Parking Inventory for Seattle and Bellevue: 1992

October 1992

ABSTRACT

REPORT TITLE:	Parking Inventory for Seattle and Bellevue: 1992
PROJECT TITLE:	Transportation Data
SUBJECT:	Parking Availability and Cost by Traffic Analysis Zone
DATE:	October, 1992
SOURCE OF COPIES:	Puget Sound Regional Council Information Center 216 First Avenue South Seattle, Washington 98104 (206) 464-7532
ABSTRACT:	An inventory of parking stalls, occupancy, and cost was conducted for 19 Traffic Analysis Zones in downtown Seattle and 6 zones in downtown Bellevue in April-May of 1992, as an update to surveys completed in 1987 and 1989.
FUNDING:	The data collection and report preparation were financed in part by appropriations from member jurisdictions of the Puget Sound Regional Council, and in part by grants from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation.

FOREWORD

This report was prepared by Neil Kilgren and Jon Layzer with project direction by Elaine Murakami, Principal Planner, Puget Sound Regional Council.

We appreciate the assistance of Phil Thordarson, City of Seattle Engineering Department; Tom Noguchi, City of Bellevue; and Cathy Blumenthal, Bellevue Transportation Management Association (TMA). We thank the private parking operators for their cooperation in this project.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

PARKING INVENTORY FOR SEATTLE AND BELLEVUE, 1992

EXECUTIVE SUMMARY

Methods

Between April 6 and May 15, 1992, the Puget Sound Regional Council inventoried all off-street parking in the Central Business Districts (CBD) in Seattle and Bellevue. The two CBDs were also surveyed in 1987 and 1989 by the Puget Sound Council of Governments, and in 1989 two additional areas in Seattle, First Hill and lower Queen Anne, were surveyed. The study area was divided into 19 zones in Seattle and 6 zones in Bellevue for the data collection and analysis.

The parking inventory included:

- off-street parking, both public and private;
- free and pay parking;
- carpool and vanpool lots;
- motor pool parking, both private and government;
- hotels and motels;
- short-term customer parking; and
- residential parking (in Seattle CBD only).

Availability

In Seattle, 50,863 parking stalls were counted in the CBD; 8,560 in First Hill; and 15,659 in lower Queen Anne. This count reflected an increase of nearly 5,500 spaces in the Seattle CBD since 1989 and over 10,500 since 1987. The average yearly increase over five years in the Seattle CBD has been 2,119 parking spaces.

The increase since 1989 was largely attributable to the completion of the following major building projects:

- Gateway Tower
- Two Union Square
- Pacific First Center
- 2nd & Seneca Building
- Market Garage
- Seattle Art Museum
- 1800 Ninth Avenue Building

In Bellevue, the inventory of 28,971 stalls in 1992 was actually slightly lower than the count in 1989 (29,253 stalls). Parking availability in the Bellevue CBD had increased by 8.9 percent in the 1989 inventory from 26,866 stalls in 1987.

Between 1989 and 1992, downtown Bellevue lost some parking stalls due to completion of the Downtown Park and ongoing construction of the Bellevue Convention Center, the Doll Museum, and the Bellevue Library, which displaced previously existing parking spaces.

Occupancy

In the Seattle CBD, occupancy rates have fallen as the total number of available stalls has increased. Overall, occupancy in the downtown core fell from 78.9 percent in 1987 to 75.2 percent in 1989 and to 73.3 percent in 1992. Occupancy rates decreased the most in areas where new buildings with large parking garages have been completed recently.

Occupancy rates in the Bellevue CBD have increased steadily over the past five years, going from 54.3 percent in 1987 to 55.5 percent in 1989, then increasing to 60.8 percent in 1992. Most of that increase occurred in pay stalls, where occupancy rates rose from 60.0 percent to 75.2 percent between 1989 and 1992.

Cost

In Seattle, the average daily parking cost in the CBD increased by 12.4 percent since 1989, going from $7.45 to $8.37. Similarly, the average 2-hour parking cost in the CBD increased 13.8 percent, from $3.76 to $4.28. These are much less than the 1987-1989 increases of 21.9 and 24.1 percent respectively.

In Bellevue, the average cost to park in the CBD was $2.14 for 2 hours, $6.58 daily, and $63.06 monthly. Only monthly costs changed substantially since 1989, increasing 16.7 percent from $54.05.

Summary

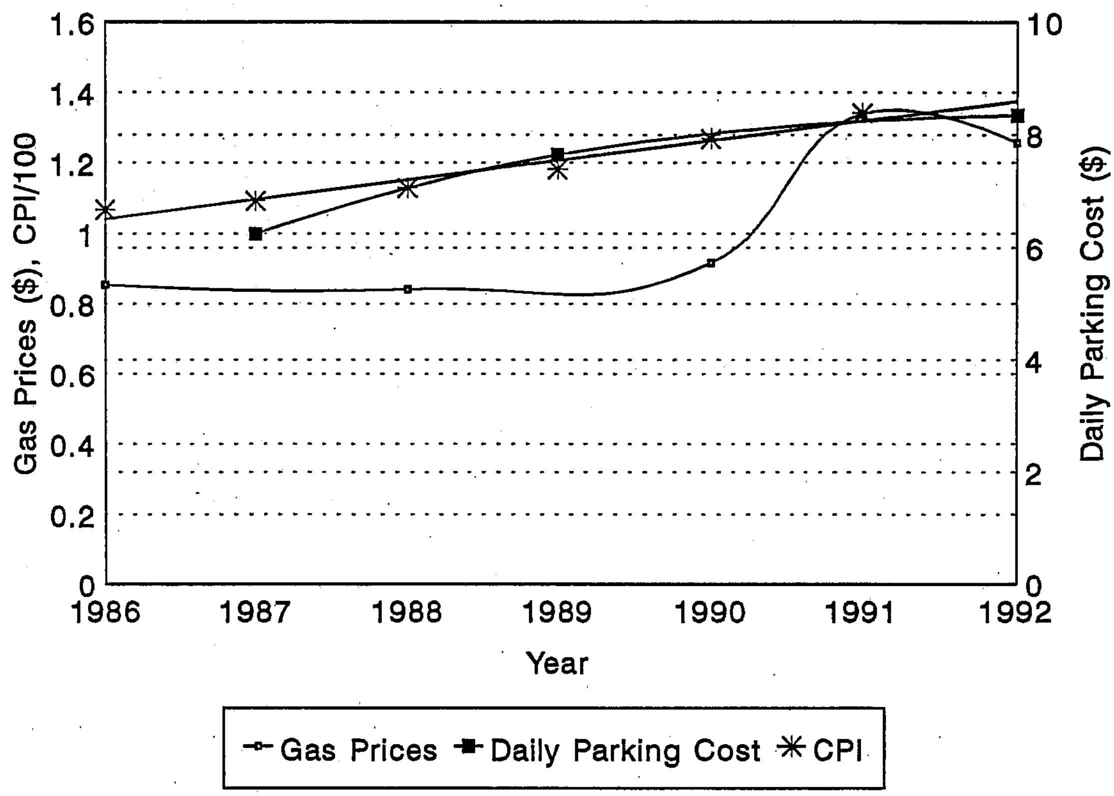
This study is intended to provide a strong database of parking availability, utilization, and costs to support local planning needs. Because these figures are strong predictors of travel demand, the Puget Sound Regional Council uses parking data as inputs in travel demand forecasting models. These models provide estimates of the amount and types of travel we can expect in the years ahead, and allow policy makers to examine the impacts of alternative transportation policy decisions.

This report is also intended to support the needs of a growing body of people more generally interested in parking policies. The federal Clean Air Act and state Commute Trip Reduction Act require that local governments and large employers take a closer look at commuter travel to and from our central business districts and formulate policies to reduce the environmental impacts of commuting.

Figure 1, on the following page, offers a first look at how these data might be used to evaluate transportation policy. Since 1987, the average daily cost to park in the Seattle CBD increased from $6.11 to $8.37 (37 percent). Since 1986, the average price of a gallon of gasoline (unleaded, self-serve) increased 47 percent, while the consumer price index of all goods and services has increased just 29 percent. However, most of the increase in gasoline prices has occurred in the last two years, while parking prices have actually levelled off recently.

Figure 1

Gas Prices, Parking Costs, and CPI
Central Puget Sound Region, 1986 -1992



I. INTRODUCTION

This is the third regional inventory of off-street parking in Seattle and Bellevue conducted by the Puget Sound Regional Council (PSRC). The Seattle inventory in 1987 covered only the Central Business District (CBD). Beginning in 1989, the study was expanded to include both the First Hill and lower Queen Anne areas. The Bellevue study area has remained the same. The Seattle Engineering Department's Transportation Division maintains an inventory of all metered, on-street parking within the City of Seattle.

This report summarizes data by Traffic Analysis Zone and by area, and compares the CBD results with data from 1987 and the results from all zones with 1989. The PSRC plans regular updating of this database on a two-year cycle. The data are used in the PSRC's travel forecasting models, particularly in estimating choice of travel mode. This study is also part of the Downtown Seattle Transit Project (DSTP) Before-and-After Study.

The report is divided into two chapters: a chapter describing the inventory in downtown Seattle, in First Hill and in lower Queen Anne, and a chapter describing the inventory in downtown Bellevue. Each chapter includes a description of the study area, the methods used for conducting the inventory, and the findings. The findings include data from 1987, 1989, and 1992.

II. SEATTLE INVENTORY

A. STUDY AREA

The Seattle study area is shown in Figure 2. Zones 1 through 13 comprise the Seattle Central Business District (CBD), bounded by Elliott Bay to the west, Denny Way to the north, Interstate 5 to the east, and Royal Brougham Way to the south (Figure 3).

Zones 14 through 16 are located east of the CBD and are known as First Hill. The area is bounded by Interstate 5 to the west, Pine Street to the north, Broadway to the east, and Alder Street to the south (Figure 4). Zones 17 through 19, known as lower Queen Anne, are bounded by Elliott Bay to the west, Denny Way to the south, Interstate 5 to the east, and Roy, Valley and Mercer streets to the north (Figure 5).

B. METHODOLOGY

Data collection was conducted between April 6 and May 15, 1992, using both permanent PSRC staff and temporary staff. The inventories were conducted Monday through Friday between the hours of 10:00 a.m. and 12:00 noon, and again between the hours of 1:30 p.m. and 3:30 p.m.

Data collected for each parking lot included census tract and block number, owner/tenant, address, total number of stalls, morning and afternoon occupancy, type of parking, cost for two hour, daily, and monthly parking, and type of parking. Parking type was used to analyze free parking and was coded either "R"--free residential, "C"--free, short-term customer, or "O"--all other). Parcel numbers for each parking record were included in Bellevue.

Residential parking was inventoried only in the Seattle CBD. All data were entered into a SAS dataset that included the 1989 parking inventory data for comparison. Some figures for 1989 have been changed in this report to correct errors found since the 1989 report was published. Those tables containing revised figures are noted. A more detailed methodology is included as an Appendix to this report.

Figure 2

Study Area Boundaries

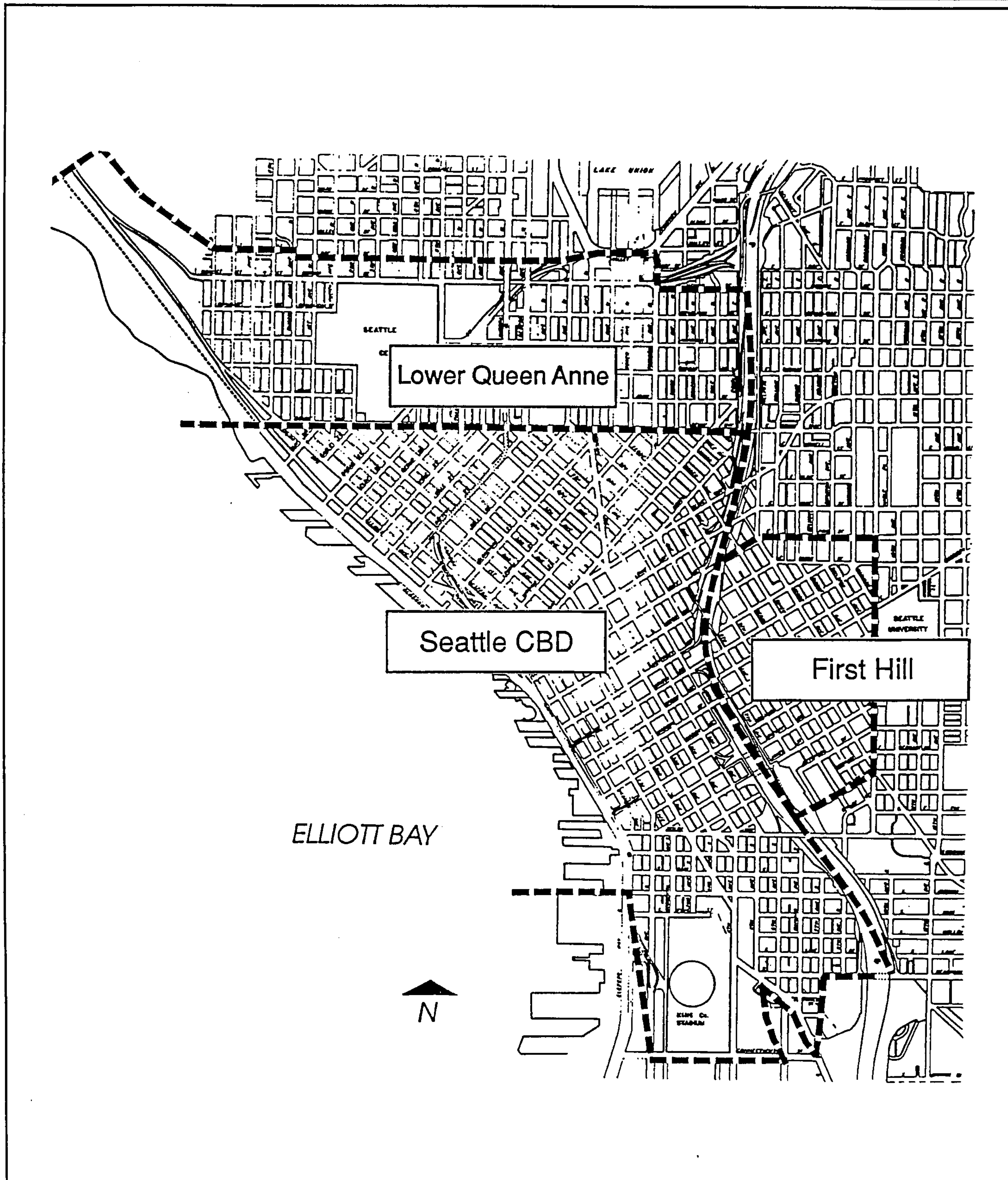


Figure 3

Seattle CBD Study Area

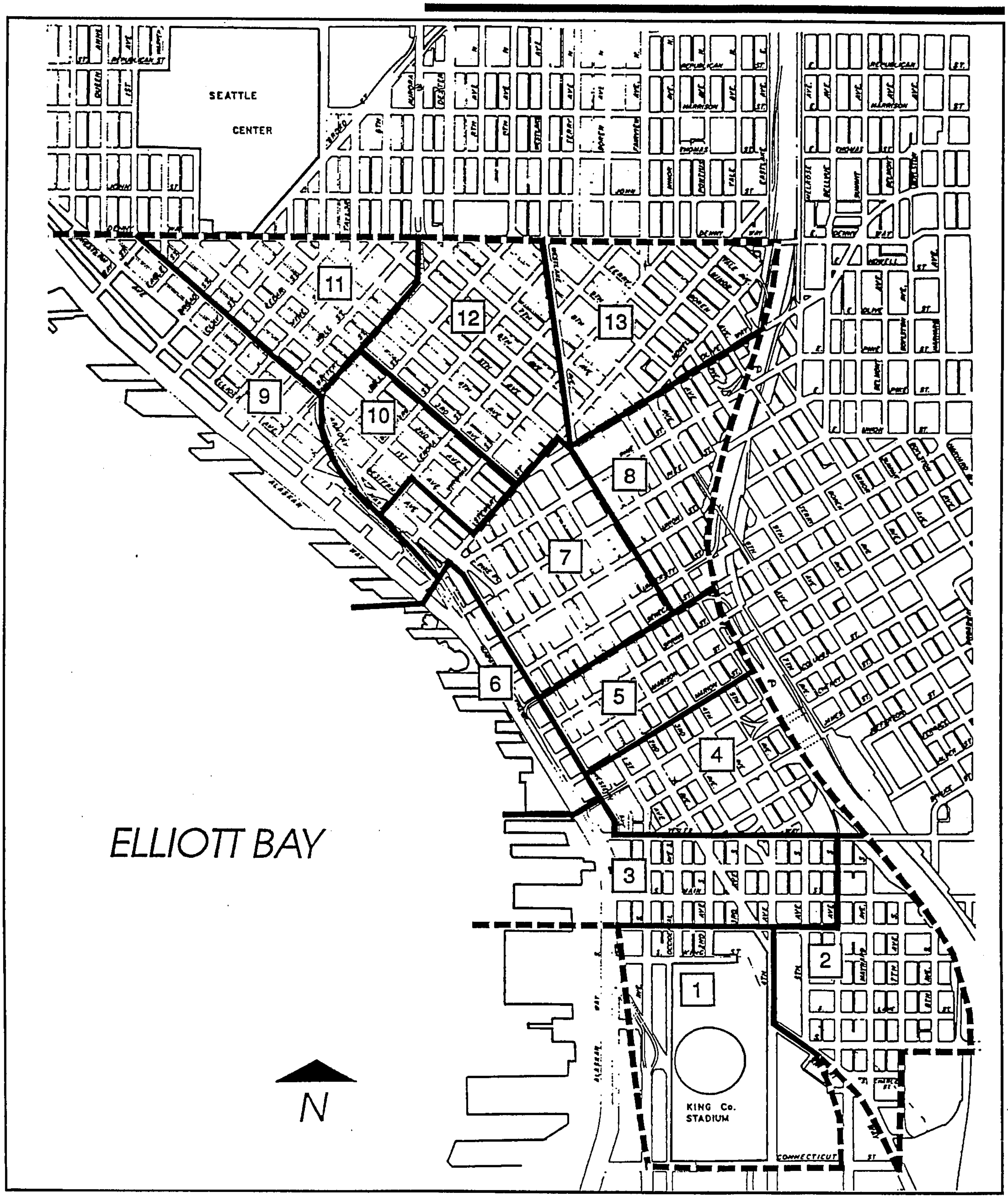


Figure 4

First Hill Study Area

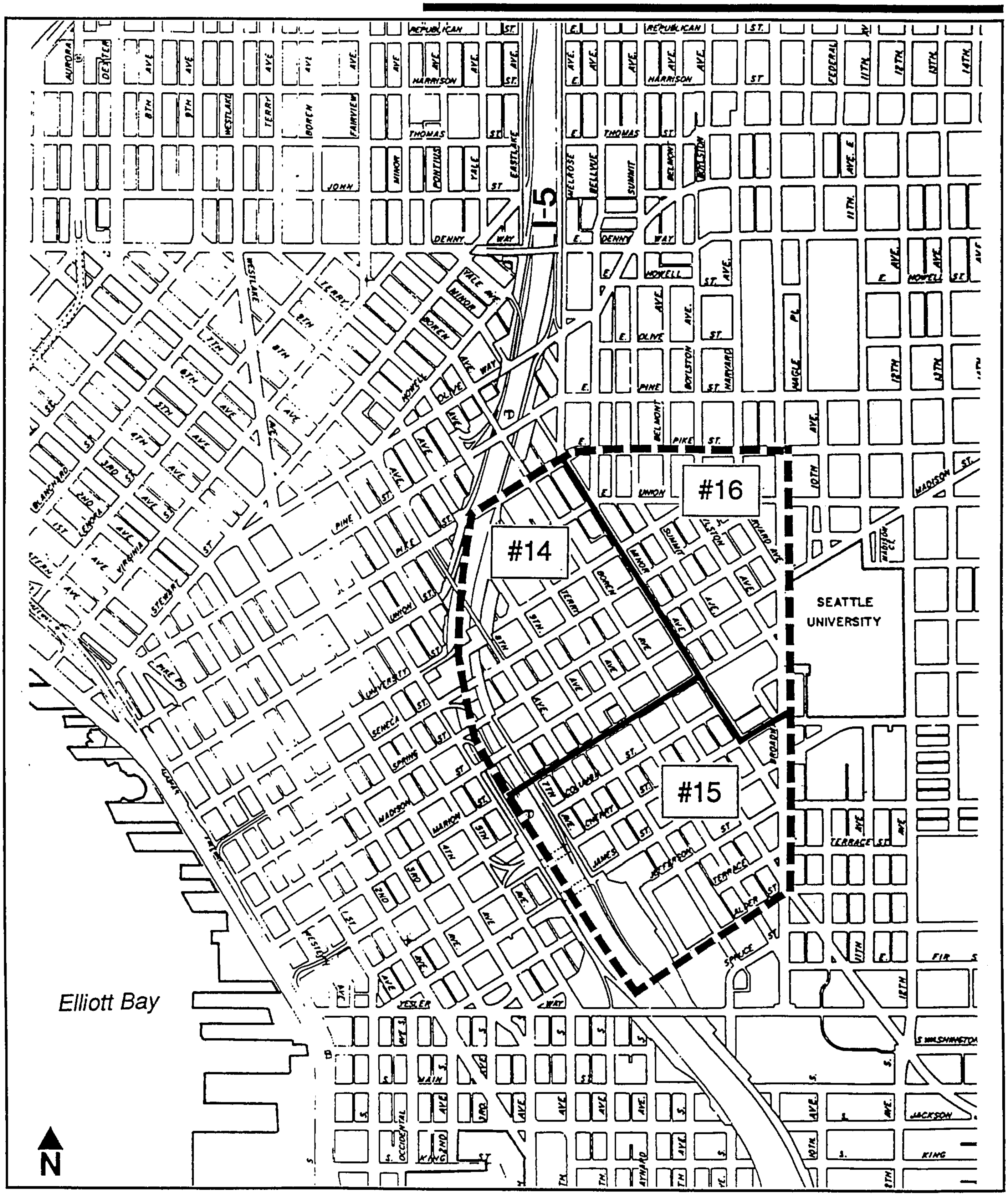
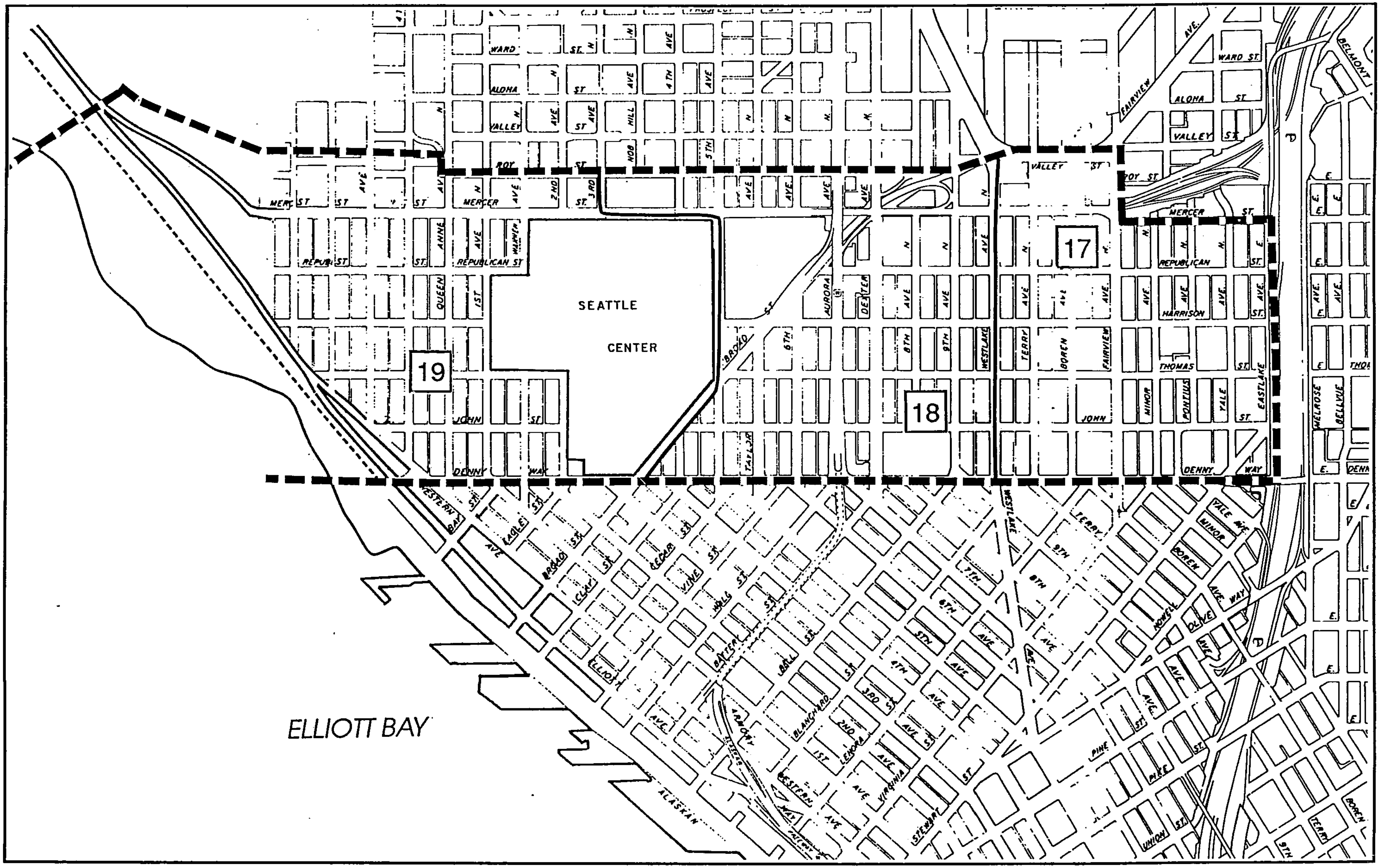


Figure 5

Lower Queen Anne Study Area

Puget Sound Regional Council



C. FINDINGS

Seattle CBD

Total Stalls

A total of 50,863 parking stalls was inventoried in the Seattle CBD. The CBD had an overall increase of 5,474 parking stalls, or 12.1 percent, since 1989. This is similar to the 12.7 percent increase in total stalls between 1987 and 1989. Table 1 sums the total number of parking stalls by zone and shows the percent change since 1989 and between 1987 and 1989.

Between 1989 and 1992, zones 6 and 8 show much greater increases in total stalls than the CBD as a whole, with 59.7 percent and 44.7 percent, respectively. The greater increases in parking stalls in these zones can be attributed to major construction projects completed since 1989. In zone 6, the Pike Place Market Garage, with 594 stalls, accounted for most of the 637 increase since 1989. In zone 8, a 1,000-stall facility became available with the completion of Two Union Square, while Pacific First Center at 5th and Pike added 950 stalls.

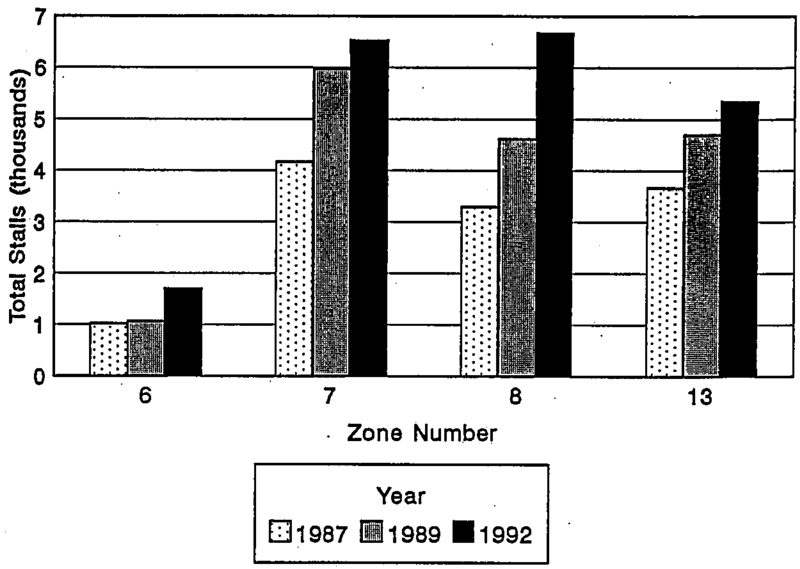
Table 1
Seattle CBD
Total Stalls and Percent Change
1992 and 1989

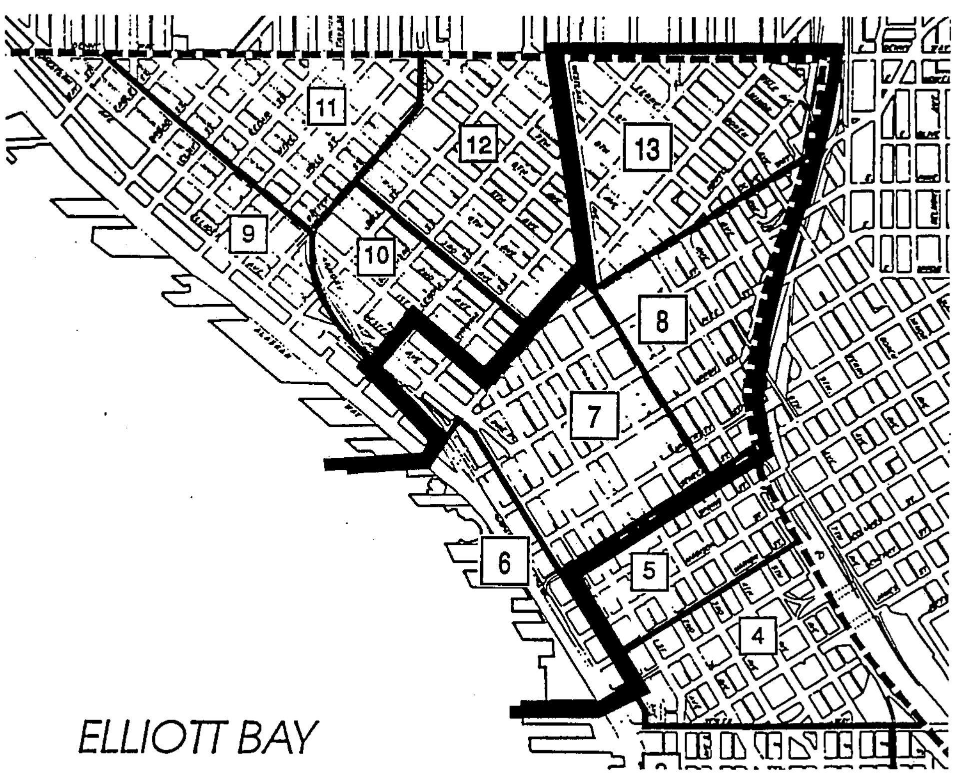
Zone	1992	1989 (revised)	Percent Change 1989-92	1987	Percent Change 1987-89
1	3,489	3,184	9.6	3,095	2.9
2	1,131	992	14.0	999	-0.7
3	1,664	1,547	7.6	1,410	9.7
4	6,731	6,195	8.7	5,729	8.1
5	4,621	4,317	7.0	4,320	-0.1
6	1,704	1,067	59.7	1,018	4.8
7	6,537	5,964	9.6	4,166	43.2
8	6,674	4,613	44.7	3,298	39.9
9	3,881	3,894	-0.3	4,182	-6.9
10	1,680	1,658	1.3	1,599	3.7
11	2,887	2,994	-3.6	2,665	12.3
12	4,518	4,267	5.9	4,126	3.4
13	5,346	4,697	13.8	3,659	28.4
Total	50,863	45,389	12.1%	40,266	12.7%

These two zones, along with zones 7 and 13, have also experienced the greatest growth since 1987 (Figure 6); zone 8 doubled its parking capacity in five years. Major construction projects in these zones since 1987 include Market Place Tower, Washington Mutual Tower, Westlake Center, and the Washington State Convention and Trade Center.

Figure 6

Total Parking Stalls by Zone
Selected Zones in the Seattle CBD 1987-1992





Occupancy

Two occupancy counts were taken at each lot, one in the morning and one in the afternoon. More accurate occupancy measures would require more counts for each lot. These figures should be evaluated with this limitation in mind. The occupancy rate is the average of the morning and afternoon counts, divided by the total number of stalls.

Parking in the CBD had an overall occupancy rate of 73.3 percent, which was lower than in previous surveys (Table 2). This is the lowest reported occupancy rate since 1984. In zones 4, 5, and 6, the decrease in the occupancy may be attributed to the increase in the number of stalls due to new construction. Large new facilities such as Gateway Tower (zone 4), the 2nd & Seneca Building (zone 5), and the Market Garage (zone 6), had occupancy rates significantly lower than their respective zone averages.

Zone 9, and to a lesser extent zone 5, saw actual daily usage decrease between 1989 and 1992. On a daily basis, 600 fewer vehicles were parking in zone 9. This may be a combination of two factors: the loss of the Princess Marguerite, a major waterfront attraction, and the addition of new parking around the Pike Place Market, which has reduced overflow parking in the northern waterfront.

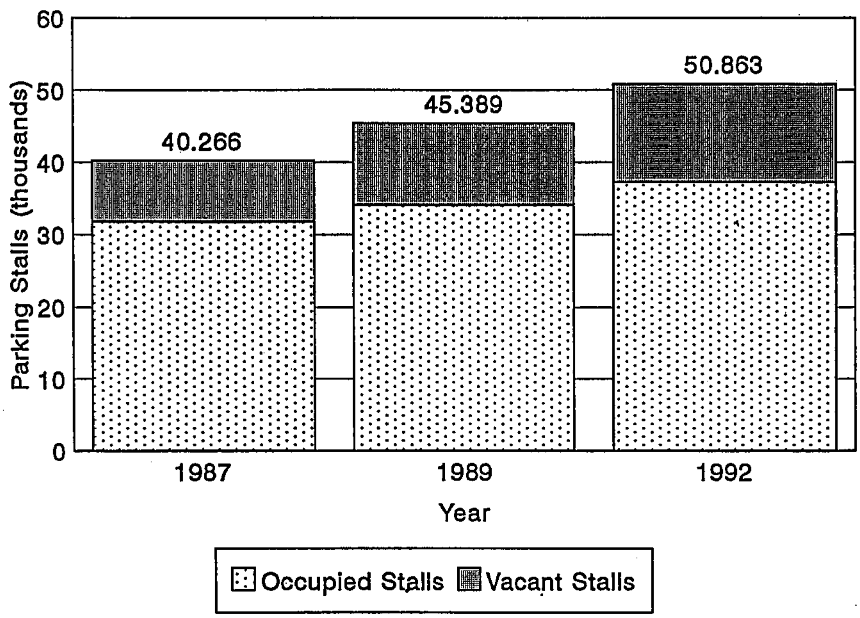
Figure 7 summarizes the occupancy rate from 1987 to 1992.

Table 2
Seattle CBD
Occupancy Rates, 1992 and 1989

Zone	1992		1989 (revised)		1987	
	Occupancy Rate (%)	Total Stalls	Occupancy Rate (%)	Total Stalls	Occupancy Rate (%)	Total Stalls
1	50.7	3,489	41.9	3,184	48.1	3,095
2	57.5	1,131	60.3	992	58.4	999
3	84.2	1,664	79.7	1,547	87.7	1,410
4	76.5	6,731	82.1	6,195	90.9	5,729
5	74.4	4,621	82.3	4,317	94.9	4,320
6	67.1	1,704	80.3	1,067	87.3	1,018
7	79.2	6,537	84.8	5,964	81.8	4,166
8	71.1	6,674	72.9	4,613	93.8	3,298
9	62.4	3,881	79.0	3,894	63.8	4,182
10	70.5	1,680	71.8	1,658	80.0	1,599
11	72.9	2,887	64.1	2,994	76.2	2,665
12	74.5	4,518	73.1	4,267	84.6	4,126
13	88.0	5,346	81.1	4,697	85.7	3,659
Total	73.3%	50,863	75.2%	45,389	78.9%	40,266

Figure 7

Occupancy and Total Capacity
Seattle CBD, 1987-1992



Numbers shown are total stalls

Parking Cost

Parking prices in this report do not reflect "early bird" special rates, employee subsidies (including free parking), or special rates such as for carpools. Parking costs were treated in the same manner in the 1987 and 1989 inventories.

Average parking cost in the CBD was $4.28 for two-hour parking, $8.37 for daily parking, and $111.23 for monthly parking (Table 3).

Two-hour average parking costs ranged from $2.75 in zone 3 to $5.92 in zone 5. The average cost of daily parking ranged from $3.42 in zone 2 to $11.31 in zone 5. Average monthly parking costs ranged from $63.41 in zone 9 to $139.89 in zone 5. All costs are weighted by total stalls. Figure 8 summarizes the average daily cost of parking and total stalls in the CBD.

The zones with the highest average daily and monthly parking costs generally include large, higher-priced parking garages that have a marked influence on the average cost figures. These zones include 4, 5, 7, and 8, which consistently reported the highest posted prices in 1987, 1989 and 1992.

For example, the average parking costs in zone 5 are influenced by many of the large office towers in the zone, such as the First Interstate, Bank of California, 2nd & Seneca, and 1001 4th Avenue buildings. In zone 4, the Columbia Center and Seafirst Fifth Avenue Plaza influence the higher cost, while the 1201 3rd Avenue Building and Westlake Center do so in zone 7.

Figure 8

1992 Summary - Seattle CBD

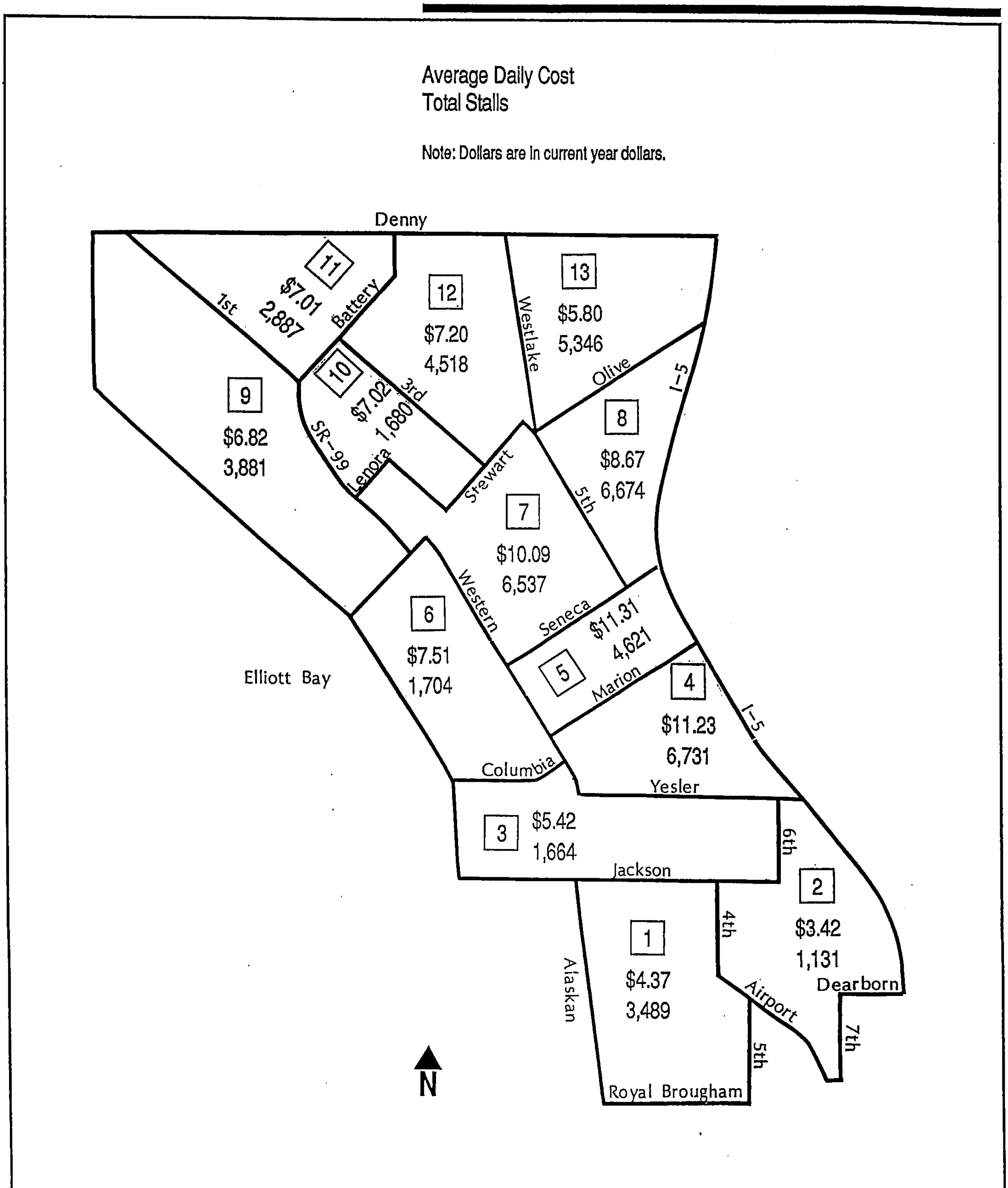


Table 3
Seattle CBD
Average Cost, 1992
(weighted by total stalls)

Zone	2 Hours	Daily	Monthly
1	$ 3.21	$ 4.37	$ 68.17
2	3.05	3.42	#
3	2.75	5.42	109.02
4	4.76	11.23	123.51
5	5.92	11.31	139.89
6	4.85	7.51	106.76
7	4.53	10.09	120.23
8	4.41	8.67	127.46
9	2.93	6.82	63.41
10	3.81	7.02	96.32
11	4.39	7.01	77.81
12	3.70	7.20	108.43
13	3.50	5.80	82.84
Total	$ 4.28	$ 8.37	$ 111.23

= fewer than 5 records in each category

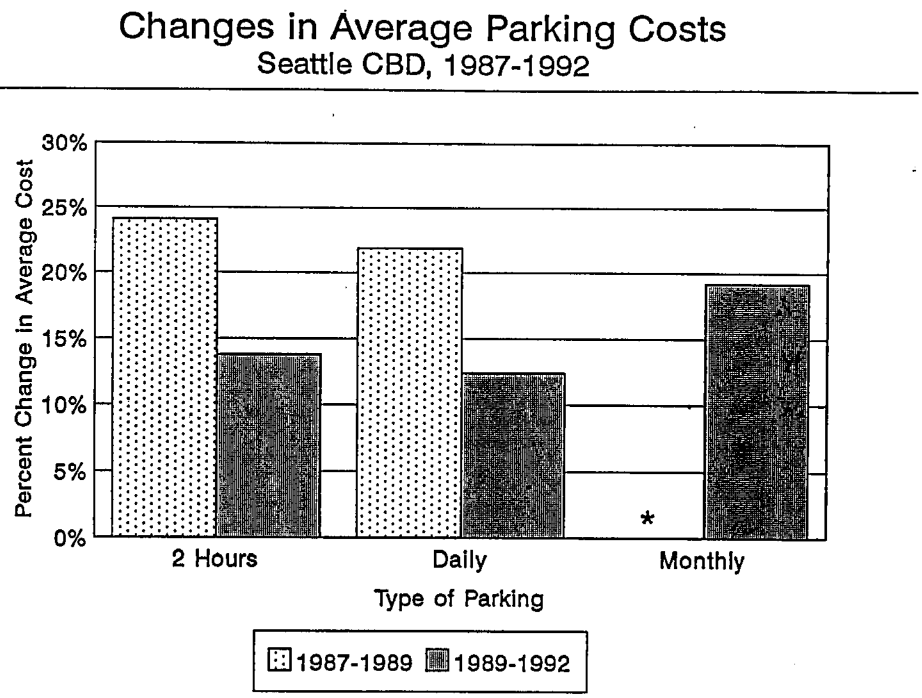
Figure 9 shows the change in 2-hour, daily, and monthly average parking costs from 1987-1989 and from 1989-1992.

Overall, parking costs have increased in the CBD since 1989 but not as sharply as they rose between 1987 and 1989. Table 4 shows that in the three years since 1989, the average cost for two-hour parking increased 13.8 percent, from $3.76 to $4.28, while between 1987 and 1989, two-hour costs increased 24.1 percent, from $3.03 to $3.76.

The decrease in the average 2-hour cost in zone 8, from $4.65 to $4.41, can be attributed to the addition of the 1000 stalls in Two Union Square, where it costs $3.00 to park for 2 hours. Average 2-hour parking costs for the rest of the zone actually rose 6.3 percent between 1989 and 1992.

Average daily costs increased 12.4 percent, from $7.45 in 1989 to $8.37, in 1992. This is a significantly smaller increase than the 21.9 percent increase between 1987 and 1989, from $6.11 to $7.45.

FIGURE 9



* There were insufficient monthly parking data in 1987

Table 4
Seattle CBD
Average 2-Hour Cost and Percent Change, 1987-1992
(weighted by total stalls)

Zone	1992	1989 (revised)	Percent Change 1989-92	1987	Percent Change 1987-89
1	$ 3.21	$ 3.30	-2.7	$ 2.14	54.4
2	3.05	#	#	1.97	#
3	2.75	2.47	11.0	2.33	6.4
4	4.76	4.40	8.3	3.58	22.7
5	5.92	4.99	18.7	4.22	18.0
6	4.85	2.73	77.7	#	#
7	4.53	3.70	22.4	3.17	16.7
8	4.41	4.65	-5.2	3.79	22.6
9	2.93	2.46	19.3	2.14	14.7
10	3.81	3.05	25.2	2.34	30.3
11	4.39	2.42	81.5	2.30	5.2
12	3.70	3.53	4.7	2.48	42.5
13	3.50	3.01	16.0	2.64	14.1
Total	$ 4.28	$ 3.76	13.8%	$ 3.03	24.1%

= fewer than 5 records in each category

The 6.1 percent decrease in average daily costs in zone 6 was influenced by the addition of the 600 stalls in the Market Garage, where it costs $6.00 to park for a day. The daily average for the rest of the zone was $7.66.

Table 5
Seattle CBD
Average Daily Cost and Percent Change, 1987-1992
(weighted by total stalls)

Zone	1992	1989 (revised)	Percent Change 1989-92	1987	Percent Change 1987-89
1	$ 4.37	$ 3.88	12.7	$ 4.24	-8.5
2	3.42	#	#	3.91	#
3	5.42	5.29	2.5	4.71	12.2
4	11.23	10.30	9.0	7.82	31.7
5	11.31	9.93	13.9	8.58	15.7
6	7.51	8.00	-6.1	#	#
7	10.09	8.48	19.0	6.47	31.1
8	8.67	7.82	11.0	7.15	9.2
9	6.82	5.28	29.1	4.45	18.7
10	7.02	5.41	29.6	4.02	34.6
11	7.01	6.35	10.4	5.31	19.5
12	7.20	6.71	7.4	5.04	33.0
13	5.80	5.68	2.2	4.72	20.2
Total	$ 8.37	$ 7.45	12.4%	$ 6.11	21.9%

= fewer than 5 records in each category

Table 6 shows average monthly costs for 1989 and 1992 and the percent change. Monthly costs from 1987 were incomplete and were omitted from this table. Overall, monthly costs increased much more than 2-hour and daily costs. Two areas saw the largest percent change between 1989 and 1992: the two zones, 3 and 4, on either side of Yesler, and zones 9 through 12, which encompass the northern waterfront and Belltown.

Table 6
Seattle CBD
Average Monthly Cost and Percent Change, 1989-1992
(weighted by total stalls)

Zone	1992	1989 (revised)	Percent Change 1989-92
1	$ 68.17	$ 65.27	4.4
2	#	47.56	#
3	109.02	83.13	31.1
4	123.51	98.29	25.7
5	139.89	119.88	16.7
6	106.76	102.63	4.0
7	120.23	104.72	14.8
8	127.46	118.72	7.4
9	63.41	45.64	38.9
10	96.32	71.84	34.1
11	77.81	65.53	18.7
12	108.43	87.24	24.3
13	82.84	77.35	7.1
Total	$ 111.23	$ 93.34	19.2%

= fewer than 5 records in each category

Table 7 sums pay and free parking by zone and Table 8 categorizes the free parking into customer, residential, and other. Free parking in the "other" category is generally employee parking. The proportion of free stalls to pay stalls is highest in the International District (zone 2) with 44.4 percent free, and in Denny Regrade (zones 10 to 12), with between 14 and 26 percent free. In the entire CBD, 6.1 percent of the 50,863 total stalls were free. This is close to the 1989 CBD level of 6.6 percent free.

The proportion of free stalls has been fairly consistent since 1987, remaining at about one-half of total stalls in the International District in all inventories, 14 to 26 percent of total stalls in Denny Regrade, and generally less than 5 percent of total stalls in the downtown core (zones 4-8).

The last column in Table 7, "cost missing", contains the number of parking stalls in each zone for which no cost information was available. The percentage of lots with missing cost information is highest in those zones with numerous small lots. The data collectors were unable to either determine ownership of a lot or to obtain definite information on any possible parking cost. In zones 9 and 11, our best guess is that about half of the stalls missing cost information are free.

Table 7
Seattle CBD
Pay and Free Parking Stalls, 1992

Zone	Total Stalls	Pay Stalls		Free Stalls		Cost Missing	
		Number	Percent	Number	Percent	Number	Percent
1	3,489	3,091	88.6	127	3.6	271	7.8
2	1,131	391	34.6	502	44.4	238	21.0
3	1,664	1,440	86.5	95	5.7	129	7.8
4	6,731	6,231	92.6	149	2.2	351	5.2
5	4,621	4,596	99.5	0	0.0	25	0.5
6	1,704	1,493	87.6	34	2.0	177	10.4
7	6,537	6,185	94.6	121	1.9	231	3.5
8	6,674	6,559	98.3	99	1.5	16	0.2
9	3,881	2,520	64.9	165	4.2	1,196	30.8
10	1,680	1,077	64.1	440	26.2	163	9.7
11	2,887	1,366	47.3	412	14.3	1,109	38.4
12	4,518	3,213	71.1	663	14.7	642	14.2
13	5,346	4,351	81.4	322	6.0	673	12.6
Total	50,863	2,513	83.6%	3,129	6.1%	5,221	10.3%

Table 8
Seattle CBD
Free Parking Stalls by Type, 1992

Zone	Customer Stalls	Other Stalls	Residential Stalls	Total Free Stalls
1	24	103	0	127
2	325	147	30	502
3	73	22	0	95
4	93	56	0	149
5	0	0	0	0
6	27	7	0	34
7	18	0	103	121
8	20	79	0	99
9	37	106	22	165
10	82	64	294	440
11	119	104	189	412
12	524	112	27	663
13	217	105	0	322
Total	1,559	905	665	3,129

First Hill

First Hill is characterized by the concentration of major medical facilities including Swedish Hospital, Virginia Mason Hospital, Harborview Medical Center, and the Fred Hutchinson Cancer Research Center. It also has several large apartment buildings, and its eastern edge borders on Seattle University.

A total of 8,560 parking stalls was inventoried on First Hill. This is an increase of just 3.9 percent since 1989. None of the First Hill zones showed a substantial increase in the total number of parking stalls.

The average occupancy ranged from 74.7 percent in zone 16 to 81.2 percent in zone 14. Occupancy for the entire First Hill area was 78.4 percent, down from 80.6 percent in 1989 (Table 9). Much of the decrease is accounted for by the Freeway Park garage, with a 96 percent occupancy rate in 1989 and a rate of 65 percent in 1992. This difference may be due purely to survey error because the 1989 data was estimated and not an actual count.

The high overall occupancy rate on First Hill (78.4 percent) compared to the CBD (73.3 percent) may be due to employment density within the area and its proximity to the downtown core. That is, some downtown workers park on First Hill and walk to their downtown work sites to save money.

Table 9
First Hill
Total Stalls, Occupancy, and Percent Change
1992 and 1989

Zone	1992 Total Stalls	1989 Total Stalls (revised)	Percent Change 1989-92	1992 Occupancy Rate (%)	1989 Occupancy Rate (%)
14	2,738	2,657	3.0	81.2	87.9
15	3,360	3,232	4.0	79.0	77.6
16	2,462	2,350	4.8	74.7	76.4
Total	8,560	8,239	3.9%	78.4%	80.6%

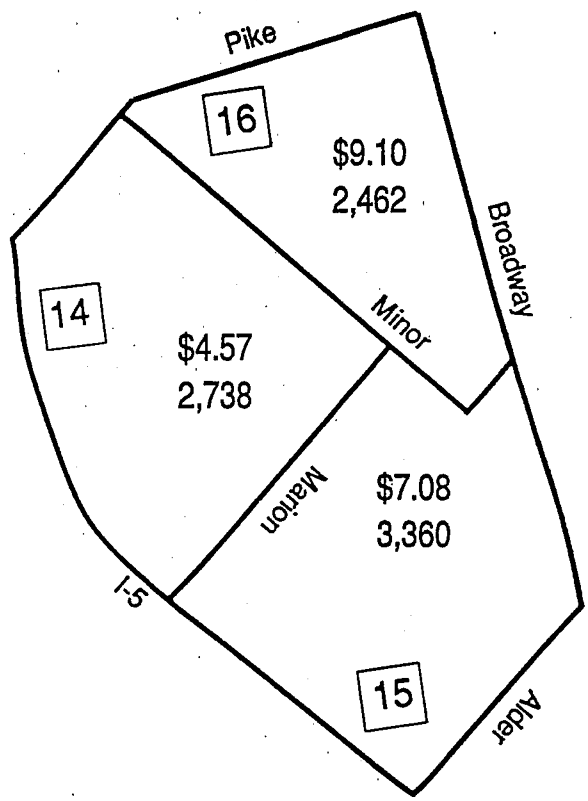
Average parking costs on First Hill are summarized in Figure 10 and listed in Table 10. The average cost for two-hour parking was $1.94, less than half the average for the Seattle CBD ($4.28). For daily parking, the average was $6.55, compared to the daily CBD average of $8.37, which was 28 percent higher. The monthly average, at $59.49, was about one-half the CBD average of $111.23.

Daily and monthly costs grew at a much faster rate than similar costs in the CBD. The daily averages in zones 15 and 16 were largely influenced by the many Swedish Hospital parking garages and lots, which charge $10 to park all day.

Although parking costs grew much more slowly in zone 14, average monthly costs, as in 1989, were considerably higher than elsewhere on First Hill: $76.41 compared to $52-$53 in zone 15 and 16.

Figure 10

1992 Summary - First Hill



Average Daily Cost

Total Stalls

Note: Dollars are in current year dollars.

N

The monthly average was influenced by several large parking lots, such as the Freeway Park garage, within a block of Interstate 5 on the edge of the downtown core. These lots and garages had monthly rates similar to those in the CBD.

Figure 11 illustrates changes in average parking costs on First Hill.

Table 10
First Hill
Average Cost, 1992 and 1989
(weighted by total stalls)

Zone	2 Hours			Daily			Monthly		
	1992	1989	% Change	1992	1989	% Change	1992	1989	% Change
14	$ 1.97	$ 1.93	2.1	$ 4.57	$ 4.86	-6.0	$ 76.41	$ 68.76	11.1
15	2.19	1.77	23.4	7.08	5.59	26.6	52.96	39.77	33.2
16	1.42	1.35	5.5	9.10	6.75	34.8	52.25	42.64	22.5
Total	$ 1.94	$ 1.73	12.2%	$ 6.55	$ 5.54	18.2%	$ 59.49	$ 46.86	27.0%

Figure 11

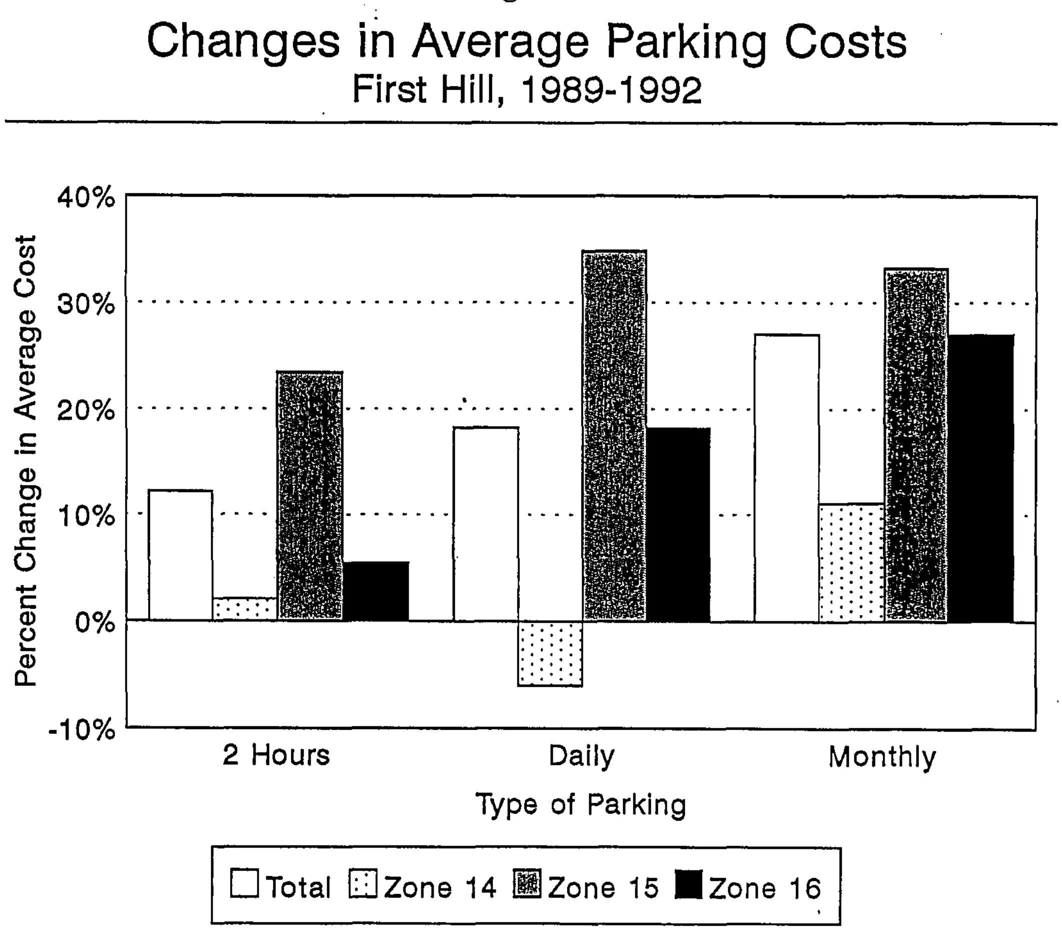


Table 11 sums pay and free parking by zone; of the 8,560 total stalls inventoried on First Hill, 11.1 percent were free. In zone 16, the First Hill zone furthest from the CBD, more than 22 percent of the parking stalls were free. Table 12 categorizes free parking into customer and other. "Other" free parking is generally employee parking.

Table 11
First Hill
Pay and Free Parking Stalls, 1992

Zone	Total Stalls	Pay Stalls	Percent Pay	Free Stalls	Percent Free	Cost Missing	Percent Missing
14	2,738	2,062	75.3	195	7.1	481	17.6
15	3,360	2,929	87.2	206	6.1	225	6.7
16	2,462	1,366	55.5	552	22.4	544	22.1
Total	8,560	6,357	74.3%	953	11.1%	1,250	14.6%

Table 12
First Hill
Free Parking, by Type, 1992

Zone	Customer Stalls	Other Stalls	Total Free Stalls
14	149	46	195
15	98	108	206
16	496	56	552
Total	743	210	953

Note: Residential data were not collected in zones 14-16.

Lower Queen Anne

The lower Queen Anne area extends from I-5 on the east to Elliott Bay on the west and from Denny Way on the south to Roy, Valley, and Mercer streets on the north. Seattle Center dominates the western portion, with several mid-rise office buildings in the southern end toward Denny. Zones 17 and 18 have a wide mix of residential, commercial, and industrial uses. Aurora Avenue (State Route 99) runs through zone 18.

In lower Queen Anne, 15,659 parking stalls were counted (Table 13). The total grew at about the same rate as First Hill (9.5 percent over three years) and slower than in the CBD. Occupancy for the entire lower Queen Anne area was 57.4 percent, close to the 1989 occupancy rate of 57.2. The low occupancy rates may be attributed to the large parking facilities for events at the Seattle Center. Since most major events occur on evenings and weekends, occupancy was lower on weekdays when the study was conducted.

Table 13
Lower Queen Anne
Total Stalls, Occupancy, and Percent Change, 1992 and 1989

Zone	1992 Total Stalls	1989 Total Stalls (revised)	Percent Change 1989-92	1992 Occupancy Rate (%)	1989 Occupancy Rate (%)
17	3,796	3,336	13.8	69.1	63.6
18	5,624	5,225	7.6	47.1	45.2
19	6,239	5,738	8.7	59.6	64.4
Total	15,659	14,299	9.5%	57.4%	57.2%

As shown in Table 14, 2-hour and daily parking costs have risen dramatically since 1989, up 28.6 and 34.8 percent, respectively, mostly because of sharp increases in zone 19. The average cost to park two hours in zone 19 has gone from $1.95 to $2.85, a 46 percent increase, much higher than First Hill and closer to the averages found in the Pioneer Square area.

Daily and monthly costs in zone 19 have also gone up sharply since 1989, by about a third. However, daily and monthly averages for all of lower Queen Anne remain the lowest in the survey area: $4.77 daily and $42.30 monthly. Zone 17, between Lake Union and Denny Way, which has the highest concentration of industrial and manufacturing land uses, has the lowest daily rate ($2.51) and the lowest monthly rate ($29.09) of any zone. Figure 12 summarizes the average daily cost and total stalls in lower Queen Anne.

Figure 12

1992 Summary - Lower Queen Anne

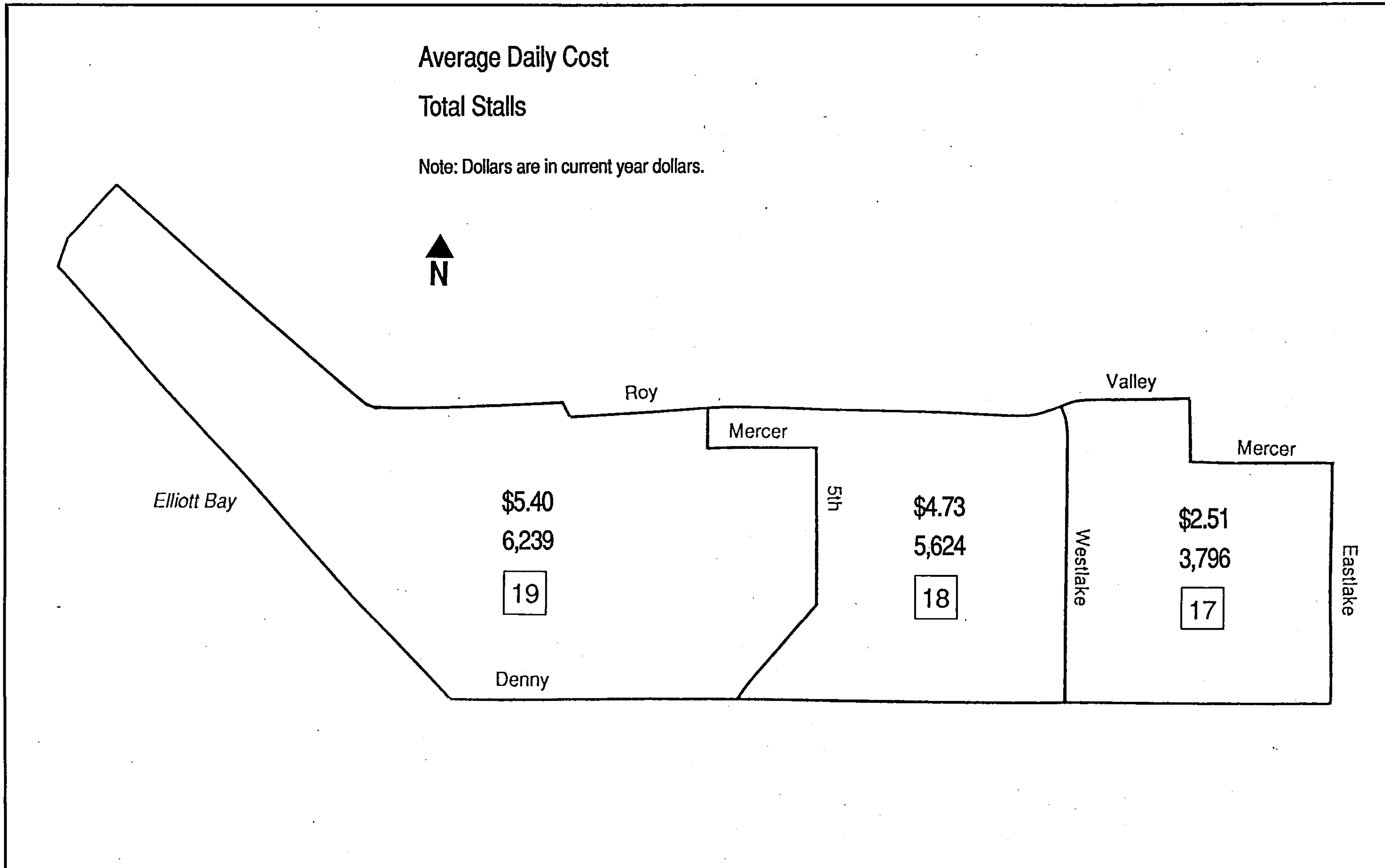


Table 14
Lower Queen Anne
Average Cost, 1992 and 1989
(weighted by total stalls)

Zone	2 Hours			Daily			Monthly		
	1992	1989	% Change	1992	1989	% Change	1992	1989	% Change
17	$ 1.62	$ 1.43	12.6	$ 2.51	$ 2.18	14.9	$ 29.09	$ 26.87	8.2
18	2.79	2.68	4.2	4.73	3.52	34.3	37.11	34.67	7.0
19	2.85	1.95	46.2	5.40	3.89	38.6	54.84	41.68	31.6
Total	$ 2.64	$ 2.06	28.6%	$ 4.77	$ 3.54	34.8%	$ 42.30	$ 35.79	18.2%

FIGURE 13

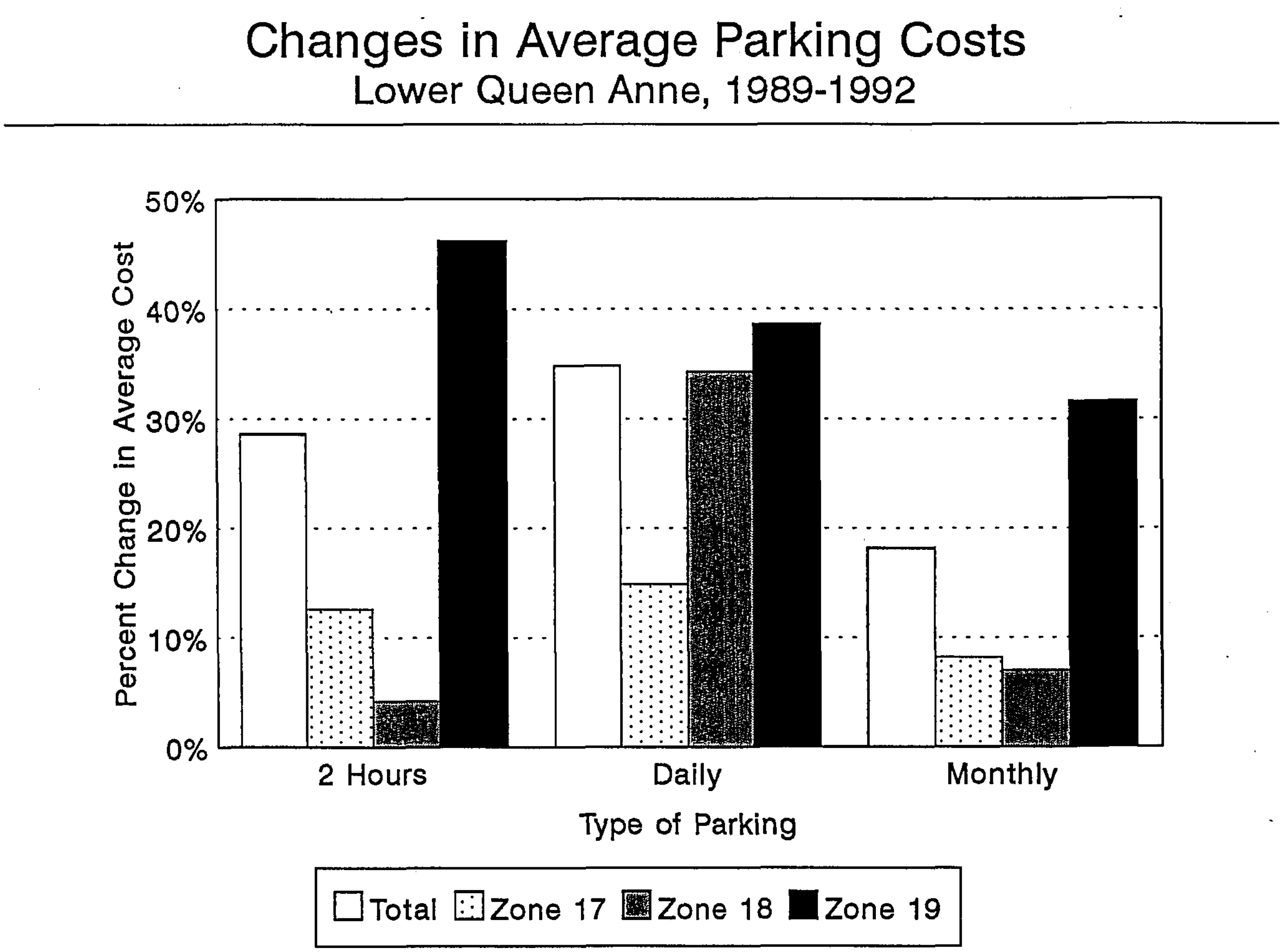


Table 15 sums pay and free parking by zone; of the 15,659 total stalls inventoried, 19.4 percent were free. Table 16 categorizes free parking into customer and other. "Other" free parking is generally employee parking.

The percentage of lots with missing cost information is high is these zones because there are numerous small lots for which the data collectors were unable to either determine ownership of a lot or to obtain definite information on any possible parking cost. This is particularily true in Zone 17 south of Lake Union, an area dominated by small businesses and light manufacturing. Our best guess is that in Zone 17, most stalls missing cost information are free. In Zone 19, we estimate that about half of those missing cost information are free.

Table 15
Lower Queen Anne
Pay and Free Parking Stalls, 1992

Zone	Total Stalls	Pay Stalls	Percent Pay	Free Stalls	Percent Free	Cost Missing	Percent Missing
17	3,796	1,416	37.3	858	22.6	1,522	40.1
18	5,624	3,035	54.0	1,186	21.1	1,403	24.9
19	6,239	3,139	50.3	988	15.8	2,112	32.2
Total	15,659	7,590	48.5%	3,032	19.4%	5,037	32.2%

Table 16
Lower Queen Anne
Free Parking, by Type, 1992

Zone	Customer Stalls	Other Stalls	Total Free Stalls
17	369	489	858
18	831	355	1,186
19	456	532	988
Total	1,656	1,376	3,032

Note: Residential data were not collected in zones 14-16.

III. BELLEVUE INVENTORY

A. STUDY AREA

The Bellevue study area is bounded on the west by 100th Ave NE; on the north by NE 12th; on the east by 116th Ave NE; and on the south by Main Street. The survey included all businesses on the south side of Main Street that have access to that street and are an integral part of the downtown business district.

The Bellevue CBD is divided into six map zones, with interior boundaries formed by Main Street, NE 8th Street and 108th Ave NE. Figure 14 shows the six map zones along with key findings discussed in Section C. Zone 71, on the south side of Main Street, stops at Interstate 405. The survey did not include the area south of Main between the freeway and 116th Ave NE, an area including City Hall and the Police Department.

B. METHODOLOGY

For the Bellevue inventory, parking spaces were counted according to individual lots, or parcels. The following specific information was collected:

1. The total number of parking spaces in a parcel, whether marked or unmarked, and differentiating where possible between customer, employee, and reserved parking;
2. The number of vehicles parked in a parcel between 9:30-11:30 AM and between 1:30-3:30 PM;
3. The cost of parking for 0-2 hours, per day, and per month;
4. The owner of the parking lot, where available; and
5. The business, service, or enterprise for which the parking is provided.

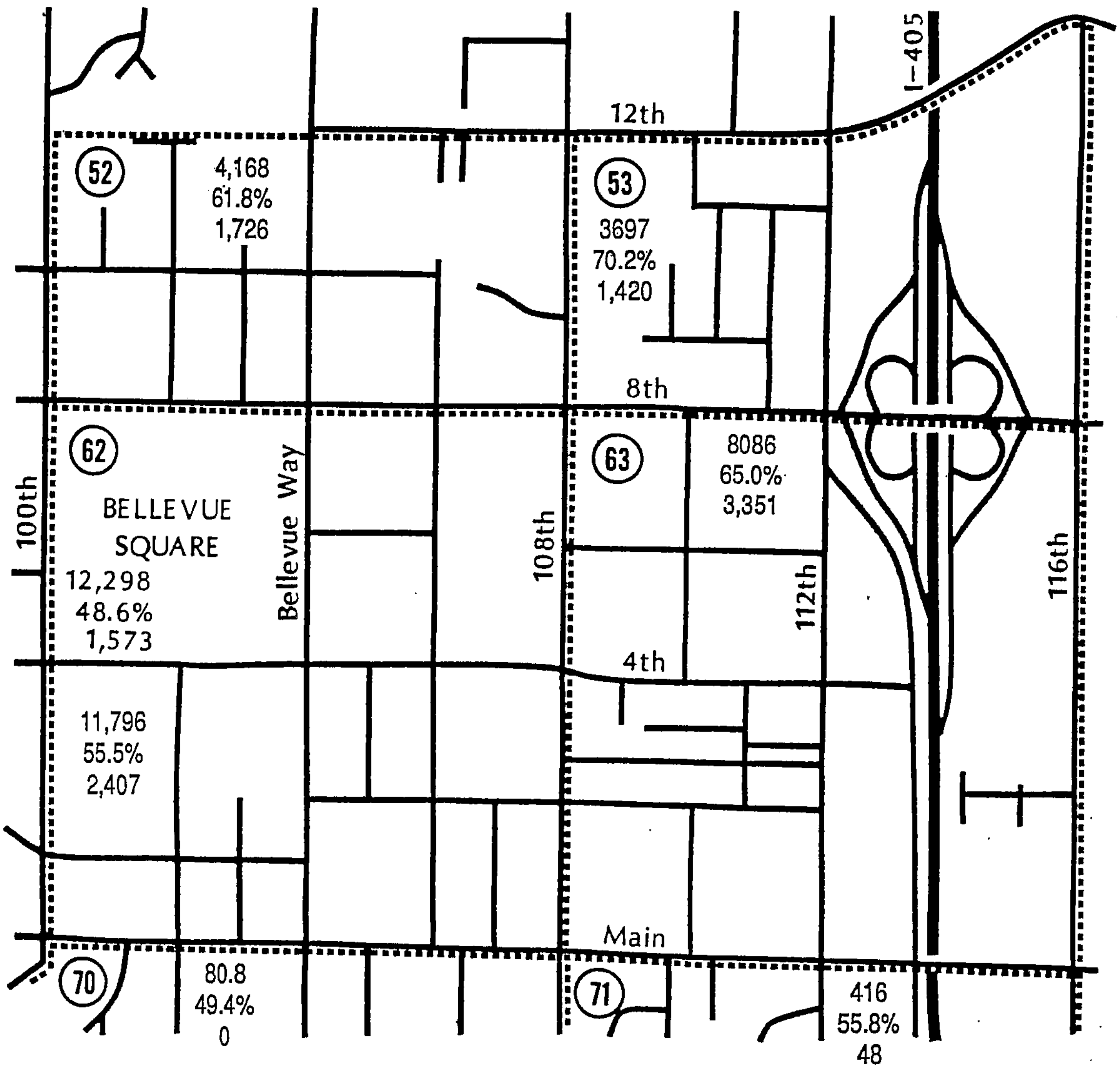
Where it was not possible to physically count the spaces and cars in a particular lot, information was obtained from any parking attendants or from the owner of the lot. This was only necessary for pay parking garages. Cost information for the following parking facilities was provided by Bellevue Transportation Management Association:

- Bellevue Corporate Plaza
- Bellevue Place
- Business Center Building
- Koll Center
- Main Street Building
- One Bellevue Center
- Pacific First Plaza
- Key Bank Building
- Plaza Center
- Quadrant Plaza
- Security Pacific Plaza
- SRO surface parking
- Skyline Tower
- United Olympic
- US West Communications

Figure 14

Bellevue CBD

1992 Summary



Total Stalls 28,971
%Occupancy 60.8%
# of Pay Stalls 8952

C. FINDINGS

Total Stalls

The total number of parking stalls counted was 28,971, slightly fewer than in 1989 (29,253 stalls). Table 17 sums the total number of parking stalls by zone and shows the percent change since 1989 and between 1987 and 1989. Changes in total parking stalls by zone are illustrated in Figure 15. There has been a lull in new construction in downtown Bellevue since 1989. In contrast, total parking capacity increased by 9 percent between 1987 and 1989, when the construction of Bellevue Place and Quadrant Plaza added hundreds of new parking spaces to the CBD.

The only major addition in 1992 was the Silver Cloud Inn (zone 52), which contributed 90 of the 157 new parking stalls since 1989. A total of 509 stalls were lost due to change of land use or new or planned construction. The following changes resulted in the loss of parking at the time of the inventory: The new Downtown Park (zone 62), which displaced more than 90 spaces; Ashwood Center (zone 53), which has been replaced by the newly opened Doll Museum and where a new library is under construction; and the Bellevue Convention Center (Meydenbauer Center, zone 63), currently under construction.

Table 17
Bellevue CBD
Total Stalls and Percent Change
1992 and 1989

Zone	1992	1989 (revised)	Percent Change 1989-92	1987 (revised)	Percent Change 1987-89
52	4,168	4,201	-0.8	2,489	68.8
53	3,697	3,843	-3.8	3,292	16.7
62	11,796	11,901	-0.9	12,261	-2.9
63	8,086	8,197	-1.4	7,761	5.6
70	808	706	14.4	657	7.5
71	416	405	2.7	406	-0.2
Total	28,971	29,253	-1.0%	26,866	8.9%

Occupancy

The occupancy rate in the CBD has risen from 55.5 percent in 1989 to 60.8 percent in 1992 (Figure 16 and Table 18). This increase is probably due to more economic activity in downtown Bellevue while the total supply of available parking has descreased slightly. Most of the higher occupancy rates occurred north of NE 8th. Occupancy rates south of Main Street dropped between 1989 and 1992.

Figure 15

Total Parking Stalls by Zone

Bellevue CBD, 1987-1992

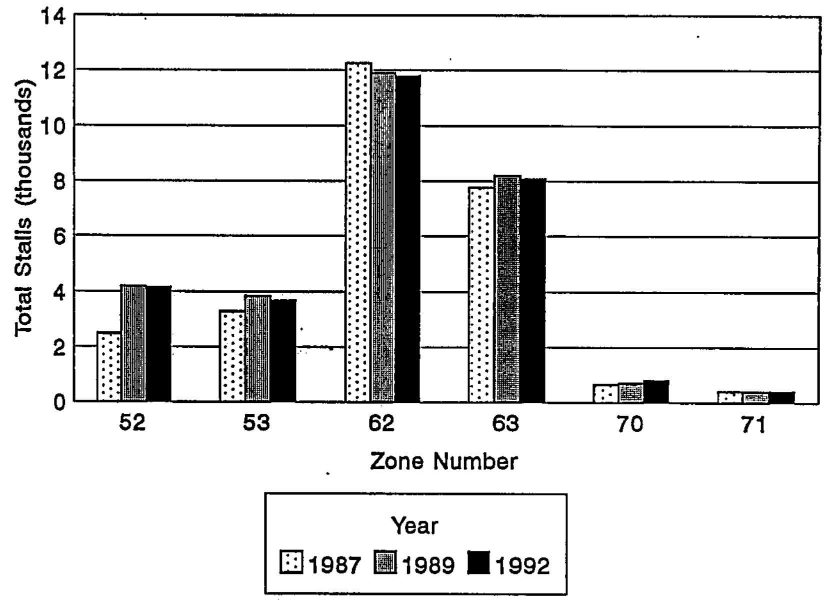
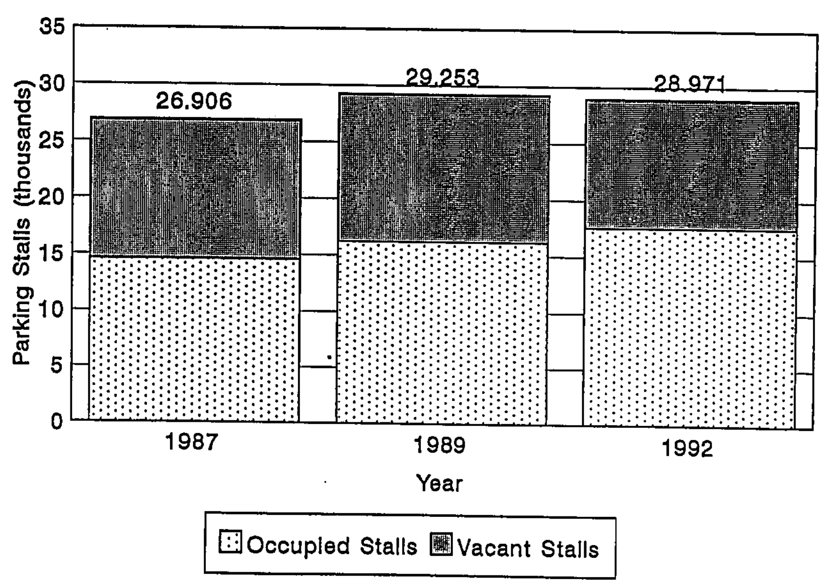


Figure 16

Occupancy and Total Capacity

Bellevue CBD, 1987-1992



Numbers shown are total stalls

Table 18
Bellevue CBD
Total Stalls and Occupancy Rate
1989-1992

Zone	1992		1989 (revised)		1987 (revised)	
	Occupancy Rate (%)	Total Stalls	Occupancy Rate (%)	Total Stalls	Occupancy Rate (%)	Total Stalls
52	61.8	4,168	41.3	4,201	54.5	2,489
53	70.2	3,697	64.0	3,843	66.7	3,292
62	55.5	11,796	55.4	11,901	48.6	12,261
63	65.0	8,086	58.6	8,197	58.9	7,801
70	49.4	808	57.9	706	48.8	657
71	55.8	416	58.9	405	47.9	406
Total	60.8%	28,971	55.5%	29,253	54.3%	26,906

Parking Cost

Average parking costs in Bellevue are listed in Table 19. Because of the small number of pay lots in the CBD, comparisons of average costs over time are only meaningful at the CBD level and not at the level of the individual parking zones. Even at the CBD level, large garages have a significant effect on the downtown averages.

Changes in average parking costs are illustrated in Figure 17. Daily and 2 hour parking costs have changed little since 1987. The average cost for two hours has remained between \$2.11 and \$2.18, while the daily average rose significantly between 1989 and 1992, increasing from \$6.01 to \$6.58. Many lots and garages charge the same two hour and daily rates as in 1987.

Table 19
Bellevue CBD
Average Costs, 1987-1992
(weighted by total stalls)

Zone	2 Hours	Daily	Monthly
1992	\$ 2.14	\$ 6.58	\$ 63.06
1989	2.18	6.01	54.05
1987	2.11	6.07	52.05

Monthly costs, however, have grown significantly since 1987 throughout the CBD. The monthly average jumped 15.4 percent between 1989 and 1992, from $54.05 to $63.06. The 3.8 percent increase in monthly rates between 1987 and 1989 is probably understated. The 1987 survey did not include many monthly employee rates that can be significantly lower than the non-tenant or non-employee rates at the public garages. Individual garages raised monthly rates from 8 to 17 percent between 1987 and 1989.

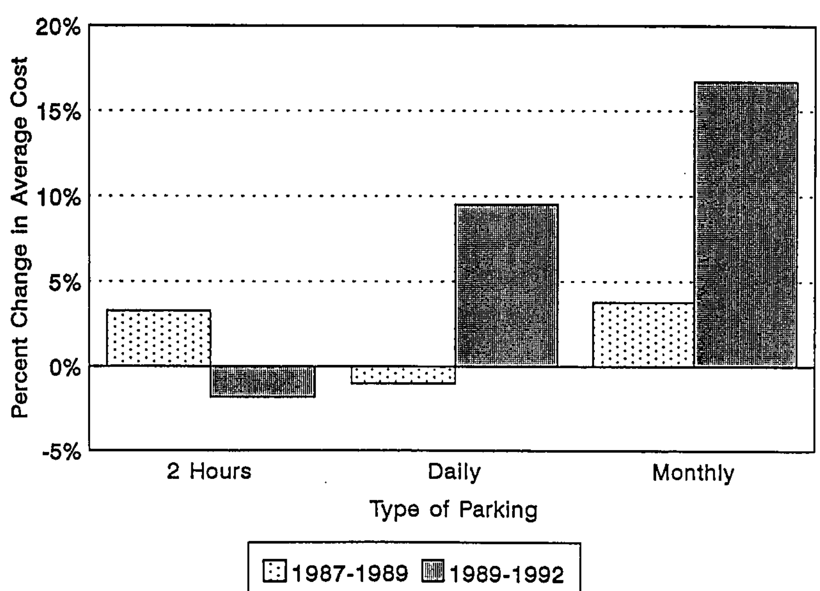
Table 20 shows the percent of pay and free stalls, and the average occupancy for each. Because there are so few pay lots in individual zones, CBD totals are used for the following two tables. Pay stalls have gone from less than 20 percent of all CBD parking in 1987 to more than 30 percent. Virtually all new parking added since 1987 have been pay stalls. Decreases in parking availability have come entirely from the inventory of free parking.

Table 20
Bellevue CBD
Pay and Free Parking Stalls, 1987-1992

Year	Total Stalls	Pay Stalls			Free Stalls		
		Number of Stalls	Percent of Total	Occupancy Rate (%)	Number of Stalls	Percent of Total	Occupancy Rate (%)
1992	28,971	8,952	30.9	75.2	20,019	69.1	54.3
1989	29,253	9,012	30.8	60.0	20,241	69.2	53.5
1987	26,906	5,264	19.6	68.8	21,642	80.4	50.7

Figure 17

Changes in Average Parking Costs
Bellevue CBD, 1987-1992



APPENDIX

METHODOLOGY FOR THE 1992 PARKING INVENTORY

Scope of Study

Data for this study was collected between April 6 and May 15, 1992. Traditionally, travel and transportation data related to commuting behavior are collected in the spring or fall, when travel patterns are more stable. Both the 1989 and 1987 surveys were also conducted in April and May.

Parking areas in the study included:

- off-street parking, both public and private;
- free and pay parking;
- carpool and vanpool lots;
- motor pool parking, both private and government;
- hotels and motels;
- short-term customer parking such as convenience stores and restaurants; and
- residential parking in the Seattle CBD only.

Parking areas excluded from the study were:

- on-street parking;
- new and used auto and truck sales lots;
- parking occupied by police, fire, and emergency vehicles;
- car rental lots;
- METRO bus and van storage lots;
- parking associated with auto and truck repair shops; and
- residential parking in the First Hill, lower Queen Anne, and Bellevue CBD areas.

Data Collection

The data collection team surveyed the Seattle zones on foot. Bellevue zones were surveyed primarily by vehicle. Surveys were conducted Monday through Friday between the hours of 10:00 a.m. and 12:00 noon, and from 1:30 p.m. to 3:30 p.m. Each lot was surveyed during one morning and one afternoon period, usually the same day. Each parking lot was coded to a 1990 census tract and block number. The information collected included the lot address, owner/tenant, total number of stalls, morning occupancy, afternoon occupancy, type of parking, cost, and comments (Figure 18, 1992 Data Collection Form). In Bellevue, the parcel number was also recorded. The Kingdome, the Seattle Center, and the Washington State Convention and Trade Center were surveyed when an "average event" for a weekday was scheduled.

Figure 18

1992 Data Collection Form

1992 PARKING INVENTORY: SEATTLE CBD
DATA COLLECTION FORM NAME DATE #### Z O N E ____

TRACBLK	LOCATION	COST 0-2	COST DAY	COST MNTH	89 MAX OCC	92 MAX OCC	AM OCC	PM OCC	TYPE R/C/O	COMMENT
ID= OWNER=	#									
ID= OWNER=	#									
ID= OWNER=	#									
ID= OWNER=	#									
ID= OWNER=	#									
ID= OWNER=	#									
ID= OWNER=	#									
ID= OWNER=	#									
ID= OWNER=	#									

Parking Cost

Three cost figures were sought at each lot: the two-hour cost, the daily cost, and the monthly cost. The PSRC collected costs only for the normal work week: Monday through Friday, 9:00 a.m. to 5:00 p.m. Many lots in outlying areas had only monthly rates, which were not posted, and a follow-up phone call was required. When more than one monthly rate was available, an average rate, weighted by number of stalls, was recorded.

Special discounted rates were not included in any of the studies. These include employer subsidies, group discounts, special coupons, and "early bird" rates. Special rates for carpools and vanpools were not used unless the lots were used exclusively by carpools and/or vanpools.

The 1992 study differentiated between four types of parking in the Seattle CBD:

- pay parking;
- free residential parking;
- free short-term customer parking, such as convenience stores and restaurants; and
- other free parking, primarily employee parking.

In the First Hill and lower Queen Anne areas, all residential parking, both free and pay, was excluded from the study. In these areas, three types of parking were differentiated:

- pay parking;
- free short-term customer parking; and
- other free parking, primarily employee parking.

In the Bellevue CBD, parking was recorded as either pay or customer.

"Free" parking was determined on the basis of cost to the user. The exception was free employee parking subsidized by an employer. In this case, an attempt was made to find out the price paid by the employer to the parking facility owner. Free parking included obvious free-of-charge parking facilities, as well as parking stalls included with the price of a condominium (zones 1-13 only), parking included at no extra cost with an apartment rental (zones 1-13 only), and parking included in a commercial lease and offered at no cost to employees or customers.

All cost figures per lot were weighted by the number of stalls. In lots with mixed hourly, daily, and monthly leasing, separate weighting of costs was usually not possible. Average cost was computed only for pay parking. All free parking was excluded from the calculation. In addition, for lots with only monthly parking rates, no daily or hourly cost was computed. All parking costs are reported in nominal dollars and have not been adjusted for inflation. These factors affect the average costs reported.

For the Seattle inventory only, fewer than five lots in a zone with parking costs were considered insufficient to compute a meaningful average and that number was not included in the report, but was used to compute area-wide averages.

Parking Database

Each parking lot was entered as a separate record into a SAS[1] dataset. Some lots were divided into two separate records if the parking was clearly segregated for two different price structures. Each record was assigned a unique identifier, called PARKID. Figure 19 shows the file structure of the SAS dataset.

The parking database contains:

- the 1992 parking inventory data;
- the 1989 parking inventory data; and
- location and ownership of parking lot.

The 1992 parking inventory data is consistent with the 1989 parking inventory data in file structure, variables, and data collection method. During the 1992 study, errors and omissions were found in the 1989 data and the database was revised.

Revisions made to the 1989 parking inventory data are described below:

Seattle

- Zone 9: deleted 64 stall lot that was coded to wrong zone in 1989.
- Zone 10: added 64 stall lot that was coded to wrong zone in 1989.
- Zone 16: added 180 and 220 stall garages missed in 1989 inventory to total stall count.

Bellevue

- Zone 62: deleted 56 spaces that are not considered parking spaces.
- Zone 63: added 10 carpool stalls that were mentioned only in comments in 1989; deleted 144 visitor parking spaces that were counted twice.
- Zone 70: Deleted 83 parking spaces that were counted twice.

Throughout the report, some of the change in the data from 1989 to 1992 can be attributed to improvements in the quality of the data due to improved resources available for data collection, overall improvements in data collection procedures, and increased cooperation of parking facility owners and managers.

[1] SAS is a registered trademark of SAS Institute, Inc., Cary, NC.

Figure 19

1992 Parking Database - File Structure

CONTENTS OF SAS MEMBER PARK92.SEATTLE6

CREATED BY CMS USERID OND ON CPUID FF-9375-001810 AT 8:12 TUESDAY, OCTOBER 6, 1992 BY SAS RELEASE 5.16
FILE= PARK92 SEATTLE6 BLKSIZE=8192 LRECL=356 GENERATED BY PROC SORT
NUMBER OF OBSERVATIONS: 1283 NUMBER OF VARIABLES: 31
MEMTYPE: DATA

----ALPHABETIC LIST OF VARIABLES AND ATTRIBUTES-----

#	VARIABLE	TYPE	LENGTH	POSITION	FORMAT	INFORMAT	LABEL
20	AOCCUPCY	NUM	4	164	4.		AM*Occupancy
21	AOCC89	NUM	4	168	4.		AM*Occupancy*1989
17	CDLY89	NUM	8	140	DOLLAR7.2		Cost*Daily*1989
19	CMTH89	NUM	8	156	DOLLAR8.2		Cost*Month*1989
10	CODE	CHAR	1	106			Record*Status
28	COMMENT1	CHAR	30	236			First comment line
29	COMMENT2	CHAR	30	266			Second comment line
16	COSTDLY	NUM	8	132	DOLLAR7.2		Cost*Daily
18	COSTMTH	NUM	8	148	DOLLAR8.2		Cost *Month
14	COST02	NUM	8	116	DOLLAR7.2		COST *0-2 HRS
15	COST89	NUM	8	124	DOLLAR7.2		Cost*0-2 hrs*1989
26	EBCOST89	NUM	8	208	DOLLAR8.2		Cost of Early Bird Special
27	EBTIME89	CHAR	20	216			Early Bird Special times
24	ERLYCOST	NUM	8	180	DOLLAR7.2		Cost*Early Bird*Special
25	ERLYTIME	CHAR	20	188			Early Bird*Special*Time
5	LOCATION	CHAR	30	18	27.		Location
4	LOT	NUM	2	16			Parking lot number within block
12	MAXCAPCT	NUM	4	108	4.		Total*Stalls
13	MAX89	NUM	4	112	4.		Total*Stalls*1989
6	OWNER	CHAR	30	48	23.		Owner
1	PARKID	CHAR	4	4			Survey ID
7	PHONE	CHAR	20	78			Phone # for lot owner
22	POCCUPCY	NUM	4	172	4.		PM*Occupancy
23	POCC89	NUM	4	176	4.		PM*Occupancy*1989
3	TRACBLK	CHAR	6	10			Track*Block
11	TYPE	CHAR	1	107			Type of*Parking
8	UPDATE	CHAR	1	98			Update code (U/N/D)
30	XCOMMNT1	CHAR	30	296			First comment line from 1989
31	XCOMMNT2	CHAR	30	326			Second comment line from 1989
9	XDATE	NUM	7	99	DATE8.		Date of last update
2	ZONE	NUM	2	8	2.		Parking zone