OSU Parking Utilization
and
Neighborhood Street Parking Study

Fall Term 2006

Facilities Services
Campus Planning

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Purpose

The purpose of this study is for the University to analyze parking utilization on the main campus and to perform an on-street parking survey on the two residential parking districts north of the campus (see map Attachment A (Parking Survey Overview Map)). The main campus study is used to determine and analyze existing supply and demand as well as identifying parking trends on campus. OSU conducts a parking inventory during the fall term when enrollment is highest. As stated in the Campus Master Plan (CMP), vehicular parking improvements will be implemented if the campus occupancy rate reaches 90%. Neighborhood surveys on the north side of campus, where many classroom buildings but few parking lots exist, are used to assist in measuring and monitoring the impact of parking on the neighborhoods.

Methodologies

The study was conducted during the fall academic term during the 4th week of the school. This time period is when the campus is considered at peak occupancy and is typical for reporting statistics for 4-year colleges and universities. The study was conducted over a 2-day period on a typical laboratory day (Tuesday), and typical lecture day (Wednesday), from 10:00 AM to 12:00 PM (representing peak days within the week).

Study Findings

Results of this study indicate that parking utilization on campus has decrease by 6% (79% to **73%**) over 2005 while the population of the campus has remained relatively constant. The decrease may be attributed to the development of housing adjacent campus, increased parking in neighborhoods adjacent to campus and decrease demand for parking. Compared to 2005, the number of permits issued has decreased by 579 (163 student & 416 Faculty/Staff) or 8%. At the same time the number of students has increased by 126 indicating less demand for parking permits. Campus wide Sectors F and G indicate 75% or less of utilized capacity. This is mainly attributed to the under utilization of Reser Stadium and the parking structure.

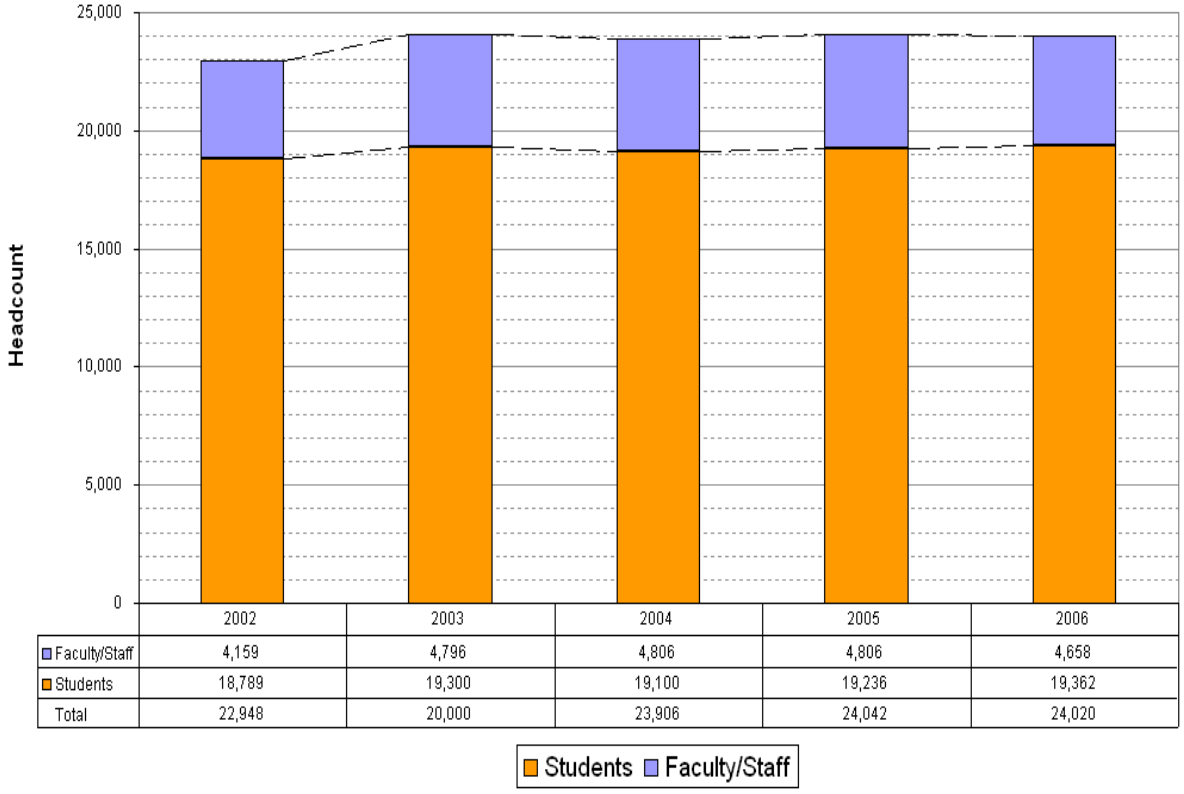
Overall district parking utilization has increased by 3%. College Hill (District A) had a decrease of 4% while College Hill North (District B) increased by 9%. The overall increase may be attributable to decreased demand for parking on campus. Additionally some of the increase in District B may be due to a shift from District A.

OSU Main Campus Parking Survey

The OSU main campus parking utilization survey was conducted on October 17 and October 18, once per day from 10:00 AM to 12:00 PM. The campus survey was orchestrated by Campus Planning and performed by Transportation and Parking Services.

Campus Population & Parking Capacity

To effectively evaluate how OSU is planning existing and future parking needs, Figure 1 (OSU Population Breakdown) below shows the campus population trend. Over the past five years the total campus population has increased approximately 4.7% with the largest percent increase being from fall 2002 to fall 2003 and the last 4 years (2003-2006) remaining relatively constant.



	2002	2003	2004	2005	2006
Faculty/Staff	4,159	4,796	4,806	4,806	4,658
Students	18,789	19,300	19,100	19,236	19,362
Total	22,948	20,000	23,906	24,042	24,020

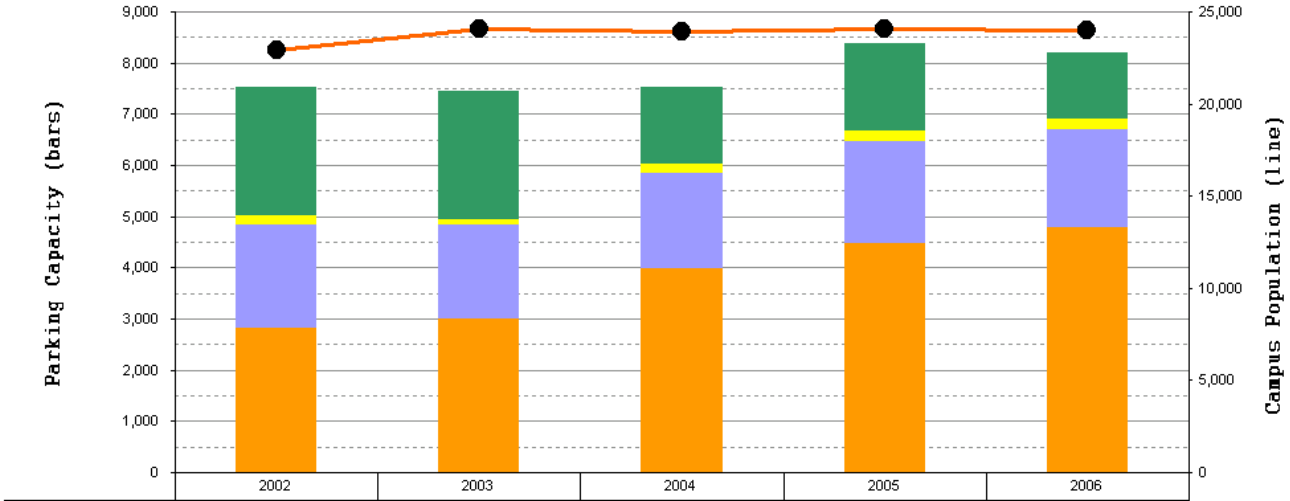
Figure 1: OSU Population Breakdown

Campus parking consists of a parking structure and a variety of parking lots: permit-regulated, metered, and open parking. On-street parking is available on 11th, 13th, 14th and 15th streets and other roadways adjacent to the campus. The lots and on-street spaces are mainly controlled by the OSU permit system except for one “open” parking lot that is free for anyone to use. The “open” lot is located on Campus way west of the Motor Pool parking lot. Parking lots are serviced by

a free shuttle service which consists of two buses that continually run throughout campus from 7:30 a.m. to 6:30 p.m.

OSU's parking management program employs a permit system for most of the parking lots, a pay-lot system for short-term metered parking, a campus shuttle and enforced parking. Permits are sold by use type: faculty/staff, student, emeritus, motorcycle, and visitor. Parking spaces within lots are assigned according to their permitted use. Those with faculty/staff permits are also allowed to use the student lots. Special permits are available for service vehicles on campus.

Figure 2 (OSU Parking Capacity and Enrollment Trend) below shows the breakdown of assigned parking spaces relative to campus population. Overall parking spaces decreased from 8,371 to 8,192 between 2005 and 2006. The decrease in parking spaces can be attributed mainly to the decommissioning of the gravel parking lot to the east of the Hilton Garden Inn on the south side of campus. Previously this lot was an "open" lot and is now temporarily used for athletic events. The relative distribution of parking capacity by campus sector can be viewed in Attachment B (Capacity by Campus Sector Map).



	2002	2003	2004	2005	2006
Other	2,525	2,518	1,493	1,697	1,294
ADA	175	89	191	217	211
Faculty/Staff	2,015	1,845	1,860	1,976	1,907
Student	2,818	2,995	3,984	4,481	4,780
Total Capacity	7,533	7,447	7,528	8,371	8,192
Campus Population	22,948	24,096	23,906	24,042	24,020

Figure 2: OSU Parking Capacity and Enrollment Trend

Parking Utilization

Parking utilization is calculated as the ratio of occupied spaces to the total number of spaces. A 90% utilization rate requires the University to construct new parking facilities. At this level of utilization drivers may spend considerable time

circulating campus in search of a parking space. **Based on the survey, OSU's parking is at a utilization rate of 73% during peak hours.** A detailed map showing parking lot utilization by parking lot and campus sector is included as Attachment C (OSU Main Campus Parking Survey Results Map).

Parking Occupancy between 2005 and 2006 has decreased by 6% from 79% to 73%. Figure 3 (Summary of Parking Capacity) below and Table 1 (Summary of Parking Usage on Campus) below show a comparison of parking utilization over the last five years. The decrease may be the result of many factors but can be attributed to the development of housing adjacent to campus (and associated parking), increased parking in neighborhoods adjacent to campus and decreased demand for parking (see Parking Demand (Permit Sales) page 6).

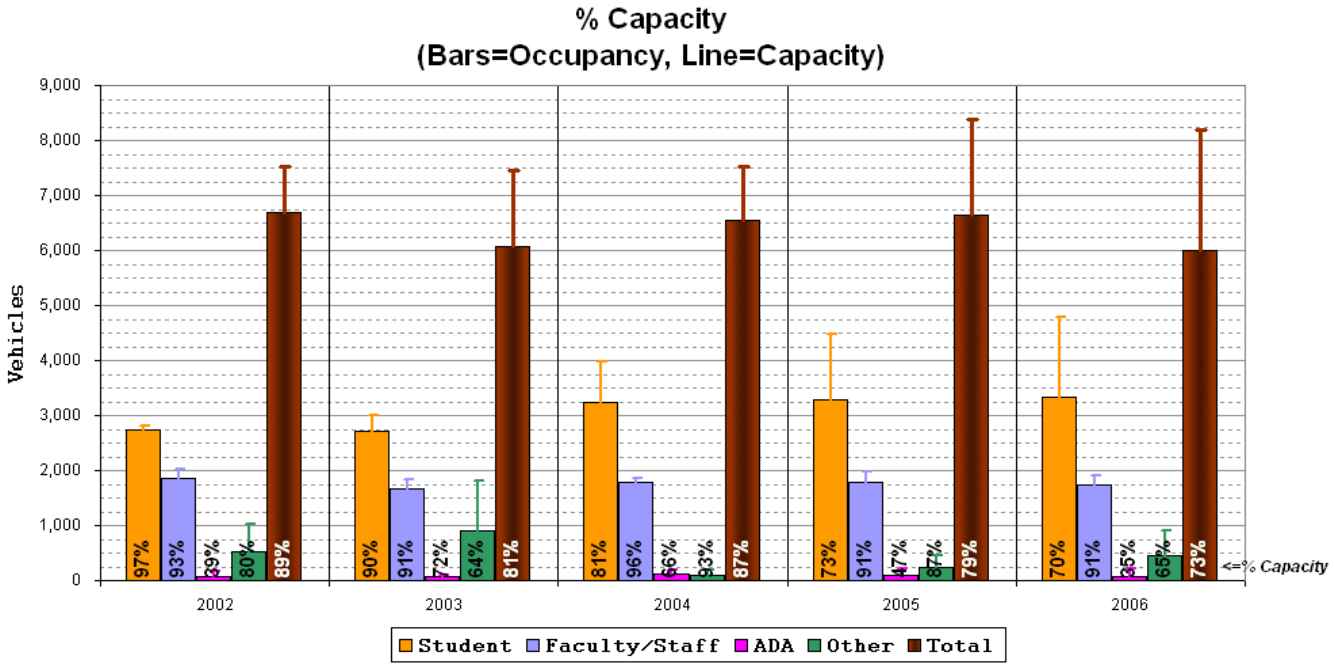


Figure 3: Summary of Parking Capacity

	Parking Capacity (vehicles)					Parking Occupancy (vehicles)					% Occupancy				
	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
Students	2,818	2,995	3,984	4,481	4,780	2,738	2,707	3,241	3,276	3,344	97%	90%	81%	73%	70%
Faculty/Staff	2,015	1,845	1,860	1,976	1,907	1,866	1,676	1,788	1,797	1,740	93%	91%	96%	91%	91%
ADA	175	89	191	217	211	69	64	126	102	73	39%	72%	66%	47%	35%
Other	2,525	2,518	1,493	1,697	1,294	2,011	1,615	1,394	1,469	839	80%	64%	93%	87%	65%
Total	7,533	7,447	7,528	8,371	8,192	6,684	6,062	6,549	6,644	5,995	89%	81%	87%	79%	73%

Table 1: Summary of Parking Usage on Campus

Parking Demand (Permit Sales)

Parking demand is defined by parking lot utilization or by the sale of campus parking permits. OSU uses parking demand ratios to project future demand in conjunction with parking lot utilization. The parking demand ratio is calculated by either the ratio of permitted vehicles to campus population or the ratio of vehicle

occupancy to campus population. Table 2 (OSU Peak Time Parking Demand Ratios) below shows the total number of parking permits by two categories: 1) faculty/staff; and 2) student.

Parking Demand Ratios	Fall 2005				Fall 2006			
	Headcount	Parking Occupancy per Headcount	Permits	Parking Occupancy per Permit	Headcount	Parking Occupancy per Headcount	Permits	Parking Occupancy per Permit
Student	19,236	17%	4,161	79%	19,362	17%	3,998	84%
Faculty/Staff	4,806	37%	3,112	58%	4,658	37%	2,696	65%
Total	24,042	21%	7,273	70%	24,020	21%	6,694	76%

Table 2: OSU Peak Time Parking Demand Ratios

The data in Table 2 indicates that 21% (17% Student, 37% Faculty/Staff) of the campus population parks on campus during peak time. During this same time 76% (84% Student, 65% Faculty/Staff) of those purchasing permits use them. Compared to 2005, the number of permits has decreased by 579 permits (163 Student & 416 Faculty/Staff) or 8%. The decrease in permit sales could be partially due to the increase in permit costs from $120 to $144 for students and from $165 to $198 for faculty/staff for year 2005 and 2006 respectively. The number of students increased by 126 students and permits sold to students decreased by 163 which indicates a smaller percentage of students purchased permit.

Parking Utilization by Sector

The OSU Campus Master Plan divides the campus into nine sectors, each with its own development allocation, including parking. Table 3 (Summary of Parking Usage on Campus by Sector) below shows parking demand and utilization for by campus sector. Attachment B (Capacity by Campus Sector Map) shows a map depicting relative sector parking capacity by sector. Attachment C (OSU Main Campus Parking Survey Results Map) shows a map depicting sector utilization as well as individual parking lot capacities.

	Parking Capacity (vehicles)			Parking Occupancy (vehicles)			% Occupancy		
Sector	2004	2005	2006	2004	2005	2006	2004	2005	2006
A	129	112	130	109	107	111	84%	96%	85%
B	1,003	1,171	924	873	947	722	87%	81%	78%
C	2,810	2,759	2,653	2,741	2,590	2,406	98%	94%	91%
D	1,064	1,065	1,268	1,062	970	1,141	100%	91%	90%
E	115	251	295	72	187	251	63%	75%	85%
F	1,480	1,136	1,514	755	741	524	51%	65%	35%
G	541	1,561	1,365	540	785	805	100%	50%	59%
H	386	316	43	385	316	37	100%	100%	86%
J	0	0	0	0	0	0	n/a	n/a	n/a
Total	7,528	8,371	8,192	6,537	6,643	5,995	87%	79%	73%

Table 3: Summary of Parking Usage on Campus by Sector

On a sector by sector basis only Sector F and Sector G (excluding sector J that has no parking) contain 75% or less of utilized capacity. Sector F's lack of utilization is mainly attributable to the Reser Stadium parking lot being underutilized (less than 15% on average). Sector G's lack of utilization is mainly attributable to the underutilization of the parking structure (less than 50% on average).

Neighborhood Street Parking Study

The Neighborhood Street Parking Study was completed during the same days as the OSU Main Campus Parking Study (October 17 and October 18) which is representative of peak student attendance on campus. The study included hourly surveys starting on the hour from 9:00 AM to 1:00 PM for the College Hill (District A) and North College Hill (District B) districts north of the OSU main campus. The survey was orchestrated by Campus Planning and performed by Facilities Services personnel and student workers. Personnel performing the survey met with Campus Planning staff prior to the study for instructions about data methodology and collection. A graphical representation of the results for 2005 and 2006 is indicated below in Figure 4 (Summary of Overall Neighborhood Parking Usage).

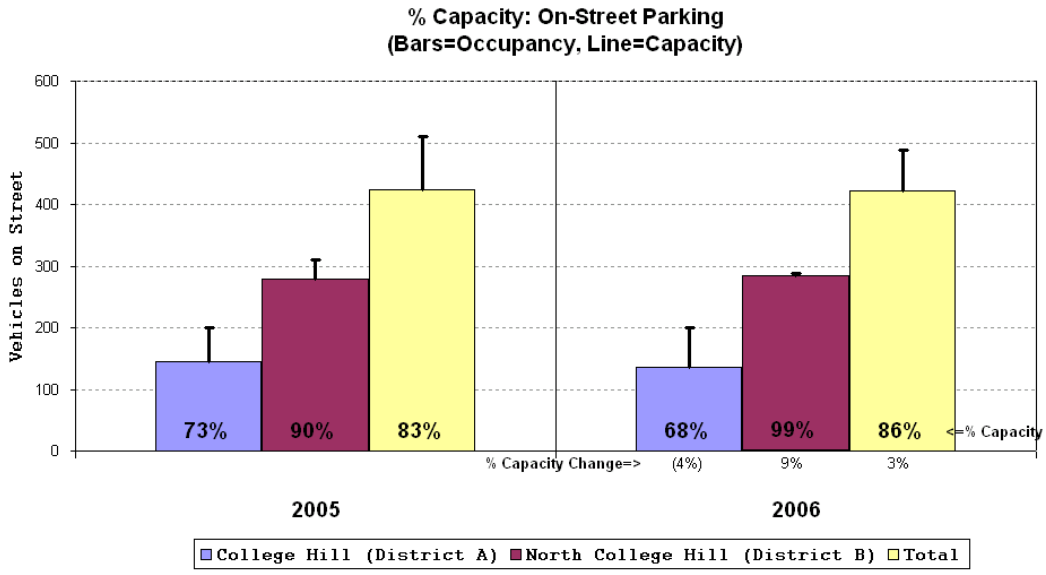


Figure 4: Summary of Overall Neighborhood Parking Usage

District Findings

The College Hill (District A) parking district is bounded between 27th and 32nd Streets east/west and between Van Buren and Johnson Avenue north/south. The North College Hill (District B) district is bounded between 14th and 24th Street east/west and between Harrison Blvd. and Monroe Avenue north/south. The overall street parking utilization by time period for this survey is indicated below in Table 4 below and Figure 4 above,

	College Hill (District A) Capacity=200 vehicle spaces*					North College Hill (District B) Capacity=288 vehicle spaces*				
Time Period	Resident Permit	Non-Permit Occupied	Meter Occupied	Total Occupied	% Capacity	Resident Permit	Non-Permit Occupied	Meter Occupied	Total Occupied	% Capacity
09:00 AM to 10:00 AM	65	75	0	140	70%	159	97	24	279	97%
10:00 AM to 11:00 AM	65	83	0	147	74%	155	103	24	282	98%
11:00 AM to 12:00 PM	66	70	0	136	68%	146	115	24	284	99%
12:00 PM to 01:00 PM	72	52	0	124	62%	152	120	24	296	103%
Average	67	70	0	137	68%	153	109	24	285	99%

Table 4: Hourly Neighborhood Street Parking Utilization during Survey

Summary of District A Findings

As shown in Table 4 above and Figure 4 above, District A has an overall average utilization rate of 68% over the period of the survey. This indicates a 4% decrease over last year's survey. Side streets nearer to campus (see Attachment D (College Hill (District A) Parking Survey Results Map)) shows to be over or near capacity which may indicates probable student parking.

Street capacity is determined by utilizing a standard parking space of 10' by 20'. Because streets are unmarked more compact vehicles can be fit into a series of unmarked spaces than is indicative of capacity. A possible cause of the district's decrease in parking utilization could be attributed to new housing units opening up this year on the east side of campus (11th St) and/or the shifting of students parking in District B.

Vehicles with OSU parking permits (hang tags) are also another indication of student parking. Due to a misunderstanding of survey procedures this piece of information was not obtained during this survey for this district.

Summary of District B Findings

As shown in Table 4 and Figure 4 above, District B has an overall average utilization rate of 99% over the period of the survey. This indicates a 9% increase over last year's survey. Many of the streets show to be over 100% capacity (see Attachment E (North College Hill (District B) Parking Survey Results Map)) that are nearer to the campus which again indicates possible student parking. Capacity utilization of this district may also be the result of lunchtime parking. As is indicated in Table 4, street parking utilization increased 6% from 9:00 AM to Noon (lunchtime). This increase may be influenced by individuals parking to eat lunch at eateries on Monroe Street.

Street capacity is determined by utilizing a standard parking space of 10' by 20'. Because streets are unmarked more compact vehicles can be fit into a series of

unmarked spaces than in indicative of capacity. This may possibly be attributed to the increase in OSU parking permit fees and the convenience of the neighborhood to campus.

Vehicles with OSU parking permits (hang tags) are also another indication of student parking. An average of ten (less than 4% of capacity) OSU parking permits were found during the survey period.

Overall Summary of Districts A and B

Together the neighborhood districts north of the campus show an 86% street parking utilization rate. This indicates a 3% increase over last year's survey with a shift of increased parking in District B. The increase may be attributed to many factors including new housing, increased parking fees, enforcement and student parking behavior.

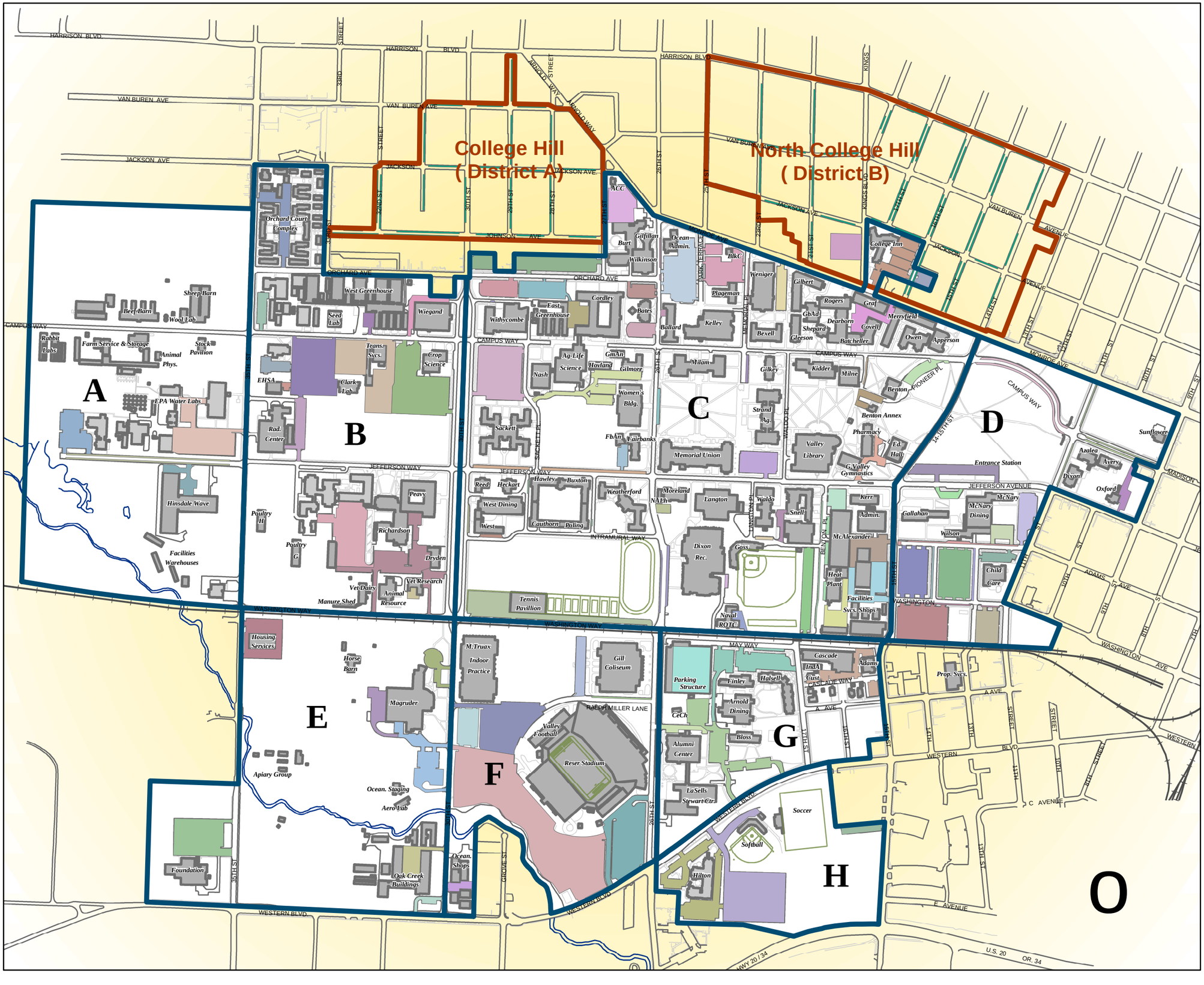
District Parking Utilization Strategies

Strategies that may be considered to improve parking both at OSU and in the residential districts include but are not limited to the following:

- Analysis of the parking study shows that more cars are parked on streets than what is available (based on 10' x 20' standard parking space). Parking on streets where parking is over 100% of capacity ("hot spots") may be reduced if parking enforcement were available in each neighborhood district during peak times to help change parking behaviors.
- The city of Corvallis does not stripe parking spaces in the neighborhoods, therefore more cars may park on a street than what the city parking space standard may allow. This may result in haphazard parking which the study shows as a hotspot.
- OSU will continue to complete the City of Corvallis Neighborhood Parking District Study in conjunction with the OSU parking study to identify potential strategies to establish and maintain acceptable parking utilization rates within the existing neighborhood parking districts.

Attachments

- Attachment A (Parking Survey Overview Map)
- Attachment B (Capacity by Campus Sector Map)
- Attachment C (OSU Main Campus Parking Survey Results Map)
- Attachment D (College Hill (District A) Parking Survey Results Map)
- Attachment E (North College Hill (District B) Parking Survey Results Map)



2006 Parking Utilization Study

Attachment A

Parking Survey Overview

Legend

- Campus Sector
- Neighborhood District

OSU Campus Planning
5 Jaunuary, 2007
GIS Map: PUS2006OSU_w_PrkDists.mxd

A

130

B

924

C

2,653

D

1,268

E

295

F

1,514

G

1,365

H

43

O

OSU
Oregon State
UNIVERSITY

2006 Parking Utilization Study
Attachment B

Main Campus-
Capacity
by Sector

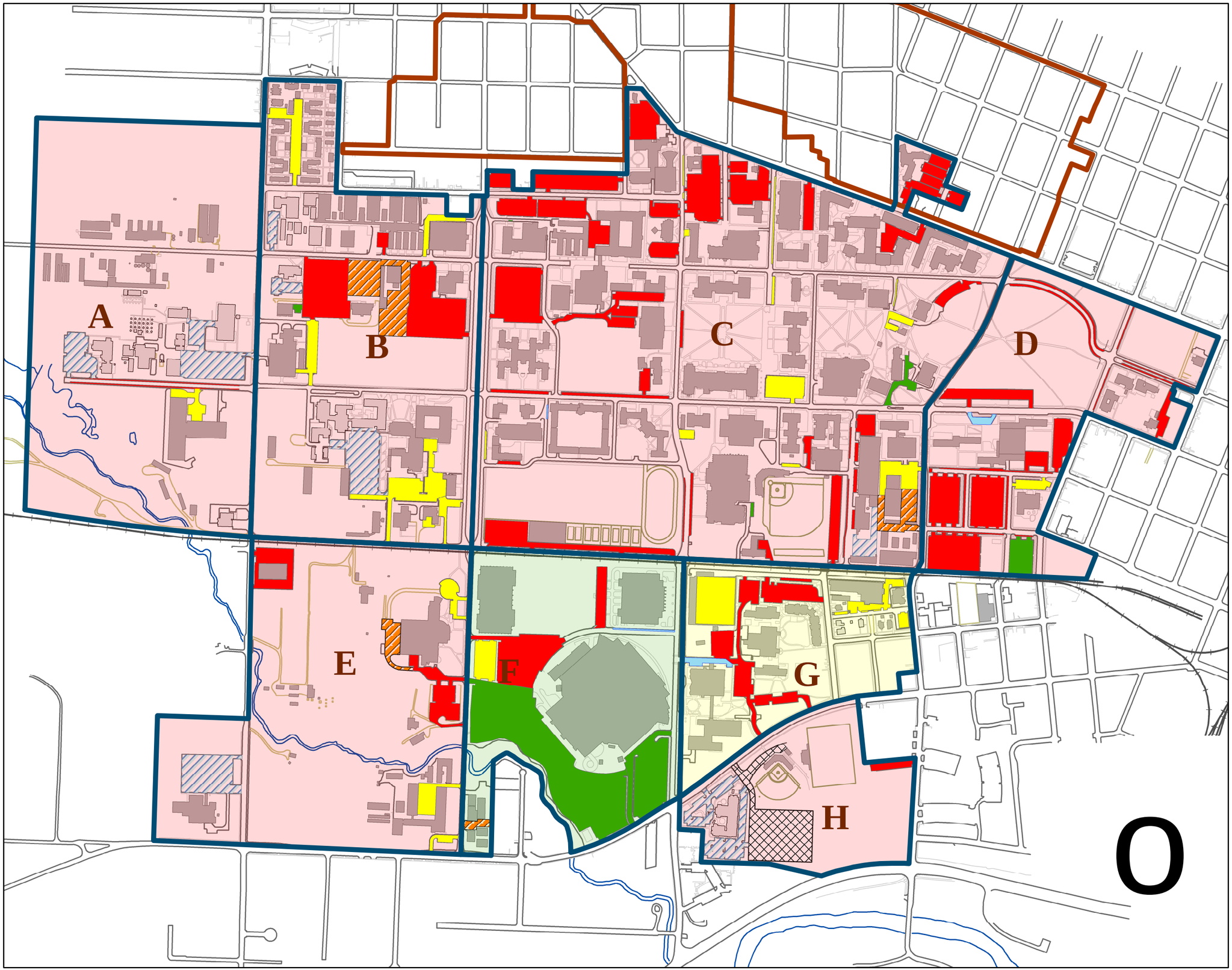
Legend

Vehicle Capacity*

- Student
- Faculty
- ADA
- Other

Number next to pie chart equals total parking spaces for sector.

OSU Campus Planning
5 January, 2007
GIS File: PUS2006_OSU_Cap.mxd



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2006 Parking Utilization Study
Attachment C

Main Campus
Survey Results

Legend

% Utilization*

- 0% - 25%
- 26% - 50%
- 51% - 75%
- 76% - 100%

Non Surveyed Lots

- Non-Public
- Non-OSU
- Decommissioned

Sectors shading indicates % utilization.

OSU Campus Planning
5 Jaunuary, 2007
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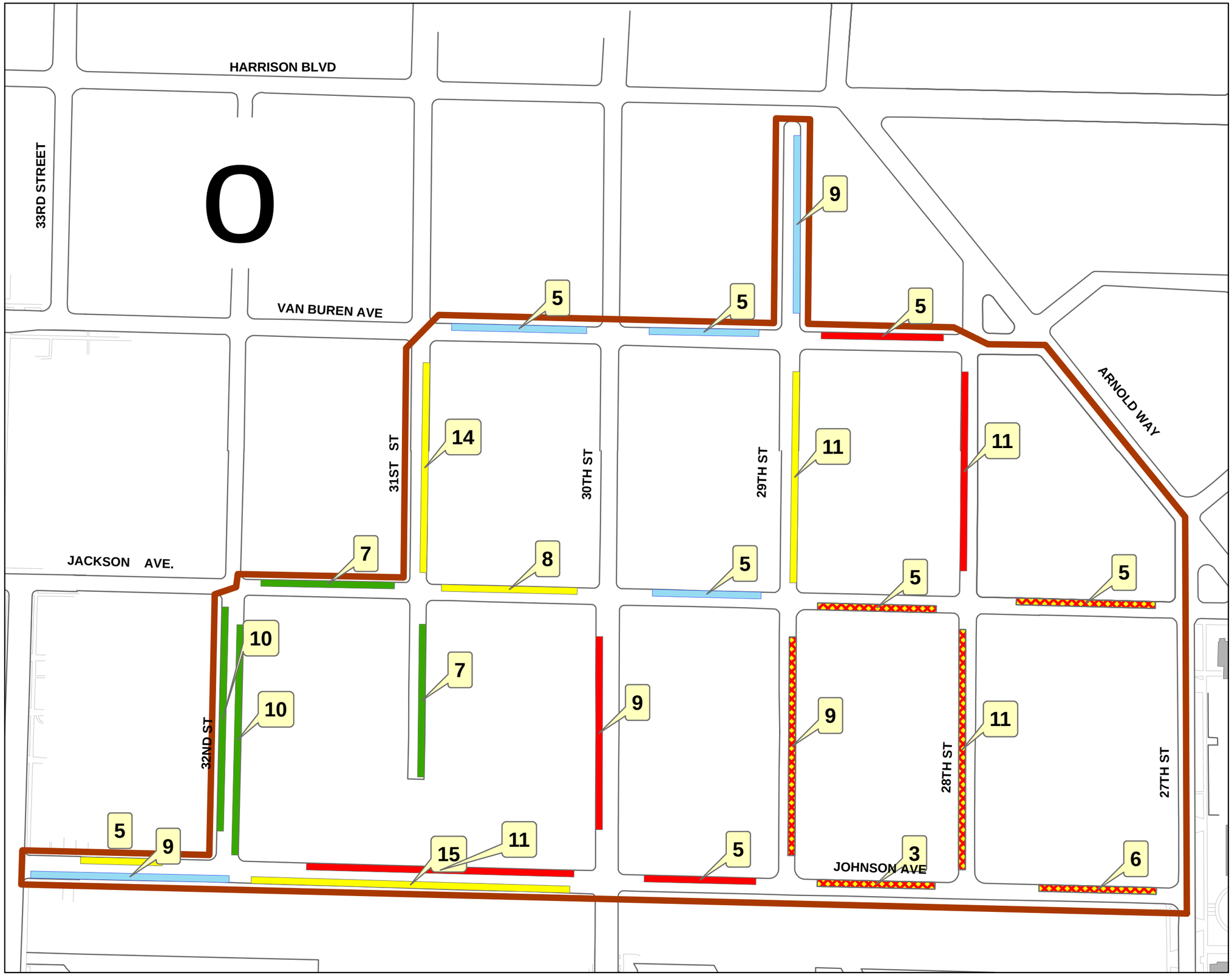

OSU Oregon State University

2006 Neighborhood Street Parking Study

Attachment D

College Hill (District A)
Parking Survey Results

Legend

% Capacity*

- 0% - 25%
- 26% - 50%
- 51% - 75%
- 76% - 100%
- over 100%

Parking capacity based on Corvallis Land Development Code regulations (Vehicle Capacity indicated in callout)

OSU Campus Planning
5 January, 2007
GIS File: PUS2006_OffCmps_PCap.mx