility. In exchange, the facility owners/managers would be required to manage any additional capacity created as short-term parking under the proposed rate structure. For example, by covering some portion of the estimated $50,000 per year in increased annual operating expenses to staff a 200-stall facility, the City might be able to create 50 additional short-term stalls.

**Costs:** Introducing valet service at private lots represents a dramatic increase in operating cost to the lot operator. Private operators would likely introduce valet service independently where it is economically viable; however, they would not be likely to limit the service to low-cost short-term parking. The City could offer to cover a percentage of the labor cost increases (set at a point where operators can realize a marginal increase in profit) required to offer valet parking. In exchange the operator would agree to manage newly created capacity as short-term, and if feasible, standardize short-term rates.

| Project/Improvement | Annual Operating Cost |
|---|---|
| Valet attendant parking (annual operating cost per 50 stalls of supply) | $50,000 |

**Evaluation:** Valet parking could increase parking capacity by 20 to 30 percent over independently accessible self-park spaces (somewhat less for already tightly striped facilities) in facilities where it is economically viable. Some waterfront lots already offer valet parking on weekends when demand is high. The cost of attendant labor is prohibitive at most other times of the week.

If implemented in all Central Waterfront parking facilities with current capacity of 50 stalls or more and having geometry conducive to stacking vehicles, this strategy could net at maximum 470 additional parking stalls. This assumes full participation by private sector owners/operators. It is more realistic to assume participation by three to four private operators, netting 100 to 150 stalls of new supply. However, it should be noted that supply increases will be scattered through multiple facilities and will provide little opportunity to tie into Center City management and information programs. The City also may need to change or address Land Use Code regulations for controls on maximum parking permitted.

The implementation of this strategy will require one-on-one negotiations with identified parking facility owners and operators. Market economics will also dictate to private parking managers when the costs of paying valets to park customers is economically beneficial. To some degree, this strategy will be implemented without any City action as parking demand increases in relation to available supply.

Figure 4-1 shows lots that might have potential for valet use and the potential net increase in supply.

## Figure 4-1 Central Waterfront Parking Lots With Potential for Valet Operations

| Garage Name | Location | Current Capacity | Capacity with Valet |
|---|---|---|---|
| Pike Place Market | 1531 Western Ave. | 540 | 675 |
| WAMU Garage | University and Second Ave. | 700* | 875 |
| Surface lot | 1400 Western Ave. at Union St. | 45 | 56 |
| Newmark Bldg. | 1401 Second Ave., enter on Union St and Pike St. | 270 | 338 |
| Surface lot | 1301 Western Ave at University St. | 70 | 88 |
| Surface lot | 810 Western Ave. at Columbia St. | 85 | 106 |
| Surface lot | 1516 First Ave. between Pike St. and Pine St. | 80 | 100 |
| | TOTAL | 1,875 | 2,344 |

Note: These numbers are rough estimates that assume a 25-percent increase in supply. Total capacity increase could vary significantly based on configuration of the facility.
*Estimated based on discussion with parking operator.

## Strategy Package 2: New Central Waterfront Parking Garage

### Strategy #2: Develop New Public Parking Garage in Partnership with Private Development

The second package of strategies for creating new short-term parking supply focuses on the development of a new parking garage in the Central Waterfront that offers short-term public parking at affordable rates.

**Description:** The foundation of this approach to mitigating the identified Central Waterfront parking deficit entails a public/private partnership to provide a good alternative to construction of new public parking, but keeping the City at arms length from the construction management of the facility.

After reviewing several garage development scenarios, including a number of public and joint public/private development options, it was determined that a privately developed and managed option was preferred over other options that involved the City building and managing public parking. In this option, the City and/or the AWVSR project would purchase or obtain a sufficient buildable parcel in the Central Waterfront area, then partner with or solicit a private developer to construct a mixed-use project that would include parking to be sold as public, short-term parking.

In the Central Waterfront, the public benefit for spending mitigation funds or other city funds on land purchase or financing to support a private development would be to provide much-needed and affordable short-term customer parking to support retail and visitor activities.

One important drawback to a potential public-private garage development option is the time required to complete negotiations and construction of a mixed-use project. For a commercial development it could take multiple years to secure a major tenant. This could push the entire project timeline to 5 to 7 years or more, missing the opportunity to have parking available for much of the AWVSRP construction period. The market for residential development might allow a quicker turn-around on a project, but could still require 2 to 4 years before the parking product came on-line. In general, a mixed-use project with the garage component will require a longer timeline to bring the garage project on-line than a freestanding garage facility, which could be negotiated through a similar process.

Several recent development projects in Portland, OR, have used similar public-private partnerships to create affordable short-term customer parking. The Brewery Blocks development and the Sixth Avenue and Alder Street garage in downtown Portland both were privately developed, but with specific restrictions placed on the parking operating permit that requires the lots to sell short-term parking and to cap short-term rates (0 to 4 hours) at 150 percent of the on-street meter rate.

**Cost:** It is difficult to determine the exact costs of a parking facility constructed as part of a mixed-use development project. In a previous phase of this study, several development options were examined, including above-ground and below-grade parking structures, and an underground facility with 460 stalls costing roughly $51.8 million or roughly $61,000 per stall for construction. The land acquisition costs for a full block site (roughly 40,000-square-feet) are estimated at roughly $14 million. In the proposed scenario the cost of site preparation and structural testing would be folded into the broader development project.

## Evaluation of Central Waterfront Parking Alternatives

The following section provides an evaluation of the two Central Waterfront parking strategy packages, using the evaluation criteria described in Chapter 3. Due to the level of short-term parking deficit in this area, the two approaches should not be viewed as mutually exclusive. The City should consider the benefits or necessity of pursuing both simultaneously.

### Central Waterfront Strategy Package #1: Increase Supply Though Partnerships and Transit Benefits

Strategy Package #1 details a series of strategies that require close coordination between the City, the property owners/managers who control parking supply and major businesses that lease large amounts of off-street parking. A number of important Central Waterfront stakeholders have emphasized the critical importance of private business and parking sector involvement in this project.

Figure 4-2 provides a more detailed evaluation of this strategy against project criteria.

## Figure 4-2 Evaluation of Central Waterfront Strategy Package #1

| Evaluation Criteria | Strategy Package #1: Increase Supply Though Partnerships and Transit Benefits | |
|---|---|---|
| | Benefits/Opportunities | Drawbacks/Challenges |
| 1. Increase Short-Term Parking Supply | • Potential to create 200 to 500 short-term parking spaces depending almost exclusively on cooperation of private sectors players<br>• Optimizes use of existing supply | • Requires complex coordination with property owners, tenants and parking operators<br>• Would require multi-year agreement from property owners/managers, which could be difficult to achieve due to tenant lease agreements |
| 2. Location Efficiency | • Much harder to create large blocks of short-term supply that can be effectively marketed | • Creates dispersed supply making it harder to brand and market<br>• City has little control over location of supply and might include parking that requires shuttle connection<br>• Could be difficult to coordinate with pedestrian linkages over construction zone and wayfinding to those linkages<br>• Could be difficult to coordinate with Center City transit circulation |
| 3. Parking User Accessibility and Understanding | • Depends on initiation of district-wide branding efforts<br>• Encourages private sector to adhere to consistent short-term rate structure | • Difficult to coordinate dispersed demand and small lots with wayfinding and Parking Guidance System<br>• Difficult to implement branding at multiple smaller facilities<br>• Difficult to create focused and effective parking outreach and marketing |
| 4. Ease of Implementation | • Potential to create new supply rapidly if private sector initiative based on market potential (only if private sector sees increased revenue potential in transition parking to short-term management) | • Requires high level of coordination/process facilitation to launch programs<br>• Would require 12 to 24 months to reach supply goals via coordination approach, due to extensive negotiations<br>• Potential for negotiations or coordination efforts to fail or stall |
| 5. Feasibility of Implementation | • Highly feasible that some supply will be created, even if the amount, location and timing is less certain<br>• Will work well if private sector identifies strong short-term market and revenue potential equal or stronger than current monthly sales generate | • Relies on private-side initiative and willingness to do community good<br>• Requires coordination between multiple agencies as well as public/private partnership |
| 6. Cost/Cost Effectiveness | • Total project costs are relatively low<br>• Could be very cost effective if private sectors determines that accommodating short-term demand can increase revenue | • Annual cost to fund transit benefits could be $0.5 to $1.0 million per year (decreasing over time) |
| 7. Improves Modal Connectivity | • Would improve signage and wayfinding program for pedestrians | • Might require higher pedestrian improvement costs to be fully integrated with construction zone crossings.<br>• Might be more difficult to serve effectively with high frequency downtown bus service (E-W connection or Center City Circulator). |
| 8. Other Transportation Benefits | • Could help limit downtown traffic by encouraging commuter mode shift from single occupancy vehicles to transit | • Using multiple smaller facilities is less effective for traffic management and limiting search traffic than a single large facility |

**Central Waterfront Strategy Package #2:**
**Build Central Waterfront Garage and Transportation Center**

Facilitating the construction of a new garage could provide a higher level of assurance that short-term supply needs will be met, but it will not net enough stalls to cover 100 percent of the projected shortfall. This bricks-and-mortar approach might resonate with concerned business owners in the Central Waterfront area, whose businesses rely directly on a successful customer access strategy.

Figure 4-3 provides a more detailed evaluation of this strategy against project criteria.

## Figure 4-3 Evaluation of Central Waterfront Strategy Package #2

| Evaluation Criteria | Strategy Package #2: Build CW Garage and Transportation Center | |
|---|---|---|
| | Benefits/Opportunities | Drawbacks/Challenges |
| 1. Increase Short-Term Parking Supply | • Creates new, affordable short-term parking<br>• High degree of certainty about results<br>• Creates valuable parking resource for waterfront area, which could last beyond the AWV<br>• Not exclusive of other TDM/partnership strategies | • If built on existing surface lot, new stalls would be gained at expense of existing spaces.<br>• Parking product might not be available at necessary time |
| 2. Location Efficiency | • Ensures location of parking near the heart of the Central Waterfront and at pedestrian links<br>• Could provide good connection to piers with direct pedestrian linkage<br>• | • Location along AWVSRP construction zone could be detraction for customers |
| 3. Parking User Accessibility and Understanding | • Optimal for wayfinding and maximizing use of proposed Parking Guidance System investment<br>• Easy to focus parking branding and marketing efforts to increase public/visitor knowledge<br>• Provides assurance that affordable short-term rate structure can be implemented | • Improvements will be needed to activate surrounding street uses, improved sidewalks, lighting, etc. |
| 4. Ease of Implementation/ Expedience | • Difficult to know exactly how private development community will react to proposed land or financing incentives | • Planning and design needs to start immediately, it will be difficult to wait for results of private sector coordination discussions<br>• Expedited project could still take 3 years or more |
| 5. Feasibility of Implementation | • Difficult to know exactly how private development community will react to proposed land or financing incentives<br>• Interviews indicate that private sector does not support City-managed garage | • Land acquisition is potential hurdle |
| 6. Cost/Cost Effectiveness | • Public-private partnership limits financial risk<br>• Proformas show that garage can be revenue-positive selling short-term supply at capped rates | • Cost per net new stall is high, particularly if built on existing surface lot<br>• Cost increase dramatically for underground garage |
| 7. Improves Modal Connectivity | • Location near Colman Dock could help to create needed multimodal hub on the waterfront<br>• | • Existing pedestrian environment is poor, so project must be implemented with improved pedestrian environment and robust signage and wayfinding program |
| 8. Other Transportation Benefits | • Single large facility with affordable rates could reduce overall volume of search traffic for parking and allow for better traffic management | • Could create additional traffic congestion on specific routes used for parking traffic access |

## Summary

Figure 4-4 summarizes strategies for developing affordable, well-managed short-term parking in the Central Waterfront area to meet the projected deficit resulting from AWVSRP construction.

## Figure 4-4 Summary of Central Waterfront Parking Management Strategies

| Strategy | Creates New Short-Term Parking | Other Parking Benefits | Costs | Implementation Responsibility |
|---|---|---|---|---|
| Strategy # 1a: Convert Existing Employee Parking to Short-Term Use | 190 to 375 | Transit incentives reduce parking demand | To be determined | SDOT, private employers, private parking operators |
| Strategy # 1b: Use Parking Technology and Facility Management Tools to Maximize Short-Term Parking Capacity | Up to 470 | Increases efficiency of existing supply | $50,000 for valet to $600,000 for car stackers | SDOT, private parking operators |
| Strategy # 2: Develop New Public Parking Garage | 300 – 500 stalls | Creates single large facility that can be tied to Center City marketing and wayfinding | $27.1 million to $51.8 million | SDOT, private developer |

# Chapter 5. Pioneer Square Parking Strategies

Tourist-friendly Pioneer Square is Seattle's oldest neighborhood and historic district. Its urban form is defined largely by Seattle's oldest buildings, which are primarily three to four stories and have almost no off-street parking on-site, which makes parking availability a major concern for tenants. It is home to mostly small businesses (e.g. accounting, architecture and design firms), ground-floor retail, residential and a thriving nightclub scene.

Although building space is underutilized, particularly on upper floors, on-street parking occupancy rates are high and several small surface lots and garages are well-utilized. Parking is less expensive than in the Financial District, so some people park here and walk to jobs downtown. In addition, ferry passengers accessing Colman Dock sometimes leave their cars in curb spots overnight and take the ferry to their homes in Kitsap County. Due to high parking utilization rates, the area has a strong dependence on short-term parking under the Viaduct. Neighborhood businesses do not perceive the North Stadium lot or other less utilized parking facilities south of Jackson as being close enough for customers.

The highly walkable retail and entertainment district has good access to bus service on First, Third and Fourth Avenues and is within walking distance of Union Station and one of three future LINK light rail stations. Pioneer Square businesses located on First Avenue could feel the loss of on-street parking acutely. During construction, increased traffic on First Avenue and the newly important access from Jackson and Main to Colman Dock could make auto circulation more difficult.

As described in Chapter 2, the short-term parking replacement goal for Pioneer Square is to accommodate 170 to 240 short-term spaces. This is based on displaced parking and available peak capacity in the area (See Chapter 2).

The following section discusses a package of strategies to meet this goal and to improve parking and access conditions in the Pioneer Square area during AWVSRP construction. These strategies focus on developing short-term parking supply through private-sector partnerships.

**Note:** *An option to build a new public parking garage in Pioneer Square was considered in this study and eliminated for multiple reasons. A lack of good development sites for a freestanding parking garage in the Pioneer Square area was a key factor. The economics of garage construction and operation dictate that facilities smaller than 350 to 400 stalls are inherently inefficient. From an*

*urban design perspective, a stand-alone garage in the Pioneer Square Historic District could raise substantial opposition and might require additional investment to enhance design features and integrate the structure into the surrounding environment.*

## Strategy Package 1. Develop Short-Term Parking Supply through Private-Sector Partnerships

### Strategy #1a: Maximize Existing Parking Supply for Short-Term Use

**Description:** This strategy package is nearly identical to the Central Waterfront Strategy Package 1 previously described in Chapter 4. Pioneer Square's retail stores and entertainment venues rely on an adequate supply of short-term parking for customers. This strategy focuses on addressing the parking deficit created by the AWVSRP through conversion of existing supply that is currently unavailable to the public or is in use as long-term parking to short-term use. Conversion can be accomplished by:

- by implementing flexible pricing programs, or
- by shifting demand from private lots through transit incentive programs.

For example, an employer pass product such as FlexPass is one type of transit incentive program that offers employers/employees subsidized transit passes in exchange for releasing parking guaranteed through lease agreements. This offer could be capped at a targeted number of short-term stalls (considering employee commute and parking patterns) in the district to reduce costs. This might also require development of new park-and-ride capacity, since many existing facilities are already full.

Based on a review of existing lots and garages, the following facilities are identified as having potential for converting some parking to short-term use (note that direct conversations with property owners and operators would need to occur):

| Garage Names | Address | Number of Stalls | Currently Occupied |
|---|---|---|---|
| Pioneer Building | 114 James Street | 435 | 88% |
| Sinking Ship parking lot | 515 Second Avenue | 260 | 82% |
| Cherry Street parking garage | 213 Cherry Street | 220 | 79% |
| US Bank Garage | 721 1st Ave | 500 | NA |
| Merrill Place Garage | 76 King St | 130 | NA |
| Qwest Field / Exhibition Hall | 1000 Occidental Av S | 1,000 | NA |
| Baseball Stadium | 1250 1st Av S | 1,695 | NA |

Again, it should be noted that given current peak occupancy rates and relatively low stall counts it may be difficult to create larger blocks of parking that can effectively be included in a Center City short-term parking system.

**Costs:** Costs of the program depend on the scale of the marketing, technology and transportation demand management efforts included.

**Evaluation**: The distribution of up to 1,500 employer pass products should influence between 110 and 300 employees to shift to transit. This estimate is based on a conservative shift to transit by 15 to 20 percent of workers provided with free transit benefits.

## Summary of Pioneer Square Parking Strategy

The following section provides an evaluation of the proposed Pioneer Square parking strategy package, using the same criteria used to evaluate the Central Waterfront parking strategies (see Chapter 3 for a discussion of the criteria).

### Summary of Pioneer Square Strategy Package #1: Increase Supply Though Partnerships and Transit Benefits

Unlike the Central Waterfront, the demand required to replace lost short-term supply and accommodate a limited amount of future growth is more moderate in the Pioneer Square area. Overall, Strategy Package #1 would have relatively low up-front costs, but annual subsidy programs could end up being somewhat expensive over the course of the project. If proposed strategies are successful, they are likely to result in short-term parking dispersed in a number of smaller facilities, which could make it more difficult to coordinate parking information, wayfinding and Parking Guidance Systems.

Proposed coordination strategies will be time- and staff-intensive and provide a lesser degree of certainty about outcomes. Discussions with the private sector should continue immediately so the City can better determine the potential for transitioning long-term supply to short-term use within the context of a business model that is acceptable to private sector participants.

Figure 5-2 provides a more detailed evaluation of this strategy against project criteria.

## Figure 5-2 Evaluation of Pioneer Square Strategy Package #1

| Evaluation Criteria | Strategy Package #1: Increase Supply Though Coordination with Private Sector | |
|---|---|---|
| | Benefits/Opportunities | Drawbacks/Challenges |
| 1. Increase Short-Term Parking Supply | • Potential to create 100 to 550 short-term parking spaces<br>• Optimizes use of existing supply<br>• Might be opportunities to share Central Waterfront supply as good shuttle connection is developed | • Requires complex coordination and land deals<br>• Many Pioneer Square businesses have no on-site parking. Loss of long-term stalls could be a hardship for businesses |
| 2. Location Efficiency | • District is small in size, so dispersion of parking to multiple facilities is less of a problem | • Off-street parking in this area is concentrated around Second and Occidental. New supply is likely to be created in same area as proposed garage. |
| 3. Parking User Accessibility and Understanding | • If most off-street parking in this area is concentrated around 2nd and Occidental, could be an opportunity for focused information and wayfinding system | • Difficult to coordinate parking in multiple small facilities with wayfinding and Parking Guidance System<br>• Difficult to implement branding at multiple smaller facilities<br>• Difficult to create focused and effective parking outreach and marketing<br>• Even with private sector coordination there is no assurance that rate control will be successful |
| 4. Ease of Implementation/ Expedience | • Might be able to reach goals for increased supply quickly given relatively low numbers and good transit service | • Requires high level of coordination/process facilitation to launch programs |
| 5. Feasibility of Implementation | • Successful coordination with one to two large employers could achieve goal<br>• Good potential for developing productive public/private partnerships | • Relies on private-side initiative and willingness to do community good<br>• Requires coordination between multiple agencies as well as public/private partnership |
| 6. Cost/Cost Effectiveness | • Relatively low overall project costs<br>• Annual cost to fund transit benefits are ongoing and could become quite large over project span<br>• Small companies might be good targets for transit benefit incentives | • Annual cost to fund transit benefits could be $250,000 to $500,000 per year (decreasing over time) |
| 7. Improves Modal Connectivity | • Good connections to planned and existing high frequency, high capacity transit<br>• Would improve signage and wayfinding program for pedestrians | • Might be difficult to serve effectively with high frequency downtown bus service if supply is dispersed |
| 8. Other Transportation Benefits | • Could help limit traffic in district by encouraging commuter mode shift from single occupancy vehicles to transit | • Could create more search traffic and limit traffic management capabilities |

# Chapter 6. On-Street Parking Strategies

On-street parking in the Center City near the AWVSRP construction zone is well utilized. Transit and traffic strategies introduced to keep downtown moving during construction are likely to further reduce the supply of on-street parking, making the remaining available curb space even more valuable. The following strategies will ensure that remaining short-term on-street parking is utilized at maximum efficiency for business customers and shoppers.

### Strategy 1: Examine Enforcement and Operations Measures to Address Inappropriate Use of Disabled Parking Placards

**Description:** The City of Seattle currently allows vehicles with disabled parking permits to park for free and for unlimited time in paid parking or time-limited areas. SDOT reports that surveys in 2004 and 2007 of downtown parking indicated that in a typical weekday, as many as 30 percent of vehicles parked on the street displayed disabled parking placards. Anecdotal evidence indicates that some number of downtown commuters inappropriately use disabled parking permits to park for free all day, where off-street parking is quite expensive. There are a number of enforcement, education and regulatory strategies that the City could pursue to address inappropriate use of disabled parking placards. This would help to free on-street parking for more appropriate short-term customer use, including for short-term trips of legitimate holders of disabled parking permits. The strategy is designed to address placard system abuse; better regulation of the placard system should support those who use it within the intent of the program. *This is an important strategy for ensuring that the on-street parking system is serving its highest and best use.*

**Costs:** The costs associated with this task would include outreach to the disabled and downtown stakeholder communities to discuss this strategy and any concerns and issues for implementation.

| Project/Improvement | Capital Cost | Annual Operating Cost |
|---|---|---|
| Educational program development | | $10,000 |
| Conduct outreach to disabled community and placard abusers | | $10,000 (one-time) |
| Produce and install new signage – if necessary | $50,000 | |

**Evaluation:** This strategy would prioritize the on-street supply for short-term, high-turnover customer and visitor uses. Education, enforcement and/or regulatory measures would need to be designed to prevent or reduce abuse of the disabled permit parking system.

### Strategy 2: Address Paid Parking Rates or Maximum Time-Stays to Promote Turnover

**Description:** The City should review parking rates and time-stay requirements in the downtown area to ensure that parking turnover is maintained. The 2-hour time limits may need to be adjusted particularly where there are businesses such as coffee shops or dry cleaners where short time-stays are more appropriate.

**Costs:** As part of the analysis to determine paid parking rates or new time limits, City staff might want to conduct a turnover survey of on-street parking in potential areas. This task will cost approximately $10,000-$20000 depending on the size of the area studied. Additionally budget for new signage would be needed.

| Project/Improvement | Capital Cost | Annual Operating Cost |
|---|---|---|
| Time-stay parking survey | | $10,000 -$20,000 (one-time) |
| Produce and install new signage | $50,000 | $0 |

**Evaluation:** Calibrating paid parking rates and time limits are effective strategies to increase turnover in on-street parking spaces, particularly on streets with a high degree of short-term visitor businesses. However, the majority of on-street parking in the downtown is already limited to two hours, which is optimal for most retail customers and business visitors. There are also 30-minute timed spaces (with signs marking them as 30-minute). Since the pay station kiosks issue two-hour tickets, any spaces allowing less than two-hour parking requires enforcement chalking. Managing effective turnover with chalking will be difficult to maintain using the current equipment and levels of enforcement. This strategy would primarily support a few businesses that have very short customer stays.

### Strategy 3: Re-stripe Existing Parking Spaces to Increase Capacity

**Description:** The City should re-stripe on-street parking or eliminate striping altogether to accommodate more vehicles at the curb. Re-striping would mean decreasing the standard length of parallel stalls (from 20 feet to 16 feet).

**Costs:** The City would need to identify where there is currently inefficient curb striping, redesign these streets, then re-stripe or remove the paint.

| Project/Improvement | Capital Cost |
|---|---|
| Identify inefficient curb striping | $10,000 |
| Redesign curb space | $20,000 |
| Re-stripe or remove paint | $50,000 |

**Evaluation:** Re-striping or simply removing parallel space markings would add at least one stall per full block face where there is horizontal curb parking, creating a slight increase in on-street parking spaces in downtown Seattle. This low-tech, low-cost option could be implemented quickly.

### Strategy 4: Impose Controls to Ensure Efficient Commercial Loading Activities

**Description:** To preserve curb space for short-term parking during peak retail and business hours, SDOT should consider a number of strategies to ensure that truck and delivery vehicle loading is maintained. Example strategies to explore for their feasibility include:

- Identifying process for reviewing and moving loading areas to along east/west streets versus on north/south arterials
- Adjust Commercial Vehicle Load Zones for trucks only
- Encourage evening, off-peak and weekend deliveries
- Use alleys and loading docks more efficiently
- Enforcement of one-way alley "protocol"
- Consider adjustments to private businesses delivery practices
- Curbside loading zones no less than 30 feet long, located at block ends

**Costs:** This strategy would require staff to study to identify best practices and how to implement various strategies. In addition, outreach and meetings with businesses, commercial delivery companies and property management firms in the affected areas will be necessary.

| Project/Improvement | Capital Cost |
|---|---|
| Parking Study | $40,000 |
| Outreach and implementation | $20,000 |
| Produce and install new signage and possibly new striping | $20,000 |

**Evaluation:** This strategy will be necessary especially in areas where curbspace will be removed to create peak or all-day travel lanes.

### Strategy 5: Increase Enforcement of Parking Regulations

**Description:** By increasing enforcement of remaining on-street, short-term parking, the City should increase space turnover, making it easier for customers and shoppers to find parking. Additional enforcement should be automated using cameras mounted to enforcement vehicles and/or buses to automate citations of double parking, blocked crosswalks, etc.

**Costs:** New parking enforcement staff would be needed to ensure that short-term parking spaces are available to customers, and not occupied by long-term commuters. It is assumed that two new enforcement officers (each with a $35,000 scooter) would be required to enhance enforcement in downtown.

| Project/Improvement | Capital Cost | Annual Operating Cost |
|---|---|---|
| Enforcement | $0 | $225,000 |
| Handhelds and other enforcement equipment | $10,000 | $0 |
| Scooters | $70,000 | |

**Evaluation:** Better enforcement of parking regulations would improve customer access, and at a low cost if additional enforcement can be automated.

## Summary

Figure 6-1 summarizes strategies for managing on-street parking in the Center City and in the vicinity of the AWVSRP construction zone.

## Figure 6-1 Summary of Center City Parking Management Strategies

| Strategy | Creates New Short-Term Parking | Other Parking Benefits | Costs | Implementation Responsibility |
|---|---|---|---|---|
| Strategy 1: Examine Enforcement and Operations Measures to Address Inappropriate Use of Disabled Parking Placards | Increases turnover allowing more people to park with existing supply | Prioritizes on-street supply for short-term, high-turnover customer and visitor uses | $70,000 | SDOT |
| Strategy 2: Address Paid Parking Rates or Maximum Time-Stays to Promote Turnover | Increases turnover allowing more people to park with existing supply | Increases turnover without increasing rates | $50,000 to $60,000 | SDOT |
| Strategy 3: Restripe Existing Parking Spaces to Increase Capacity | 110 | Could add one stall per full block face | $80,000 | SDOT |
| Strategy 4: Impose Controls to Ensure Efficient Commercial Loading Activities | May increase supply slightly during certain times | Preserves curbspace for commercial loading activities | $80,000 | SDOT, private business owners, property management, commercial delivery companies |
| Strategy 5: Increase Enforcement of Parking Regulations | Increases turnover allowing more people to park with existing supply | Increases turnover | $80,000 capital cost and $225,000 annual operating cost | Seattle Police Department - parking enforcement |

# Chapter 7. Center City Off-Street Parking Management

This chapter addresses Center City off-street Seattle parking management, including marketing, information, commuter parking, and technology strategies to create a more functional, accessible and transparent short-term parking system. The Center City is the key economic engine of the Puget Sound region, providing thousands of jobs, the largest retail district, housing for a range of incomes, and a hub for entertainment and tourism. Strategies presented in this section are generally focused on making the Center City short-term parking system more effective over the long-term, but also would provide great benefit during AWVSRP construction. These strategies are part of a thorough review of transportation issues affecting downtown Seattle, including strategies to reduce dependence upon private automobiles.

The AWVSRP and other transportation projects in the downtown area will have a dramatic and long-lasting impact on how employees, shoppers, residents and visitors get to the Center City and move around once they are there. As a result, a long-standing discussion about the need for publicly managed customer and business short-term parking has moved to the forefront. In fact, investments triggered by viaduct mitigation might provide an opportunity to develop a more cohesive equitably priced parking system in the Center City. Mitigation programs and the parking strategies described in this report need to be considered for their effectiveness in both the construction phase and over the long term.

This chapter provides a series of strategies that address (1) customer and visitor short-term parking and (2) employee parking.

## Making the Short-Term System Work

This section provides strategies for ensuring that short-term parking is available and well managed throughout the Center City. Strategies presented here will help mitigate the impacts of the AWVSRP on customer access and help the Center City thrive. Proposed actions include improving the driver's experience through better information and wayfinding, standardizing signage and marketing and examining a universal rate structure for short-term parking.

During construction, drivers will likely be confused by altered routes, displaced parking, and obstructed views. Launching an effective public information and wayfinding program will be essential to keep the Central Waterfront, Pioneer

Square and the rest of Downtown open for business and increase safety. The following information and wayfinding strategies are proposed in this section:

- Electronic wayfinding and guidance system on Center City streets
- Participation in Center City wayfinding system as incentive to private owners and managers
- Web-based parking information and reservation system
- Universal logo and rate structure for all short-term public parking
- Signage ordinances to encourage private participation in parking management

Making the Center City a Park-Once district, where visitors can park and walk or take transit between destinations, would be a critical step towards circulating people rather than vehicles in downtown. For a Park-Once strategy to be successful, parking must be tied to effective transit services to provide transparent and ubiquitous intra-downtown mobility.

### Strategy 1: Build Alliances among Parking and Business Interests

**Description:** In Seattle, off-street parking is owned and managed largely by the private sector. Therefore, it is critical for the City to form partnerships with major downtown property owners, parking management companies and large employers to effectively implement strategic Center City parking management strategies.

This strategy recommends creating a parking advisory committee that would support the goal of providing sufficient and well-managed short-term customer parking, access and information. The committee could include representatives from the business community, major property owners, parking management companies, transit providers, and other key groups. It would provide an interface for the City to private owners and operators.

**Costs:** The costs associated with a parking advisory committee are related to start-up funding for meetings and formation.

| Project/Improvement | Capital Cost | Annual Operating Cost |
|---|---|---|
| Supporting Parking Advisory Committee | | $5,000 |

**Evaluation:** Some management strategies will not be possible unless the City has the cooperation and buy-in from private parking owners, operators and local businesses.

**Timeline:** A parking advisory committee could be formed and funded very quickly using existing City relationships.

### Strategy 2: Organize a Parking Technology Summit

**Description:** This strategy recommends that the City organize a Parking Technology Summit designed to introduce state-of-the-art parking technologies to the public and private parking communities. This should include Center City property owners, public agencies such as Seattle Center or King County that manage downtown parking, and private parking managers. This summit would share state-of-the art technology amongst the parking community and help the City to better understand what new technologies could benefit parking owners and operators and help the City itself better manage public parking supplies. At the conclusion of the summit, the City should bring together participants in a roundtable discussion about which technologies would best support downtown Seattle parking needs and goals.

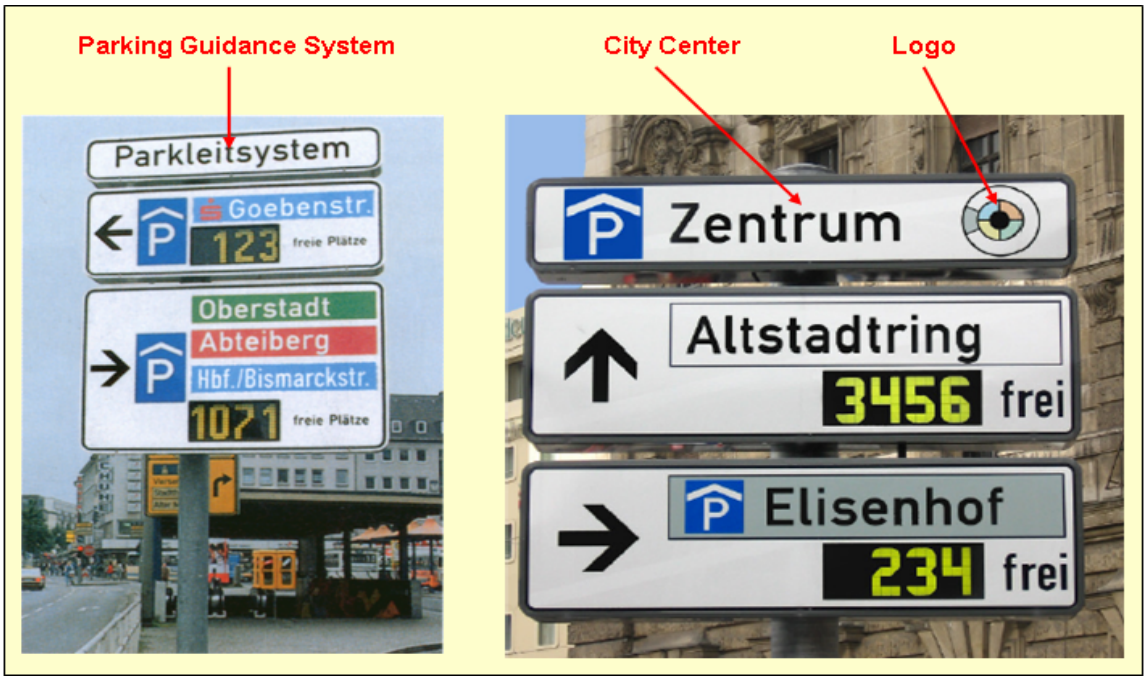
A successful summit could lead to programs supported by the City or AWVSRP that would provide subsidies or incentives for owners/operators that adopt technologies that improve parking management or help create additional short-term supply.

**Costs:** Organizing a Parking Technology Summit, including paying for staff time and renting a facility to hold the event would cost $5,000 to $10,000. Vendors would likely cover their own costs.

**Evaluation:** This strategy provides a good opportunity for the public and private sectors to communicate about the role of technology in supporting downtown parking goals. Bringing all interested parties together for one central event is the most efficient way to educate a diverse group and introduce people to each other with a goal of coordinating future parking technologies. With good publicity it would also act as an opportunity to deliver a summary of this plan and solicit feedback on recommended strategies.

### Strategy 3: Implement a Center City Parking Guidance System

**Description:** The installation of an electronic dynamic parking guidance system (PGS) is recommended as a key strategy for improving parking access and information in the Center City.




German Parking Guidance System street signage showing spaces available in zones and specific garages.

A PGS directs motorists from the main access roads of the city to parking facilities with available spaces. The number of spaces available in a specific car park or the total number for a defined area is shown on variable information signs. Therefore, these systems are called Parking Guidance Systems as the numbers change every few minutes. For more information on PGS, see IVV's "Parking Guidance System for Downtown Seattle" (2006) in Appendix A. The following actions should further strengthen the system:

- Holding introductory meetings with parking operators, preferably in the process of establishing a Parking Advisory Committee
- Negotiating participation into a system to provide short-term parking and branding efforts, as described in previous strategies
- Selecting a target area for a pilot program
- Consider providing subsidies to participating parking operators to meet system and data delivery needs

**Costs:** Parking guidance systems are usually owned, operated and financed by city authorities. Federal funds might be available to co-finance the necessary infrastructure (other U.S. cities are using CMAQ funds to develop comparable systems). In Europe where PGSs are popular, the city typically pays for the central computer, signs and the communication infrastructure, whereas parking operators pay for their in-house installations necessary to deliver the data. The operating costs of the PGS are often shared between the city and the parking

operators. For instance, the annual fee in the city of Cologne, Germany is $3,500 per year per garage. This is regarded as a relatively small amount compared to the revenues from additional customers generated by participation in the system. The following list presents system components and amounts necessary to develop a parking guidance system connecting 20 garages in Seattle. Based on the following assumptions, a rough capital cost estimate would be $1.7 million:

- 20 parking facilities included in the first phase, with a smaller system started as a pilot program
- Central computer already dimensioned for a larger system
- Five dynamic signs per parking facility (this also includes signs showing the number of available spaces for a group of facilities on one sign)
- Two static signs per parking facility
- Average of three signs per sign post
- Data transmission (wireless communication, Internet etc.)

Detailed information about the estimated capital cost can be found in IVV's draft report (See Appendix A). Annual operating costs are very minimal if the system is integrated in the City's Traffic Operations Center.

| Project/Improvement | Capital Costs |
|---|---|
| Parking Guidance System, incl. communication and signage | $1,500,000<br>Would also include operating costs |

**Evaluation:** Parking management should play an important role in influencing the traffic situation in Center City. A Parking Guidance System will contribute to overall parking management in the following ways:

- Reduce search-for-parking traffic which leads to a reduction of emissions, fuel consumption and wasted time;
- Promote better use of existing parking facility capacity;
- Direct parking traffic on dedicated roads (e.g. using the main road network); and
- Provide better information for drivers with limited knowledge about the transportation system by showing alternative parking locations in the proximity of their destination.

An effective dynamic parking guidance system is targeted both to people with good knowledge about parking in the area (e.g. commuters, shoppers) and people with limited knowledge about parking in the area (tourists, visitors).

Soliciting buy-in from the private parking sector and coming to agreement on a set of basic management and pricing principles will be the biggest challenge associated with implementing a Center City PGS.

**Timeline:** The development and installation of a PGS for 20 Center City parking facilities would take between 18 and 36 months, taking procurement, funding opportunities, etc. into account.

### Strategy 4: Change City Sign Regulations to Make Parking Information Transparent

**Description:** A key factor in the success of cities that operate coordinated public parking systems is recognizable and consistent signs (whether public or private). Parking information, particularly rate signs, in Seattle are often intentionally confusing and deceptive to lure parkers into garages. Some basic principles should be applied to the City's signage code that would improve parking information and access. These principles include:

- Include Center City parking brand / logo
- Provide clear hours of operation and pricing information at garage entry
- Post 2-hour rates for short-term visits
- Post address and name to connect to web-based wayfinding and parking guidance system

**Costs:** The public costs associated with implementing these provisions include staff time to develop and work with other City departments on sign regulations.

**Evaluation:** Logical signage and branding are very important tools in the facilitation of accessible short-term parking.

Vancouver, WA: Park-n-Go Brand

Portland, OR: SmartPark Brand

**Strategy 5: Develop a Center City Parking Marketing Program**

**Description:** The City should develop a marketing program with a universal brand that provides materials for Center City parking facilities that agree to program elements. Marketing program components should include:

- Production and update of parking maps and brochures
- Development and maintenance of web-based parking information (both static and real-time if the electronic Parking Guidance System is installed)
- Development of standardized advertising signs indicating where participating garages are located that can be displayed at nearby businesses. Would need to work closely with City regulations on outdoor signs in the right-of-way and attached to private buildings.
- Development of a universal brand for short-term parking.

A unifying brand would establish a highly recognizable symbol for short-term customer parking where customers can be assured of a standardized or comparable hourly rate and high level of service. The City of Portland's SmartPark and the Park-n-Go system in Vancouver, WA, are representative of this concept.

**Costs:** The development of parking maps and brochures would cost about $30,000, followed by an annual cost of $10,000 for updates and revisions. Printing of maps and brochures is estimated to cost approximately $20,000 per year. The capital cost for development of a Web-based parking information site depends on integration with the Parking Guidance System. However, it is estimated that development would cost approximately $40,000, followed by an annual cost of $10,000 for upkeep and maintenance.

The City of Seattle and participating parking facility owners/operators would also incur costs associated with logo development and sign installation. Portland's SmartPark logo cost approximately $80,000 in 1992 ($115,000 in current dollars), using a third party advertising firm to market-test brand ideas and concepts, and create the graphics and supplemental marketing materials. Based on this information, capital cost will be approximately $120,000 for logo development. Uniform exterior garage signage was developed for seven Portland locations at a cost of approximately $20,000 per facility ($30,000 in current dollars). A cost of $30,000 is assumed per parking facility for signage and exterior improvements. The costs should be borne all or in part by private garage owners, but public subsidy might be required to encourage rapid transition to the new logo.

| Project/Improvement | Capital Costs | Annual Operating Costs |
|---|---|---|
| Parking maps and brochures: development and updates | $30,000 | $10,000 |
| Printing of parking maps and brochures | $0 | $20,000 |
| Web-based parking information: development and maintenance | $40,000 | $10,000 |
| Logo development using third-party advertising firm (to be financed by the City) | $120,000 | |
| Development and production of uniform exterior garage signs for 20 major parking facilities (to be financed by the involved parking operators) | $600,000 | |
| Half-time staff to administer program | | $60,000 |

**Evaluation:** There is currently no logical sign program showing customers and visitors where to park in Center City. With a branded logo and signage system it becomes clear to drivers where to find public parking and how much it will cost. The strength of parking programs in cities like Portland, OR, and Vancouver, WA, as well as Kalamazoo, MI, Boise, ID, and Anchorage, AK, is that each provides standardized hourly parking rates for all participating garages through the first

three to four hours, transparent signage, common logos and marketing and common management. This translates to a predictable user experience. In Portland, the SmartPark garages are not allowed by policy to charge more than the hourly rate at a standard downtown parking meter (at this time $1.25 per hour). This gives a customer confidence that there is no difference in charge between parking on- or off-street, which encourages customers to move directly to off-street SmartPark locations rather than circling blocks looking for metered stalls.

The parking facility sign program and a Parking Guidance System would be complemented by up-to-date maps, brochures and online information. A parking-related web site would present the actual number of free parking spaces and the expected occupancy trend of each parking garage together with basic information about the parking situation. To further aid visitor wayfinding in the Center City, the user would choose a parking garage from a map or list that is generated after entering a destination address. It would be important that these marketing materials be updated on a regular basis, so that visitors are using accurate information.

**Timeline:** Marketing materials should be developed as soon as a parking guidance system program is developed. However, because of the estimated length of the branding process, this should start approximately one year in advance. Before printing maps and brochures, the City should finalize a short-term parking strategy and implementation plan for the Center City, particularly for Pioneer Square and the Central Waterfront, and develop a realistic implementation plan and timeline. Development of logo and production of garage signs would take approximately 6 to 12 months.

## Managing Commuter Parking

The following section provides strategies that further encourage and enable downtown employees to commute to work by means other than driving alone. Reduction of employee parking demand is the most cost-effective and efficient means to increase the supply of short-term customer parking and is important for relieving congestion and supporting transit speed and reliability.

### Strategy 6: Improve Efficiency of Existing Parking Lots and Garages

**Description:** New technology, such as car stackers or valet parking, can create more capacity in existing parking supply. Car stackers and mechanical systems use various types of lifts and elevators to stack vehicles two or three high. Car stackers are most effectively employed on existing surface lots or on top decks of parking structures. Due to the time required for the parker to send in and retrieve a vehicle, it is assumed that this technology is most appropriate for commuter or monthly parking users.

The key benefit of City investment in new technology for private parking operations would be to create additional short-term parking supply while more efficiently using commuter parking areas. The City's parking regulations need to be reviewed in light of adding new technology or management strategies to use existing facilities more efficiently.

This strategy could be effective around the edge of the Center City to provide additional areas for commuter parking, connecting to downtown by rail, bus transit or private shuttle system.

**Cost:** The cost of a car stacker varies between $2,000 and $10,000 per stall (2006 figures), depending on type, number of units bought, installation costs and a range of other factors. A commercial stacker that can accommodate vehicles up to the size of an SUV can be purchased for approximately $7,000, including shipping and installation. If more than 300 units are bought, the cost per stacker drops to about $6,000. This includes the cost of a central electric power pack that is needed for every 30 stackers as well as shipping and installation.[1] If the City of Seattle were to subsidize 10 percent of the cost for the first 10 private operators and assuming that the average parking facility would acquire 100 stackers, the cost to the City would be (10% x $6,000 x 10 operators x 100 spaces).

[1] Phone interview with cost estimates from Harding Steel, Inc. on October 31, 2006.

| Project/Improvement | Capital Cost |
|---|---|
| Subsidy to first 10 private owners/operators interested in purchasing stackers | $600,000 |

**Evaluation:** Efficiency boosters such as car stackers are a flexible way to address growing demand for parking spaces at relatively low construction cost and no additional land requirements. They can nearly double the number of vehicles that can be parked in a given area. Car stackers have relatively high equipment and operating costs, although the total cost is typically less than building additional structured parking. In addition, car stackers are most suitable in parking facilities with attendants and they increase the time required to park and retrieve vehicles. However, if valet service for commuter parking is considered, this is a cost effective investment to further increase supply. Most car stackers are unsuitable for many types of vehicles, such as vans and trucks.[2]

### Strategy 7: Operate Intercept Satellite Parking Lots

**Description:** This strategy focuses on intercept or satellite parking areas located on the edge of the Center City to intercept people before they arrive downtown. This report does not address any potential need for new or expanded regional park-and-ride facilities. It should be noted that neighborhood-based park-and-rides, such as those operated by King County Metro and Sound Transit, are much more effective than destination-end intercept lots because commuter's sensitivity to transferring increases the greater the percentage of their total trip they have already completed by car. With that in mind, there would need to be substantial cost benefits to get commuters to park at intercept facilities and use bus or shuttle services to get to their final destination.

Nonetheless, there has been interest in the idea of developing intercept lots on the periphery of downtown at sites such as:

- Fourth Avenue and S. Lander Street (US Postal Service facility)
- Seattle Center
- Stadium area garages
- Federal Center South (this site has the most limited existing transit service and would likely require costly service enhancements)

[2] Victoria Transport Policy Institute (2006) Parking Solutions. Accessed on October 27, 2006, at www.vtpi.org/tdm/tdm72.htm.

**Costs:** The major cost associated with this strategy is land acquisition or leasing for use as an intercept park-and-ride. Another disadvantage to close-in park-and-ride lots is that land values are higher closer to the Center City; therefore the cost to accommodate each vehicle is much higher. Additionally, the cost per vehicle mile reduced is extremely high, since people will still make much of their trip by car.

There is a substantial operating cost associated with serving any of these lots with a shuttle service. Therefore, any lots that can be established on existing transit lines should be prioritized. For example, a shuttle serving one or two stadium area lots and providing circulation throughout downtown would cost about $765,000 per year to operate and require $640,000 or more in vehicle purchases. This assumes service would run at 10-minute headways during peak commute hours and at 20-minutes headways during the midday. At $50 per operating hour, 14 hours per day (six hours of peak service and eight hours of midday service), and 255 business days per year, the annual operating cost would be $765,000. Such an operation would require eight vehicles (six operational and two spares); the City can anticipate a cost of $80,000 per vehicle for a 20-passenger body-on-chassis type vehicle, or $640,000 total.

Locating remote parking adjacent to the Lander LRT station provides an excellent opportunity to leverage high capacity trains entering the Center City. At peak hours, light rail trains may be reaching capacity as they approach the Center City. If additional capacity is needed, additional train cars could be purchased. This carries a significant capital cost, but adds relatively little additional operating costs if cars are added to existing trains.

| Project/Improvement | Capital Cost | Annual Operating Cost |
|---|---|---|
| Vehicle acquisition | $640,000 | |
| Service operation | | $765,000 |

**Evaluation:** Inner ring park-and-ride systems have a number of opportunities and constraints in Seattle's context. *First, there are a number of costs and challenges associated with implementing intercept park-and-ride lots that should be considered:*

- In most cases intercept park-and-ride lots require new shuttle service, which carries substantial operating costs. Even if the park-and-ride is located adjacent to a high frequency transit line, buses entering downtown are likely to be full during peak hours. Park-and-ride customers will demand frequent service that gets them close to their destination, which in almost all cases will require expensive new shuttle service.

- Even with a high frequency shuttle service, increased travel time due to wait time and circulation routing will be a major deterrent.
- Vast price breaks between the cost of parking and parking Downtown would be needed to get people to use close in facilities. This means that the cost of parking and taking the shuttle would need to be substantially cheaper than the cost of monthly parking downtown. Therefore, it is unlikely that lot revenues would be expected to support the operating of shuttle services.
- Attracting drivers to lots in, or proximate to, the Center City is not likely to ease traffic congestion, since the worst congestion occurs at a few access points to the Center City.

Implementation of intercept park-and-rides would also create some opportunities:

- If implemented successfully, park-and-ride lots would provide an opportunity to free up downtown parking supply being used for long-term or daily commuter parking for short-term customer purposes.
- There might be an opportunity to coordinate required shuttle services with tourist- and visitor-oriented shuttle service as well as regularly-scheduled bus service, making better use of variable commuter and visitor demands, particularly in the Seattle Center area.

## Summary

Figure 7-1 summarizes strategies for managing short-term and commuter parking presented in this chapter.

## Figure 7-1 Summary of Center City Off-Street Parking Management

| Strategy | Parking Benefits | Costs | Implementation Responsibility |
|---|---|---|---|
| Making the Short-Term System Work | | | |
| Strategy 1: Build Alliances among Parking and Business Interests | Creates critical capacity for coordination and program implementation | $5,000 operating | City of Seattle and private partners |
| Strategy 2: Organize a Parking Technology Summit | Introduces state-of-the-art parking technologies to the public and private parking community, helps City better understand what new technologies could benefit private parking community | $5,000 to $10,000 | City of Seattle, private parking facility owners and operators |
| Strategy 3: Implement a Center City Parking Guidance system | Improves utilization of existing off-street supply, improves public information | $1,500,000 for initial system | City of Seattle, private parking facility owners and operators |
| Strategy 4: Change City Sign Regulations to Make Parking Information Transparent | Improves transparency of short-term parking system, improves downtown parking experience | Minimal | City of Seattle |
| Strategy 5: Develop a Center City Parking Marketing Program | Establishes recognizable symbol for short-term customer parking, improves downtown parking experience | $790,000 in capital costs and $100,000 in annual operating costs | City of Seattle, private parking facility owners and operators |
| Managing Commuter Parking | | | |
| Strategy 6: Improve Efficiency of Existing Parking Lots and Garages | Increases efficiency of existing supply at relatively low construction cost and no additional land requirements | $600,000 | City of Seattle, private parking facility owners and operators |
| Strategy 7: Operate Intercept Satellite Parking Lots | Might free up long-term downtown parking for short-term, potential to make better use of commuter/visitor shuttle demand | $640,000 in capital costs and $765,000 in annual operating costs | City of Seattle, Metro, Sound Transit, private parking facility owners and operators |

Produced for the SEATTLE DEPARTMENT OF TRANSPORTATION

# Alaskan Way Viaduct and Seawall Replacement Parking Assessment

## Appendix A: Electronic Parking Guidance Systems

**October 2007**

# Parking Guidance System for Downtown Seattle

## Conceptual Framework

**31. October 2006**

Ingenieurgruppe IVV GmbH & Co. KG

# Conceptual Framework for a Parking Guidance System in Downtown Seattle

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in cooperation with Thomas Brennan, Nelson\Nygaard Consulting Associates

**Date:** 31. October 2006

# 1. Aim of this paper

The installation of an electronic parking guidance system (PGS) is being reviewed as a key strategy for improving parking access and information in Seattle Center City. A PGS directs motorists from the main access roads of the city to parking facilities with free spaces. The number of spaces currently available in a specific car park or as a total number for a defined area is shown on variable information signs (see examples in Fig. 1.1). Therefore, these systems are sometimes called *Dynamic* Parking Guidance Systems as the numbers change every few minutes.

Fig. 1.1: Dynamic Parking Guidance Systems

Parking management plays an important role in influencing the traffic situation in cities. A Parking Guidance System can contribute to overall parking management in the following ways:

- Reduce search for parking traffic which leads to a reduction of emissions, fuel consumption and wasted time.
- Promote better use of existing parking facility capacity.
- Direct parking traffic on dedicated roads (e.g. using the main road network).

- Provide better information for drivers with limited knowledge about the transportation system by showing alternative parking locations in the proximity of their destination.

An effective dynamic parking guidance system is targeted both to people with good knowledge about the parking situation (e.g. commuters, shoppers) and people with limited knowledge about the situation (tourists, visitors).

A Parking Guidance System collects data from different parking facilities (with different owners), processes them in a central computer and distributes the results to strategically placed dynamic signs. The central computer and signs are usually owned and operated by the city department of transportation whereas the equipment necessary to collect the number of free spaces in each parking facility is owned by the parking operator. Thus, the city administration has the responsibility for planning, installing and operating of the PGS. The aim of this paper is to discuss and recommend strategies for these tasks and to provide basic information on technical, organizational and planning issues related to dynamic PGSs.

There are also systems available that guide motorists **within** a multi-story car park. These systems are usually installed in facilities with high demand (e.g. at airports), where people need to find free parking space in shortest time. Ultrasound detectors are used to determine each stall's occupancy. This data is processed to show the number of available stalls per level and to direct drivers to aisles with available spaces on each level (see Fig. 1.2). The decision to equip a car park with an internal guidance system is in the hand of the owner and is not the task of the city administration. Therefore, these systems will **not be discussed in this paper**, although the data can be used as direct input to the external PGS.

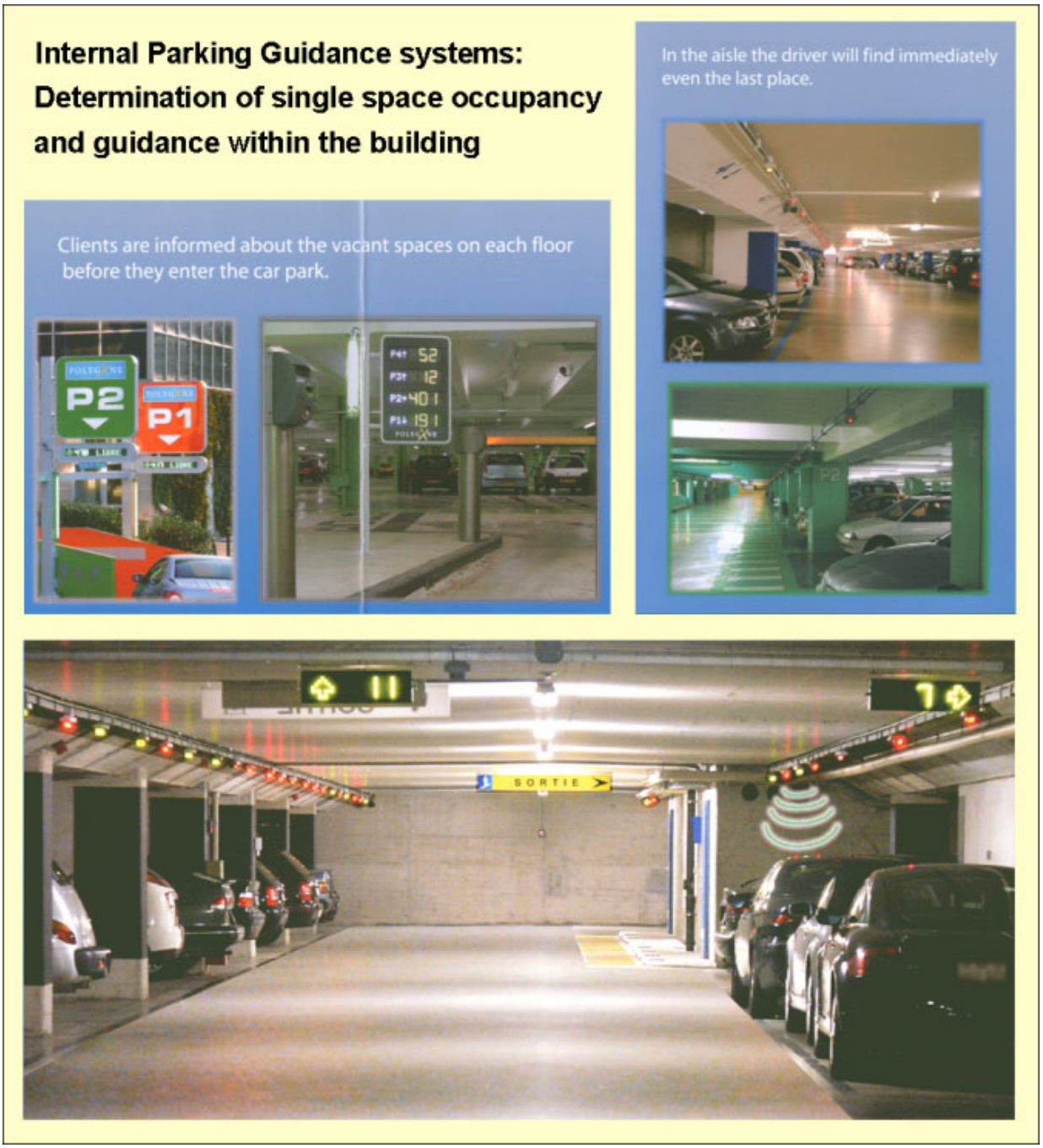


Fig. 1.2: Internal Parking Guidance Systems

## 2. Features of a modern Parking Guidance System

The following sections present important organizational and technical aspects of a modern parking guidance system, explain the planning process and provide costs for different system components. The examples shown are taken from installations in Germany where more

than 50 cities have a dynamic PGS. (Sources for pictures and graphics include: Publication of the German Automobile Club ADAC "Schneller Parken mit Parkleitsystem"; marketing brochures of system vendors like Dambach, Scheidt&Bachmann, Siemens, Setrix; internet search (e.g. city of Munich) as well as IVV pictures and graphics).

## 2.1 Organizational Requirements

Different organizational questions have to be considered when introducing a parking guidance system. The PGS must be understood as one "system", offering comparable standards and qualities. There are therefore basic requirements concerning the type, the location and size of the parking facilities to be included as well as for the pricing system.

A typical candidate parking facility is located in reasonable distance to the drivers final destination (e.g. up to 3 blocks or up to 10 min walking distance), provides enough stalls for short-term parkers (e.g. more than 100 stalls for facilities in large urban centers), provides the possibility to count all incoming and outgoing vehicles and fits in the overall pricing scheme of the area.

The latter is important for the acceptance of the system. The user should expect a similar price level per hour in comparable car parks in an area. The acceptance of the system declines if there are wide variations in parking rates. Drivers start to search for the cheaper solution instead for using the next available car park. The basic rule for the pricing scheme is: Similar prices in the same area, comparable prices between off-street and on-street parking and lower prices for locations further away from the center.

The effectiveness of a PGS depends also on the number of car parks to be included. The goal must be to include all major facilities of one area, not only the municipal or independent car parks but also the parking facilities of shopping centers, banks and other commercial buildings which provide parking to the general public. This requires the negotiations with the private operators to convince them to participate, to invest and to contribute to the operating costs (see section 2.4).

Another fundamental requirement for the success of a PGS is that on-street in the area be metered and enforced regularly.

There are also requirements for the system layout. The user must recognize the system by the dedicated (unique) signs – both for the dynamic signs with the number of available spaces but also for the static signs which are needed to guide the drivers from a decision point to the car park. The use of an additional header saying "Parking Guidance System" and a special logo can help to improve user acceptance and recognition (see Fig. 2.1).

Fig. 2.1: Examples for additional explanation and logo

Another tool to improve the orientation is the creation of different parking zones (see Fig. 2.2). Zoning is important the bigger the area covered by the PGS and the more car parks included. Zones have dedicated names (e.g. the neighborhood or the name of the major attraction or a landmark) and different colors. The colors are used on the signs together with the name of a car park or with the name of the zone.

For Seattle, we assume that the PGS would, where possible, use zones identified for the pedestrian wayfinding system.

This approach is helpful to limit the number of signs at one location to a maximum of 4 or 5, the maximum number of signs that can be read by a driver. Fig. 2.3 shows the principle with the example of signs at a decision point: Car park A and car park B are the next parking garages after the decision point. The free spaces in the other car parks located in the direction the driver is traveling (those marked by the red circles) are summarized and showed on one sign each using the zone names.

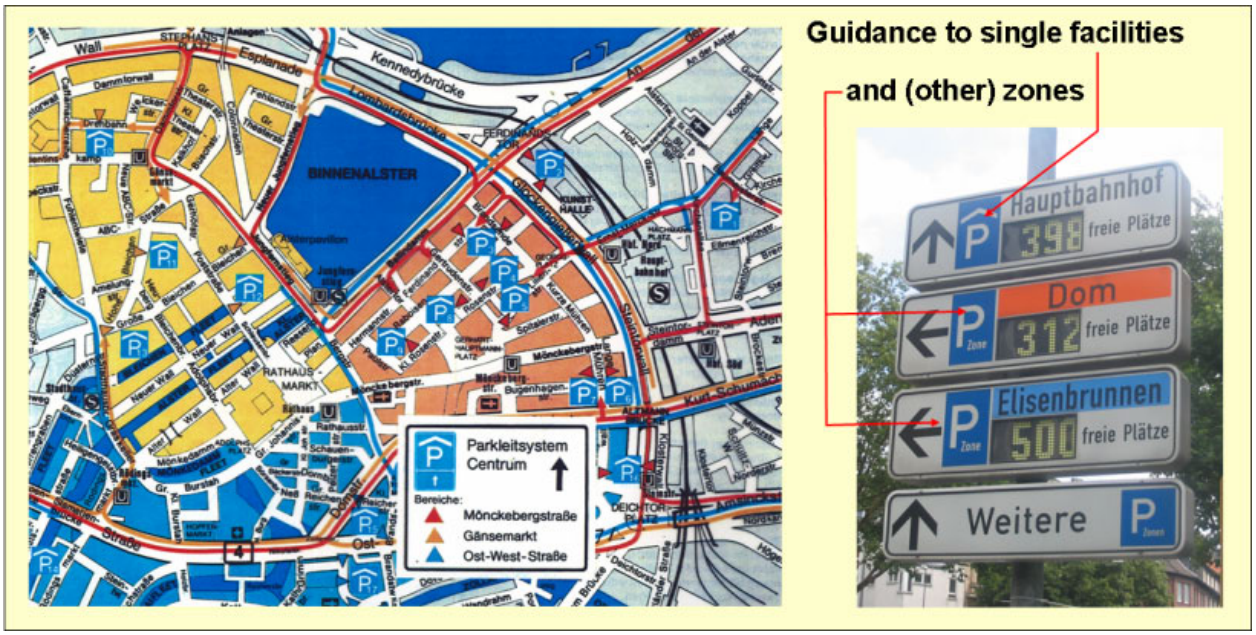


Fig. 2.2: Better orientation by introducing parking zones

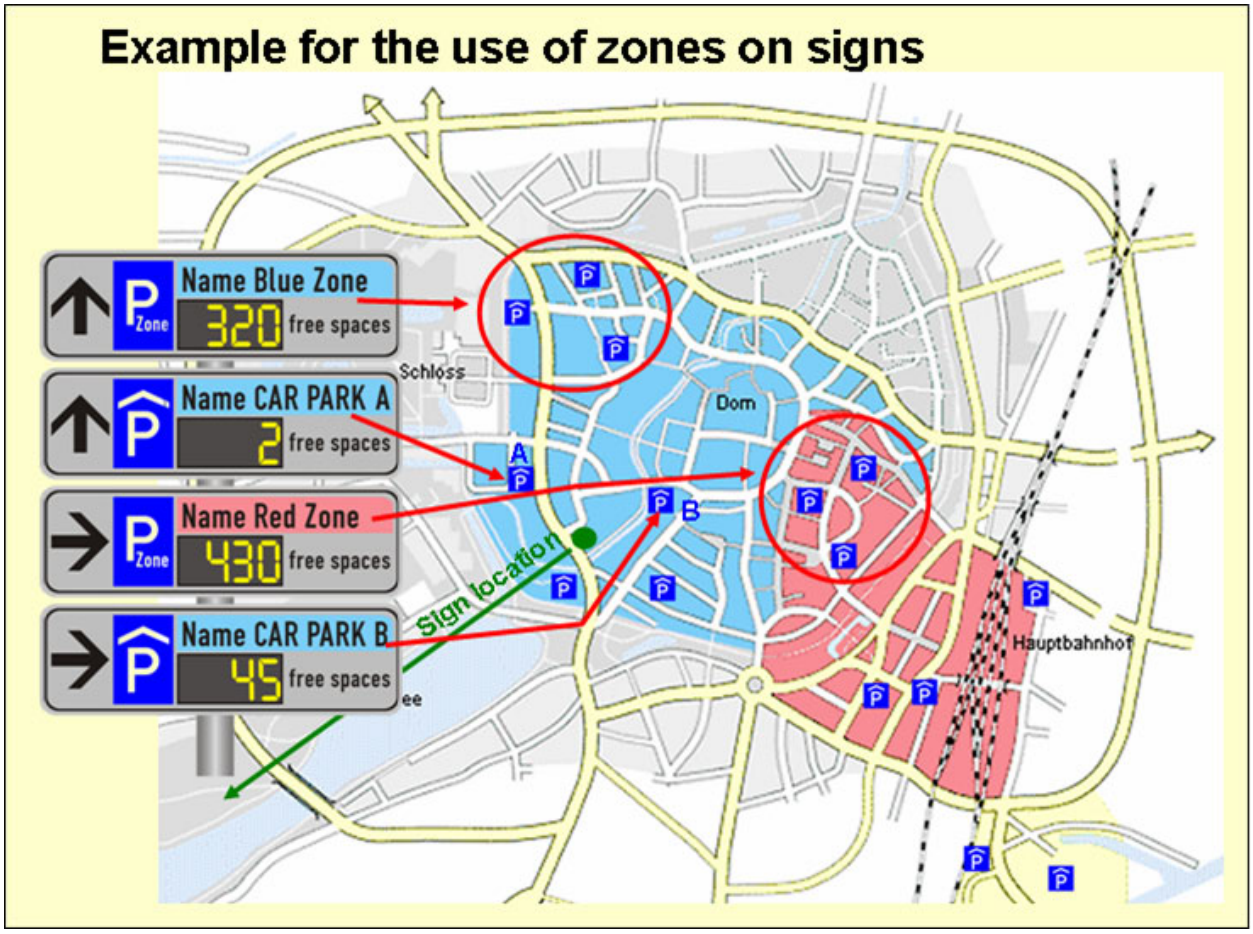


Fig. 2.3: Principle of using accumulated numbers for free spaces in zones on the signs

The installation of a new parking guidance system itself provides an excellent marketing tool for participating garages. However, the installation is often accompanied by other marketing activities like information flyers, press releases, internet pages etc.

## 2.2 Technical Issues

Dynamic Parking Guidance Systems have been in use in Europe and Asia for two decades to direct motorists in large or medium sized cities to parking facilities with currently available spaces. The systems have changed over time as a result of the developments in the electronic technologies. Old systems for example could only show the messages 'Available' or 'Full' on signs. New systems show the number of available spaces per facility or group of facilities. Data transmission in older systems still based on expensive cable solutions whereas modern systems can use wireless transmission or even the internet.

Fig. 2.4 shows the four principle technical components of a dynamic parking guidance system:

- The technology in the car parks to provide the actual number of available stalls (**data collection**).
- The PGS Central Computer to process the car park data and to produce the individual numbers for the signs (**data processing**). The central computer also delivers data to third parties like traffic management, information systems (see chapter 3) or produces statistical data.
- The dynamic and static signs of the system (**data display**).
- The different means of data transfer between the sub-systems (**data transmission**).

The reminder of this section describes different technical solutions for these four topics. One general requirement must be considered for all the technical solutions: The Parking Guidance System must have a modular concept which is open for changes and extensions of car parks, signs, routes and zones. This is important for an incremental installation due to budget restraints but also for flexible use of the system (e.g. on major road construction work). The required flexibility is for example one reason for using individual signs per car park at a sign post instead of using one board containing the information for different car parks.

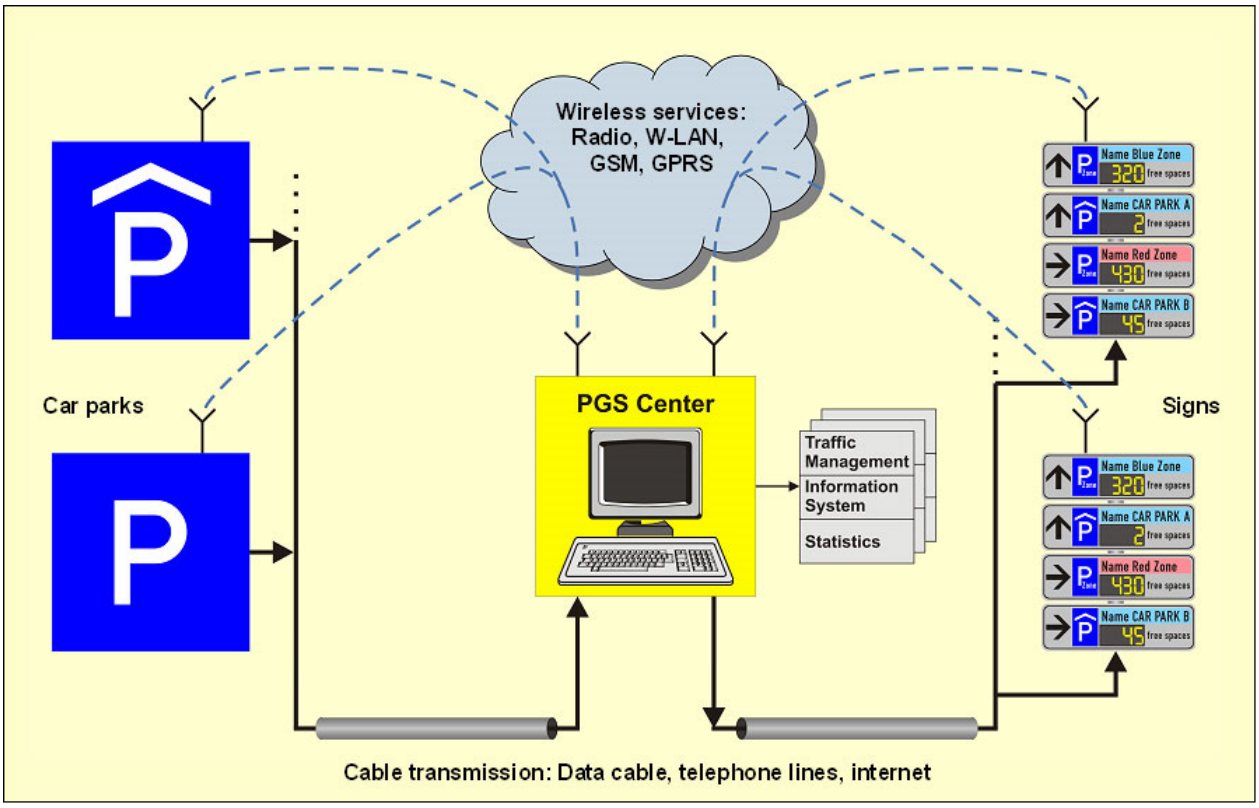


Fig. 2.4: Components of a Parking Guidance System

**Data Collection:**

The exact measurement of the currently available parking spaces in the car parks is the fundamental prerequisite for the dynamic parking guidance system. The most accurate counting devices are the individual stall detectors (ultrasound sensors), which are used in car parks equipped with an internal guidance systems (see Fig. 1.2). This expensive technology is normally not used in urban parking facilities. Therefore, the number of available spaces is usually derived from the entry and exit gates of the car park. Special devices count the number of gate openings for entry and exit. The number of free spaces is the result of the calculation 'capacity minus the sum of entering cars plus the sum of leaving cars'. Only parking spaces, which are available to the public (short-term parking) must be taken into account. Parking spaces reserved for monthly users have to be deducted from the capacity. The car park staff has to adjust the actual capacity every morning by counting the remaining cars (over-night parking) and by considering special situations, e.g. the temporary loss of spaces due to maintenance work or changes in the reservations of monthly parkers. They can do that on a small terminal or even via PDA and internet.

The gate technology used in modern car parks is already able to deliver the data needed. The internal computing devices have the necessary interfaces to feed a parking guidance system. Old gate technology might be enhanced by adding small counting devices. Moreover it is possible to equip existing car parks or surface parking lots with inductive loop detectors at the entrances and exits to count the number of entering and leaving cars. Today, video detectors are a relatively inexpensive alternative to inductive loop detectors for counting cars. It is possible that one video detector counts the number of cars for two directions of traffic. Fig. 2.5 shows the different possibilities to count cars at parking facilities.

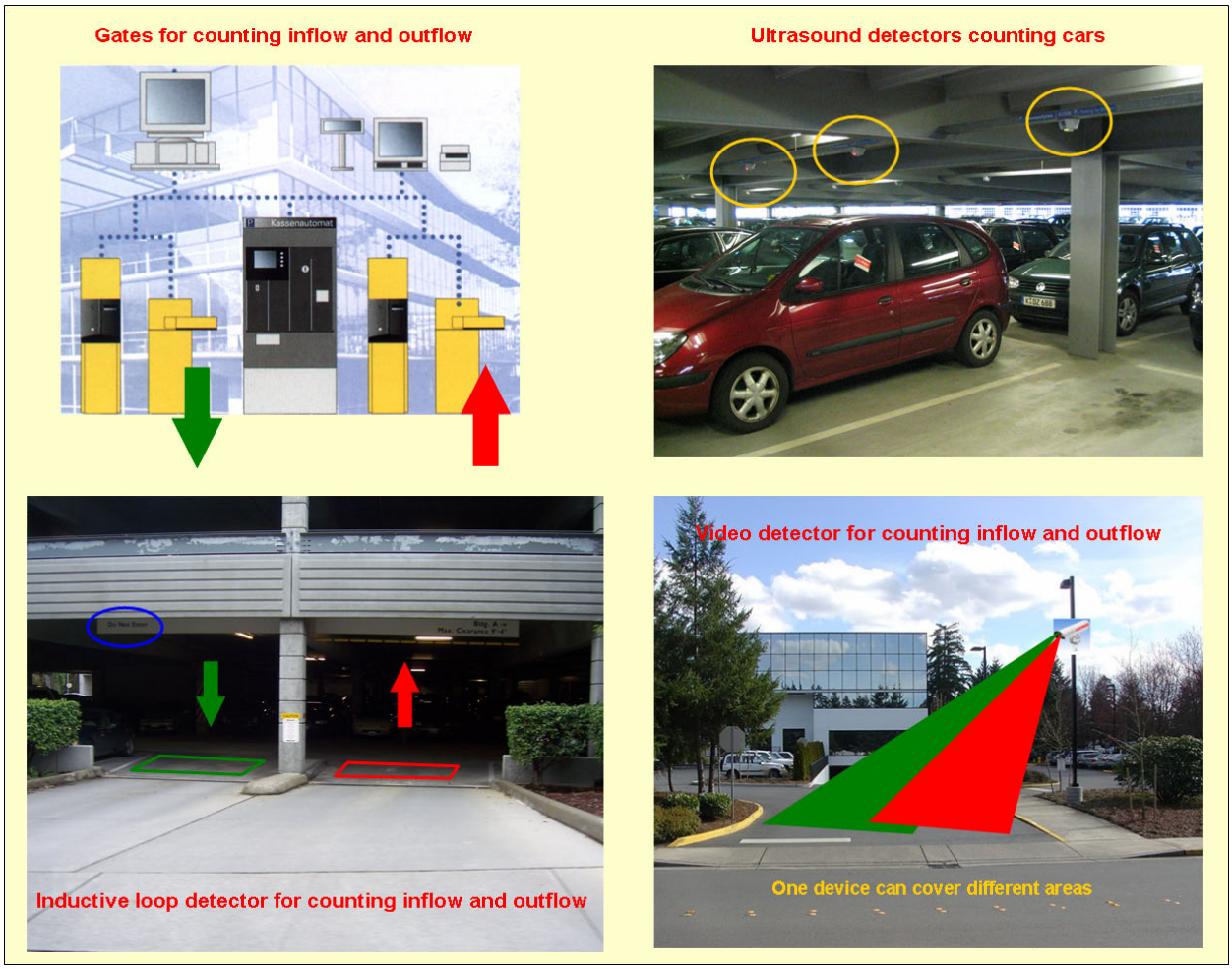


Fig. 2.5: Possibilities to count cars at parking facilities

**Central Data Processing:**

The central computer is responsible for collecting the number of available spaces per site and producing the content of the dynamic signs used throughout the system. The central

computer is also the interface to other systems (e.g. to internet pages showing the number of actual available spaces for each car park of the system). The central computer collects, displays and documents any error message like missing parking data because of an error of the car park device or error messages from the signs.

The central computer is used for changing the general data base e.g. the opening hours of the individual car parks. The opening hours are for example needed to set a sign for a car park automatically to zero after closing time or to calculate totals for a group of car parks (some still open, others closed) correctly. Every sign can be manually changed from the central computer, e.g. to switch off the sign in case of closing off the access road. The central computers of PGS have user-friendly, graphic interfaces, e.g. presenting the location of all car parks and signs on an inter-active map. Finally, the central computer generates statistics which can be used as base data to produce default levels to be shown in case of disturbed connections to one or more car parks (e.g. average occupancy per hour for weekdays, Saturdays, Sundays, holidays, etc.).

A parking guidance system is usually operated automatically and needs operator intervention only in case of interruptions. The parking guidance central computer is therefore mostly located in the traffic management center of the city's DOT where technical staff is already available due to other traffic management tasks.

***Remark***: There is also the possibility that a car park communicates directly with a dynamic sign without using a central computer. Such solutions are taken into consideration for small applications or for car parks located at the periphery of the system with signs showing only the availability of one car park.

**Data Display:**

The signs on the roads are the important user interface and their design is - together with the accuracy of the data provided - responsible for the system acceptance. A parking guidance system uses both dynamic signs, which show the number of available spaces and static signs, which are only used to guide a driver through the road network between the last dynamic sign and the car park. Moreover, the car parks of the system usually show the number of available spaces at the entrance or just a 'free' or 'full' sign. Fig. 2.6 shows examples for a static sign and an entrance sign.

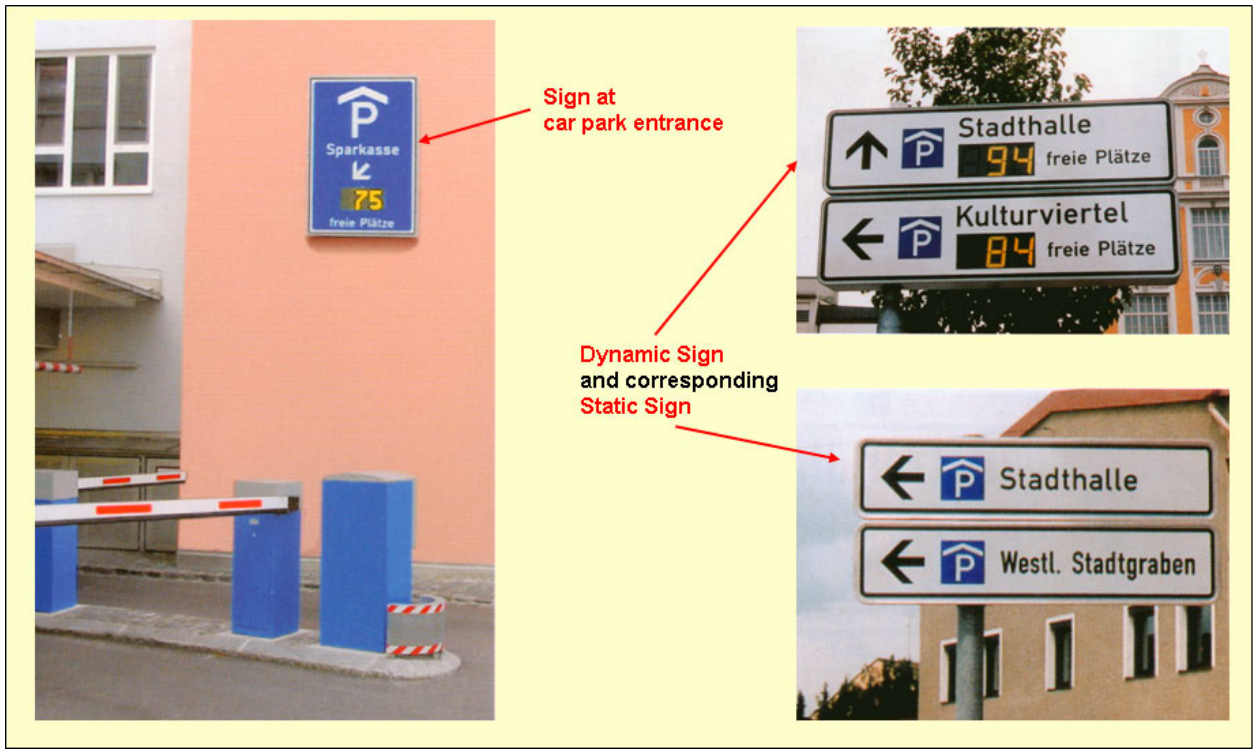


Fig. 2.6: Example for entrance sign and static sign

The following display technologies are used to show the variable messages on the signs:

- Optical fiber technology
- Bi-stable trigger elements
- LED (light-emitting diode) technology
- LCD (liquid crystal display) technology

The power for the displays is usually taken from the existing power lines e.g. those used for the traffic lights.

The designs of the signs change slightly from town to town and from country to country but there are standard elements which can be found in all signs (see Fig. 2.7):

- An arrow showing the driving direction after the intersection,
- The name of the car park or the parking zone,
- A color code for the specific zone (if applicable),

- The display showing the number of available spaces (sometimes also other information like 'closed' or 'full'),
- An explanation for the number ('free spaces' or 'free'),
- In most cases a logo for 'parking', in Europe usually a white P on blue background. There is often additional information on the logo like the "roof symbol" for parking garage or the word 'zone' for a parking zone.

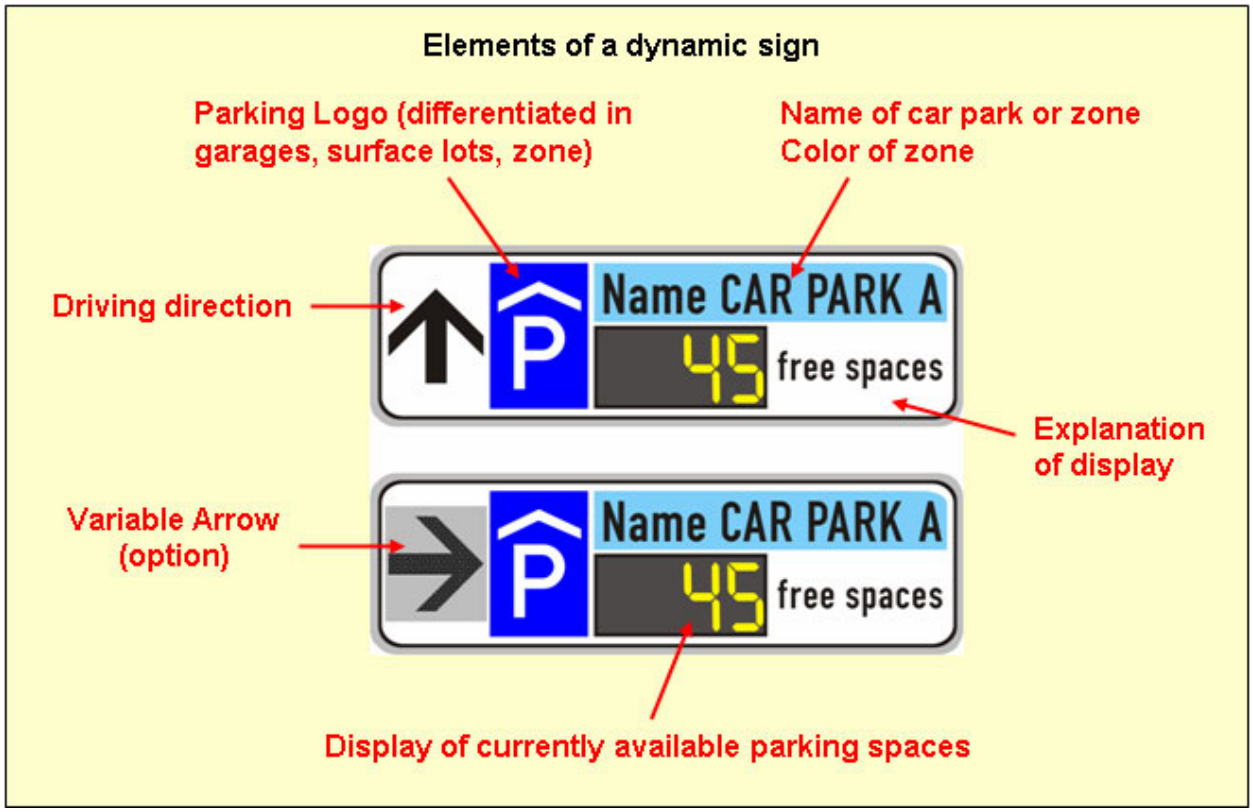


Fig. 2.7: Elements of a dynamic parking guidance sign

The most expensive part of the signs is the dynamic display to show the number of available spaces. Therefore, most of the systems in use have only this information variable. All other elements of the sign are usually printed on reflecting folios and glued on the metal body. This reduces the costs of the signs and allows changing the information on a specific sign just by printing on another folio.

However, it might in special circumstances also be desired to guide drivers on alternative routes to a parking lot for different times of a day (e.g. to avoid a congested main route in peak hour traffic). The arrows can for those signs be realized as motor-driven rotating prisms or as LED indicators. Fully programmable signs, which allow the free display of

names, arrows and numbers, are usually not used in city center parking guidance systems due to higher infrastructure and operating costs.

**Data Transmission:**

There are different possibilities for the frequency of data transmission between the system components. Data from the car park to the central computer can be sent:

- At fixed time intervals: The car park transmits the data in regular intervals. The duration of the intervals can automatically be shortened with a decreasing number of available spaces to optimize the accuracy of the information,
- At fixed levels of occupancy changes: The car park transmits the data when the occupancy status changes by a certain level,
- On request of the central computer.

Data from the central computer to the signs are sent:

- At fixed time intervals: The central computer transmits the data in regular intervals. The duration of the intervals can automatically be shortened with a decreasing number of available spaces to optimize the accuracy of the information,
- At fixed levels of occupancy changes: The central computer transmits the data when the occupancy status changes by a certain level.

There are also rules for the changes of sign content to avoid a frequent change of the numbers, e.g. changing back from a lower number (less spaces) to a higher number (more available spaces) if the difference is more than 10. Another rule might be to show changes in stall availability only in steps of 10 (or more), if there is still a high number of free stalls.

Fig. 2.4 shows, that there are in principal different technical possibilities to transmit the parking data:

- The use of data cable or telephone lines require to a certain degree relative expensive excavation work, at least in the proximity of the signs. (Remark: some excavation work is needed in any case for power supply of the signs).
- The internet is a cost-effective solution to transmit data between car parks and central computer.
- Wireless transmission using radio frequencies is especially of interest if the connection of parking guidance signs via cable creates massive infrastructure work.

- Wireless transmission using internet (W-LAN) and GPRS technologies is the latest trend in data communication.

The latter is currently introduced in the new Parking Guidance System for the city center of Munich in Germany comprising 25 parking garages. The new system uses the internet as communication channel between the car parks and the central computer as well as transceivers with mobile radio standard GPRS to send data via the Internet from the center to the signs (see Fig. 2.8). Even the central computer is a web-solution and needs no hardware installation on the premises of the client.

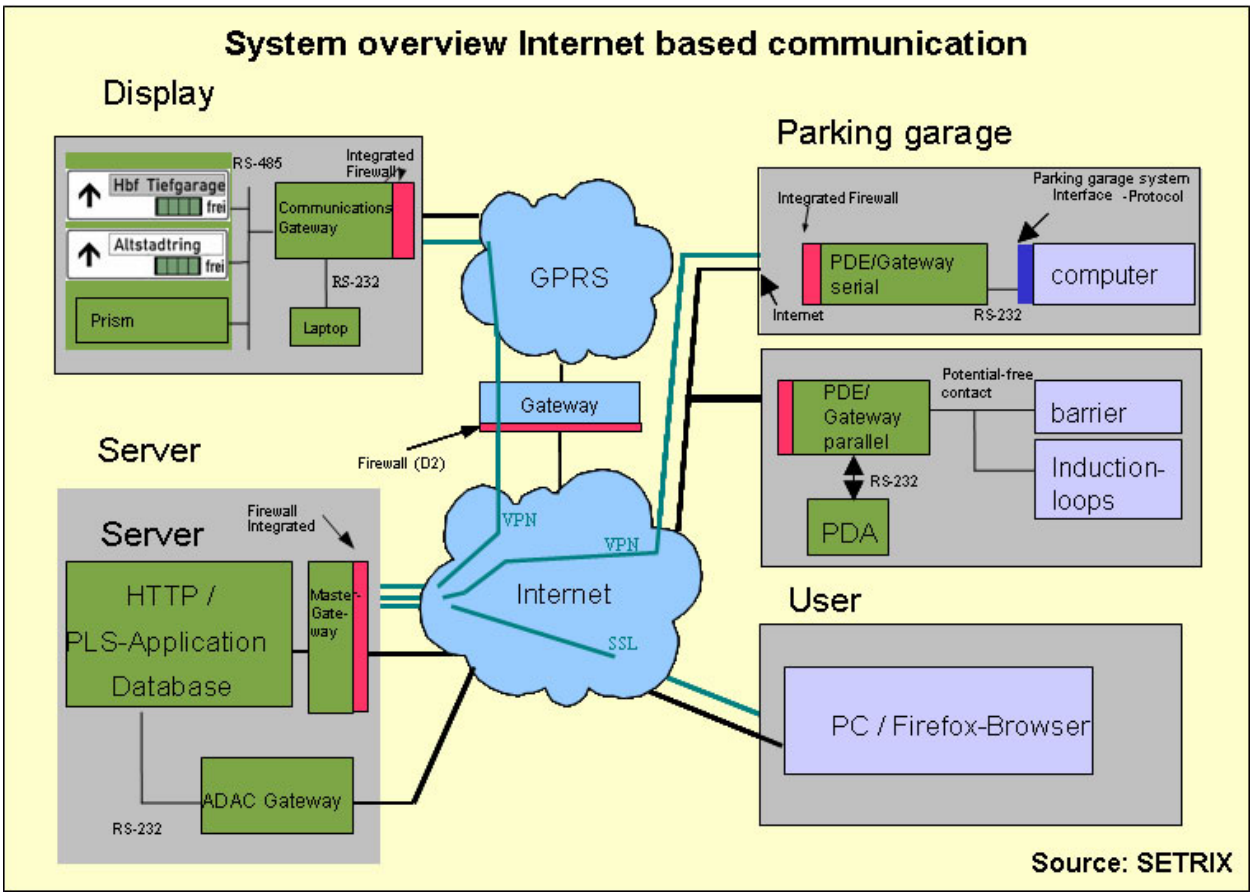


Fig. 2.8: System overview for internet based communications

The system guaranties secure data transmission:

- All Data transmission takes place over the Internet
- VPN (Virtual Private Network) between the PGS Server and the on-street displays

- Data transmission between the PGS Server and the displays using public Wireless cellular networks (GPRS)
- The user stations (using an HTML Interface) use the HTTPS Protocol for security.

## 2.3 Planning Process

The installation of a parking guidance system is an important measure in the urban transportation management and a major investment. It requires a sound planning process both from the transportation side and the technology side. Therefore, the system planning process is usually shared between the transportation planners or transportation consultants of the city and the system designers of the vendor company. The planning process of parking guidance system comprises in general the following activities:

Transportation consultants (and or city staff):

- Providing the **organizational basis** like the pricing scheme, the target areas, the general system layout etc. In particular, the negotiations with the car park owners are an important prerequisite for the success of the project. They must be convinced to provide their data (meaning to invest in some in-house infrastructure) and perhaps to adjust their pricing structure as well as operational hours. Good partners for such negotiations are organizations like chamber of commerce or a downtown business association, which can help to explain the benefits of a parking guidance system for the owners, such as
  - Improved awareness
  - More revenues from more parkers
  - More potential customers if the parking garage belongs to a retailer
  - "Advertisement" if for example the name of a shopping mall car park appears on the signs
  - Added value by being shown on parking related web-sites and brochures
- **Determination of the parking facilities** to be integrated into the parking guidance system: The following criteria have to be taken into account:
  - The candidate facilities have to provide a reasonable amount of publicly available short-term parking places
  - The facilities have to be in reasonable walking distance to the destination areas
  - The facilities can provide the data needed by the system

  - The facilities must have suitable opening hours (e.g. a problem for event parking facilities of stadiums or sport centers)

- **Definition of the PGS routes**, as the superposition of the access routes from the city access roads to all car parking facilities of the system. The aim of a PGS is usually to guide the traffic on the major road network close to the facilities and use the secondary network only for the last leg to the entrances. It is also important to bundle as ,many routes as possible to optimize the number and location of the signs. The so-called "spider principle" is used to determine the PGS routs. The car park is considered as the spider body, whereas the approach routes from different directions are considered the spider legs. The superposing of the individual spider systems forms the overall guidance network. This network can then be optimized together with the process of fixing the sign locations.

- **Definition of the PGS sign locations and the sign content**: The guidance network builds the basis for the planning of sign locations and sign content. Dynamic signs are usually needed at decision points from which a driver can reach different suitable car parks in different directions in reasonable distance. Additional static signs may be needed to guide a driver from the last decision point to the parking lot entrance (e.g. around a block). The planning of sign location and sign content has to take into account the standard requirements for road signage planning:
  - Conformity rule: Use of uniform, standardized signs for good recognition and as common basis for future enlargements.
  - Perception rule: The driver must have the chance to read all information. Therefore, limiting the number of individual signs at a sign post to 4 (or maximum 5) per location and approach direction.
  - Visibility rule: The signs must be seen from the road without hindrances.
  - Continuation rule: a destination shown on a sign must be repeated on all following signs up to the car park entrance.

  The result of this planning process is the exact content of each sign together with the definition of calculation rules for those signs which show the number of free spaces in a group of parking facilities (see Fig. 2.3).

- **General system layout and cost estimation**: Adjustment of the planning process due to budget restraints or other results of the project coordination process.

- **Preparation of tender documents** for the system installation.

The final planning phase is the technical and operational outline of the system by the vendor company:

- **Technical system planning** (see section 2.2) for:
  - Data collection at car parks and interfaces.
  - Data processing at the PGS Central Computer and interfaces.
  - The dynamic and static signs of the system.
  - The means for data transfer between the sub-systems.
  - Creating special interfaces to other systems (like information systems).
- **Operational system planning**: Planning the software for system operation.

## 2.4 Financial issues and average cost figure

Parking guidance systems are usually owned, operated and financed by city authorities. Federal funds may be available for co-financing the necessary infrastructure. The experiences in Germany with the development of a new PGS show that usually the city pays for the center, the signs and the communication infrastructure and the car park owners pay for their in-house installations necessary to deliver the data.

This financing scheme often changes in case of the later integration of a new facility in an existing system: The car park owner pays for his costs and all necessary changes in the exiting system like new or changed signs, signposts, cables and communication equipment.

The operating costs of the PGS are often shared between the city and the car park owners. The annual fee in the city of Cologne in Germany is for example $3,500 per year per garage. This is regarded as a relatively small amount compared to the revenues created by additional customers through the system.

The following list presents average costs figures for system components of a parking guidance system. The numbers are taken from projects in Germany. The prices on the US-market might differ, but should be in a comparable range.

| Description of System Components | Average Price in US-$ |
|---|---|
| **PGS-Center** | |
| 1 Central Computer (hard and software) | $20,000 – $80,000 |
| Interfaces to communication (modem, router etc.) | $5,000 – $20,000 |
| **Signs and sign posts** | |
| 1 dynamic sign (standard sign like upper sign in Fig. 2.6) incl. modem | $6,000 |
| 1 static sign | $2,000 |
| 1 sign post incl. grounding and power supply | $2,000 |
| **Communication: Cable, Wireless transmission, Internet** | |
| 1 yrd new cable including excavation work etc. | $150 |
| Wireless communication interface at sign | $500 - $1,000 |
| **Car Park Equipment (different alternatives)** | |
| Interface to existing (modern) gate systems that is able to count the entering and leaving cars | $6,000 |
| New ticket dispensers, ticket verifiers and gates (per entry) to replace old systems | $25,000 - $35,000 |
| Installations necessary for the Internet based PGS system | $6,000 |
| 2 double inductive loops incl. decoder and interfaces | $4.000 |
| 2 video detectors and interfaces | $4,000 |

Fig. 2.9: Unit prizes for PGS infrastructure

# 3. The use of Parking Guidance System Data for other services in Parking Management

The data stored in the central computers of Parking Guidance Systems can be used to perform short term forecasts of available parking spaces per parking facility. The programs compare the actual parking utilization with "historic" data and perform trend extrapolations of input / output flows. This data is increasingly used as valuable input to information systems about the parking situation in the cities.

Parking related internet pages of the cities present the actual number of free parking spaces and the expected trend of the occupation of each parking garage together with ba-

sic information about the parking situation. The user can for example chose a parking garage from a map or from a list which is generated after entering an address (see Fig. 3.1).

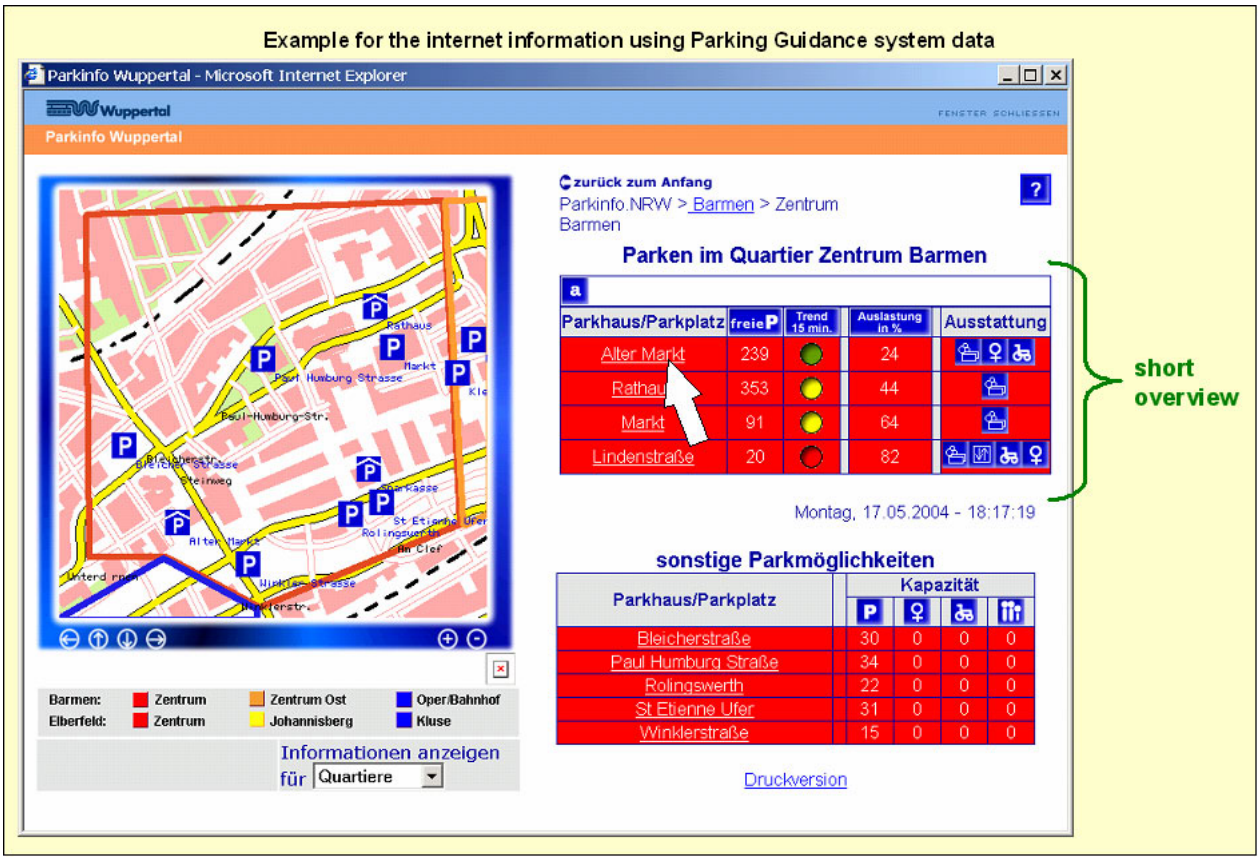


Fig. 3.1: Example for internet presentation of PGS data – overview for a zone

When selecting a specific garage (see Fig. 3.2), users get a full set of information like the capacity, the number of actual available spaces, the trend of occupation for the next half hour, the fares, a picture of the entrance and additional information like number of spaces for handicapped people, opening hours, existing of video surveillance, etc. The parking space information is linked to a route guidance system providing the route and driving directions from any location in the country to the selected parking lot. In some cases, Park-&-Ride-information is also provided indicating all P-&-R-lots and the corresponding public transport lines as well as the travel time to the center.

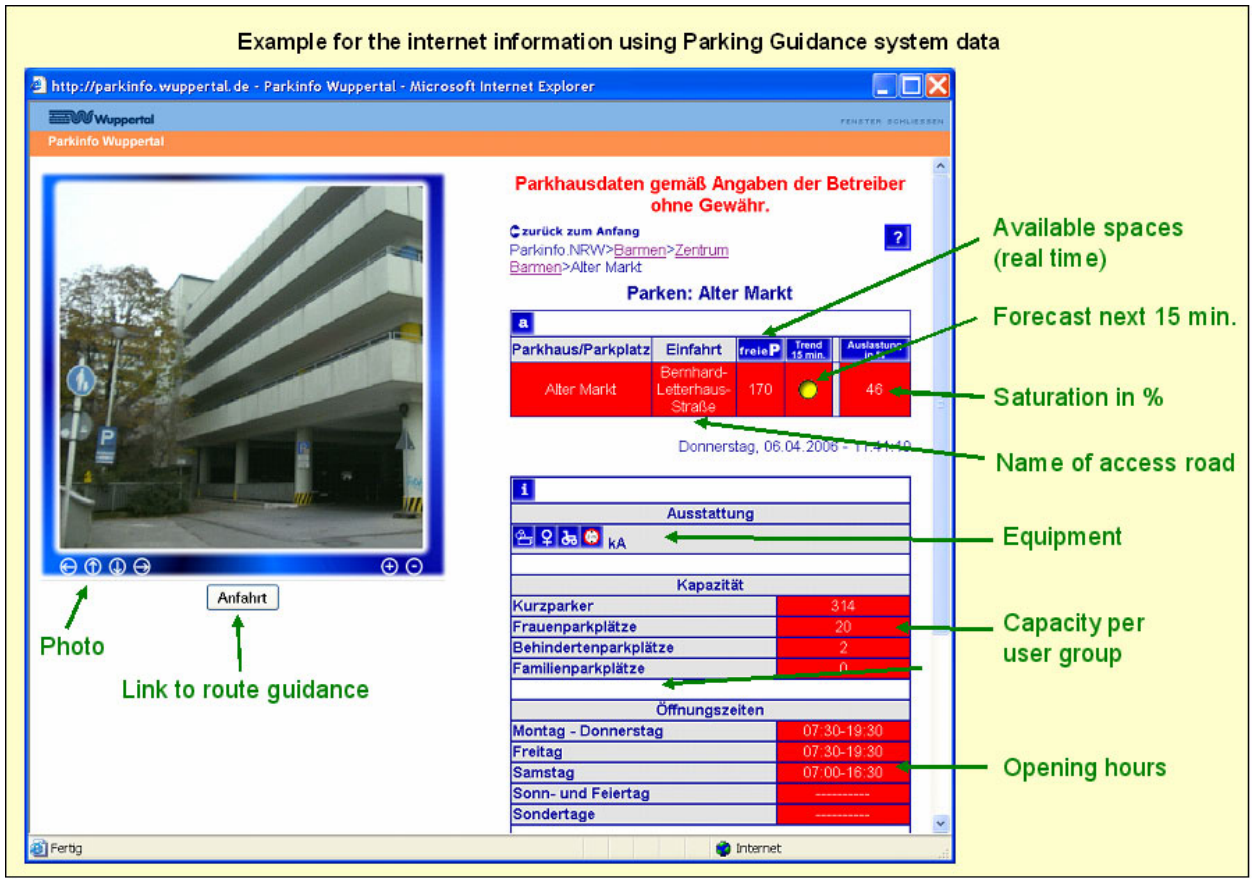


Fig. 3.2: Example for internet presentation of PGS data – details for one parking garage

Such information is not only a valuable service for the users. It is also regarded as a good marketing tool for the parking guidance system and the car parks participating in the system.

There is a growing trend in offering internet services on PDAs and Smart phones. Fig. 3.3 and Fig. 3.4 present examples, how actual PGS data and other parking information as well as route guidance to parking facilities is presented in the PDA format.

Fig. 3.3: Example for internet presentation of parking information for PDA

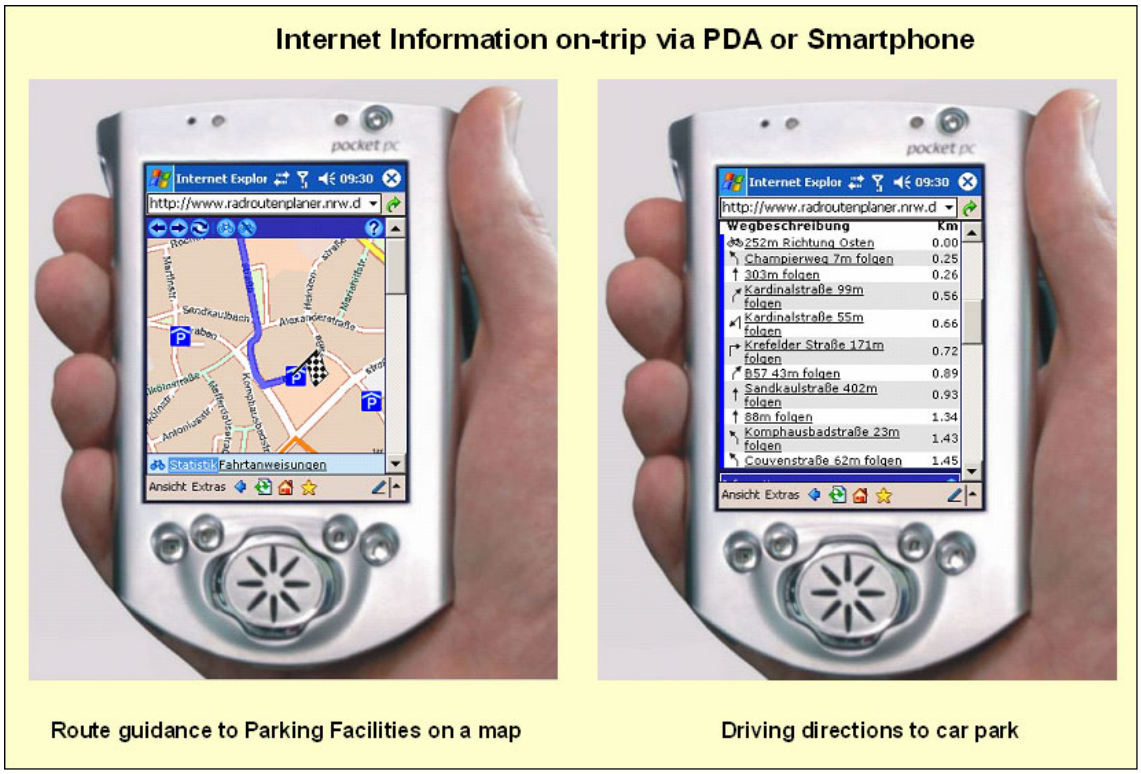


Fig. 3.4: Example for route guidance to parking facilities on PDA with internet access

There is another on-line service available using PGS data: Some cities or car park owners offer to send the actual number of parking spaces available to the mobile phone via SMS (Text message: Short Message Service). Users call a special number or send a SMS and receive immediately the information per SMS on their phone.

# 4. Recommendations for Seattle

This section provides preliminary recommendations for the City of Seattle for necessary activities to implement a Parking Guidance System. The recommendations often refer to the explanations given in the previous chapters. We tried to use downtown Seattle for the examples, but had to make many assumptions.

**Recommendation 1: Talk to car park owners in an early stage**

- What can they expect?
- Are they willing to participate?
- What equipment is needed to position them to participate?
- What portion of the cost are they willing to pay?

**Recommendation 2: Try to negotiate a common pricing scheme for the car parks of the PGS**

- Importance of common pricing structure
- Importance of comparable prices to on-street parking (e.g. $2 maximum for the first hour in a car park)
- Try to get rid of dubious advertisements (signs saying from $5 first half hour)

**Recommendation 3: Establish a sound system design as input for all negotiations**

- Discuss sign design
- Discuss importance of branding and "head signs" (Fig. 2.1)

**Recommendation 4: Select a target area for the first installation and the next level and zoning system**

- Map with existing zones in Seattle
- Map with zones and candidate facilities
- Discussing pros and cons
- Map showing alternative zoning and sub-zoning

- Discuss the influence of the Alaska Way Viaduct and Seawall Replacement project

**Recommendation 5: Clarify in an early stage the possibilities of subsidies for car park owners**

- Provide start-up subsidies for car park owners participating in initial system (later participants would need to cover greater portion of entry cost

**Further input for the discussions should be:**

- a map showing the general access routes to the city center as basis for discussions of the basic PGS-Network (see page 17 "Definition of the PGS routes")
- Discuss the strategies needed to establish such a network (e.g. Keep 2nd and 3rd Ave free of parking related traffic due to other diverted traffic or PT?)
- an example of a part of the city with candidate facilities, access routes and sign locations (example to explain page 17 "Definition of the PGS sign locations and the sign content"). Such an example is important to better estimate the average number of dynamic and static signs, sign posts etc.
- cost estimation based on average number of infrastructure needed e.g. on a "per parking facility included" basis

**A first very rough cost estimate is provided below:**

Assumptions:

- 20 car parks included for the starting system.
- Central computer already dimensioned for a bigger system
- 5 dynamic signs needed per car park (this includes also signs showing the number of available spaces for a group of car parks on one sign)
- 2 static signs per car park
- average of 3 signs per sign post
- Cost effective data transmission (wireless communication, internet etc.)
- Subsidy for car park owners or costs for city owned car park to deliver data

The cost estimation is under these assumptions like follows using unit prizes from Fig. 2.9:

| Item | Calculation | Costs in US $ |
|---|---|---|
| Central PGS Computer incl. interfaces | 1 | 80,000 |
| Dynamic signs | 6 signs x 20 car parks = 120 | 720,000 |
| Static signs | 2 signs x 20 car parks = 40 | 80,000 |
| Sign Posts incl. Grounding | 120 signs / 3 signs per post = 40 | 100,000 |
| Electricity for sign post | 800 yards x 150 $/yard | 120,000 |
| Cost per car park for providing data | 20,000 | 400,000 |
| Planning costs | Transportation consultant for system outline, routes, sign content and location, etc | 100,000 |
| Uncertainties | | 75,000 |
| **Total estimation** | | **1,675,000** |

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Produced for the SEATTLE DEPARTMENT OF TRANSPORTATION

# Alaskan Way Viaduct and Seawall Replacement Parking Assessment

## Appendix B: Stakeholder Interview Summary

October 2007

## I. BACKGROUND

Over the past two weeks six key downtown Seattle stakeholders were interviewed regarding their assessment, concerns, issues and recommendations for managing parking impacts that may be associated with the Alaskan Way Viaduct and Seawall Replacement Project. Interviewees were selected in consultation with the City of Seattle. Most are major property owners in the downtown, control or manage parking and/or have been participating with the City in its more comprehensive stakeholder process for the Alaskan Way Viaduct and Seawall Replacement Project.

A detailed interview guide/questionnaire was developed in consultation with the City and sent to participants in advance of the interviews. The questionnaire was comprised of fourteen questions, though participants were encouraged to add or expand on the questionnaire if they had concerns, ideas or input they felt would benefit the overall discussion.

The purpose of this memorandum is to summarize the key themes that emerged from the interviews. A detailed summary of the interviews has been prepared and submitted to Nelson/Nygaard and the City of Seattle.[1] Information from these interviews will be used to inform the on-going stakeholder process associated with the broader project.

## II. STAKEHOLDER PARTICIPANTS

Participants in the interview process included:

- Bob Davidson (Seattle Aquarium)
- Matt Griffin (Pine Street Group)
- Laura Larson (Republic Parking)
- Dale Sperling (Unico)
- Val Tomey (Wright Runstadt)
- David Tye (Equity Office Properties)

## III. KEY THEMES

### 1. The greatest concern participants have is associated with continued access and movement into and through downtown.

Whether related to specific buildings/locations or the general area of construction impact, stakeholders believe that keeping traffic moving is the key to minimizing the negative impacts of construction. Getting people to lots and garages, onto transit or to a specific business or building is what concerns stakeholders most. All agreed that the "disruption of construction" could create a sense in the public's mind that downtown is to be avoided, which could lead to a customer's choice not to come downtown or a businesses choice to relocate. "Access" was also defined to include arriving by car, transit and/or accessing sites on foot (i.e., linkages between buildings, parking to transit, ferries to transit, etc.).

As such, there was high support for dynamic guidance systems, education and outreach, marketing and communications and on-going efforts to inform and direct the public.

[1] As a condition of the interviews, participants were assured that comments made during the interviews would not be directly associated with them.

**2. There is high concern by property owners over the potential loss of tenants as leases come due.**

While there was strong support for programs that targeted parking opportunities for short-term visitors, there was higher concern that the impacts of sustained construction disruptions will result in major losses of commercial office tenants. As such, interest in programs/partnerships targeted toward short-term parking is moderated by a "need to balance what is done to assure tenant needs are accommodated." For some property owners, new parking programs "will be dictated by the terms of our existing tenant leases." Some property owners indicated that they are already beginning to examine their parking assets and implement programs to "maximize" on-site supplies (i.e., valet, stacking, rates, etc.)

**3. There is a strong sense that existing levels of transit service and program delivery must be elevated to a much higher level if a goal for achieving a significant transition of employees to alternative modes is to be successful.**

Stakeholders expressed a consistent theme that the "very magnitude" of the construction disruption will require that alternative mode services and programs (particularly transit) will have to improve to levels of frequency, reliability and mobility that exceed status quo. As one stakeholder noted, if the goal is to put even more people on transit than are currently using transit, "then the product will have to be even better than it is today."

**4. There is high support for engaging the private sector in partnerships.**

Most stakeholders commended the City for its efforts to date in exploring mitigation programs that could be implemented. They also expressed a belief that the parking problem could likely be solved through a combination of partnerships with existing owners of parking supply, aggressive programs and incentives for transit, a system/network of remote parking locations (for employees) and comprehensive and on-going education and communications. Each element of mitigation *will require coordinated management and strong leadership within both the public and private sectors*. To this end, the stakeholders were open to any number of incentives that could be used to "seal" partnerships. These included risk funds to mitigate lost revenue, joint marketing/communications/branding, transit incentives, on-site capital improvements and guidance systems.

**5. Not all programs can be "property owner based."**

Though property owners may control parking supplies, the intent is to free up commuter stalls by transitioning employees into alternative modes. This would, of course, free up stalls for visitor parking. Several property owners indicated that they had little control or influence on the behavior of their tenants' employees. Stakeholders indicated that along with partnerships targeted at property owners, there will have to be equally aggressive programs and partnerships targeted at businesses/employers. This will require significant, targeted and focused outreach. Contact in businesses will need to be at the CEO level, the people who can influence and change corporate policy and culture. In short, there is a feeling that the building/property owners may have a limited role in influencing employee behavior.

**6. The idea that the City would own/control or build off-street short-term parking supply received mixed reviews.**

Most of the stakeholders indicated that they would not resist the City pursuing its own off-street short-term parking supply, but would rather such an outcome be a last resort. Stakeholders felt that the "parking problem" could likely be absorbed into private supplies with aggressive and innovative public/private partnerships. These partnerships would include property owners, businesses/employers, the City and Metro. Nonetheless, if the project is not successful in getting employees out of current off-street stalls, the idea of a facility/facilities operated exclusively for short-term access is acceptable. There was strong agreement that the City needed to be the leader in addressing short-term parking demand.

**7. Establishment of a network of "remote" employee parking facilities, linked by efficient and frequent transit was frequently identified as a preferred mitigation strategy.**

Several stakeholders indicated that the most effective way to free up short-term supply is to get employees out of prime downtown off-street parking spaces. The idea of remote lots came up frequently in this regard. In all cases, stakeholders indicated that remote lots would only be as successful as (a) the frequency and reliability of the transit connection to downtown destinations and (b) transit pass incentives that are more attractive than current incentives to compel people who currently park downtown to move to a more distant location.

**8. Targets need to be set that give better clarity and context to strategies and programs implemented.**

Several stakeholders indicated that more information is needed on "the size of the parking problem." Some recommended that the City quantify the desired number of employees that would need to be transitioned out of parking within the impact zone to create additional short-term supply. This would (a) aid in communicating the need (b) better clarify the type and magnitude of programs that could/should be implemented and (c) define and focus on who and how to achieve the targets. It would also add means through which program success could be measured over time.

## IV. SUMMARY

The above listed themes are not all inclusive of the broad range of input that was discussed in the interviews. The themes do however summarize those areas where there is consensus of opinion. Overall, these stakeholders all maintain a realistic perspective on the impacts of the impending construction and a clear sense that new programs and partnerships must be developed. Each indicated their willingness to continue to participate and be engaged in the process to develop solutions.