

TECHNICAL REPORT

**CAPITOL HILL NEIGHBORHOOD  
ON-STREET PARKING STUDY**

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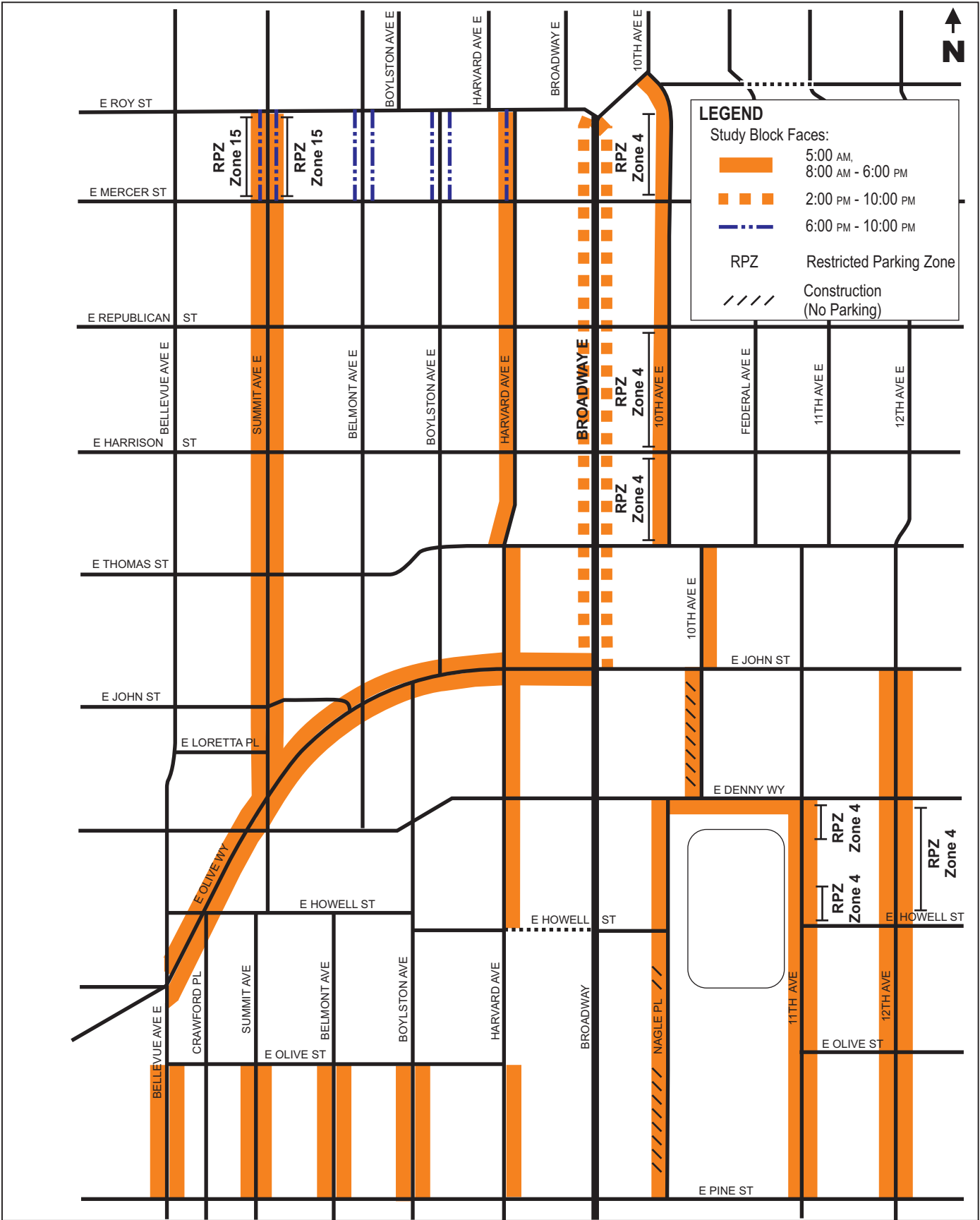
## 1. Introduction

This technical report presents the findings of the parking survey conducted in March 2009 in the Capitol Hill neighborhood. The study evaluates parking characteristics on a typical day and typical evening. The data and analysis will help the Seattle Department of Transportation (SDOT) determine if changes in parking management techniques are needed. The study determined:

- utilization and parking duration of unregulated spaces,
- utilization and parking duration of parking spaces with signed time-limits,
- parking utilization by time of day, and
- parking characteristics for a typical weekday, daytime and evening.

The study area inventory of parking spaces was provided by the Seattle Department of Transportation (SDOT) on maps prepared by the Geographic Information System (GIS) staff. Inconsistencies found in the file were reported to SDOT.

The study area and the block faces included in the data collection for Capitol Hill are shown on Figure 1. The study area was roughly bounded by E Pine Street to the south, E Roy Street to the north, Melrose Avenue E to the west, and 12<sup>th</sup> Avenue to the east. Also shown on Figure 1 are the time periods over which the survey occurred for the study block faces. There were 78 block faces included in the study not including the two block faces that were closed to parking due to construction. Several block faces on Broadway E were surveyed in the afternoon and evening to evaluate how parking demand changes after the pay stations there are no longer in effect. And finally, seven block faces were surveyed at the north end of the study area during the evening only to assess how restaurant and theater activities in that area affect parking, and if RPZ restrictions on one of those blocks shows a lower occupancy.



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Figure 1  
 Study Area Block Faces



## 2. Study Methodology

### Data Collection

Parking data were collected on Tuesday, March 17, Wednesday, March 18, and Tuesday, March 24, 2009. Parking activity was recorded at 5:00 A.M. to capture residential related parking and then in one-hour intervals from 8:00 A.M. to 6:00 P.M. Data collection on Broadway E occurred from 2:00 P.M. to 10:00 P.M. in one-half hour intervals. The night time data collection, at the north end of the study area, occurred in one-hour intervals from 6:00 P.M. to 10:00 P.M.

Parking space utilization data were collected by Operations Management Group (OMG), Inc. using their hand-held electronic data collection tool. A sequence number was assigned to every parking space within each map segment to ensure consistency in the data collection. The inventory and sequence numbers included all parking spaces by type, and other curb space uses, such as bus zones, hydrants and driveways, where parking is not allowed. In addition to recording cars parked in legally-designated spaces, the surveyors recorded “squeeze-in vehicles” on each street segment, which represent motorists who created their own space between other vehicles, at the end of the block, or in no parking zones. The squeeze-in vehicles were included since they reflect the true demand for parking in the area.

Parking data were evaluated independently for each type of parking restriction and unrestricted parking. Three factors were evaluated:

**Utilization** – The percentage of the legal parking spaces that were occupied by a vehicle. Utilization rates above 100% can occur when vehicles parking in illegal spaces or squeeze into marginal areas such as those near intersections, fire hydrants or driveways. The parking utilization for 3-minute, 15-minute, and 30 minute load/unload zones could reflect a lower than actual rate because the survey occurred once per hour. Some cars may have parked and left between each survey.

**Compliance** – The percentage of vehicles that parked within the established time limits. For example, the cars that parked for two hours or less in a signed two-hour zone would be compliant. Compliance rates were only measured for the periods when the parking limits are in effect, which is typically from 8:00 A.M. to 6:00 P.M.

**Parking duration** – The length of time that a vehicle occupied a space. This factor was only evaluated for unrestricted spaces.

### Parking Capacity

The practical capacity of on-street parking is typically defined at 85% utilization. At this level of utilization, the next arriving customer or visitor is able to quickly find a reasonably convenient parking space. When utilization exceeds the practical capacity, drivers could experience delays and frustration while searching for a parking space, as well as contribute to area traffic congestion while circling the block looking for parking. Practical capacity is used to determine the adequacy of a parking system. SDOT considers utilization rates above about 75% to be the threshold where additional parking management techniques should be explored through a comprehensive study of parking management measures. In this way, measures can be put in place before parking reaches capacity. SDOT also uses parking management measures to support the goal of reducing automobile trips, particularly for commuting. Short-term parking limits that favor retail and restaurant use are preferred to long-term parking that could be used by commuters.

### 3. Parking Space Inventory

The parking space inventory was updated during the on-street data collection effort. In total, there were 828 legal parking spaces in the study area. The allocation of these spaces by type and location is shown in Table 1. The time-limited spaces are restricted by signage. Most pay stations are on Broadway E. Three pay station parking spaces are on E Olive Way.

Table 1. Day Time Parking Inventory

Street	30-Minute	One-Hour	Two-Hour	Three-Hour	Four-Hour	Un-restricted	Other	Total
<b>North-South Streets</b>								
Bellevue Ave E	8	3				5	1 D <sup>1</sup>	17
Summit Ave E	16	4	7		13	126	3 D	169
Belmont Ave E	4					23		27
Boylston Ave	3					8		11
Harvard Avenue E	14	3	20			67	1 D	105
Broadway E	11 14 Pay		72 Pay			3	2-15Min 2 Police	104
Nagle Place	3					12		15
10 <sup>th</sup> Ave East	3		29			28	3 D	65
11 <sup>th</sup> Ave E	7		20	84		14		125
12 <sup>th</sup> Ave E	20	13	23			52		108
<b>East-West Streets</b>								
E Olive Way	7	22	8 3 Pay			25		65
E Denny Way				17				17
<b>Study Area Total</b>	<b>112</b>	<b>45</b>	<b>182</b>	<b>101</b>	<b>13</b>	<b>363</b>	<b>12</b>	<b>828</b>
Percent of Total	14%	5%	22%	12%	2%	44%	1%	100%

Source: SDOT GIS inventory when restrictions are in effect, typically 8:00 A.M. to 6:00 P.M. on weekdays and Saturday.

1. Signed Disabled Parking Only.

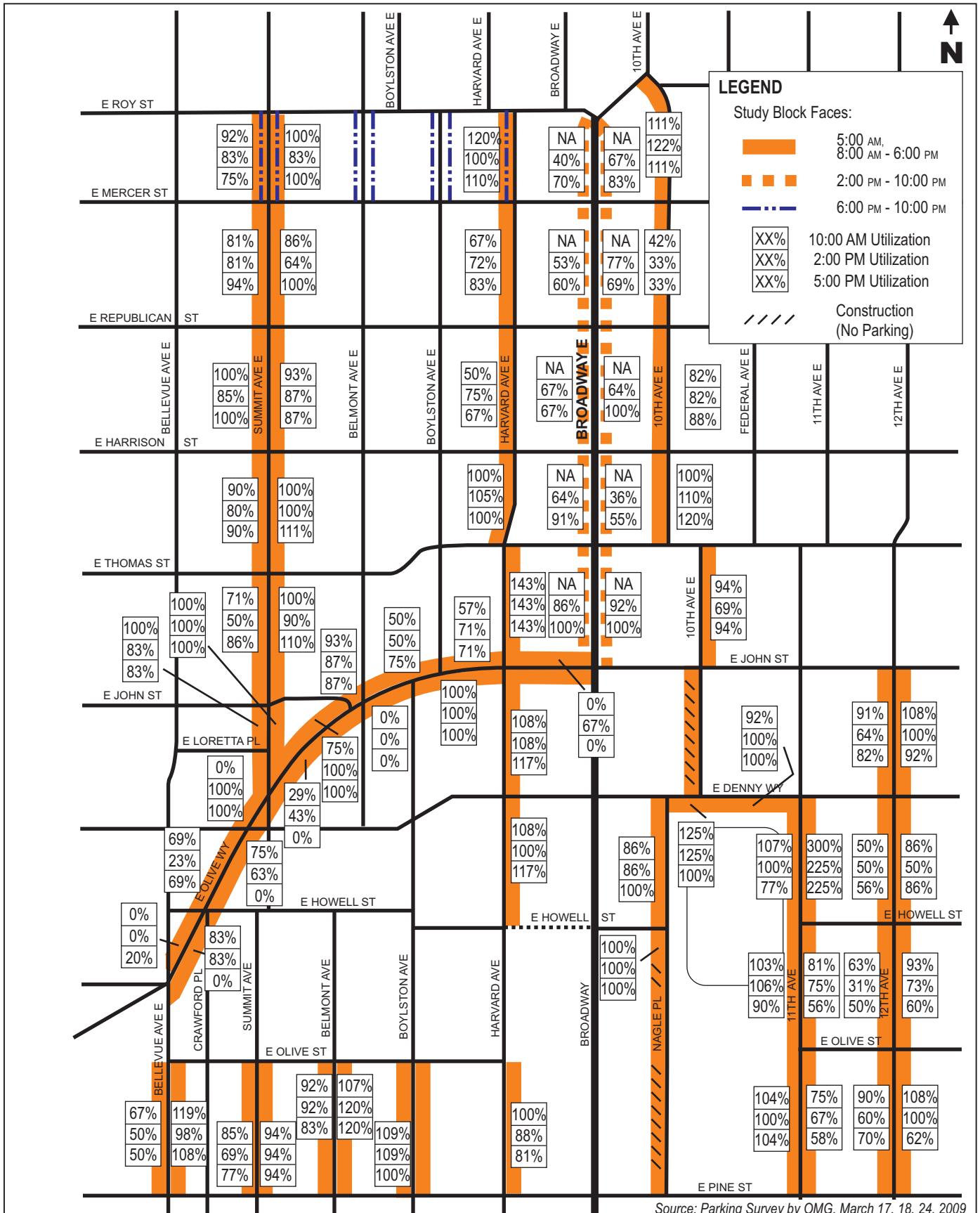
The parking space inventory reflects the midday parking regulations. For the most part, changes in restriction type occur at 6:00 P.M. when restricted spaces become unrestricted spaces. There is little change in restriction type during the day and so the midday was used in the daytime analysis. It is noted that SDOT has recently installed new 3-minute time-restricted spaces that are effect 24 hours per day. These new signs and restrictions are not yet reflected in the City's inventory.

#### 4. Parking Utilization – All Spaces

The average utilization for each block face, of all parking spaces, including all restriction types was calculated at 5:00 A.M., 10:00 A.M., 2:00 P.M., and 5:00 P.M. Figure 2 presents the average utilization by block face at 5:00 A.M., which primarily reflects overnight residential parking activity. Time-limited parking restrictions are not in effect at 5:00 A.M. The average utilization north of E Olive Way ranged from 83% to 143% by block face. (There was one small exception near E Olive Way of 25%.) Along E Olive Way, the utilization varied widely, ranging from 14% to 100%. South of E Olive Way and west of Broadway E, there were two block faces at 50% and 56% utilization, and another eight were 85% or higher utilization. South of E Olive Way and east of Broadway E, there were lower utilization rates along 11th Avenue near Cal Anderson Park, with one block face at 0%. These lower rates may be related to the fact that park users occupied the spaces the evening before, and they were not used by late-arriving residents. On 12th Avenue E, the utilization ranged from 44% to 100%. On E Denny Way, the utilization rate was 96%.

Figure 3 presents average daytime utilization by block face at 10:00 A.M., 2:00 P.M. and 5:00 P.M. when parking restrictions are in effect area wide. In most areas, parking utilization was highest in the late afternoon when the parking supports many activities including commercial uses, and residents returning home from work.





Source: Parking Survey by OMG, March 17, 18, 24, 2009

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Figure 3

Utilization at  
 10:00 AM, 2:00 PM and 5:00 PM



## 5. Parking Utilization and Compliance of Time-Limited Spaces

### 30-Minute Parking Restrictions

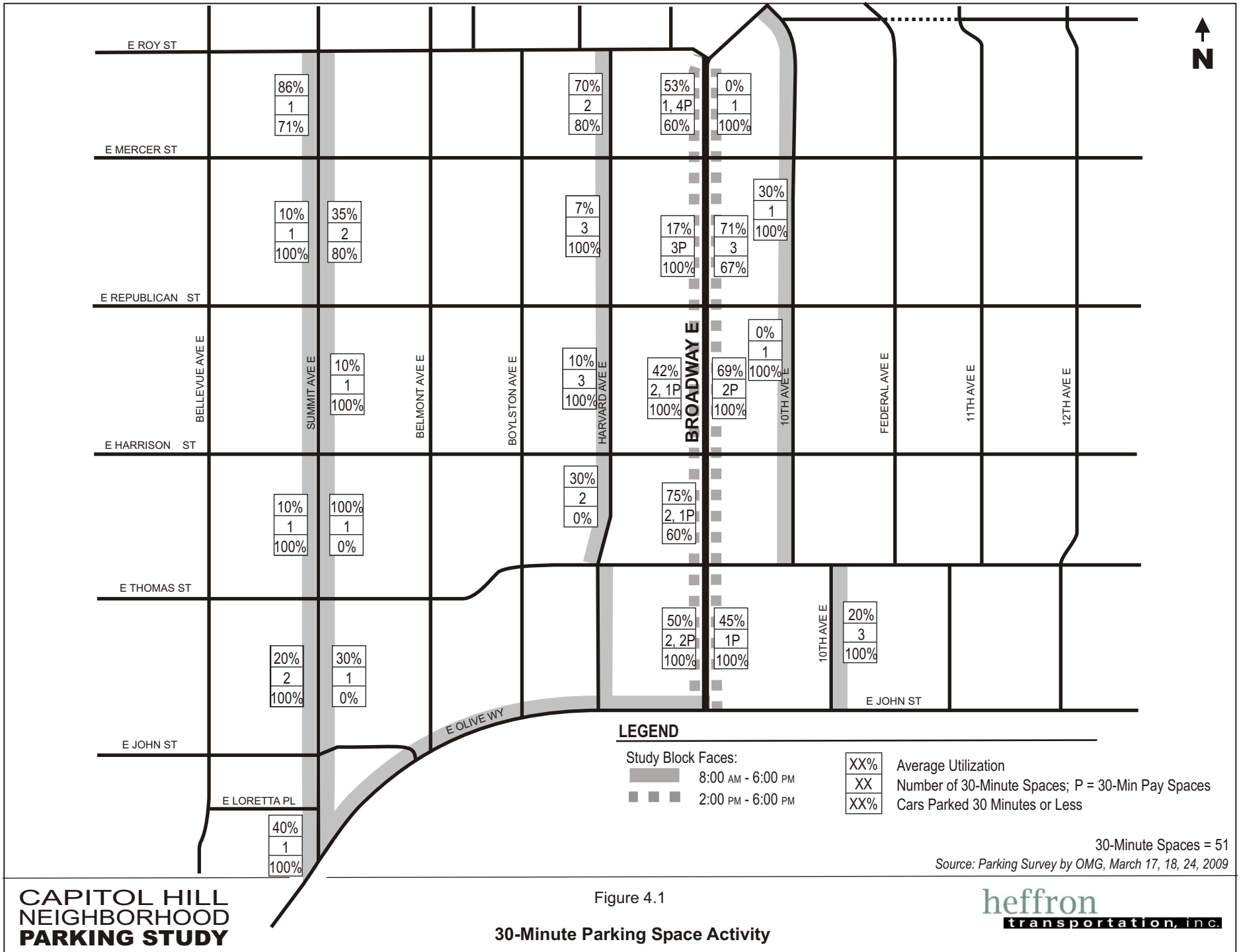
Parking activity for 30-minute load zones is presented in Figure 4.1 north of E Olive Way and in Figure 4.2 south of E Olive Way. For each block face the data shown are: average utilization, the number of 30-minute spaces, and the compliance rate. The survey occurred at a one-hour frequency (for study area block faces other than Broadway E). There is likely turnover occurring between each survey – a car that came and went that was not counted – resulting in a higher utilization on the street than displayed in the data. In addition, a car parked for over 30 minutes, but less than one hour was assumed compliant for the calculated compliance rate.,

Within the study area, there are 102 parking spaces that are signed with 30-minute time limits. Some 30-minute spaces exist on almost all block faces. Block faces with more than three 30-minute spaces on one block face include:

- west side of Broadway E, E Mercer Street to E Roy Street;
- west side of Broadway E, E Olive Way to E Thomas Street;
- east side of Bellevue Avenue E, E Pine Street to E Olive Street;
- west side of Summit Avenue E, E Pine Street to E Olive Street;
- east side of 11th Avenue, E Pine Street to E Olive Street; and
- both sides of 12th Avenue, E Olive Street to E Howell Street.

Overall, the compliance rates were relatively high throughout the study area with many block faces at 100%. There were three block faces with 0% compliance.

On Broadway E, the survey was conducted from 2:00 P.M. to 10:00 P.M. at 30-minute intervals. The 30-minute signed parking restrictions end at 6:00 P.M. The average utilization before 6:00 P.M. varied by block face as shown in Figure 4.1. After 6:00 P.M. the utilization was at least 92% for each block face, and five of the nine block faces were 100% to 169% utilized with squeeze-in parking. On Broadway E there are both 30-minute signed time-limited spaces and 30-minute paid spaces on a single block face. The average compliance rate between 2:00 P.M. to 6:00 P.M. was 96%. After 6:00 P.M., the signed time limits are no longer in effect. Even so, the 30-minute spaces have a higher turnover after 6:00 P.M. than other types of spaces.





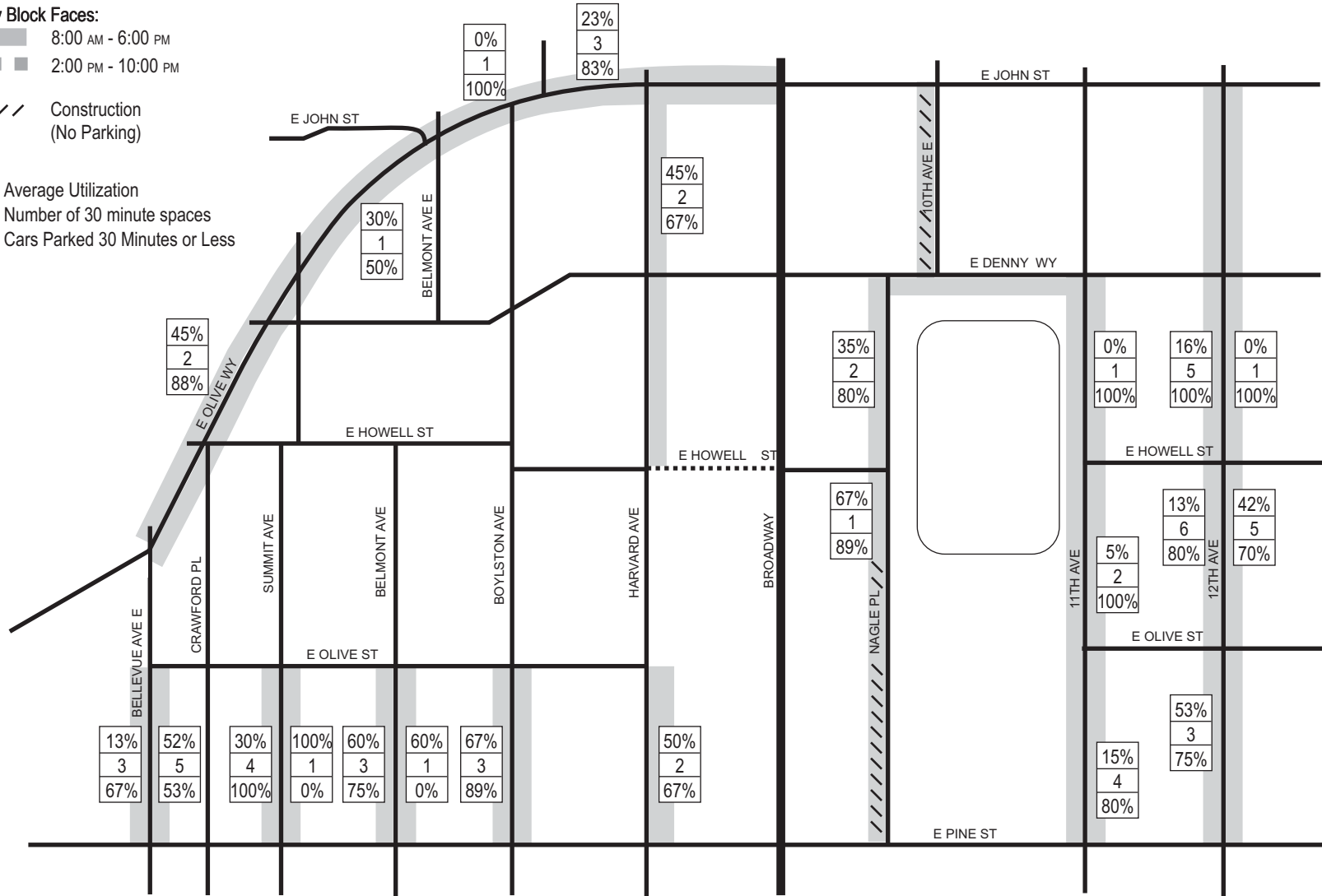
**LEGEND**

**Study Block Faces:**

- 8:00 AM - 6:00 PM
- 2:00 PM - 10:00 PM

//// Construction  
(No Parking)

- XX% Average Utilization
- XX Number of 30 minute spaces
- XX% Cars Parked 30 Minutes or Less



30-Minute Spaces = 61

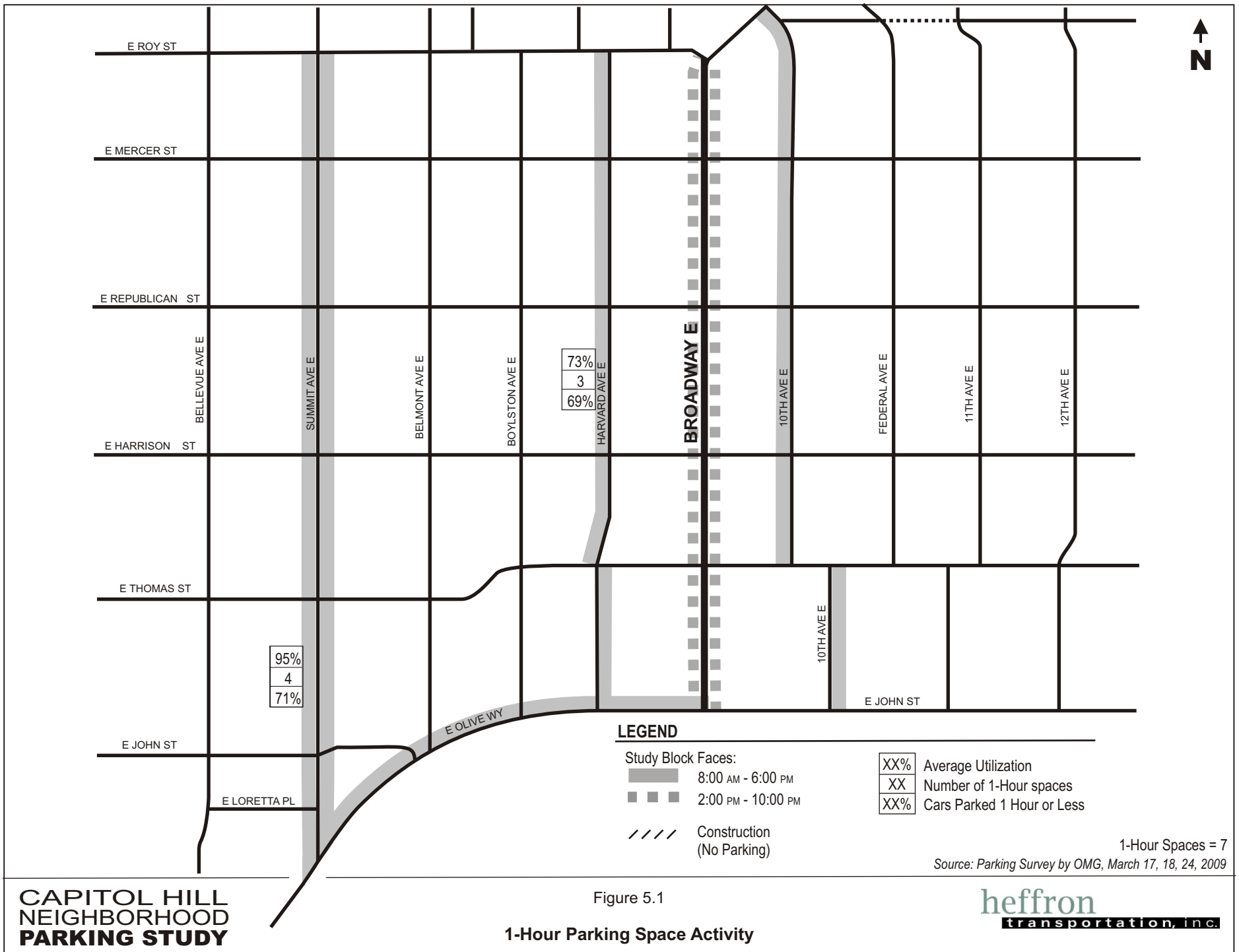
Source: Parking Survey by OMG, March 17, 18, 24, 2009

## One-Hour Parking Restrictions

Parking activity for one-hour spaces is presented in Figure 5.1 north of E Olive Way and in Figure 5.2 south of E Olive Way. For each block face the data shown are: average utilization, the number of one-hour spaces, and the compliance rate for cars parked for one hour or less. There were only seven block faces with one-hour signed time-limited spaces.

There are 45 parking spaces signed with one-hour time-limits on ten study area block faces. Most one-hour parking spaces are on E Olive Way and 12th Avenue. There were five block faces with over 70% utilization and two block faces with less than 30% utilization. There were a lot of squeeze-in parked cars on the east side of Bellevue Avenue E, between E Pine Street and E Olive Street, which resulted in a utilization of 133%.

The compliance rates were relatively high for the one-hour time limits. The data determined that 93% of the cars in the one-hour spaces parked for less than two hours, which shows that the signed limits are creating turnover.





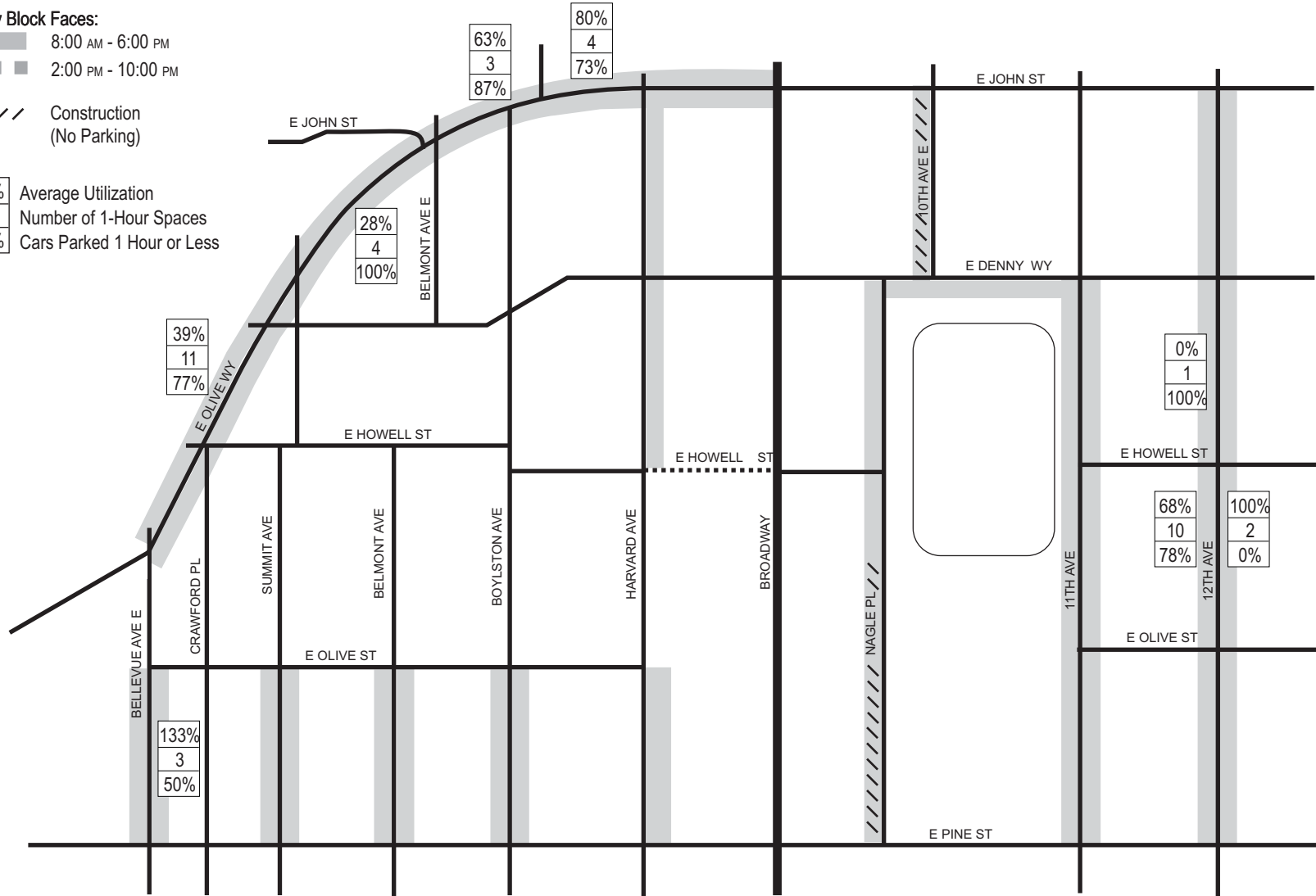
**LEGEND**

**Study Block Faces:**

- 8:00 AM - 6:00 PM
- 2:00 PM - 10:00 PM

//// Construction  
(No Parking)

XX% Average Utilization  
 XX Number of 1-Hour Spaces  
 XX% Cars Parked 1 Hour or Less



1-Hour Spaces =38

Source: Parking Survey by OMG, March 17, 18, 24, 2009

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Figure 5.2  
 1-Hour Parking Space Activity



## Two-Hour Parking Restrictions – Pay Stations

Parking activity for two-hour spaces is presented in Figure 6.1 north of E Olive Way and in Figure 6.2 south of E Olive Way. For each block face the data shown are: the average utilization of two-hour spaces, the number of two-hour spaces followed by a “P” if the spaces were regulated by pay-stations, and compliance rates for cars parked for two hours or less.

The study area included 75 pay station spaces with two-hour parking limits: 72 on Broadway E and three on E Olive Way between Harvard Ave E and Broadway E. The average utilization of two-hour pay-station parking spaces on Broadway E was 68% from 2:00 P.M. to 6:00 P.M. and 111% from 6:00 P.M. to 10:00 P.M., when parking is free and the time limits are not in effect.

The compliance rate for two-hour pay station parking on Broadway E (before 6:00 P.M. when the restrictions are in effect) was 96%. This was a much higher compliance rate than found for signed two-hour limits.

The study area included three pay-station parking spaces, on streets other than Broadway E, located on the north side of E Olive Way between Harvard Avenue E and Broadway E. These three spaces had an average utilization of 30% from 8:00 A.M. to 6:00 P.M.

## Two-Hour Parking Restrictions – Signed Time Limits

There are 182 parking spaces in the study area signed with two-hour time limits. The study block faces with signed two-hour limits are shown on Figure 6.1 and Figure 6.2. The utilization rates by block face range from 28% to 133% for two-hour signed time-limited parking spaces.

The compliance rates ranged from zero to 100%, and averaged 81%, which is lower than the compliance rate on Broadway E with two-hour pay stations.

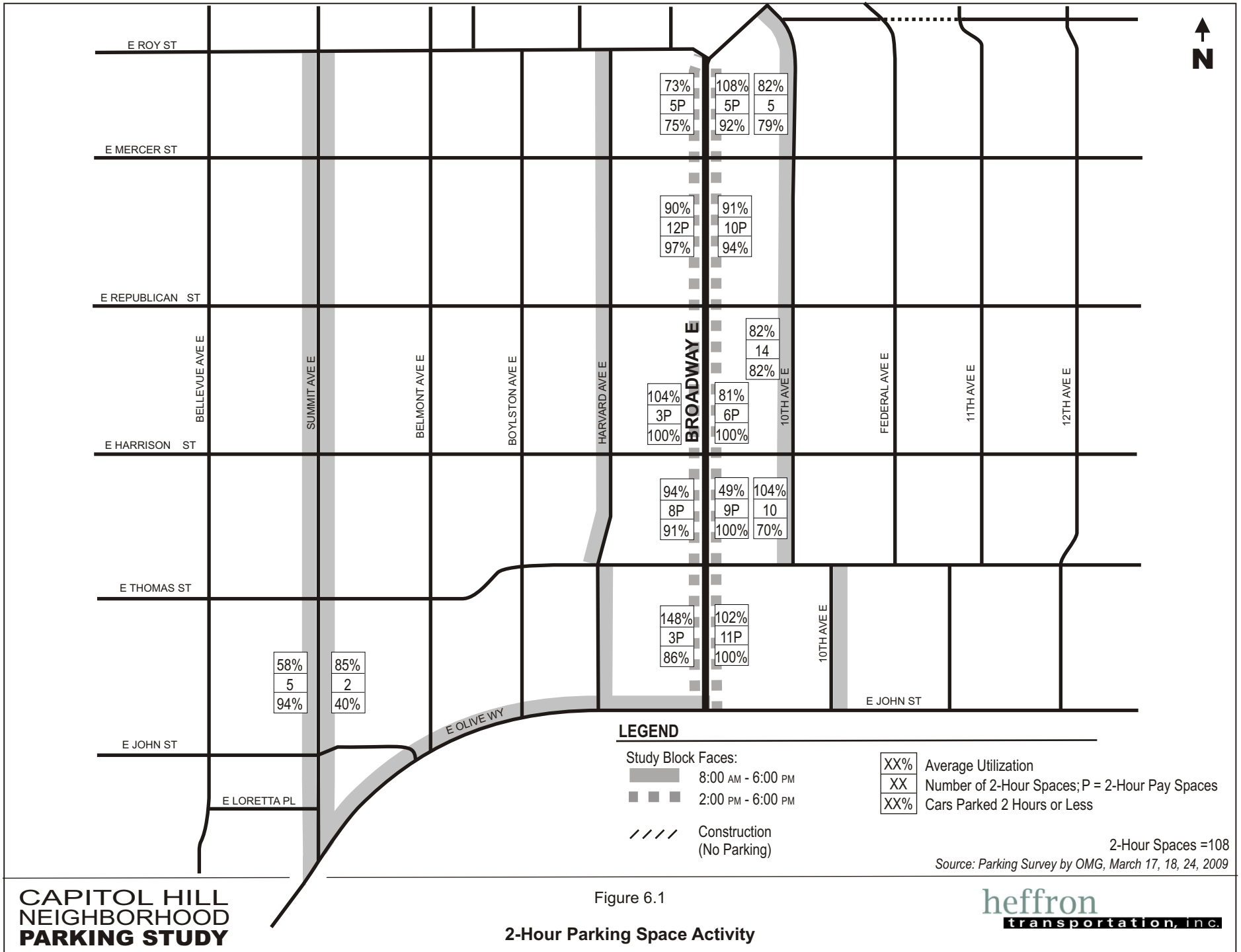
## Three-Hour Parking Restrictions

Parking activity for three-hour spaces is presented in Figure 7. The three-hour parking restrictions serve users of the Cal Anderson Park. For each block face the data shown are: the average utilization of three-hour spaces, the number of three-hour spaces, and compliance rates for cars parked for three hours or less.

There are 101 signed three-hour time limited spaces on five study area block faces. The 84 parking spaces on the west side of 11th Avenue are angled parking spaces established for users of the Cal Anderson Park, located between Nagel Place, 11th Avenue, E Pine Street and E Denny Way.

The average utilization rates were 83% on the south side of E Denny Way, between 10th Avenue E and 11th Avenue E, and over 100% or greater on all other block faces.

The compliance rate ranged from 80% to 94%, meaning that most users parked for three hours or less.



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Figure 6.1  
**2-Hour Parking Space Activity**



### LEGEND

Study Block Faces:

- 8:00 AM - 6:00 PM
- 2:00 PM - 6:00 PM

- Construction (No Parking)

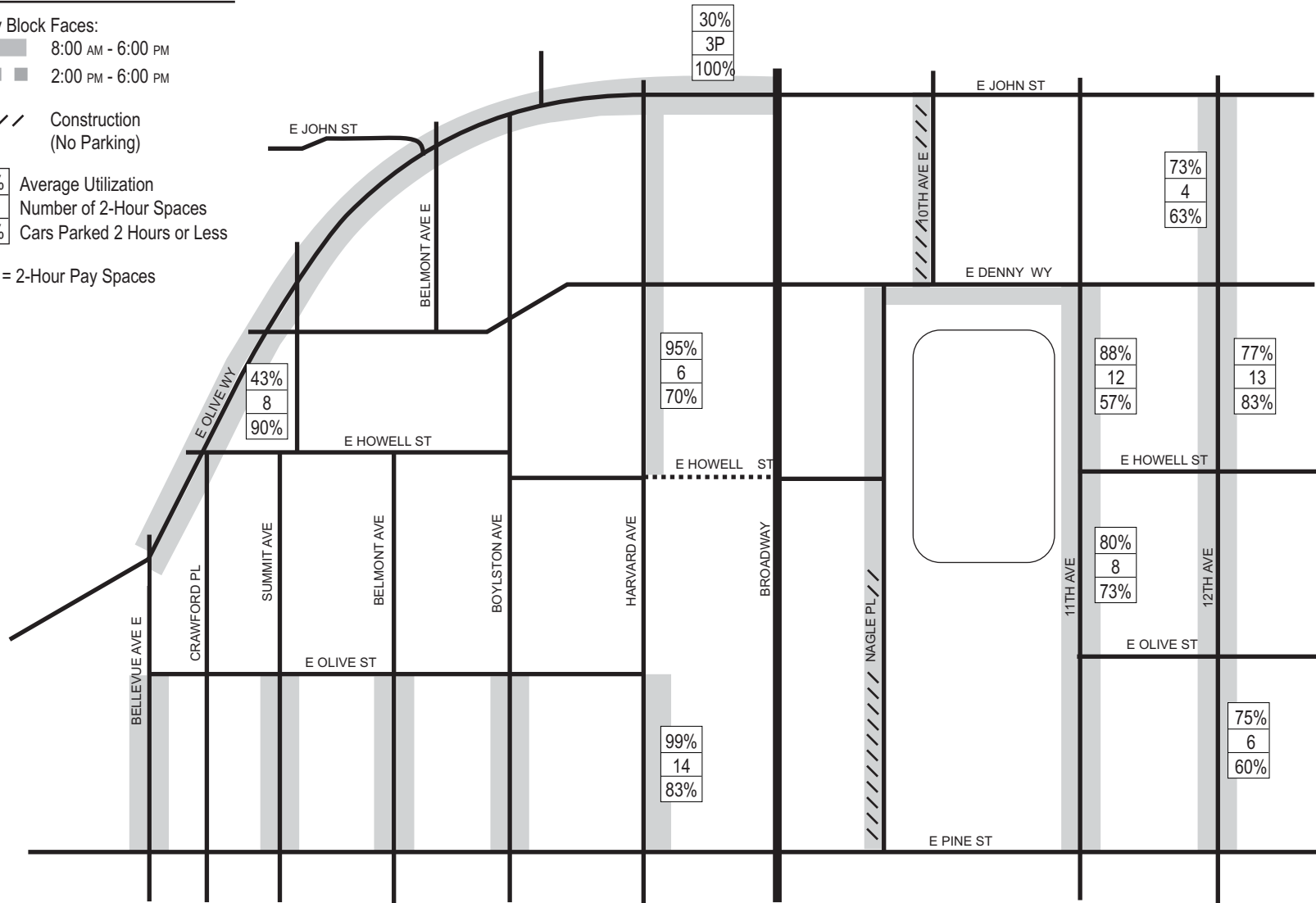
- |     |
|-----|
| XX% |
|-----|

 Average Utilization
- |    |
|----|
| XX |
|----|

 Number of 2-Hour Spaces
- |     |
|-----|
| XX% |
|-----|

 Cars Parked 2 Hours or Less

P = 2-Hour Pay Spaces



2-Hour Spaces = 74

Source: Parking Survey by OMG, March 17, 18, 24, 2009

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Figure 6.2  
2-Hour Parking Space Activity






**LEGEND**

Study Block Faces:

-  8:00 AM - 6:00 PM
-  2:00 PM - 10:00 PM

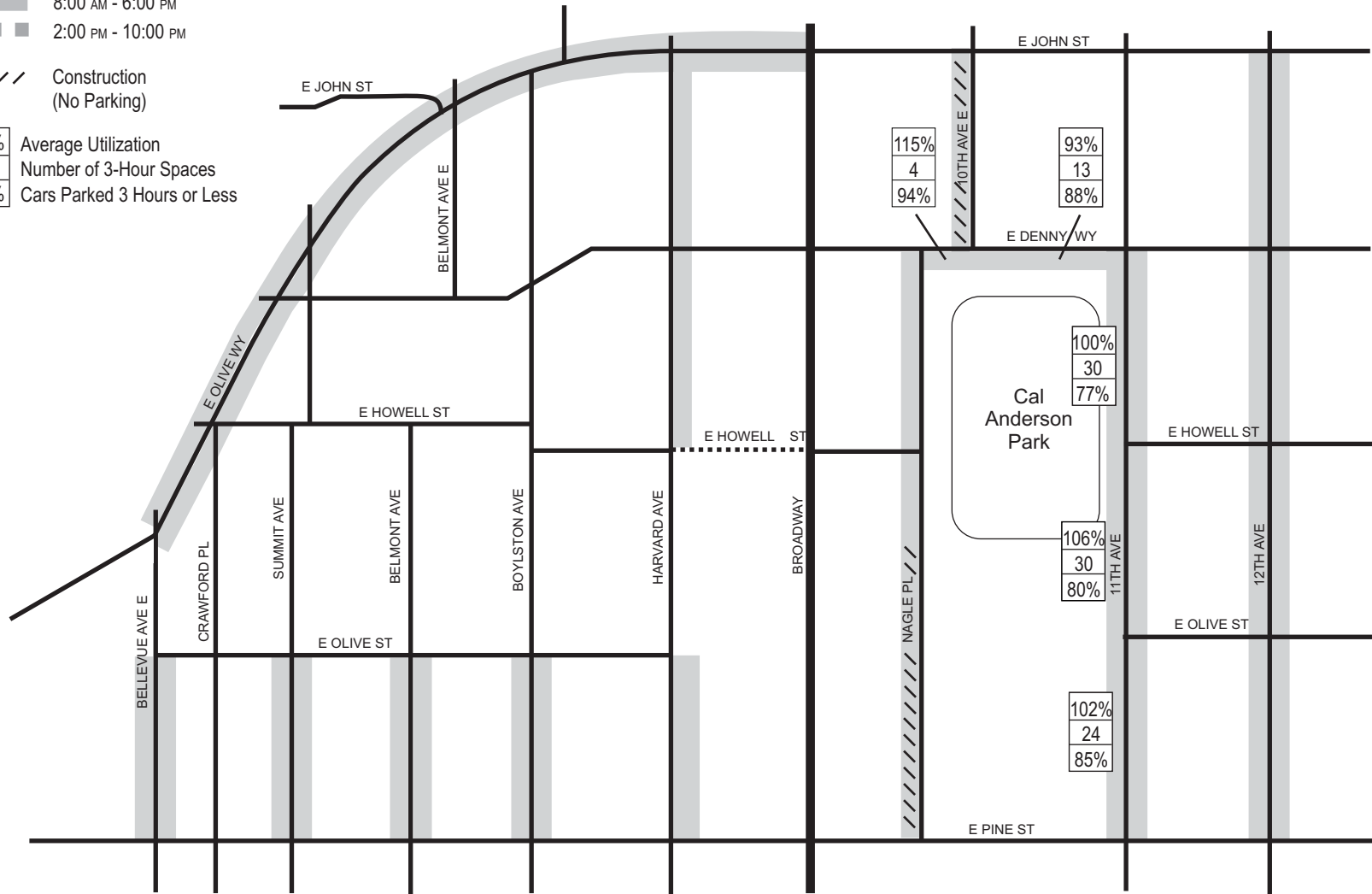
 Construction (No Parking)

- |     |
|-----|
| XX% |
|-----|

 Average Utilization
- |    |
|----|
| XX |
|----|

 Number of 3-Hour Spaces
- |     |
|-----|
| XX% |
|-----|

 Cars Parked 3 Hours or Less



3-Hour Spaces = 101

Source: Parking Survey by OMG, March 17, 18, 24, 2009

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Figure 7  
**3-Hour Parking Spaces  
around Cal Anderson Park**



## Four-Hour Parking Restrictions

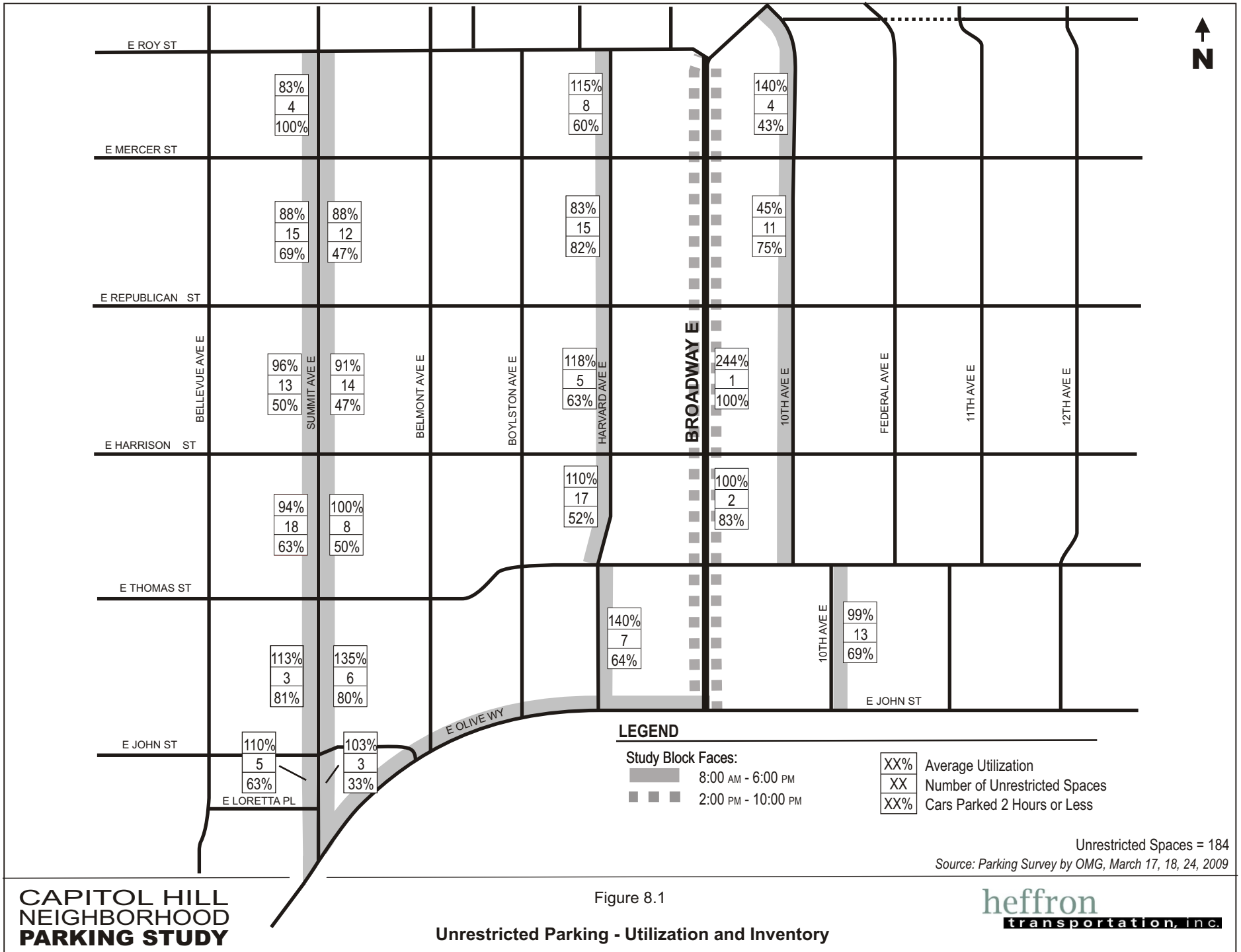
There are 13 signed four-hour time limited spaces on two block faces within the study area. The spaces are on both sides of Summit Avenue E between E Mercer Street and E Roy Street. The utilization rates were 86% and 98% on the west and east block faces. The compliance rates were 85% and 94% on the west and east block faces, meaning that most users parked for four hours or less.

## 6. Parking Utilization and Duration for Unrestricted Spaces

Unrestricted spaces are legal spaces that have no signed time limit, parking meter, or pay station. Cars can park in these spaces all day, up to a maximum of 72 hours as defined by City code. As such, these spaces are often used by residents on Capitol Hill who store their car during the day and commute by another mode of travel. These spaces are also used by workers in the area for all-day parking. There are 363 unrestricted parking spaces on 44 study area block faces throughout the study area. Broadway E has three unrestricted spaces. These spaces were not included in the unrestricted analysis.

Figure 8 presents the average utilization by block face, the number of unrestricted spaces, and the number of cars that parked for two hours or less. The time period for the analysis was 8:00 A.M. to 6:00 P.M. Utilization rates above 70% occurred on 37 study block faces, with 20 block faces at 100% or higher. This means that cars were parked by squeezing into gaps in the curb space, at the curb return, in driveways, or other non-compliant parking spaces. Only two block faces, located on E Olive Way, had utilization rates under 30%.

The number of cars parked for two hours or less is another indicator of parking turnover. In the area north of E Olive Way (Figure 8.1) there were seven of 21 block faces with 70% or more of the cars parked for two hours or less. South of E Olive Way (Figure 8.2) there were eight of 21 block faces with 70% or more parked for two hours or less.



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Figure 8.1  
**Unrestricted Parking - Utilization and Inventory**



**LEGEND**

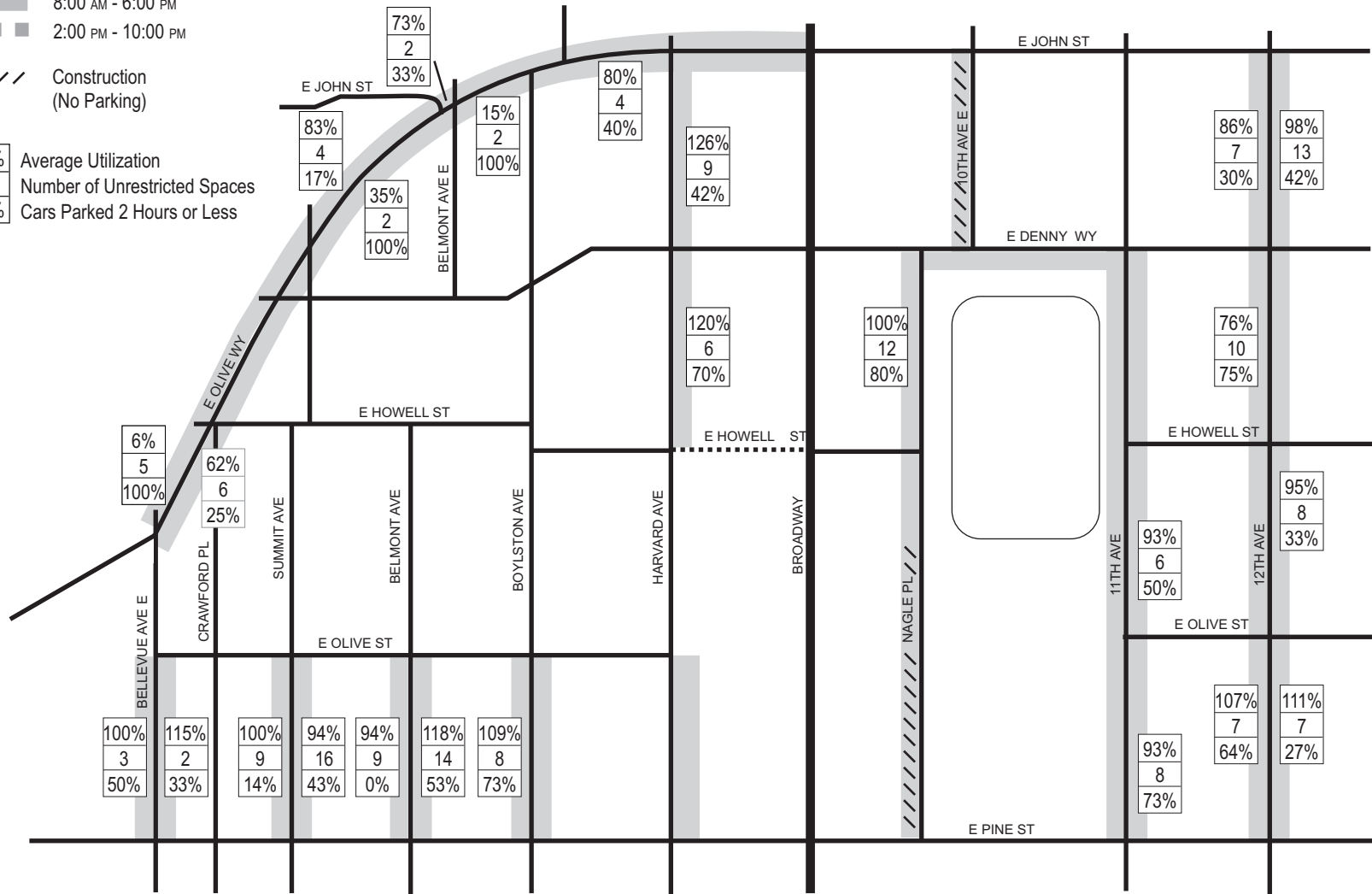
**Study Block Faces:**

8:00 AM - 6:00 PM

2:00 PM - 10:00 PM

Construction  
(No Parking)

XX% Average Utilization  
XX Number of Unrestricted Spaces  
XX% Cars Parked 2 Hours or Less



Unrestricted Spaces = 179

Source: Parking Survey by OMG, March 17, 18, 24, 2009

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Figure 8.2

**Unrestricted Parking - Utilization and Inventory**

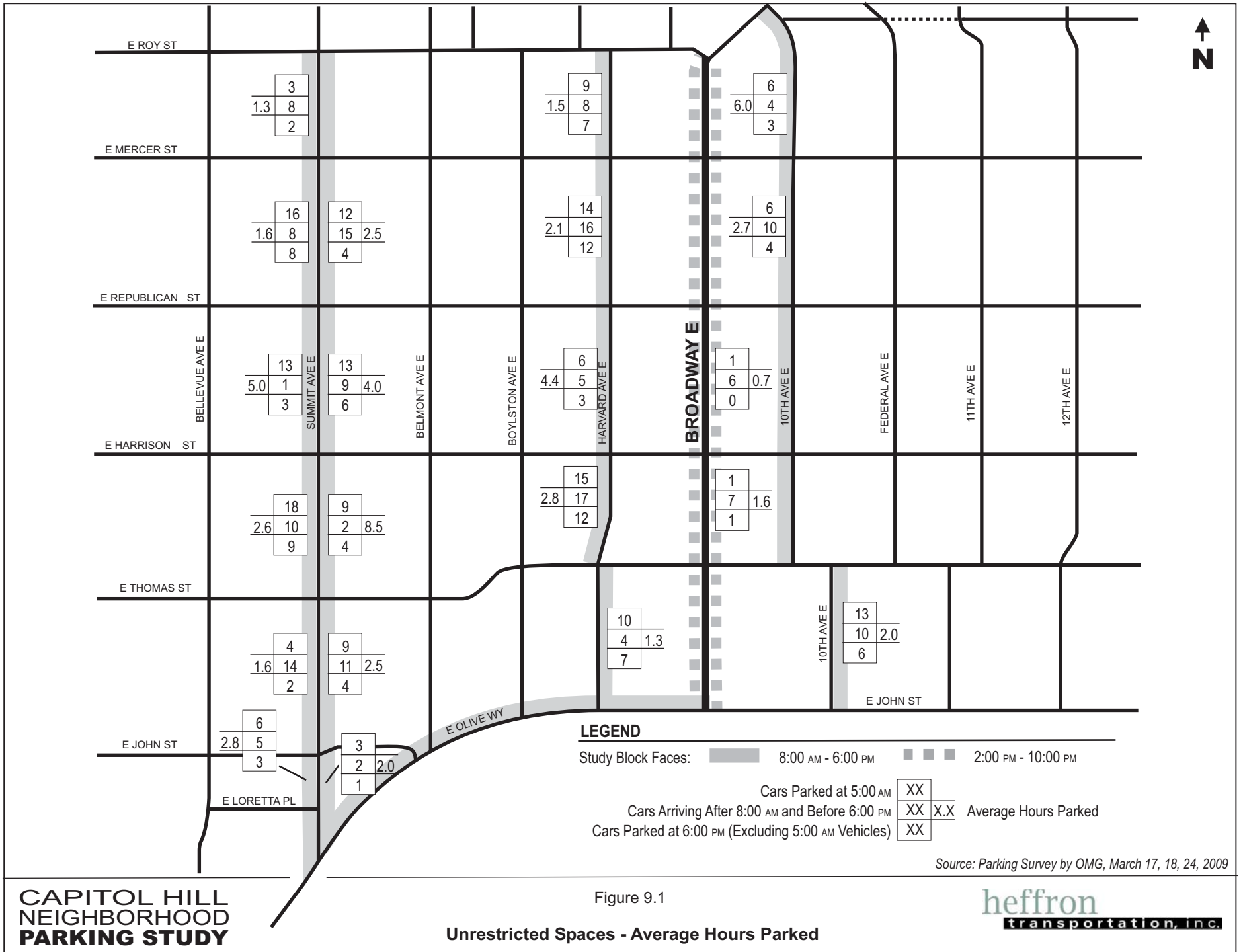


To assess how these spaces are used, different attributes were measured, as shown on Figure 9.1 and Figure 9.2 for the area north and south of E Olive Way, respectively.

- **Cars parked at 5:00 A.M.** – This reflects the likely overnight parking demand by area residents.
- **Cars that arrived after 8:00 A.M. and left before 6:00 P.M.** – This reflects the number of new cars that parked during daytime hours.
- **Cars parked at 6:00 P.M.** – These are cars that arrived during the day, typically near the end of the day and likely remained a parked car after 6:00 P.M. They were removed from the parking duration calculation because it is not known how long they parked.
- **Average hours parked.** The duration is shown only for the vehicles that parked during the day (arrived after 8:00 A.M. and left by 6:00 P.M.)
- **Total number of cars parked during survey.** The sum of the cars parked during the three time periods defined above equals the total number of unique cars observed during the survey period.

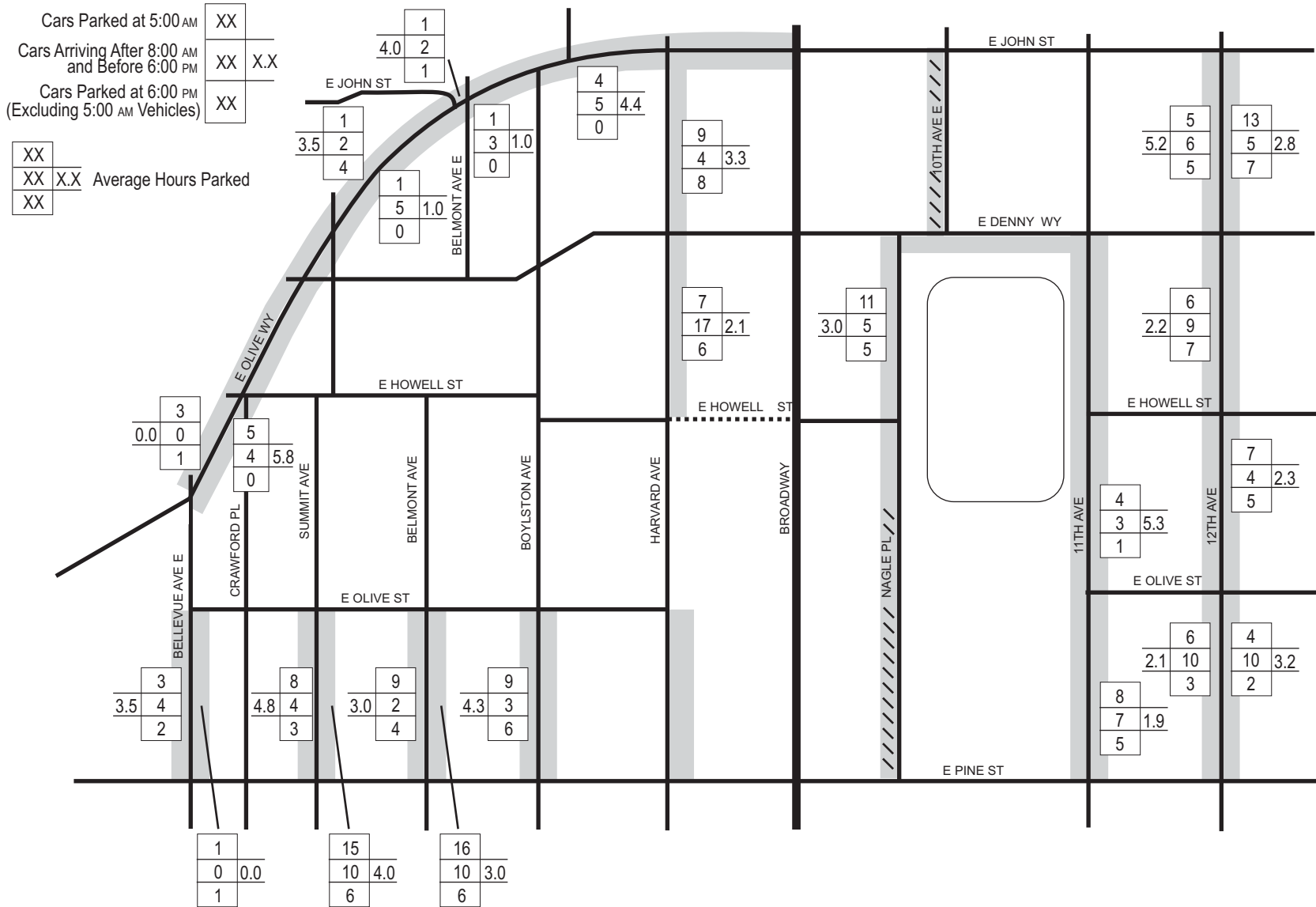
The analysis highlights significant differences by block face. For example, on the west side of Summit Avenue E, between E Harrison Street and E Republican Street, there were 13 cars seen parked at 5:00 A.M. and only one car that parked after 8:00 A.M. and left before 6:00 P.M. In total there were 17 unique parked cars during the survey (the sum of the cars parked during the three time periods). When compared with the parking supply (number of spaces from Figure 8.1), it is clear that all 13 spaces were occupied by residents. Only one space opened up for a car to park midday, and the average hours parked for that one car was 5.0 hours. This is a very low rate of turnover, which is expected for unrestricted parking spaces.

Two blocks south on Summit Avenue E, between E John Street and E Thomas Street on the west side, there are only three parking spaces. There were four cars parked at 5:00 A.M., 14 cars that were able to park between 8:00 A.M. and 6:00 P.M. and two cars that arrive during the day, were parked at 6:00 P.M. and the duration into the evening is unknown. In total, there were 20 unique parked cars during the survey period. This block of Summit Avenue E has higher turnover and lower average parking duration of 1.6 hours, reflective of some commercial activity on this block.



**LEGEND**

Study Block Faces:   
 8:00 AM - 6:00 PM   
 2:00 PM - 10:00 PM   
 Construction (No Parking)



Source: Parking Survey by OMG, March 17, 18, 24, 2009

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Figure 9.2

Unrestricted Spaces - Average Hours Parked



## Late Evening Parking Survey – Residential blocks west of Broadway E

The late evening demand associated with restaurants and theaters was surveyed west of Broadway E, between E John Street and E Roy Street. Seven block faces with 49 parking spaces on Summit Avenue E, Belmont Avenue E, Boylston Avenue E, and Harvard Avenue E were surveyed in one-hour increments from 6:00 P.M. to 10:00 P.M. All parking restrictions on this section end at 6:00 P.M. The study block faces include one three-minute signed time limited space, three 30-minute signed time-limited spaces, 13 four-hour time limited spaces, and 32 unrestricted spaces. RPZ 15 is in effect on both sides Summit Avenue E between E Mercer Street and E Roy Street.

There are 28 unrestricted spaces on Belmont Avenue E, Boylston Avenue E, and Harvard Avenue East. The average utilization for each hour, from 6:00 P.M. to 10:00 P.M. on these streets was 114%, 107%, 111%, and 111%. The 30-minute and 3-minute were not included in the utilization rate because the survey occurred only once per hour.

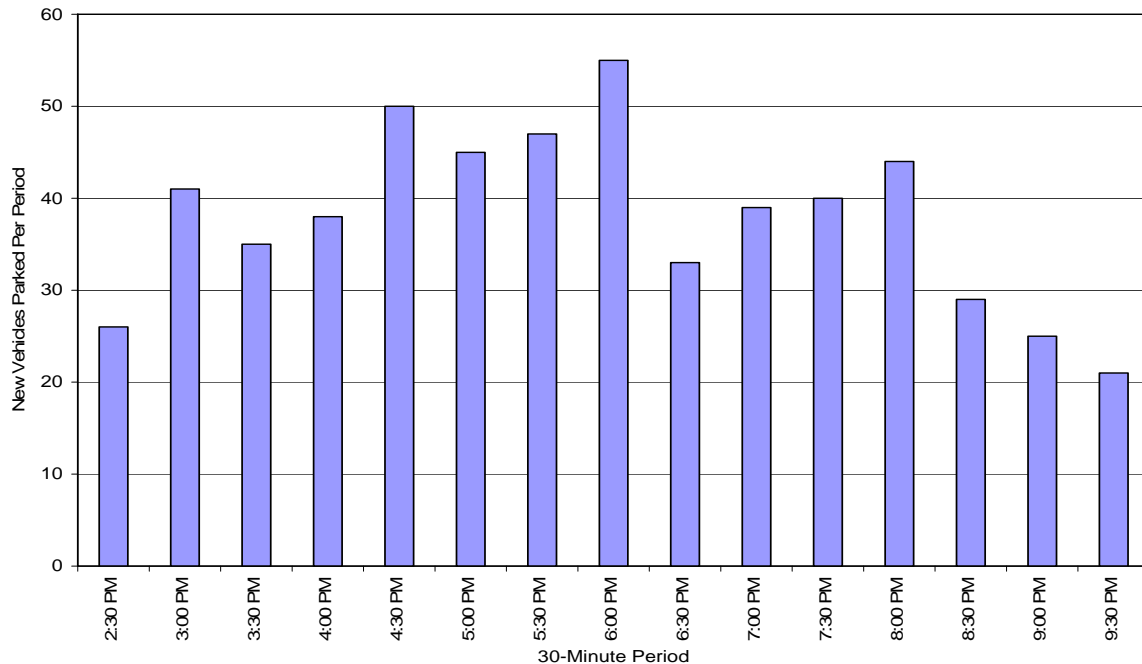
There are four unrestricted spaces and thirteen 4-hour signed time-limited spaces on Summit Avenue E. The average utilization for each hour, from 6:00 to 10:00 P.M., for the unrestricted spaces was 100%, 100%, 100%, and 125%. The average utilization for the 4-hour spaces was 100%, 100%, 92%, and 100%.

## Late Evening Parking Survey – Broadway E

The late evening demand associated with restaurants and theaters was surveyed at the north end of Broadway E, between E John Street and E Roy Street. Ten block faces were surveyed in 30-minute increments from 2:00 P.M. to 10:00 P.M. All parking restrictions on this section end at 6:00 P.M. and the survey results were used to show how parking turnover is affected by the end of these restrictions.

The number of new cars parked on Broadway E was calculated to compare turnover rates during the afternoon when the time-limited parking restrictions are in effect, to the evening turnover when there are no time-limits to parking. Figure 10 summarizes the number of new cars parked on Broadway E from 2:30 P.M. to 9:30 P.M.

Figure 10. New Cars Parked – Broadway E



Source: Parking survey performed on March 19, 2009 from 2:00 P.M. to 10:00 P.M. Total of 104 parking spaces were surveyed.

The number of new cars that arrived during each 30-minute period peaked at 6:00 P.M. with 55 vehicles that arrived during that time period. There are a total of 104 parking spaces on the ten block faces surveyed on Broadway E, so this reflects a turnover rate of 53%. It is possible that the turnover was highest at this time because motorists no longer need to pay for parking. The turnover rate in the next 30-minute period was much lower, likely reflecting the fact that many of the available spaces were taken in the prior period. Turnover then decreases steadily until the end of the survey period.

## Other Parking Spaces

There are two 15-minute signed time-limited parking spaces and two signed police-only parking spaces on Broadway E. There are four study block faces with a total of eight signed disabled parking spaces.

## 7. Key Findings

### 30-Minute Parking Restrictions

- Within the study area there are 102 parking spaces that are signed with 30-minute time limits.
- There were 17 block faces with utilization of less than 30 %, including four with no parked cars. There were nine block faces with greater than 70% utilization.
- Utilization rates of approximately 30% were typical throughout the city. The low utilization reflects an availability for load/unload activity.

- On Broadway, the survey was conducted from 2:00 P.M. to 10:00 P.M. with data collected every 30-minutes. The 30-minute signed parking restrictions end at 6:00 P.M. After 6:00 P.M. the utilization was at least 92% for each block face, and five of the nine block faces were 100% to 169% utilized with squeeze-in parking.
- On Broadway the average compliance rate between 2:00 P.M. to 6:00 P.M. was 96%. After 6:00 P.M. signed time limits are no longer in effect, but the 30-minute spaces continue to have a higher turnover after 6:00 P.M. than other types of spaces.
- Overall, compliance of 30-minute spaces was relatively good throughout the study area with many block faces at 100%.

### One-Hour Parking Restrictions

- Within the study area there are 45 parking spaces signed with one-hour time-limits. Most one-hour parking spaces are on E Olive Way and 12<sup>th</sup> Avenue.
- The average utilization was over 70% on five block faces and two block faces were less than 30% utilization. On the east side of Bellevue Avenue E, between E Pine Street and E Olive Street cars parked by squeezing in to gaps, parked at corners, and other non-compliant spaces which resulted a utilization of 133%.
- The compliance rates were relatively high for the one-hour time, ranging from 73% to 100% on E Olive Way, and 69% to 71% north of E Olive Way.

### Two-Hour Parking Restrictions – Pay Stations

- Within the study area there are 75 pay station spaces with two-hour parking limits: 72 on Broadway E and three on E Olive Way between Harvard Ave E and Broadway E.
- The average utilization of two-hour pay station parking spaces on Broadway E was 68% from 2:00 P.M. to 6:00 P.M. and 111% from 6:00 P.M. to 10:00 P.M. P.M., when time-limited parking restrictions are not in effect.
- 94% of cars that arrived after 2:00 P.M. and left before 10:00 P.M. parked for two hours or less.
- There were only three pay station parking spaces, on blocks other than Broadway E, located on the north side of E Olive Way between Harvard Ave E and Broadway E. These three spaces had an average utilization of 30% from 8:00 A.M. to 6:00 P.M. The compliance rate for two-hour pay station parking on Broadway E (before 6:00 P.M. when the restrictions are in effect) was 96%. This is a much higher compliance rate than found for signed two-hour limits.

### Two-Hour Parking Restrictions – Signed Time Limits

- Within the study area there are 182 parking spaces with two-hour time limits.
- Utilization rates by block face range from 28% to 133% for two-hour signed time-limited parking spaces.

- Compliance rates range from 0% to 100%, averaging at 81%, lower than the compliance rate of 2-hour pay stations on Broadway E.

### Three-Hour Parking Restrictions (Cal Anderson Park)

- Within the study area there are 101 signed three-hour time limited spaces on five study area block faces on the north and east sides of Cal Anderson Park with 84 angled parking spaces on the west side of 11th Avenue E.
- Average utilization rates were 93% on the south side of E Denny Way, between 10th Ave E and 11th Ave E, and over 100% or greater on all other block faces.
- Compliance ranged from 80% to 94%, averaging 82%.

### Four-Hour Parking Restrictions

- There are 13 signed four-hour time limited spaces on both sides of Summit Ave E between E Mercer Street and E Roy Street. These are RPZ blocks, allowing those with RPZ permits to park longer than four hours.
- Utilization rates were 86% and 98% on the west and east block faces.
- Compliance rates were 85% and 94% on the west and east block faces.

### Unrestricted Parking

- Within the study area there are 363 unrestricted parking spaces. Broadway E has three unrestricted spaces that were not included in the analysis.
- The average number of hours parked was shorter on block faces with commercial activity and longer on block faces that were solely residential in nature
- Utilization rates above 70% occurred on 37 study block faces, with 20 block faces at 100% or higher. This means that cars were parked by squeezing into gaps in the curb space, at the curb return, in driveways, or other non-compliant parking spaces. Only two block faces, located on E Olive Way, had utilization rates under 30%.

### Overnight Resident Parking

- To determine the likely overnight parking by Capitol Hill residents, a survey was conducted at 5:00 A.M. with one pass by the data collectors. The utilization north of E Olive Way ranged from 83% to 143% by block (high density residential). Along E Olive Way, the utilization ranged from 14% to 100% with about half of E Olive Way at approximately 50% utilization. This is likely due to peak hour parking restrictions.
- South of E Olive Way and west of Broadway, there were two block faces at 50% and 56% utilization; the other eight were 85% or higher utilization.

- South of E Olive Way and east of Broadway, there were lower utilization rates along 11th Avenue near the park, with one block face at 0%. On 12th Avenue, utilization ranged from 44% to 100%. E Denny Way had a utilization rate of 96%.

### Late Evening Parking Survey – Residential blocks west of Broadway

- Late evening parking demand west of Broadway was surveyed on Summit Ave E, Belmont Ave E, Boylston Ave E, and Harvard Ave E between E Mercer Street and E Roy Street. The average utilization for the unrestricted spaces, for each hour, from 6:00 P.M. to 10:00 P.M. on Belmont Avenue E, Boylston Avenue E and Harvard Avenue E was 100% or greater with cars that squeezed in to non-compliant spaces along the curb.
- The average utilization for the thirteen 4-hour spaces each hour, from 6:00 to 10:00 P.M. on Summit Avenue was 100%, 100%, 92%, and 100%. There were four unrestricted spaces with an average utilization of 100% or more.
- 30-minute signed spaces showed a higher turnover rate than other space types, even when the restriction was not in effect.

### Afternoon/Evening Parking Survey – Broadway

- The late evening demand associated with restaurants and theaters was surveyed at the north end of Broadway, between E John St and E Roy St. The average utilization was above 90% for seven of ten block faces. The utilization was above 100% on four of these block faces.
- 94% of cars that arrived after 2:00 P.M. and left before 10:00 P.M. parked for two hours or less.
- The number of new cars that arrived peaked between 6:00 P.M. and 6:30 P.M. with 55 vehicles that arrived. There are a total of 104 parking spaces on the ten block faces surveyed on Broadway E, so this reflects a turnover rate of 53%. It is possible that the turnover was highest at this time because motorists no longer need to pay for parking.
- The turnover rate from 6:30 P.M. to 7:00 P.M. was much lower, likely reflecting the fact that many of the available spaces were taken in the prior period. Turnover then decreased steadily until 10:00 P.M.