

DOWNTOWN SEATTLE PARKING INVENTORY, 1987

PSCOG

Puget Sound Council of Governments

Grand Central on the Park

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PUGET SOUND COUNCIL OF GOVERNMENTS

ABSTRACT

REPORT TITLE: Downtown Seattle Parking Inventory, 1987

PROJECT TITLE: DSTP Before and After

SUBJECT: Parking Availability and Costs by
Traffic Analysis Zones

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ABSTRACT: This report was prepared for Task 6 of the
DSTP Before and After Study. An inventory
of parking spaces, utilization, and costs
was conducted for 13 Traffic Analysis Zones
in April-May of 1987.

FUNDING: The preparation of this report was financed
in part by appropriations from member
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Administration (UMTA # WA 08066).

PARKING INVENTORY

Puget Sound Council of Governments
November, 1987

EXECUTIVE SUMMARY

The Puget Sound Council of Governments conducted an inventory of off-street parking in the Seattle Central Business District in April and May, 1987. The area covered extended north to Denny, east to I-5, south to Royal Brougham, and west to Elliot Bay. The study area includes a total of 13 Traffic Analysis Zones (TAZ).

The inventory included: location, ownership/tenancy, cost of parking and utilization of parking. A computer file was established with each parking lot assigned to its appropriate census tract and block number. Data from the Seattle Engineering Department inventory conducted in 1984 was obtained and added to the 1987 database.

A total of ^{40,078}~~39,859~~ parking spaces was counted in 1987. This is approximately the same number as counted in 1984; however, losses and gains are significant for particular zones. Construction of the bus tunnel and the Washington State Trade and Convention Center are related to the significant loss of parking stalls in Zone 8. The overall occupancy rate increased from 73% to 80% between 1984 and 1987.

For the entire study area, the average all-day parking fee was \$6.11. The average monthly fee was \$91.32. Average all-day parking costs by zone ranged from \$3.91 to \$8.60. Prices in the CBD rose substantially. Between 1984 and 1987, the average price for all-day parking rose by \$1.50, a 21% increase. This increase is far above the 8.8% increase in the Personal Consumption Expenditures Index in the same time period.

FOREWORD

The Puget Sound Council of Governments (PSCOG) is a voluntary organization of local governments in King, Kitsap, Pierce, and Snohomish counties, created to provide a forum for regional decision making. The primary goals of the PSCOG are to guide the growth and development of the region, and to seek solutions to problems which cross jurisdictional boundaries. PSCOG membership currently includes 44 cities and towns, three Indian tribes and four counties. The PSCOG's business is conducted by local elected officials representing the member agencies.

The cooperation and assistance of the Seattle Engineering Department in providing the maps used in the 1984 data collection is appreciated. Comments and review from Phil Thordarson, City of Seattle Engineering Department; staff of the City of Seattle Office of Long Range Planning; and staff of the Metro Research and Market Strategy Division are also appreciated.

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I. INTRODUCTION

Parking availability and costs in downtown areas can influence an individual's choice in their mode for commuting. Changes in downtown Seattle land use that have affected parking cost and availability include construction of major office buildings and construction of the Washington State Trade and Convention Center. Newer buildings have been approved for construction subject to constraints under "Memoranda of Agreements (MOA's)" with the City of Seattle Engineering Department (SED) to mitigate demand for traffic and parking in the downtown area. PSCOG travel forecasting models, specifically, mode-choice models use parking costs as inputs.

Tracking the availability and costs of parkings in the downtown area will assist in evaluating changes in commuting behavior before and after tunnel construction.

1984 SEATTLE ENGINEERING INVENTORY

The Seattle Engineering Department has historically collected both off-street and on-street parking counts in the Seattle CBD every two years. Lack of funding prohibited collection in 1986. This data, collected on maps and later aggregated to blocks has never been established as a computer-based file.

II. METHODS

STUDY AREA

The study area for the off-street parking survey consisted of the Seattle Central Business District as delineated by the PSCOG for planning and modelling purposes. In broad terms, the area extended north to Denny, east to I-5, south to Royal Brougham, and west to Elliot Bay. The study area includes a total of 13 Traffic Analysis Zones (TAZ) and is shown in Figure 1. The PSCOG survey covered a somewhat larger area than the SED survey. Zones 1, 2, and 3 include more area than the SED survey (see Figure 1). This geographic difference was significant only in Zone 1 where the Metro base at Royal Brougham and a gravel lot on 4th Ave. So. were added, and in Zone 4 where a 200 stall lot under the freeway was added to the database.



*These zones correspond to PSCOG Traffic Analysis Zones

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1987 PSCOG Off-Street Parking Survey

Fig. 1

DATA COLLECTION

Data was collected by traversing the streets from one end of the TAZ to the other in a systematic manner. All off-street public and private parking and number of stalls were noted. The location of lots, ownership and cost of parking (if applicable) were also recorded. The utilization of parking lots (occupancy) and any remarks were noted.

Each zone was surveyed during one morning (10 a.m. to 12 noon) and one afternoon period (2 p.m. to 4 p.m.). The data was collected between April 4, 1987 and May 4, 1987. The survey was conducted by PSCOG staff.

The inventory included both private and public lots, and free and pay stalls. The inventory included parking spaces at hotels, motels, and condominiums. The inventory did not include new or used car sales lots, auto service-related shops (Midas Muffler, Goodyear Tire) or car rental outlets (Budget Rent-a-Car, etc.) Further, it did not include fire trucks.

Each parking lot has been assigned a zone and has also been coded to the 1980 census tract and block number. This allows each record to be easily aggregated and sorted for these geographic units. The data was then entered into a SAS (Statistical Analysis System) dataset.

CORRESPONDENCE TO 1984 DATA

The sites from the PSCOG survey were matched with the sites of the SED survey using the maps from the primary data collection in 1984. Sites were matched by location, size and price. The 1984 data was then added to the computer file. The 1984 information included capacity (public and private), occupancy, and costs. The PSCOG collected only off-street parking, while the 1984 survey included both off-street and on-street (metered) parking.

PARKING DATABASE

Each parking lot was entered as a separate record into a SAS dataset. This establishes the file to be easily updated and amended. Figure 2 shows the primary fields stored on the dataset for part of one zone.

When the 1984 data were entered into the computer file, several records were specifically excluded, although they were listed on the 1984 maps. These records account for 769 spaces, but since they are not available as parking spaces, they have been omitted. (See Table 1.)

ZONE=7

| Track Block | Location | Owner | COST 0-2 HRS | Cost Daily | Cost Month | Total Stalls | AM Occupancy | PM Occupancy | SED Stalls | SED Occupancy |
|----------------|---------------------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|-----------------|---------------|------------------|
| 81104 | 3rd & Stewert | Allied | \$3.50 | \$7.25 | \$70.14 | 829 | 750 | 670 | 881 | 844 |
| 81104 | 2nd & Stewart | Joe Diamond | \$2.50 | \$6.00 | . | 71 | 57 | 69 | 71 | 68 |
| 81105 | 2nd & Pike N | Century Square | \$3.00 | \$5.00 | . | 310 | 310 | 280 | 350 | 306 |
| 81105 | 2nd & Pine/Pike East | Joe Diamond | \$2.50 | \$6.00 | . | 26 | 26 | 22 | 25 | 22 |
| 81106 | 3rd & Pike | | \$3.50 | \$4.50 | \$100.00 | 258 | 154 | . | 0 | 0 |
| 81111 | 2nd & Pike s | Century Square | \$3.00 | \$5.00 | . | 47 | 44 | 34 | 47 | 37 |
| 81113 | Washington Building | Chevron | \$3.00 | \$7.50 | \$91.72 | 650 | 595 | 520 | 410 | 391 |
| 81114 | Rainier Square | Rainier Square | \$3.00 | \$8.50 | . | 100 | 100 | 100 | 125 | 100 |
| 81117 | 2nd & University | Citi Park | \$3.00 | \$6.00 | \$90.00 | 150 | 150 | 160 | 175 | 170 |
| 81118 | Seneca | Central Parking | \$3.00 | \$7.00 | . | 98 | 77 | 75 | 88 | 42 |
| 81120 | 415 Seneca Olympic Garage | Standard | \$5.00 | \$8.50 | \$100.00 | 815 | 815 | 815 | 766 | 739 |

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EXAMPLE OF DATA COLLECTED

Fig. 2

TABLE 1

Lots included in 1984 SED and Excluded by PSCOG in 1987

| Zone | Lot | No. of Stalls |
|---------|-----------------------|---------------|
| Zone 8 | Hertz Rent-a-Car | 42 stalls |
| | Riach Honda New Cars | 106 stalls |
| Zone 9 | Princess Marguerite | 80 stalls |
| Zone 11 | KIRO News Garage | 24 stalls |
| Zone 12 | Fredrick's Cadillac | 220 stalls |
| | Midas Muffler | 25 stalls |
| | Car Wash | 6 stalls |
| | Fire Station | 7 stalls |
| Zone 13 | Riach Honda Used Cars | 143 stalls |
| | Goodyear Tire garage | 35 stalls |
| | Budget Rent-a-Car | 32 stalls |
| | Greyhound Bus Lot | 49 stalls |
| Total | | 769 stalls |

III. SUMMARY

CAPACITY AND OCCUPANCY

A total of ^{40,078}~~39,859~~ parking spaces was counted in this 1987 inventory. The total number of parking spaces in the Seattle CBD, overall, remained about the same between 1984 and 1987. Losses and gains for particular zones are related to construction of major projects.

The biggest loss of stalls was in Zone 8 due to the construction of the bus tunnel and the Washington State Trade and Convention Center. Zone 4 showed an increase in the number of stalls due to the completion of the Columbia Center.

The overall occupancy rate for the CBD increased from 73% to 80%. The most dramatic increases were in Zones 3, 5, 8, 9, and 12 where occupancy increased between 13-16%. In Zone 8, where the biggest loss of stalls occurred, occupancy increased from 83% to 94%.

TABLE 2
Parking Capacity and Occupancy

| Zone | Capacity | | % Occupancy | |
|--------|----------|--------|-------------|--------|
| | 1987 | 1984 | 1987 | 1984 |
| 1 | 3,345 | 3,141 | 46.86 | 38.31 |
| 2 | 1,026 | 1,011 | 60.04 | 66.17 |
| 3 | 1,410 | 1,467 | 87.62 | 61.21 |
| 4 | 5,598 | 5,063 | 89.91 | 85.32 |
| 5 | 3,505 | 3,449 | 93.72 | 80.11 |
| 6 | 684 | 725 | 87.21 | 80.00 |
| 7 | 4,981 | 4,990 | 84.86 | 84.61 |
| 8 | 3,298 | 4,464 | 93.78 | 83.55 |
| 9 | 4,182 | 4,101 | 63.80 | 50.11 |
| 10 | 1,599 | 1,558 | 80.05 | 74.81 |
| 11 | 2,665 | 2,780 | 76.25 | 66.12 |
| 12 | 4,126 | 4,256 | 84.60 | 71.21 |
| 13 | 3,659 | 3,802 | 85.71 | 85.24 |
| TOTALS | 40,078 | 40,802 | 80.41% | 73.14% |

PRICES

All prices have been weighted by number of stalls, and not by number of lots. Average prices have been computed for pay lots only. That is, free customer or employee parking has been excluded from these calculations. For example, 25 spaces at Egbert's Furniture Store or 62 spaces at Bush Gardens Restaurant are not included. Table 5 includes a count of free spaces so that calculations factoring in these spaces is possible.

For lots with only a monthly parking fee, a daily or hourly rate was not imputed. This also will affect the average cost reported in these tables.

For the entire study area, the average all-day parking fee was \$6.11. The average monthly fee was \$91.32. As expected, the highest costs were in zones 4, 5, and 8, and lower costs were in the Denny Regrade, International District and Pioneer Square. Average all-day parking costs by zone ranged from \$3.91 to \$8.60.

TABLE 3
1987 Prices (Weighted by Stalls)

| Zone | 0-2 Hours | Daily | Monthly |
|----------|-----------|--------|----------|
| 1 | \$2.14 | \$4.24 | \$ 82.89 |
| 2 | 1.97 | 3.91 | . |
| 3 | 2.33 | 4.71 | 79.02 |
| 4 | 3.58 | 7.82 | 88.47 |
| 5 | 4.04 | 8.60 | 113.39 |
| 6 | 3.46 | 6.41 | 101.41 |
| 7 | 3.47 | 6.81 | 86.39 |
| 8 | 3.79 | 7.15 | 107.81 |
| 9 | 2.14 | 4.45 | 50.00 |
| 10 | 2.34 | 4.02 | 70.00 |
| 11 | 2.30 | 5.31 | 74.55 |
| 12 | 2.50 | 5.04 | 81.32 |
| 13 | 2.64 | 4.72 | 76.48 |
| AVERAGES | \$3.03 | \$6.11 | \$ 91.32 |

Prices in the CBD area rose substantially. The average cost for parking 0-2 hours rose by 59¢, a 24% increase between 1984 and 1987. The average price for all-day parking rose by \$1.05, a 21% increase. (These are in nominal dollars - not adjusted for changes in price index). See Table 4 for a list of the zones that experienced the greatest average changes in parking fees.

TABLE 4

Zones Experiencing the Greatest Average Changes

| Costs 0-2 hours | | | |
|-----------------|--------|--------|----------|
| Zone | 1984 | 1987 | % Change |
| 2 | \$1.20 | \$1.97 | + 64.2 |
| 4 | 2.74 | 3.58 | 30.6 |
| 5 | 2.51 | 4.04 | 60.9 |
| 6 | 2.32 | 3.46 | 49.1 |

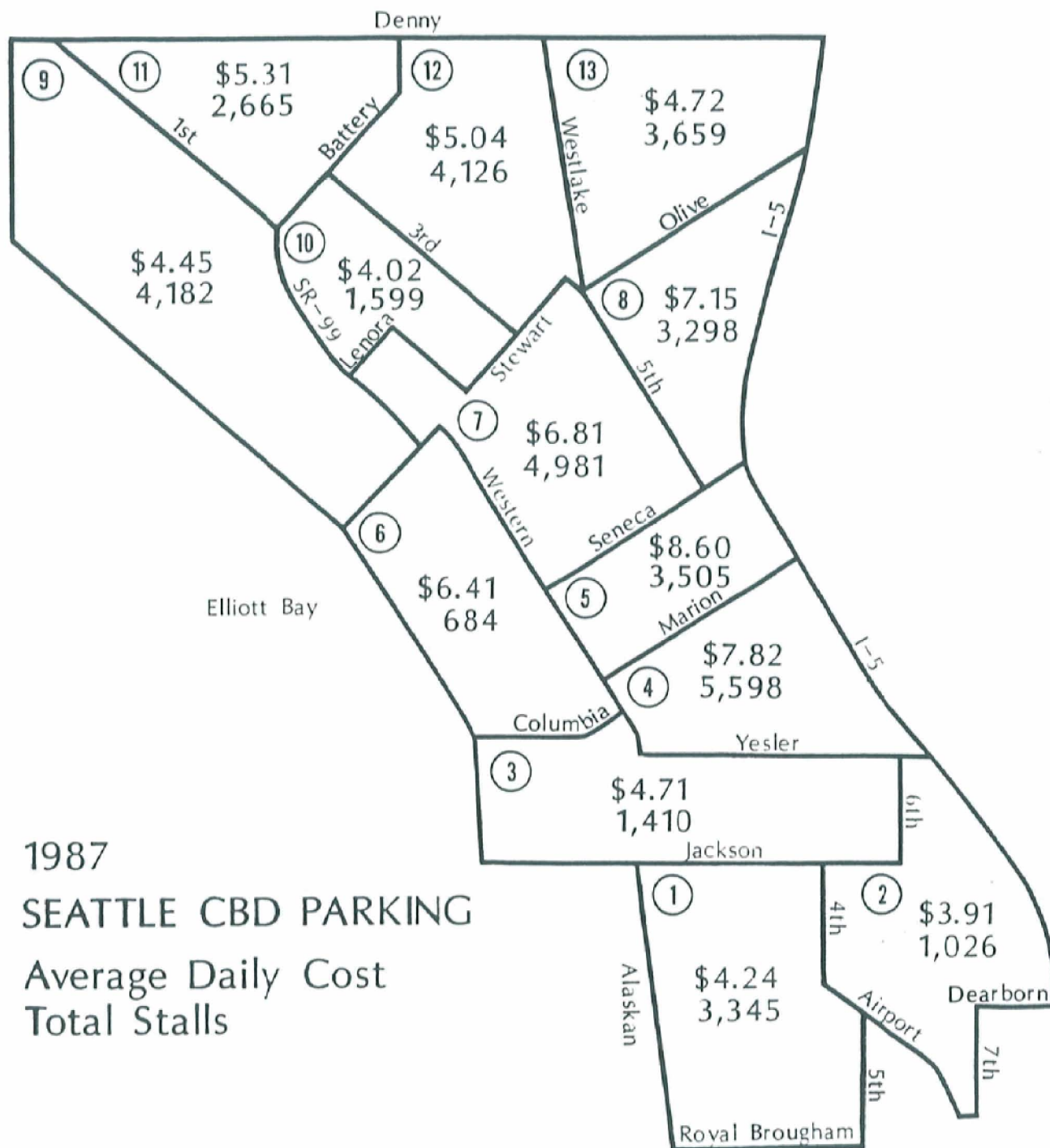
| Costs All-Day Parking | | | |
|-----------------------|--------|--------|----------|
| Zone | 1984 | 1987 | % Change |
| 2 | \$2.09 | \$3.91 | + 87.1 |
| 5 | 6.99 | 8.60 | 23.0 |
| 7 | 5.45 | 6.81 | 24.9 |
| 8 | 5.77 | 7.15 | 23.9 |
| 11 | 3.65 | 5.31 | 45.5 |

These increases were far above the 8.8% increase in the Personal Consumption Expenditures Index between 1984 and 1987.

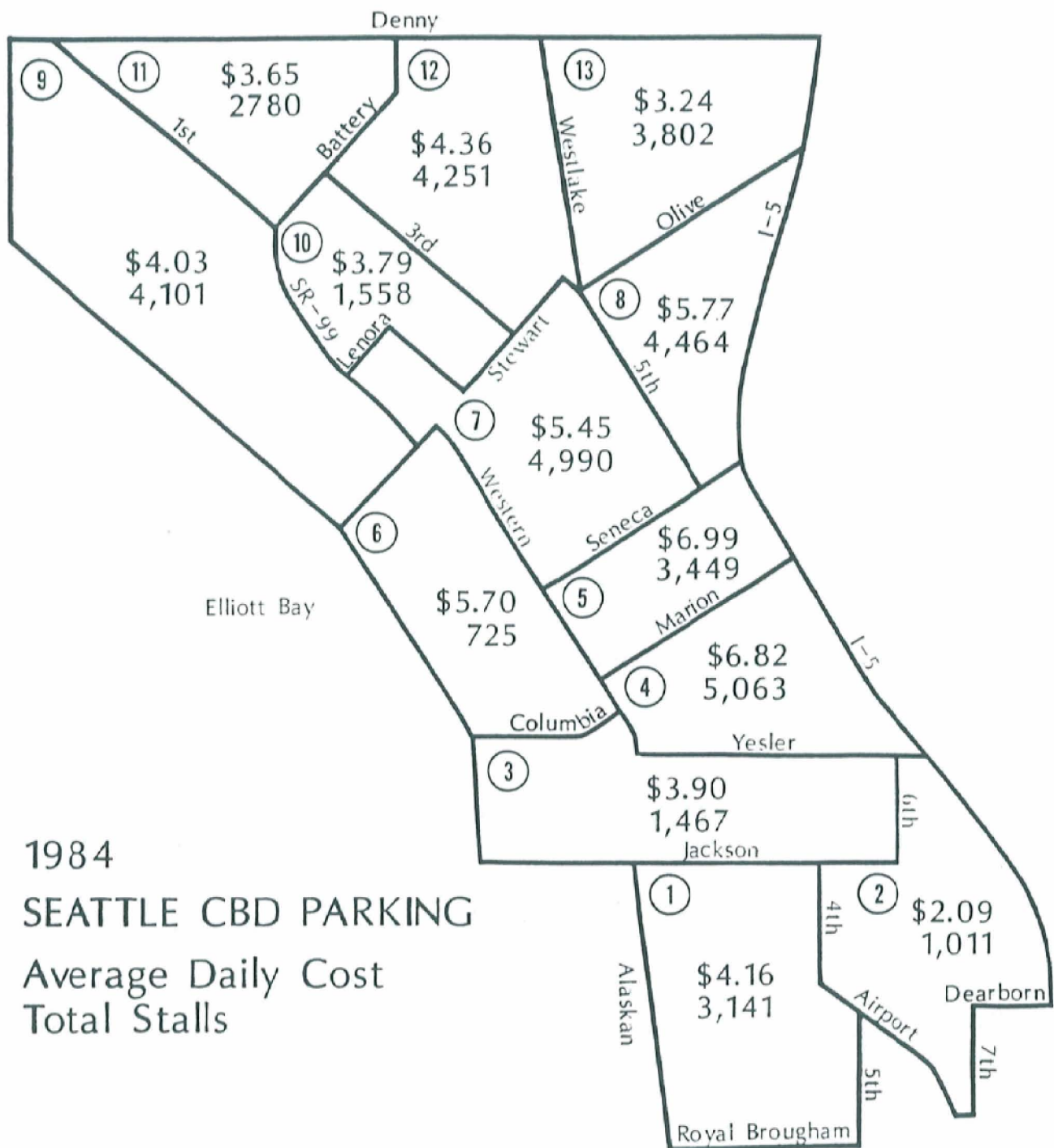
Figures 3 and 4 are maps displaying some of the information from Table 5. The total stalls and the average daily cost for each zone is shown, with one map for each year.

Figures 5 and 6 show parking costs in 1987 dollars and show how price increases have differed across zones. These figures also compare the zone average to the average cost for the entire CBD.

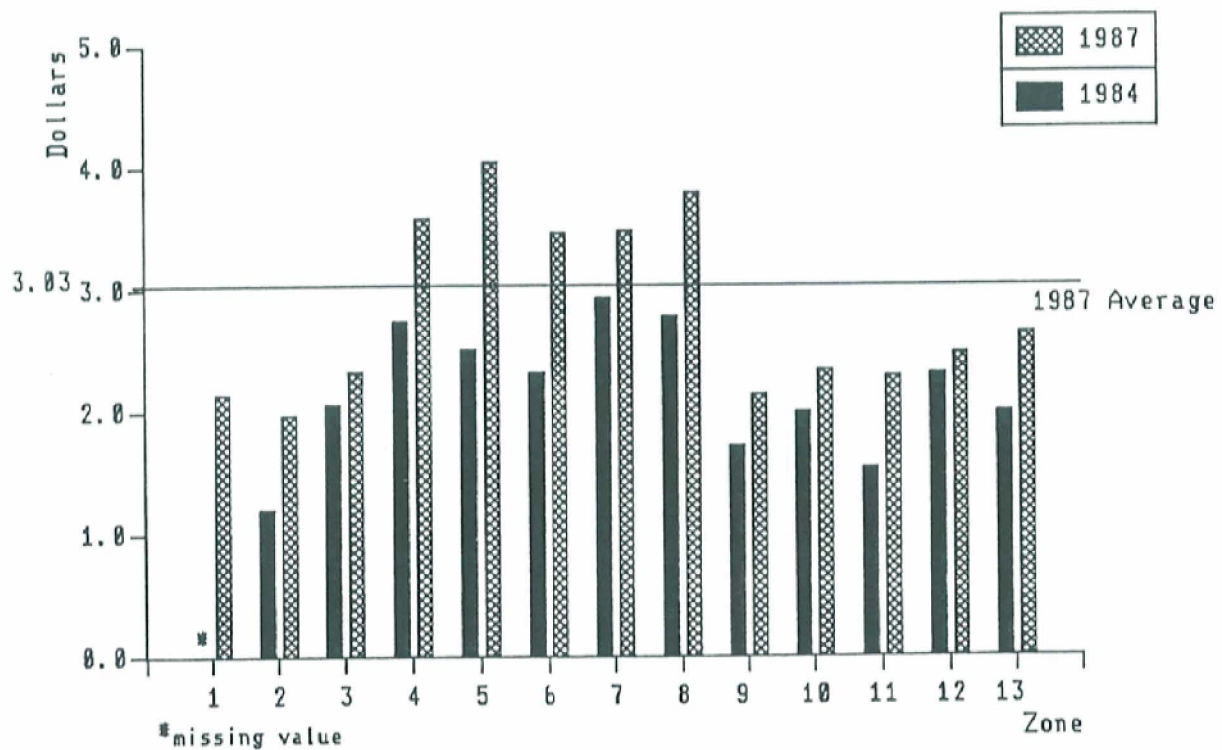
| COSTS FIGURED ONLY ON PUBLIC PRICES | | | | | TOTALS FIGURED BY TOTAL LOTS | | | | |
|-------------------------------------|--------------|----------------------------|------------------|----------|----------------------------------|--------------------|---------------------|-----------|------------|
| ZONE # | 1987 1984 | 0-2 HOURS | DAILY | MONTHLY | TOTAL CAPACITY | TOTAL OCCUPANCY | MAXIMUM CAPACITY | PAY STALL | FREE STALL |
| ZONE #1 | 1987 1984 | \$2.14 \$4.24 \$4.16 | \$4.24 \$4.16 | \$82.89 | 3345 | 1568 | 2241 | 3083 | 262 |
| ZONE #2 | 1987 1984 | \$1.97 \$1.20 | \$3.91 \$2.09 | | 1026 | 616 | 80 | 260 | 766 |
| ZONE #3 | 1987 1984 | \$2.33 \$2.06 | \$4.71 \$3.90 | \$79.02 | 1410 | 1236 | 168 | 1171 | 239 |
| ZONE #4 | 1987 1984 | \$3.58 \$2.74 | \$7.82 \$6.82 | \$88.47 | 5598 | 5033 | 750 | 4554 | 1044 |
| ZONE #5 | 1987 1984 | \$4.04 \$2.51 | \$8.60 \$6.99 | \$113.39 | 3505 | 3285 | 650 | 3362 | 143 |
| ZONE #6 | 1987 1984 | \$3.46 \$2.32 | \$6.41 \$5.70 | \$101.41 | 684 | 597 | 195 | 537 | 147 |
| ZONE #7 | 1987 1984 | \$3.48 \$2.93 | \$6.81 \$5.45 | \$86.39 | 4981 | 4160 | 829 | 4875 | 106 |
| ZONE #8 | 1987 1984 | \$3.79 \$2.78 | \$7.15 \$5.77 | \$107.81 | 3298 | 2849 | 803 | 3193 | 105 |
| ZONE #9 | 1987 1984 | \$2.14 \$1.72 | \$4.45 \$4.03 | \$50.00 | 4182 | 2668 | 505 | 2915 | 1267 |
| ZONE #10 | 1987 1984 | \$2.34 \$2.00 | \$4.02 \$3.79 | \$70.00 | 1599 | 1280 | 180 | 1027 | 572 |
| ZONE #11 | 1987 1984 | \$2.29 \$1.54 | \$5.31 \$3.65 | \$74.55 | 2665 | 1975 | 343 | 935 | 1730 |
| ZONE #12 | 1987 1984 | \$2.48 \$2.31 | \$5.04 \$4.36 | \$81.38 | 4126 | 3491 | 535 | 3419 | 707 |
| ZONE #13 | 1987 1984 | \$2.64 \$2.00 | \$4.72 \$3.24 | \$76.48 | 3659 | 3136 | 285 | 2656 | 1003 |
| PSCOG | | | | | AVERAGE COSTS & CAPACITY BY ZONE | | | | |
| | | | | | Table 5 | | | | |



Note: Dollars are in current year dollars.



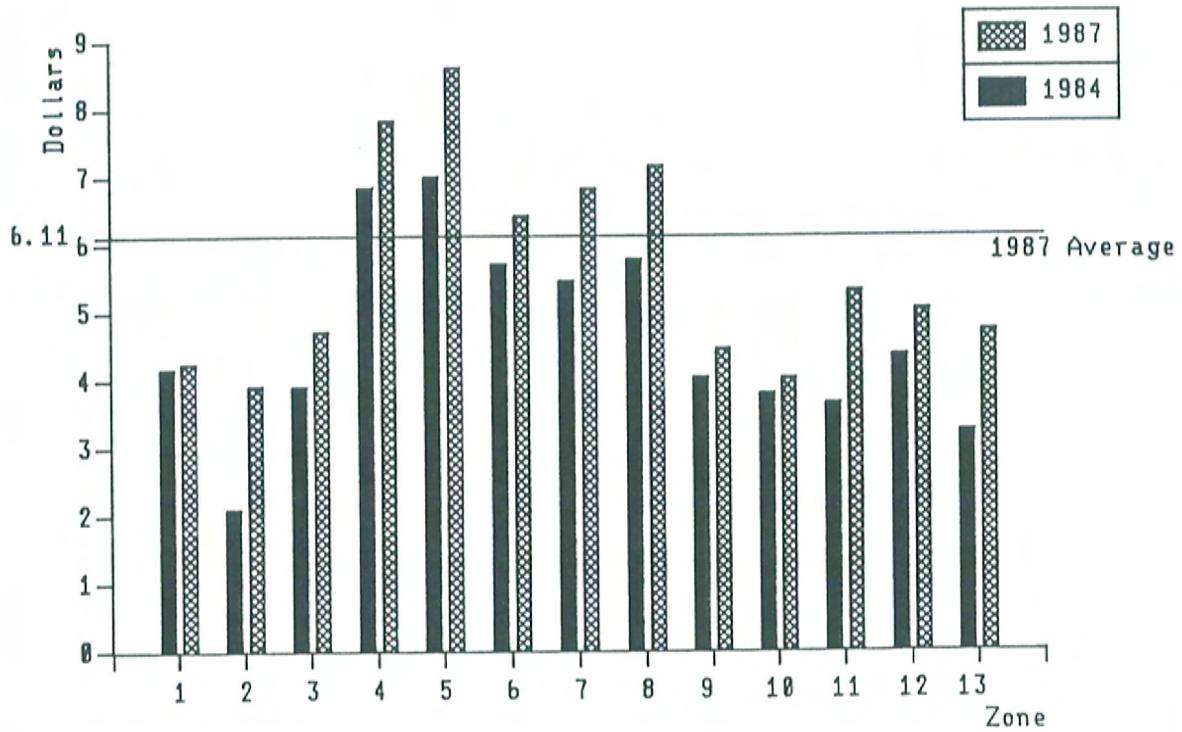
Note: Dollars are in current year dollars.



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0-2 HOUR PARKING COSTS
1987 DOLLARS

Fig. 5



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DAILY PARKING COSTS
1987 DOLLARS

Fig. 6

KING SUBREGION

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Auburn

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Beaux Arts Village

Coun. Robin Stefan

Bellevue

Mayor Cary Bozeman
Coun. Nan Campbell

Bothell

Coun. Walt Wojcik

Clyde Hill

Coun. Roger Shaeffer

Des Moines

Mayor Pat DeBlasio

Duval

Coun. Paul Reddick
Coun. Ruth Subert

Enumclaw

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Coun. Bruce Laing
Coun. Lois North
Coun. Bill Reams

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Renton

Coun. Kathy Keolker

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Coun. Virginia Galle
Coun. Jeanette Williams

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Comm. John Horsley
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Mayor Richard Mitchusson
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Mayor Robert Mizukami
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Mayor Larry Cavanaugh
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Gig Harbor

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Milton

Coun. Leonard Sanderson

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County Exec. Joe Stortini
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Coun. Paul Cyr
Coun. Bill Stoner

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Mayor Ron Crowe

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Coun. Peter Pedone

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Tacoma

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Mayor Gordon Tjerne

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County Exec. Willis Tucker
Coun. Bruce Agnew
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