

Salem Capitol Mall - Parking Inventory Analysis

In every downtown the issue of parking is central to a stakeholders ability to plan for and manage access to support specific business uses. For the Department of Administrative Services (DAS) the need to understand both the perception *and* reality of parking is essential if a comprehensive, effective and successful parking management strategy is to be developed and implemented. This report focuses on establishment of a clear understanding of the reality of current parking dynamics in the Capitol Mall area of downtown Salem. Particular emphasis of this work is on the parking resources owned and controlled by the State of Oregon within the study zone.

I. PURPOSE OF THE PARKING INVENTORY ANALYSIS

The purpose of a parking utilization study is to derive a comprehensive and detailed understanding of actual use dynamics and access characteristics associated with parking in this downtown study zone. Important elements of this section include:

- (1) Development of a data template for all parking in the study area, denoting all parking stalls, by time stay type, for on and off-street facilities in public control.
- (2) A complete survey of parking use on a “typical day,” — Thursday on June 8, 2006.¹
- (3) Analysis of parking utilization and turnover that included:
 - a. Quantification of total study area parking inventory.
 - b. Hourly occupancy counts (7 a.m. – 7 p.m.) for on and off-street inventory.
 - c. Parking turnover analysis (on-street).
 - d. Parking duration-of-stay analysis (on-street).
- (4) Identification of parking surpluses and constraints in the parking supply.

In short, the purpose of the parking utilization study was to produce a succinct analysis of existing parking dynamics in Salem’s Capitol Mall that can be employed over time to support and inform decision-making related to development and parking.²

II. STUDY AREA

The parking inventory study area was determined in the initial project scoping process, in consultation with DAS. The study zone includes the commercial area of the Capitol Mall, which is generally comprised of the area bounded by D Street NE (on the north), State Street SE (on the south), Cottage Street NE (on the west) and Capitol (between D and Union Streets) and 12th Street NE between Union and State Streets (on the east).

¹ This date was chosen in consultation with the City of Salem and DAS. On this day, public schools were still in session and no major events were scheduled for the downtown. Weather conditions were excellent and activity was brisk.

² Copies of all data templates will be provided to the Department of Administrative Services for future use. The data templates incorporate hourly parking counts for every stall, by block face and public lot, in the study area.

Figure A, on the following page illustrates the entire study area examined in the data collection.

III. METHODOLOGY

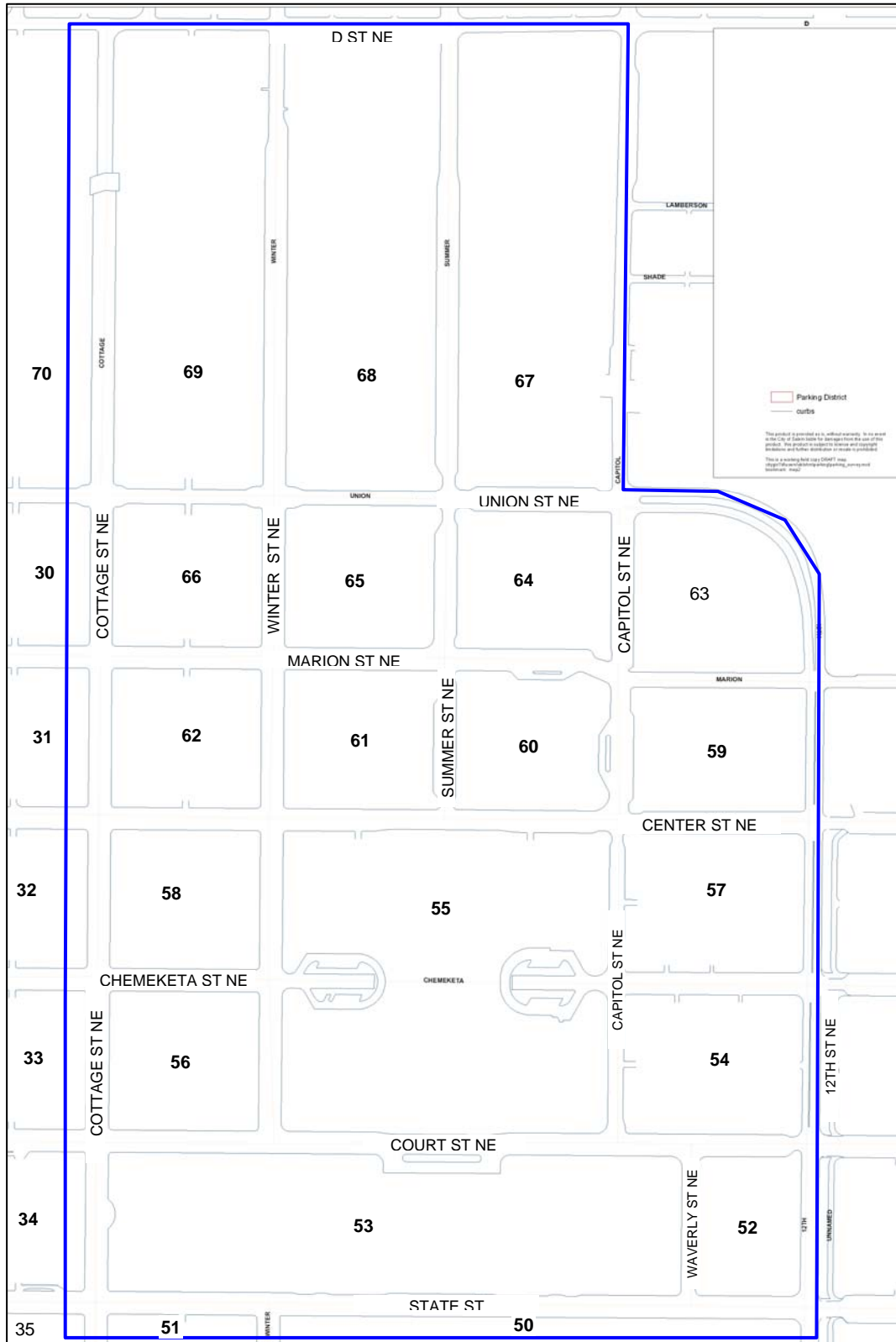
Rick Williams Consulting (RWC) conducted the capacity/utilization and turnover inventory on Thursday, June 8, 2006. The survey day was selected in consultation with DAS and the City of Salem and was reflective of the initial scoping process.³ Overall, the survey day was sunny (mid to high 80 degrees) with strong parking activity in all sectors of the downtown. The Thursday parking inventory was conducted between 7:00 a.m. and 7:00 p.m.

The project team's methodological approach to gathering parking utilization/capacity/turnover data began with a physical compilation of all public parking assets (on and off-street) within the study area. This physical assessment was conducted in advance of the survey day and all parking resources were documented by location and type. This was used to create a data template necessary to conduct the utilization assessment.

The Thursday survey involved an hourly accounting of each occupied on-street parking stall in the study area using the last four digits of the parked vehicle's license plate. Surveyors collected license plate data at each on-street parking stall (metered, un-metered and by permit only) located in the study area for every hour over a twelve-hour period (7:00 a.m. – 7:00 p.m.). Hourly capacity counts were taken over the same time frame at 26 off-street facilities within the study zone. Twenty-four of the lots were State owned and 2 were privately owned. A total of 5,117 stalls were physically surveyed.

³ A comprehensive study of on and off-street parking was also conducted in the downtown retail core on the study day. Results of this analysis and survey are available from the City of Salem.

**Figure A
DAS PARKING STUDY ZONE**



IV. GENERAL CHARACTERISTICS OF THE INVENTORY - STUDY AREA

A. Supply

A total of **5,117** parking stalls were surveyed within the study area boundaries. Publicly controlled stalls total **5,037** spaces, which include **1,217** on-street and **3,820** off-street stalls.⁴ Parking in the on-street supply is primarily provided in the form of metered parking, requiring hourly payment by users. State employees are able to obtain off-street parking permits for use in the State lots and garages through the DAS parking office. Private sector employees generally avail themselves of parking opportunities on private lots. Long-term parking (10 hours and carpool parking) is available on street within the study zone.

An additional **80** stalls were surveyed in private lots. The privately owned lots were generally available to public use and were surveyed so as to understand actual use of these lots and the role they might play in future parking discussions.

Table 1 presents a breakout of all the surveyed parking supply in the Capitol Mall Study Zone.

Table 1
2006 Parking Inventory of Supply – Capitol Mall Zone

Downtown Study Area Parking Stall Breakout		
<i>On-Street Meters by Type</i>	Number of Stalls	% of Total On-Street Stalls
15 minutes	13	1%
30 minutes	13	1%
1 hour	86	7%
2 hours	632	52%
3 hours	26	2%
10 hours	257	21%
Carpool	175	15%
Permit Only	14	1%
Public: On-Street Parking Stalls	1,217	100%
Public: Off-Street Parking Stalls	3,820	
<i>Sub-Total Public Supply</i>	5,037	
Private: Off-Street Parking Stalls	80	
Total Surveyed Supply	5,117	

As **Table 1** indicates, the Capitol Mall Study Zone maintains a high percentage of 2-Hour metered parking stalls, with over half the on-street supply (52%) made up of these types of stalls. Ten-hour meters comprise 21% of the on-street supply and Carpool stalls comprise another 15 percent. The remainder of the on-street supply is made up of a small number of 15-minute, 30-minute, and 1-hour and permit spaces.

⁴ For purposes of this study handicap/disabled and loading zone stalls were removed from the study results, based on the assumption that such stalls are not readily available to general parking demand. The project team believes that if these stalls were included the study results would artificially overstate surplus supply.

The surveyed off-street supply included 24 State-owned lots and 2 privately owned facilities. The most significant publicly controlled off-street parking resource is the CPMS facility (at 900 Chemeketa Street), which contains 1,232 parking stalls.

B. Peak Hour and General Occupancies

Peak hour occupancy for the study area is the period during the business day where the downtown experiences the highest utilization of parking stalls. Peaks may vary between the on and off-street parking systems. This analysis attempts to determine that point in the day at which the greatest numbers of vehicles are parked in the study zone. In the analysis that follows occupancies for all stalls in public on street and off-street locations are summarized.

1. On-street Parking Summary – Entire Study Area

The peak hour for the on-street public inventory is between 11:00 a.m. and noon for the combined on-street system (i.e. all stalls, all use types). At this hour, 53.7% of the 1,217 parking stalls in the study area are occupied. **Table 2**, below summarizes occupancies by type of stall, peak hour by stall type and average length of stay. **Figure B**, below, illustrates public and private occupancies for each hour of the twelve-hour survey day.

Table 2
On-Street Parking Summary – Capitol Mall

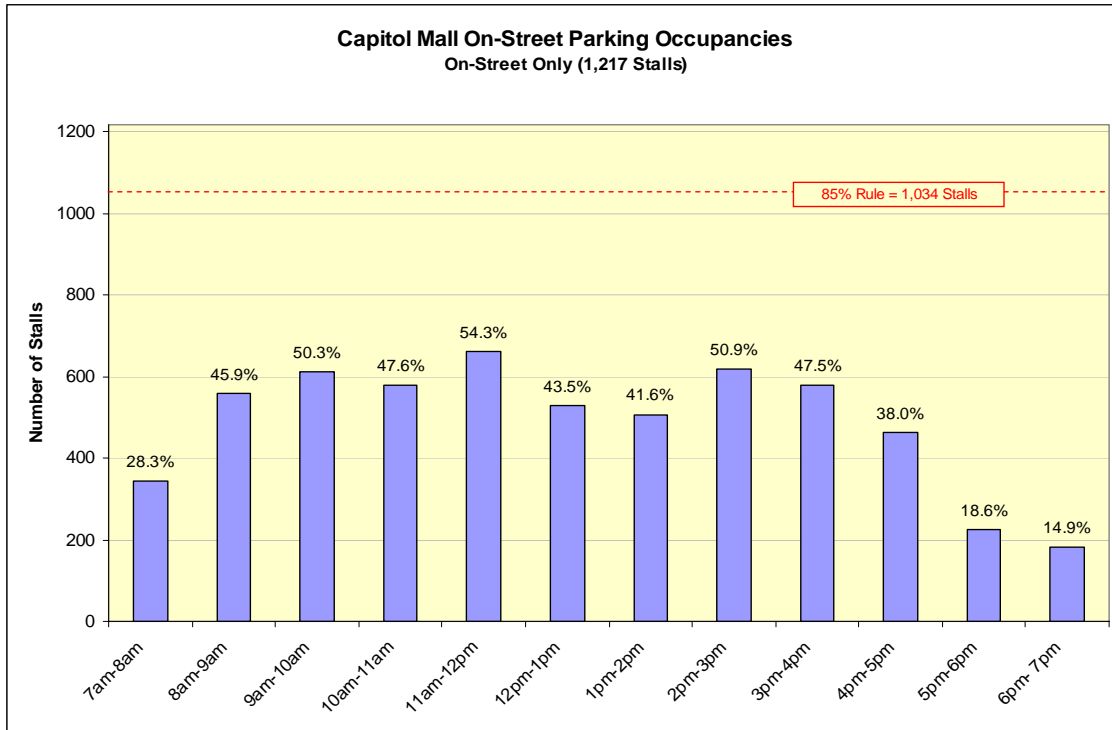
All On-street Stalls					
Type of Stall	# of Stalls	Peak Hour	Peak Occupancy	Stalls Available (empty)	Average Length of Stay
All Stalls	1217	11 am – noon	53.7%	563	2 hr/24 min.
Usage by Time Stay					
15 minutes	13	5 – 6 pm	23.1%	10	N/A
30 minutes	13	8 – 9 am	76.9%	3	N/A
1 hour	86	3 – 4 pm	76.7%	20	2 hr/55 min.
2 hours	632	11 am – noon	47.2%	334	2 hr/9 min.
3 hours	26	11 am – noon	61.5%	10	2 hr/23 min.
10 hours	257	11 am – noon	57.6%	109	2 hr/35 min.
Carpool	176	11 am – noon	68.2%	56	2 hr/45 min.
Permit Only	14	10 – 11 am	57.1%	6	2 hr/44 min.

From **Table 2**, the following conclusions can be derived:

- During the 11:00 a.m. – noon peak hour, 654 stalls are occupied leaving 563 empty stalls available within the entire study area.
- The highest use is in stalls designated as 30 minutes, which achieve peak hour occupancy of 76.9% between 8 a.m. and 9 a.m., though there are only 13 of these stalls in the inventory. The largest segment of parking (2-hour) reaches peak occupancies of just 47.2% between 11:00 a.m. and noon. The second largest segment (10-hour) reaches 68.2% at the same time.

- The average customer duration of stay in an on-street parking stall is approximately 2 hours and 24 minutes. This average is consistent, regardless of the time stay designation.

Figure B



Overall, the on-street system was underutilized on the study day. This reflects that the Oregon Legislature was not in session. The abundance of available parking during the peak hour suggests the system is capable of absorbing substantial traffic destined for the legislative session when this body reconvenes.

Interestingly, the average customer time stay at meters in this study zone is over 2 hours. The average time stay at 1-hour meters are 2 hours and 55 minutes; at 2-hour meters the average is 2 hours and 9 minutes. The more appropriate time stay designations for “short-term” stays within the zone should be in the area of 3 hours. This would allow customers a stay allowance more consistent with business needs in the zone, reducing violations. Converting 1 and 2-hour meters to 3-hours would also standardize parking in the zone, creating a greater sense of uniformity for the customer.

2. Off-street System

While the combined on-street system operates at approximately 54% peak occupancy, it is important to evaluate how the off-street system operates in relation. This is particularly important to understand, as potential access constraints within the on-street system (now or in the future) will need to be directed into off-street locations. As such, understanding available capacity for absorption of on-street demand growth will be important.

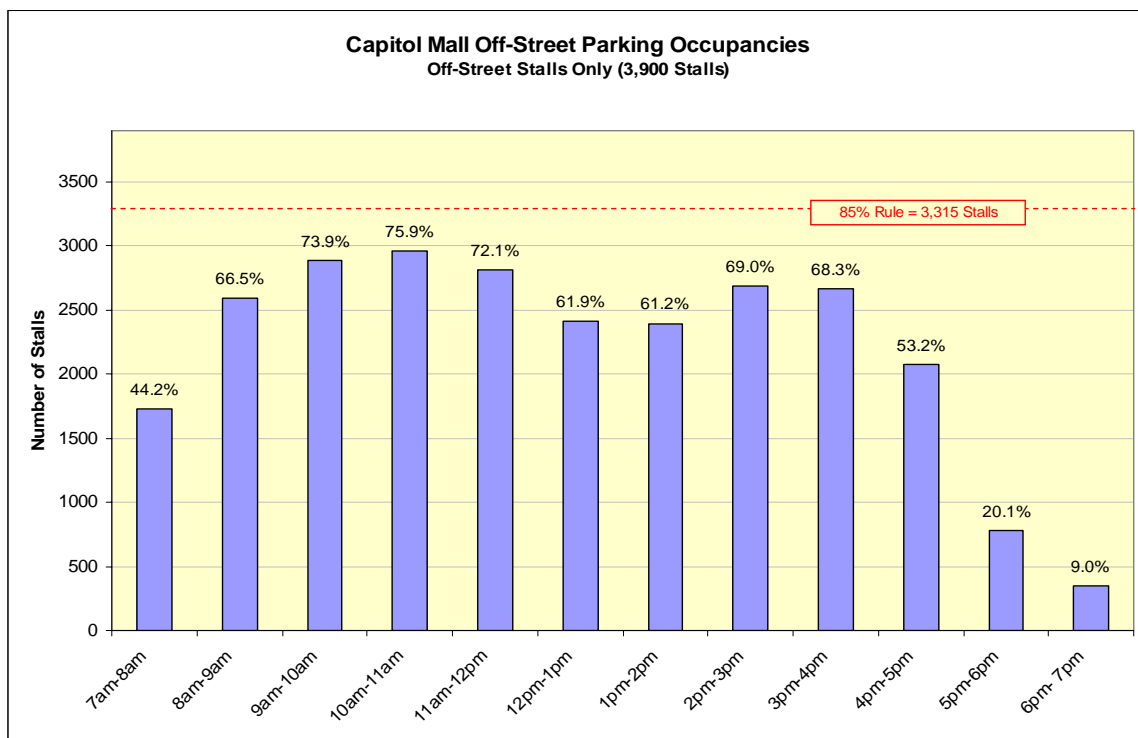
Table 3 below provides a summary of the peak hour demand for the off-street supply sampled on the survey day. **Figure C** provides an illustration of occupancies for each hour of the twelve-hour survey day.

As the **Table 3** illustrates, peak hour occupancy for all off-street facilities (totaling 3,900 stalls) is between 10:00 a.m. and 11:00 a.m. when occupancies reach 75.9%. This contrasts with the on-street occupancy peak, which occurs one hour earlier. Nonetheless, given peak occupancy, there is a significant supply of empty and available parking in the peak hour (i.e., 940 stalls) within the off-street supply (which is primarily controlled by the State).

Table 3
Off-Street Parking Summary – Capitol Mall

Combined Capitol Mall Zone – All Off-street Stalls			
# of Stalls	Peak Hour	Peak Occupancy	Stalls Available (empty)
3900	10 – 11 am	75.9%	940

Figure C



For purposes of understanding parking availability in the publicly controlled off-street supply, **Table 4** provides a breakout of occupancies in the 24 State-owned facilities. As the table demonstrates, significant stall availability exists, ranging between 875 and 940 stalls. Significant stall availability can be found in the CMPS facility (411 stalls at the peak hour). Numerous facilities maintain peak stall availability of 20 or more stalls. A graphic illustration of the two private facilities (80 stalls) is not presented here, given that both facilities achieved 100% occupancy. There is a significant range of occupancies between the individual off-street lots from 29% to 100%.

**Table 4
Breakout of State Supply by Occupancy and Available Stalls**

	LOT Name Address	Total Stalls	Empty Stalls Combined Peak Hour (10-11a.m.)	Individual Peak Hour(s) per Facility	Available Stalls at Individual Peaks
1	Red Lot 400 Capitol St.	291	72	10:00-11:00 AM 75.3%	72
2	PUC 555 Capitol St.	175	32	10:00-11:00 AM 81.7%	32
3	Agriculture 635 Capitol St.	28	8	2:00-3:00 PM 75.0%	7
4	Archives 800 Summer St.	44	19	6:00 – 7:00 PM 100%	0
5	N. Mall Heritage 885 Summer St.	24	17	10:00 – 11:00 AM 29.2%	17
6	NMOB 725 Summer St.	176	41	11:00 – 12:00 PM 88.0%	39
7	State Lands 775 Summer St.	108	20	11:00 – 12:00 PM 82.4%	19
8	Employment 875 Union St.	51	14	9:00 – 10:00 AM 84.2%	8
9	Veterans 700 Summer St.	79	10	10:00 – 11:00 AM 87.4%	10
10	Orange Lot 667 Capitol St.	64	25	11:00 – 12:00 PM 82.8%	11
11	Human Resources 500 Summer St.	196	52	9:00 – 10:00 AM 75.0%	49
12	605 Cottage St.	93	12	10:00 – 11:00 AM 87.1%	12
13	Green Lot 880 Union St.	389	42	10:00 – 11:00 AM 89.2%	42
14	Yellow Lot 860 Marion St.	344	20	10:00 – 11:00 AM 94.2%	20
15	Revenue 955 Center St.	204	49	9:00 – 10:00 AM 77.9%	45
16	L&/Library Loop 350 Winter St.	22	16	9:00 – 10:00 AM 45.5%	12
17	ODOT/PSP Loop 255 Capitol St.	18	12	8:00 – 9:00 AM 61.1%	7
18	CMPS 900 Chemeketa St.	1,232	411	10:00 – 11:00 AM 66.7%	411
19	Executive Building 155 Cottage St.	180	38	10:00 – 11:00 AM 78.9%	38
20	Justice/S.Court 1162 Court St.	15	8	3:00 – 4:00 p.m. 66.7%	5
21	1175 Court St.	34	8	9:00 – 10:00 AM 85.3%	5
22	1158/78 Chemeketa St.	26	8	10:00 – 11:00 AM 69.2%	8
23	324 Capitol St.	20	6	9:00 – 11:00 AM 70%	6
24	1144 Center St.	7	0	8:00 – 1:00 PM 100%	0
	Off-street Totals	3,820	940		875

From the information derived from the survey of off-street facilities, the following conclusions can be derived:

- During the “combined” 10:00 a.m. – 11:00 a.m. peak hour, 2,880 stalls are occupied leaving 940 empty stalls available within the off-street inventory.
- A more conservative estimate of available stalls factors for the peak hours of each individual facility. Using this approach, available stalls drop to 875 stalls, a still significant number.
- Available stalls are concentrated in the CMPS facility (i.e., 411 available) though numerous facilities maintain peak hour stall availability in excess of 20 spaces.
- Given these findings, there appears to be an opportunity to more aggressively manage access into selected facilities to (a) augment customer access through signage and/or metering and/or (b) increasing the number of monthly passes assigned into specific facilities.

C. Usage Characteristics (Turnover, Duration of Stay, Volume and Exceeding Time Stays)

The Capitol Mall on-street parking supply is designed to provide several short-term parking opportunities to users using a combination of time stay options (ranging from 15 minutes to 3 hours. Similarly, the system allows for long-term stay opportunities (10 hours) for users needing more time and may not have access into State owned parking facilities.

Table 5, below, provides a summary of overall stall usage characteristics for this parking area.

**Table 5
General Characteristics of Use – On-Street Parking Stalls**

USE CHARACTERISTIC	DATA FINDING
Thursday	
Average duration of stay per unique vehicle	2 hrs./ 24 minutes
Actual number of unique vehicles (7:00 a.m. – 7:00 p.m.)	2,344
Actual turnover rate (number of cars to use a single occupied stall over a 12 hour period)	5.0
% of vehicles violating the posted time stay	19.4%
Number of violations and description of type	76 tickets issued for time stay violations 5 warnings for moving to evade/employee plates

Duration of Stay

One would assume that because 52% of the on-street supply is made up of 2-hour stalls that the average time stay at Capitol Mall area on-street spaces would be less than 2-hours. Interestingly, the average duration of stay at Capitol Mall on-street spaces higher than one might anticipate.

- The average stay in the Capitol Mall zone for all parking stalls is 2 hours and 24 minutes (or 2.40 hours).
- The longest duration of stay is at 1-hour stalls where the average is 2 hours and 55 minutes (2.92 hours). This may be a result of the fact that the 1-hour stalls are placed in locations that are highly desired by customers (though their time stay need is greater than that allowed).

This is supported by the fact that the 1-hour meters have the second highest peak hour occupancy rate (i.e., 76.7%).

Overall, though customers are on average parking for longer than 2 hours, their time need is still for relatively short stays and high turnover. Unfortunately, the majority of on-street parking opportunities (2 hours) does not allow customers to park for the length of time they desire.

Turnover: Efficiency of the Parking System

Given the average stay of 2.40 hours, over the course of a typical day, an on-street stall in the Capitol Mall zone will turn 5.0 times (12 hour day/2.40 hours duration = 5.0 turns). This is reflective of an urban retail center.

In most cities, the primary time stay allowance will allow for calculation of an *intended turnover rate*. For example, if the intended use for a stall is two hours, then the stall should be expected to turn 6 times over a twelve-hour period. As such, if turnover were demonstrated to be at a rate of less than 6, the system would be deemed inefficient. A rate in excess of 6 would indicate a system that is operating efficiently.

The Capitol Mall area maintains a turnover rate of 5.0. Given the mix of 1, 2, 3 and 10 hour meters in this area, the Capitol Mall is definitely operating at an efficient level. Nonetheless, average customer time stays would suggest the need to evaluate whether 2 or 3-hour meters would be more appropriate to this area.

Volume

On the survey day, 2,344 unique license plate numbers were recorded parking in the on-street system between the hours of 7:00 a.m. and 7:00 p.m.⁵

Exceeding time stays

Approximately 19.4% of unique vehicles parked in 1-hour, 2-hour, 3-hour and 10-hour stalls downtown exceed the posted time stay. This is a significant rate of violation, suggesting that the format of parking meters (i.e., time stay mix) is flawed, unintentionally putting customers at risk of receiving a parking ticket.

On the survey day, 76 tickets and 5 warnings were issued within the study zone.

The high number of time stay violations derived from the data likely occurs because:

- (a) 61% of the parking supply is made up of parking meters allowing 2 hours or less.
- (b) The majority of customers desire a time stay of between 2 hours and 9 minutes (2.15 hours) and 2 hours and 55 minutes (2.92 hours).

Overall, the time stay analysis indicates that the average customer time stay requirement would be better served by converting 1 and 2-hour meters to 3-hours.

⁵ It is important to note that this does not represent all vehicles in the study zone on June 8, 2006, as license plate numbers were not recorded in off-street facilities. The unique vehicle total allows us to

V. SUMMARY AND CONSIDERATIONS

Overall the data analysis of the Capitol Mall parking inventory indicates that the system is operating with substantial parking available in both the on and off-street supply. Peak parking conditions in the on-street system (at 54.3% occupied) are likely understated given that the inventory was conducted when the legislature is not in session. This would indicate that the on-street supply has the flexibility and availability to absorb parking demand as the legislature moves in to session.

Similarly, the off-street system also maintains a significant supply of available parking (between 875 and 940 stalls in the peak hour). The system currently operates at less than peak capacity, particularly for a system that is primarily intended to accommodate State workers seeking monthly parking opportunities. Given that the supply is in State control/ownership, there is opportunity to maximize use of this supply.

To that end, the following strategies are recommended:

1. Convert the existing 1 and 2 hour meters within the Capitol Mall study zone to 3 hours. This would: (a) establish a time stay allowance that is more consistent with demonstrated customer parking behavior; and (b) create a greater sense of uniformity within the on-street supply intended for shorter-term stays.
2. Maintain the 10-hour meters until such time as occupancies are demonstrated to exceed 85% in the peak hour. At that time, (a) increase hourly rates at these meters and/or (b) switch a percentage of stalls to 3-hours (particularly if occupancies at the 3 hour meters increases to exceed 85%.
3. Reduce/eliminate reserved monthly parking stalls in State off-street parking facilities. According to DAS there is a waiting list of more than 1,000 employees seeking monthly parking in state parking facilities in the Capitol Mall parking zone. Most of the stalls that have been identified as “empty” in the survey are unused reserved stalls. Eliminating/reducing reserved stalls will allow DAS to recapture capacity within the system. This will result in: (a) reduction in the number of employees on the waiting list; (b) increase revenue; and (c) reduce the amount of future parking that might be built to address increasing employee demand for parking
4. If (3) above is implemented, DAS could begin selling general access monthly passes to up to 50% of the identified surplus of parking. For example, the CMPS facility maintains 411 empty stalls at the peak hour. DAS could offer 205 “new” general access monthly passes for use in this facility. This would effectively increase occupancy in the facility but assure that any peaks or anomalies in the supply not captured in the parking survey were accounted for. After six months, DAS could resurvey the facility, reestablish peak hour stall availability and determine if additional pass sales are warranted.
5. If additional customer short-term parking is desired, DAS could implement (3) above and balance the number of new pass sales offered to State employees with installation of a limited number of parking meters in selected facilities. This would allow DAS to: (a) address (to a lesser degree than 4, above) monthly employee parking demand; (b) create additional customer access in currently underutilized space; and (c) create an additional revenue source from customer parking.

6. Given the size of the current DAS waiting list for monthly parking, it is recommended that DAS increase monthly parking rates. With more than 1,000 employees seeking parking it is apparent that the current price for parking is not correlated to demand.
7. If the Sate elects to continue providing monthly reserved parking stalls it is recommended that these stalls be priced at a premium above the cost of a general access monthly pass. The data indicates that a significant number of existing reserved stall sit unoccupied and underutilized throughout the day. This creates inefficiency in the system that, if allowed to continue, should be addressed through rate.