

Traffic Impact & Parking Evaluation for

**Project 10263, Rehabilitate Swetman & Poucher
Halls and/or Surge Space, Project 10131, Rehab
Hewitt Union or Athletic Facility**



State University Construction Fund
State University of New York at Oswego
Town of Oswego, New York

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OSWEGO
STATE UNIVERSITY OF NEW YORK



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LIST OF REFERENCES

1. TRANSPORTATION RESEARCH BOARD, HIGHWAY CAPACITY MANUAL, SPECIAL REPORT 209, WASHINGTON, D.C., 2000.
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3. HIGHWAY SUFFICIENCY RATINGS, NYSDOT, 2001.
4. MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, NYSDOT, 2001.
5. STATE UNIVERSITY OF NEW YORK AT OSWEGO CAMPUS CAPITAL PLAN SUCF PROJECT NO. 10818, HELPERN ARCHITECTS, 1999.
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EXECUTIVE SUMMARY

OVERVIEW

This Traffic Impact and Parking Study has been prepared to identify the potential vehicular/pedestrian traffic and parking impacts resulting from the proposal, the Renovation of Swetman and Poucher Halls and construction of a new Campus Center. This report is intended to supplement the Long Environmental Assessment Form (LEAF) required under the State Environmental Quality Review Act (SEQRA) for the proposed campus modifications.

In addition to identifying impacts associated with the above-mentioned proposal, a campus wide investigation of vehicular and pedestrian traffic was conducted to identify and prioritize future capital improvement projects that may be required due to current or additional deficiencies as identified by the investigation.

Several conditions are investigated and evaluated to identify improvements potentially required for the immediate renovation proposal and longer term campus wide needs. They include:

1. Site Investigation and Data Collection:

- Continuous roadway section counts (24-hour, 1 week) at 9 locations;
- Vehicular turning movement counts during critical AM and PM peaks at 6 locations;
- Pedestrian flow counts at the same 6 locations, during the same time frames;
- Parking demand/capacity inventory (daily, over 10 hours);
- Geometric detailing at 6 intersections for traffic modeling purposes;
- Intersection photograph log

2. Identification of Existing Conditions and Current Operations

- Network capacity results;
- Current parking capacity and demand;
- Safety evaluation (review of historical accident data)

3. Projection of Future Traffic and Parking Operations

- Determine and quantify changes in network vehicular and pedestrian traffic flow that will result from the specifics of the proposal;
- Determine and quantify changes in parking demand, by location, that will result from the specifics of the proposal;

- Determine these changes for various campus scenarios, as related to the proposal
4. Identification of Deficiencies
 5. Recommendation of Mitigation
 - Swetman Poucher Renovation / Construction of Campus Center
 - Campus Wide Master Planning
 - Prioritized mitigation list and costs

The report that follows gives, in detail, study and analyses procedures, recommendations for mitigation of the immediate proposal (Renovation of Swetman and Poucher Halls, construction of a new Campus Center) and a prioritized list of campus wide improvements for future consideration.

In addition, the overall demand for campus parking is evaluated. According to typical parking industry standards, occupancy of over 90-95 percent is considered effectively full. Almost all of the lots in the central campus area are effectively at capacity. The occupancy counts showed substantial vacancies at the parking areas south of Route 104 having over 675 vacancies. In order to more efficiently utilize the existing parking supply it will be necessary to move some members of the SUNY Oswego community to the empty spaces on the periphery of campus. Every effort should be made to encourage the use of this parking through parking fee cost differentials as well as improved transit.

RECOMMENDATIONS

This report addresses the traffic and parking related impacts that can be expected from development of the current proposal, and assesses the longer term needs of a Campus Master Plan. The following list summarizes recommendations for improvements, as related to the immediate proposal and long term needs:

- A. Renovation of Swetman Poucher and Construction of Campus Center
 1. Establish traffic calming treatments along Centennial Drive from Takamine to the driveway servicing lot E-10.
 2. Remove the bus drop-off and shelter within the above limits and relocate to the modified loop road fronting Swetman Poucher.
 3. Construct a median on Centennial Drive at Washington Boulevard for pedestrian refuge and separation of opposing traffic flow.
 4. Develop and implement a pedestrian route identification system, as it pertains to changes in pedestrian flow resulting from the immediate proposal.

5. Develop and implement an informational signing plan for Special Events (including hockey games).
6. Develop and implement an informational signing plan for Graduation / Convocation Events.
7. Remove, modify, and install new categorical parking lot signage as appropriate.
8. Construct a new surface parking lot (south of West End Avenue and East of Sweet Road) to provide for year round dynamic demands and VIP parking for events that may occur during the day.

B. Campus Wide Master Planning

- 1a. Investigate pedestrian crossing issues across Route 104 at Barnes Drive:
 - Gap study and pedestrian count to support delineated crossing
 - Warrant investigation to identify need for signalized pedestrian crossing
- 1b. Install pedestrian signal, if warranted.
2. Develop and implement a pedestrian route identification system, on a campus wide basis.
3. Establish a campus identification “gateway” treatment at the Washington Boulevard / Sheldon Avenue intersection.
4. Define and delineate, via pavement markings and signs, a pedestrian crossing At the Rudolph Road / Centennial Drive intersection.
5. Shuttle serviced should be evaluated after completion of the project and after traffic volumes and patterns have stabilized to assess the potential need for additional shuttle service.
6. The existing parking space/student ratio of 0.34 should be maintained.
7. Efforts to displace commuter students from the main campus parking areas to perimeter and remote lots should be continued.
8. Masterplanning efforts to traffic calm, and ultimately sever, Centennial Drive should be undertaken incrementally. Begin with recommendation

number 1 in section X.A. and continue with less restrictive means (i.e. alternatives that limit traffic on Centennial Drive such as conversion to one-way flow) until the link can be severed completely.

CONCLUSION

This report concludes that all identified impacts can be addressed through the intermediate recommendations as defined. Long term campus wide needs will be ameliorated with consideration to the prioritized recommendations list. Future campus projects will consider all prioritized items, and implement the same based on the defined improvement location, on-going construction chronology, and funding sources available at the time.

I. INTRODUCTION

This Traffic Impact and Parking Study has been prepared to identify the potential traffic and parking impacts resulting from the proposed Rehabilitation of Swetman and Poucher Halls and New Campus Center (SUCF Project No. 10263). This report is intended to supplement the Long Environmental Assessment Form (LEAF) required under the State Environmental Quality Review Act (SEQRA) for the proposed campus modifications. In addition, this study evaluates overall campus improvements that can be made to enhance circulation, operations, the pedestrian environment, and campus mobility.

The operating characteristics of the existing roadway network traversing and surrounding the campus, both public and private, are identified and a concept plan outlining potential mitigation will be suggested to minimize any future capacity or safety concerns. Recommendations are also provided to improve the campus environment for pedestrians, and motorists.

II. LOCATION

The Oswego State campus is located on State Route 104 near the western city limits of the City of Oswego, 35 miles northwest of Syracuse, New York. The campus is situated in the Town and County of Oswego, New York along the southerly shore of Lake Ontario. The campus straddles NY Route 104 with the majority of the residential and academic facilities located north of NY Route 104 between the highway and Lake Ontario. The site location is illustrated in **Figure 1**.

III. EXISTING CONDITIONS

A. Highway System

The roadway system identified for investigation includes the portion of NY Route 104 adjacent to the College, Rudolph Road, Iroquois Trail, Sweet Road, West End Avenue, New Street, Washington Boulevard, Sheldon Avenue, and Centennial Drive within, and/or adjacent to, the boundaries of the SUNY Oswego Campus. Six existing intersections are studied in detail in this Report; they include the following intersections:

- Intersection #1 – County Route 89-Rudolph Road / Iroquois Trail.
- Intersection #2 – Sweet Road / Iroquois Trail
- Intersection #3 – West End Avenue / New Street
- Intersection #4 – Washington Boulevard / Centennial Drive
- Intersection #5 – Washington Boulevard / Sheldon Avenue
- Intersection #6 – Rudolph Road / Centennial Drive

Table I - Target Intersection Attributes, lists the intersections that were analyzed to assess the impact of this project, and attributes related to each.

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LOCATION PLAN

FIGURE 1

CHAZEN JOB# 90280

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TABLE I
TARGET INTERSECTION ATTRIBUTES

INT. NO.	INTERSECTING ROADWAYS	GEOMETRY/ LANE FLOW	INTERSECTION TYPE & CONTROL	MAINTENANCE JURISDICTION
1	CR 89-Rudolph Rd / Iroquois Trail	2 lane / 2 way 2 lane / 2 way	Northbound "T" Stop Sign on Iroquois Trail	County - SUNY SUNY
2	Sweet Road / Iroquois Trail	4 lane-divided / 2 way 2 lane / 2 way	Eastbound "T" Yield Sign on Iroquois Trail	SUNY SUNY
3	West End Avenue / New Street	2 lane / 2 way 2 lane / 2 way	Northbound "T" Stop Sign on New Street	SUNY Town of Oswego
4	Washington Boulevard / Centennial Drive	2 lane / 2 way 2 lane* / 2 way * Excl. southbound Rt. Turn lane	Southbound "T" Stop Sign on Centennial	City/County of Oswego SUNY
5	Washington Boulevard / Sheldon Avenue	2 lane / 2 way 2 lane / 2 way	4-way Stop Signs on Sheldon	City/County of Oswego SUNY
6	Rudolph Road / Centennial Drive	2 lane / 2 way 2 lane / 2 way	Northbound "T" Stop Sign on Centennial	SUNY SUNY





B. Parking Program

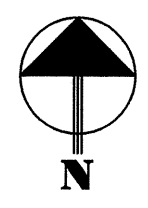
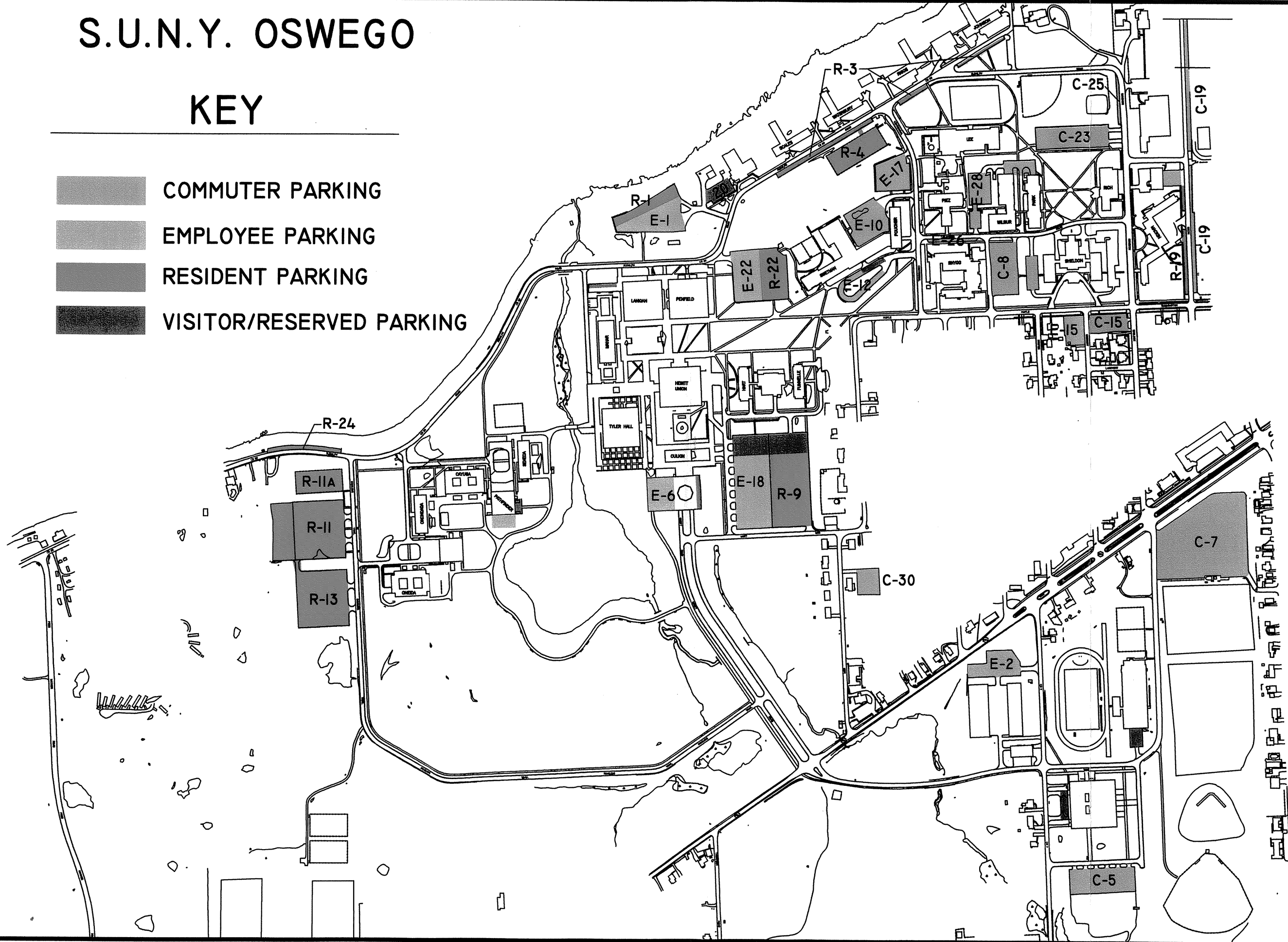
The SUNY Oswego Campus is currently served by 29 designated surface parking lots as well as several short term and accessible parking areas. The designated parking lots are identified with letters and numbers based on the intended users (e.g. e = employee, r = resident student, and c = commuter student). The campus parking map shown in **Figure 2** graphically depicts parking lot location and usage by color.

The parking lots are assigned to various users based on parking permits issued by the College. The capacities and uses of the lots are defined in Table II.

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KEY

-  COMMUTER PARKING
-  EMPLOYEE PARKING
-  RESIDENT PARKING
-  VISITOR/RESERVED PARKING



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EXISTING PARKING LOT
 ALLOCATION
FIGURE 2
 CHAZEN JOB# 90280 SRF JOB# 22069.0

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TABLE II
CAMPUS PARKING LOT CAPACITIES

Parking Lot	Capacity for the following users:					Total Lot** Capacity
	Resident Student	Commuter Student	Faculty / Staff	Accessible*	Reserved	
E-1	0	0	191	0	0	191
E-2	0	0	89	1	0	89
R-3	104	0	0	3	24	104
R-4	118	0	0	0	0	118
EC-5	0	300	0	6	0	300
E-6	0	0	56	5	19	75
EC-7	0	624	0	0	0	624
C-8	0	149	0	1	4	149
R-9	275	0	0	0	0	275
E-10	0	0	103	5	15	103
R-11	388	0	0	0	0	388
R-11A	120	0	0	0	0	120
E-12	0	0	29	1	0	29
R-13	288	0	0	0	0	288
C-15	0	70	0	0	0	70
E-15	0	0	45	0	0	45
Visitor-16	0	0	0	2	125	125
E-17	0	0	95	0	0	95
E-18	0	0	275	0	0	275
C-19	0	166	0	0	0	166
R-19	44	0	0	2	12	44
LOT 20	0	0	0	2	30	30
E-22	0	0	237	6	4	237
C-23	0	156	0	4	0	156
R-24	38	0	0	0	0	38
C-25	0	25	0	0	0	25
E-26	0	0	24	1	0	24
E-28	0	0	69	4	5	69
C-30	0	64	0	2	0	64
Total	1375	1554	1213	45	238	4316

* In accordance with A.D.A. guidelines

** The total capacity of all lots is a combination of all resident student spaces, commuter student spaces, faculty/staff spaces, and reserved spaces in only lots Visitor-16, Lot-20, and Lot E-6 (these are all visitor spaces)

Table II summarizes the capacities of each parking area on campus for the different parking users. This table indicates that 31% of the parking spaces on the campus are allocated for resident students, the remainder are

divided between commuter students 35%, faculty / staff 27%, reserved 5%, and accessible 1% parking. In addition to the parking areas identified in Table II, there are several undesignated parking areas scattered throughout the campus.

SUNY Oswego has an existing parking policy which requires anyone parking a vehicle on campus to annually register the vehicle with the University Police Department. There are two mandatory fees for students bringing vehicles to campus: a vehicle registration fee and a parking permit fee. There are no restrictions concerning which students may obtain parking permits. The registration fee is \$10.70 per academic year (beginning in the fall semester for each year). The parking permit fees are as follows:

Full Time (12 credit hours/more)	\$53.50 each semester
Summer	\$21.40
Part Time (11 credit hours/less)	\$26.75 semester

The following parking permits were issued for the 2002 Fall semester:

Resident Students:	1,695 permits (26%)
Commuter Students:	2,208 permits (35%)
Faculty / Staff:	2,085 permits (33%)
Lot 7 Shuttle Lots:	17 permits (0%)
Motorcycle Permits:	369 permits (6%)
Total:	6,374 permits

In addition, a traffic fine of \$20.00 is charged for violation of the Traffic Regulations and vehicles may be removed at the owner's expense.

C. Pedestrian Circulation

The residential areas of the campus are subdivided into three sub-areas. Lakeside Campus is located on the north side of the campus along Lake Ontario and includes Johnson, Riggs, Waterbury, and Scales Halls. West Campus, located at the west side of the campus between Iroquois Trail and the Glimmerglass Lagoon includes Seneca, Cayuga, Oneida, and Onondaga Halls. East Campus is spread over the remainder of the campus and is comprised of Hart and Funnelle Halls and the Mackin Complex. The Lakeside and East Campus residential communities are located within close proximity to the academic core of the College. As a result of this proximity, the vast majority of students residing in these areas walk to destinations in the area of the Academic Complex and Sheldon Quadrangle. Glimmerglass Lagoon and its outlet form a natural north/west boundary that physically separates West Campus from the rest of the campus. As a result, the migration of pedestrians between West

Campus and other areas of campus is limited to specific access points. These include the Rudolph Road Bridge, the foot bridge between Seneca and Tyler Halls, and Iroquois Trail at the southerly end of the Lagoon.

Previous studies addressing pedestrian circulation identified visual cues (worn paths through grass areas) which indicate a lack of delineated walkways on heavily trafficked pedestrian routes. This speaks to a lack of adequate connectivity and amenities for pedestrians across the campus.

D. Transit Service

Centro of Oswego is a subsidiary corporation of the Central New York Regional Transportation Authority (CNYRTA). CENTRO provides public transit service to the cities of Auburn, Skaneateles, Marcellus, Oswego, Fulton, Mexico and Syracuse. Campus buses serve the main campus, perimeter parking areas, college housing, and surrounding neighborhoods. A route map, depicting the major routes and flow directions, is shown in **Figure 3**.

As shown in Figure 3, CENTRO buses have four separate routes (2A, 2B, 2C, 2D) that travel between the City of Oswego and SUNY Oswego campus. There are also two separate CENTRO buses contracted by SUNY Oswego Auxiliary Services that only serve the SUNY Campus, as shown by the Red and Blue Routes in Figure 3.

The fare for riding the bus on the #2 routes is \$0.60 for the general public, \$0.15 for on-campus students with valid I.D., and free for off-campus students with a current CENTRO sticker on their I.D. The CENTRO buses contracted separately for the SUNY campus are free for all students with a campus I.D.

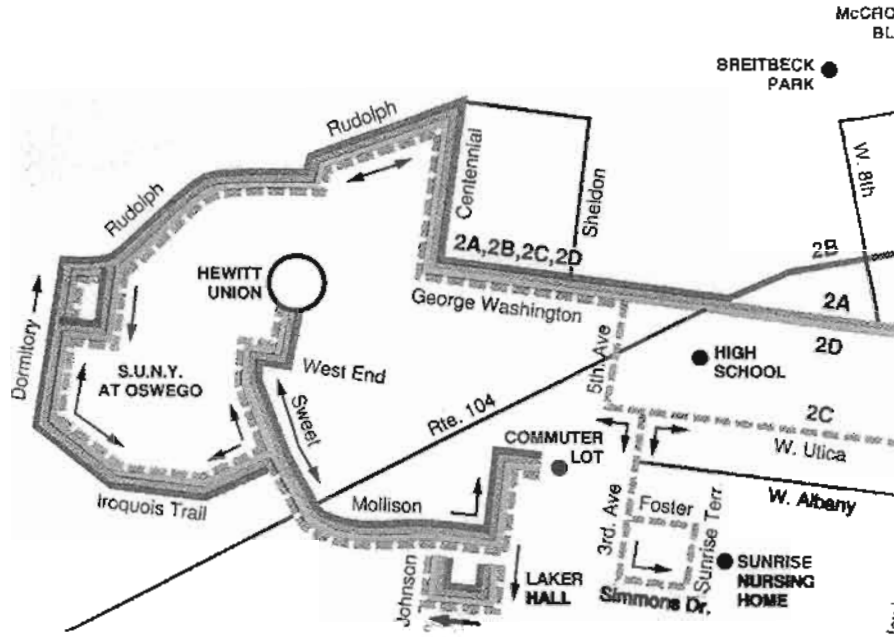
Buses servicing the #2 routes begin at approximately 6:00 AM and end at 2:00 AM the following morning, with no service between 2:00 AM and 6:00 AM. The Red/Blue Routes that service SUNY campus run from approximately 7:00 AM until midnight, with the Blue Route discontinuing service at approximately 5:00 PM.

The CENTRO buses than travel Route #2 have approximately a 30 minute headway, or time difference, between routes. The on campus CENTRO buses have approximately a 6 minute headway on the Red Route and 13 minute headway on the Blue Route.

There are 8 different bus stops or shelters, on campus that the Blue/Red Route buses will stop at. They are located at: Western residence halls, Cayuga Circle at Rudolph Road, Penfield Library, at Rudolph Road and Centennial Drive, on Centennial Drive at Poucher Hall, in front of Culkin

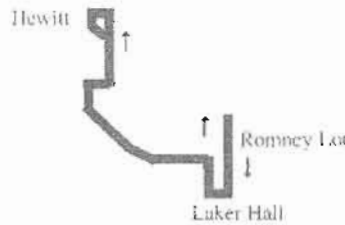
CENTRO BUS ROUTE

LAKE ONTARIO

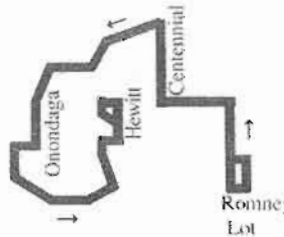


COMMUTER BUS ROUTES

RED ROUTE: APPROXIMATELY 6 MINUTES



BLUE ROUTE: APPROXIMATELY 13 MINUTES



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EXISTING TRANSIT
ROUTES

FIGURE 3

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Hall to service Hewitt Union, Romney Field house lot, and one at the Laker Hall shuttle lot. The City CENTRO buses stop at the Laker Hall shuttle lot, Hewitt Union, and Centennial Drive and Washington Boulevard.

E. Special Events at Romney Field House

Most of the major special events held on campus occur at the Romney Field House which is located along the south side of Route 104 on Barns Drive. Two events drawing the largest crowds, greatest volume of vehicular traffic, and/or generating the highest parking demands are hockey games and commencement.

Hockey games are typically held on Friday and Saturday nights beginning around 7:00 PM and ending around 9:30 PM. Approximately 13 regular season home games per year are held at Romney Field House. Based on information provided by the College:

- average attendance is approximately 1,200 people
- 300-400 vehicles currently park at Romney for games
- average vehicle occupancy is 2-3 people per vehicle
- game attendance is typically split 40% from off-campus and 60% from on-campus

The other major event, commencement, occurs twice a year and always takes place on a Saturday. These events occur once in the winter, after the first semester and then again in the spring after the second semester with the spring events more heavily attended than in the winter. During the spring event, commencement is divided into two ceremonies due to the size of the graduating class and facility limitations. The first ceremony takes place between 9:00 and 11:00 AM and the second ceremony takes place between 1:00 PM and 3:00 PM. Information provided by the College indicates the following:

- 1,500 vehicles park in the vicinity of Romney Field House and Laker Hall for each ceremony
- average vehicle occupancy is 2-3 people per vehicle
- approximately 700 vehicles park in lot 7 adjacent to Romney Field House
- approximately 500 vehicles park in lot 5 adjacent to Laker Hall
- approximately 300 vehicles park in the grass south of the paved lot at Romney Field House
- Just recently the campus has initiated a breakfast for parents and students at Hewitt Union, in an attempt to draw some vehicles away from the Romney Field house parking area

- Parents and students attending the breakfast at Hewitt Union park in Lots E-6, E-18 and R-9
- Some vehicles also park in lots R-11 and R-3, as some students are still on campus in the dorms and have not moved out
- Shuttles currently travel between Hewitt Union and Romney Field House for parents and students who are parked on the main campus

F. Emergency Vehicles

Emergency vehicle access is provided to all points on campus by the surrounding road network. All destinations on campus are currently accessed by Iroquois Trail on the west, Rudolph Road on the north, West End Avenue, Swift Street and Washington Boulevard on the south, and Centennial Drive and Sheldon Avenue on the east. Emergency vehicles can access individual buildings by driving along paved walkways and/or grass areas.

G. Accessibility

The College currently provides 45 accessible parking spaces in the parking lots identified in Figure 2. In addition, 47 accessible parking spaces are provided in various reserved lots throughout the campus.

The 2001 Landscape & Signage Assessment prepared by Trowbridge & Wolf Landscape Architects addressed accessibility issues on the campus in detail. That Report provided the following discussion concerning Swetman and Poucher Halls:

“All of the entrances to Swetman and Poucher Halls have one or more steps. The ramps and stairs do not have compliant rails. There is ADA accessible parking north of Swetman Hall but access aisles are not provided and there is no accessible route to the door, as persons must reach the door by using the driving lane. It is assumed the playground may be removed or modified as part of the renovation and so was not evaluated for compliance.”

Five accessible parking spaces are provided in Lot E-10 adjacent to Swetman and Poucher Halls. The combined parking area of E-10 and E-17 consists of 218 spaces. According to typical NYSDOT design parameters, a parking lot of this size requires 7 accessible spaces. This parking lot currently meets this guideline.

IV. DATA COLLECTION

A. Average Daily Traffic

Continuous (24-hour) bi-directional traffic volume data were collected by SRFA along key roadway sections in the study area. Data was collected over a one-week period beginning on Wednesday December 4, 2002 and ending on Wednesday December 11, 2002. This time frame is representative of typical class schedules and attendance. The data was collected for informational purposes to provide continuous traffic data for any period of the day. In addition, the data was evaluated to determine a two-way Average Daily Traffic (ADT) volume at each location. The ADT is summarized by location in Table III. Figure 4 depicts the location of each hourly count station.

**TABLE III
 AVERAGE DAILY TRAFFIC VOLUMES**

Roadway	Location	2002 ADT in vehicles per day (vpd)
County Route 89	West of Iroquois Trail	1,030
Sheldon Avenue	South of Washington Boulevard	560
Washington Boulevard	East of Sheldon Avenue	9,700
Washington Boulevard	West of Centennial Drive	3,000
West End Avenue	East of Sweet Road	3,100
New Street	South of West End Avenue	1,020
Sheldon Avenue	North of Washington Boulevard	2,900
Centennial Drive	South of Rudolph Road	5,900
Sweet Road	South of Iroquois Trail	3,600

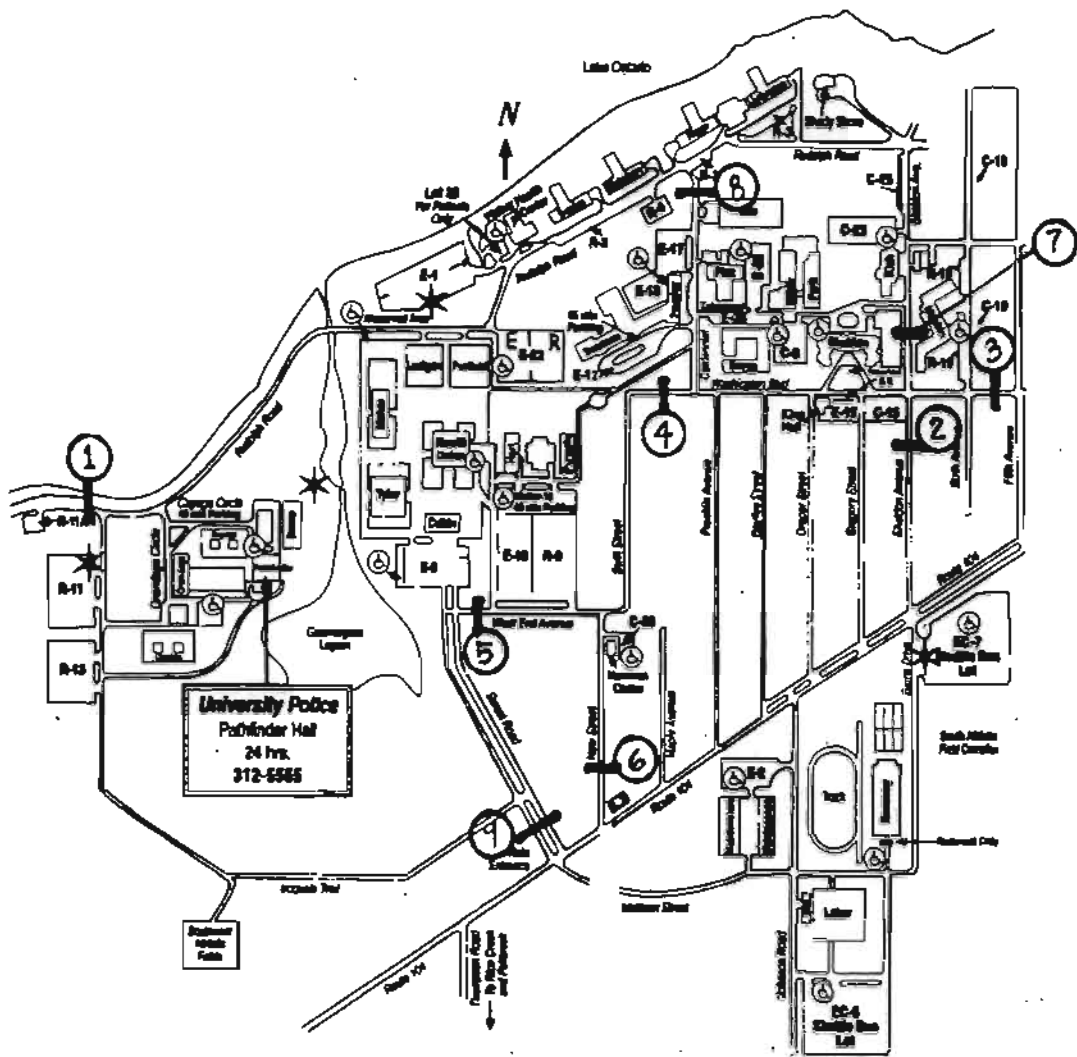
The hourly daily traffic volume data collected at each location is also depicted graphically in the Appendix of this report. Each graph represents one weeks worth of data at each count location.

B. Peak Hour Turning Movement Counts

The roadway network surrounding the project site was investigated to establish existing peak hour traffic volumes, and assess current (typical) operating conditions during the academic year when students are on campus. This established a base condition for comparison with the proposal.

The peak hours selected for analysis were determined based on a review of both College operations and the hourly traffic count data collected in

State University of New York at Oswego



- ① - RUDOLPH (WEST OF IRVING)
- ② - SHELDON (SOUTH OF WASHINGTON)
- ③ - WASHINGTON (EAST OF SIXTH)
- ④ - SWIFT (WEST OF CENTENNIAL)
- ⑤ - WEST END (EAST OF SWEET)
- ⑥ - NEW (SOUTH OF WEST END)
- ⑦ - SHELDON (NORTH OF WASH'N)
- ⑧ - CENTENNIAL (SOUTH OF RUDOLPH)
- ⑨ - SWEET (SOUTH OF IRVING)

REHAB SWETMAN AND POUCHER HALLS
AND / OR SURGE SPACE

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AT OSWEGO

AUTOMATIC TRAFFIC
RECORDER COUNT
LOCATIONS

FIGURE 4

CHAZEN JOB# 90280

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early December. The College population is a mixture of employees (faculty and staff), resident students, commuter students, and visitors.

Typically, ordinary commuter traffic peaks on a weekday between the hours of 7:00 to 9:00 A.M. and 4:00 to 6:00 P.M. The peaking characteristics of college traffic are similar to ordinary commuter traffic in the morning. However, departures from campus are staggered throughout the day, based on varying schedules. A more realistic afternoon window to capture both campus traffic and non-College commuter traffic is an earlier interval than the typical commuter peak.

The two peak intervals identified for detailed data collection are 7:30 AM – 10:00 AM and 2:30 PM to 5:00 PM. Data collected included full vehicular turning movements, geometry, lane flow and lane utilization; pedestrian traffic flow was documented as well. All of these features are required to assess the operating characteristics of the intersections.

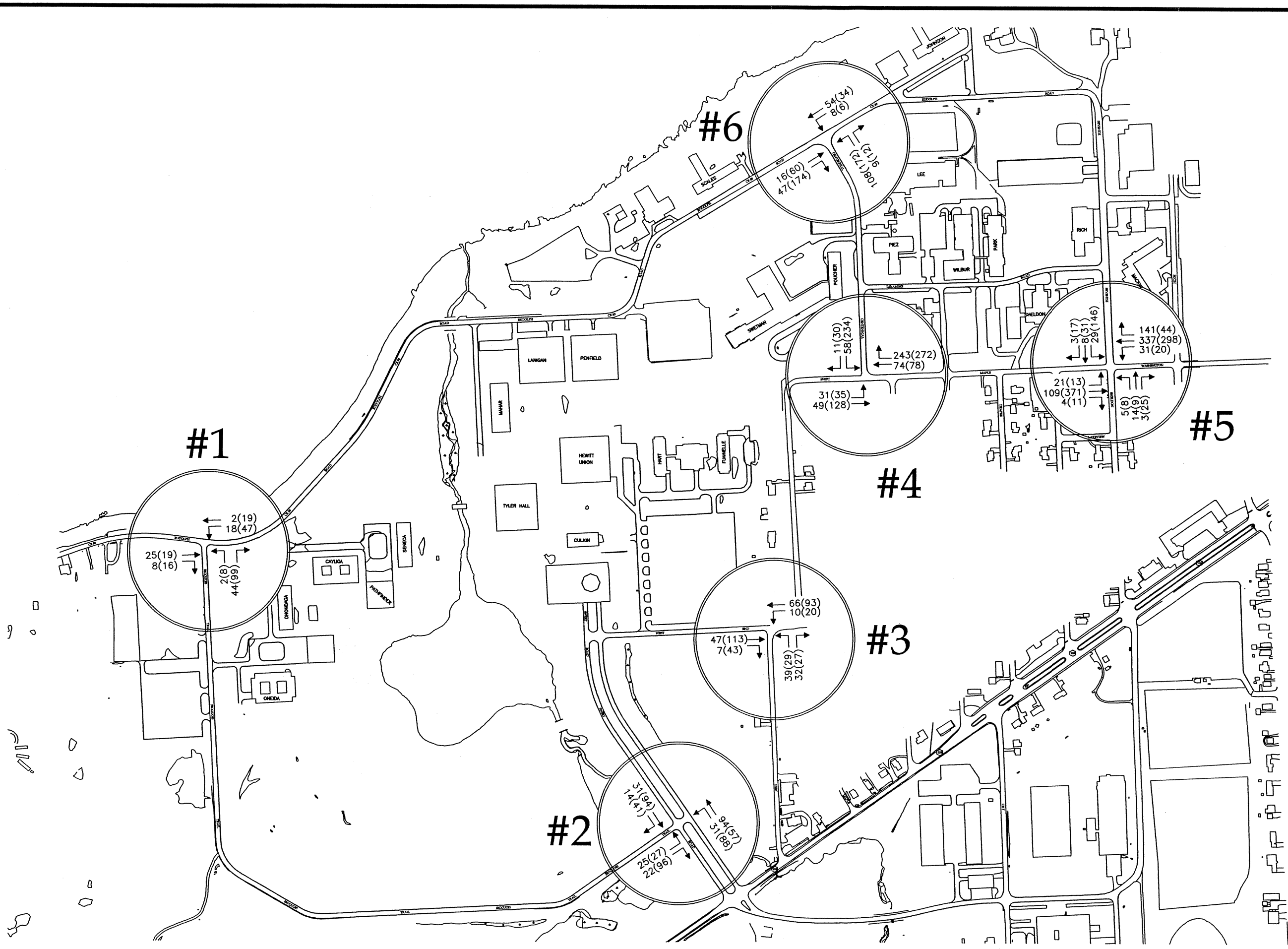
Weekday turning movement counts were obtained at the six existing intersections previously identified. The peak hour volumes were determined by turning movement counts performed by SRFA on Wednesday, December 11, 2002 (PM interval) and Thursday, December 12, 2002 (AM interval). These counts identified the actual peak hours to be generally between 8:30 to 9:30 AM and 2:45 to 3:45 PM.

Peak hour volumes, depicting the existing vehicular movements at each study intersection, are illustrated in Figure 5. Figure 6 depicts pedestrian crossings during the peak hours at each of the intersections where data was collected.

C. Parking Inventory and Utilization

A survey of all parking lots on the State University of New York at Oswego Campus was conducted on Tuesday, December 10, 2002 between 7:30 AM and 5:30 PM. This was a typical day during the academic calendar and did not include any "special events". For the purposes of this analysis, "special events" are defined as events that draw a significant amount of off-campus traffic and occur infrequently such as commencement and hockey games.

Parking lot occupancies were documented once every hour during this time period and any illegally parked vehicles were noted. The study documented 51 total separate parking areas on the campus, 29 of which have a letter and number assigned to them, as indicated previously in Figure 2. The results of the study have been summarized into four different user profiles (resident students, commuter students, employees,



KEY - 00(00) = AM(PM)

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AND / OR SURGE SPACE

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STATE UNIVERSITY OF NEW YORK AT OSWEGO

EXISTING WEEKDAY PEAK
HOUR TRAFFIC VOLUMES

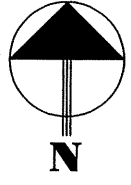
FIGURE 5

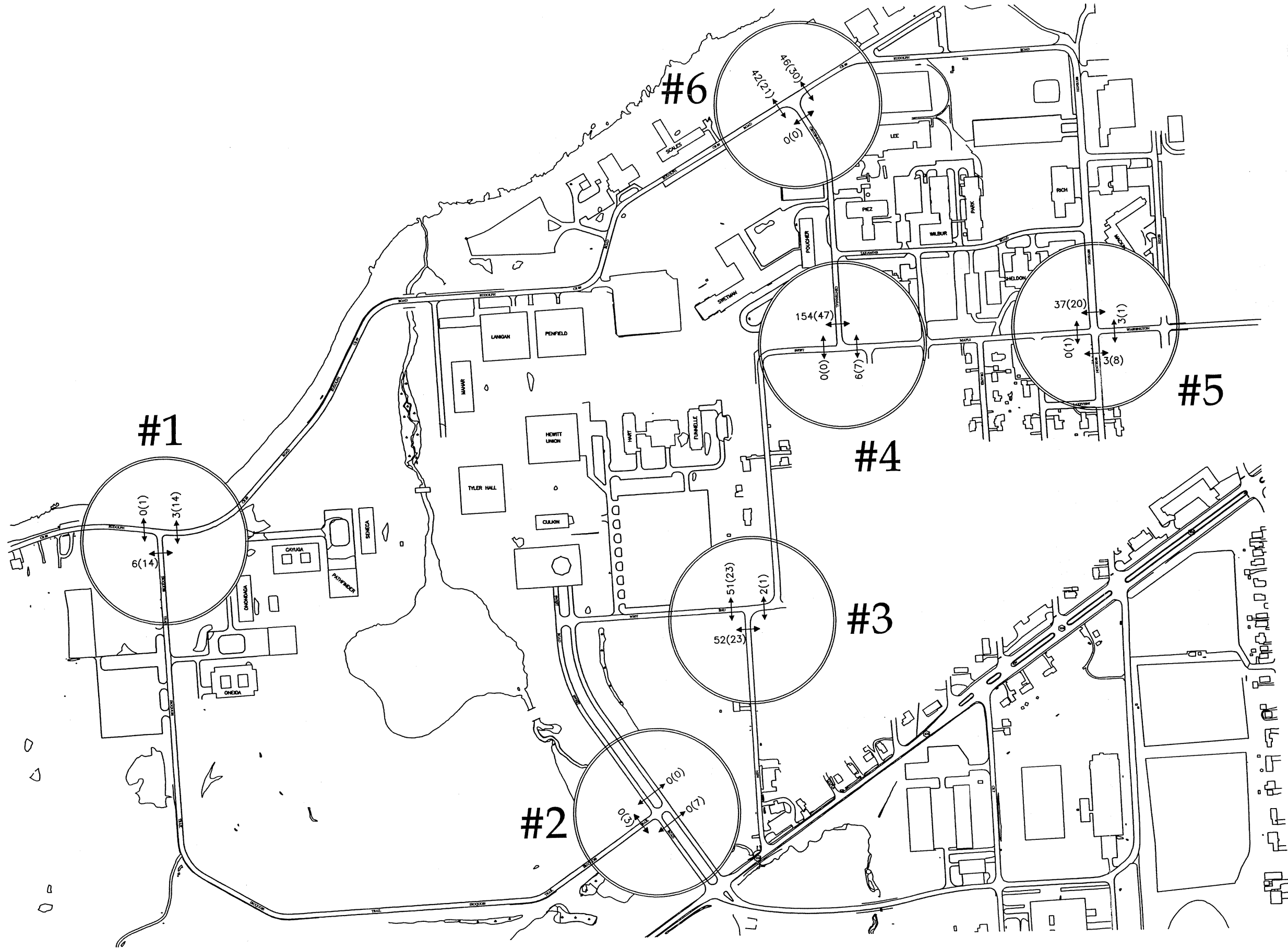
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EXISTING PEDESTRIAN VOLUMES
AT STUDY INTERSECTIONS
FIGURE 6
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and other) as shown on the graph in **Figure 7** below. The "Other" category includes various specific parking areas such as, but not limited to: 45 minute parking, visitor lot, and the health care lot (Lot 20).

FIGURE 7
COMBINED PARKING DEMAND BY USER – FALL 2002

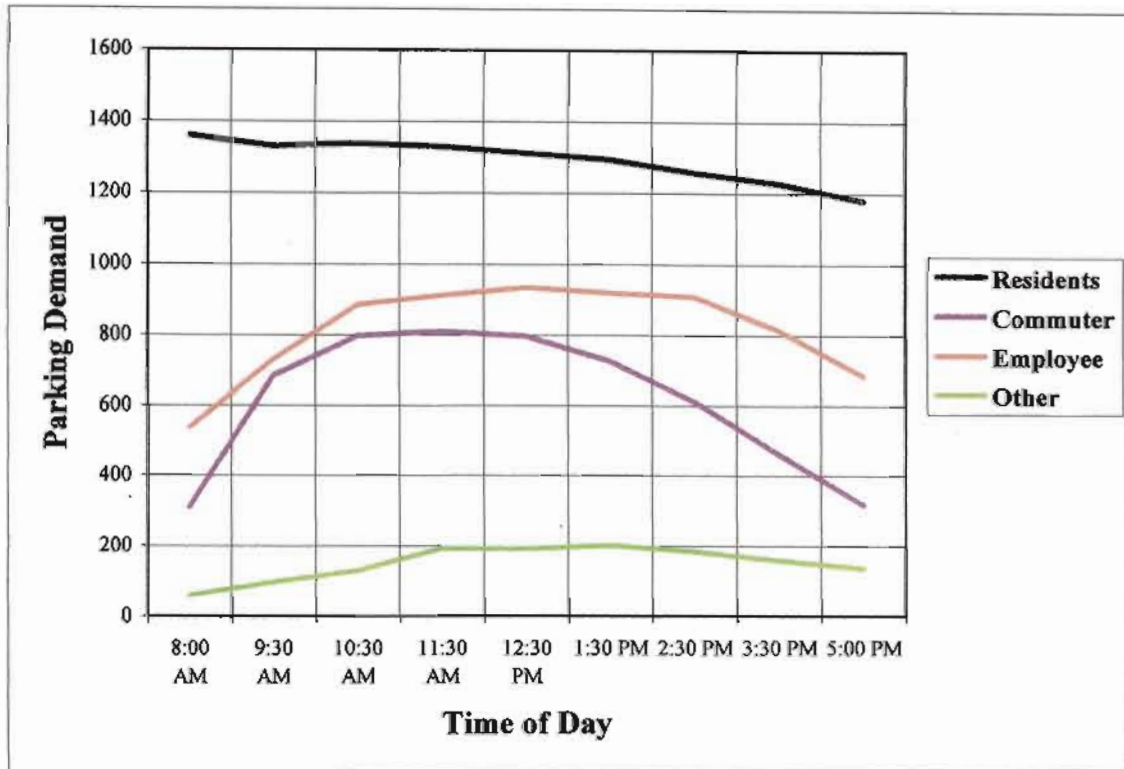


Table IV summarizes the maximum usage observed in each lot and denotes whether lots are under, near, at or over capacity.

TABLE IV
CAMPUS PARKING LOT USAGE

Parking Lot	Total Lot Capacity	Maximum Occupancy Observed	Capacity Relationship
E-1	191	146	UNDER
E-2	89	53	UNDER
R-3	104	74	UNDER
R-4	118	120	OVER
EC-5	300	75	UNDER
E-6	75	78	OVER
EC-7	624	164	UNDER
C-8	149	161	OVER
R-9	275	278	OVER
E-10	103	105	OVER
R-11	388	394	OVER
R-11A	120	126	OVER
E-12	29	35	OVER
R-13	288	285	AT
C-15	70	71	OVER
E-15	45	37	NEAR
Visitor-16	125	85	UNDER
E-17	95	46	UNDER
E-18	275	220	UNDER
C-19	166	86	UNDER
R-19	44	43	AT
LOT 20	30	23	NEAR
E-22	237	171	UNDER
C-23	156	156	AT
R-24	38	48	OVER
C-25	25	23	AT
E-26	24	24	AT
E-28	69	69	AT
C-30	64	67	OVER
Total	4316	3263	

The cells that are highlighted indicate parking lots that experienced occupancy that exceeded the maximum capacity at one point during the day. This data indicates that, overall, the campus experiences 75% occupancy throughout the parking lots. This is largely a result of under-utilized shuttle lots at Laker Hall and Romney Field House.

Parking information was further reduced and evaluated by sub-dividing the campus parking areas into groups of parking lots. The parking lots are grouped by use (resident, commuter, employee) and general area. Parking capacity and demand for each group of parking lots are graphically depicted in **Figure 8**. Figure 8 clearly shows which areas of campus have excess capacity versus the demand for parking in that area and which areas are parking deficient with respect to the area's demand. Two areas of note are the West Campus residence halls which experience a maximum demand that exceeds the existing capacity, and the area south of Route 104 (Romney Field House and Laker Hall lots) which, during the time of maximum demand, was only 25% occupied.

V. PROPOSAL

A. Description

The proposed campus modifications include the rehabilitation of Swetman and Poucher Halls as well as construction of a new Campus Center adjacent to Swetman Hall.

The Campus Center will house a 2,500 seat convocation center and a new ice rink for college hockey games. In addition, the new Campus Center will contain social interaction space, study lounges, meeting rooms, food service, dining, retail café and student organization support facilities.

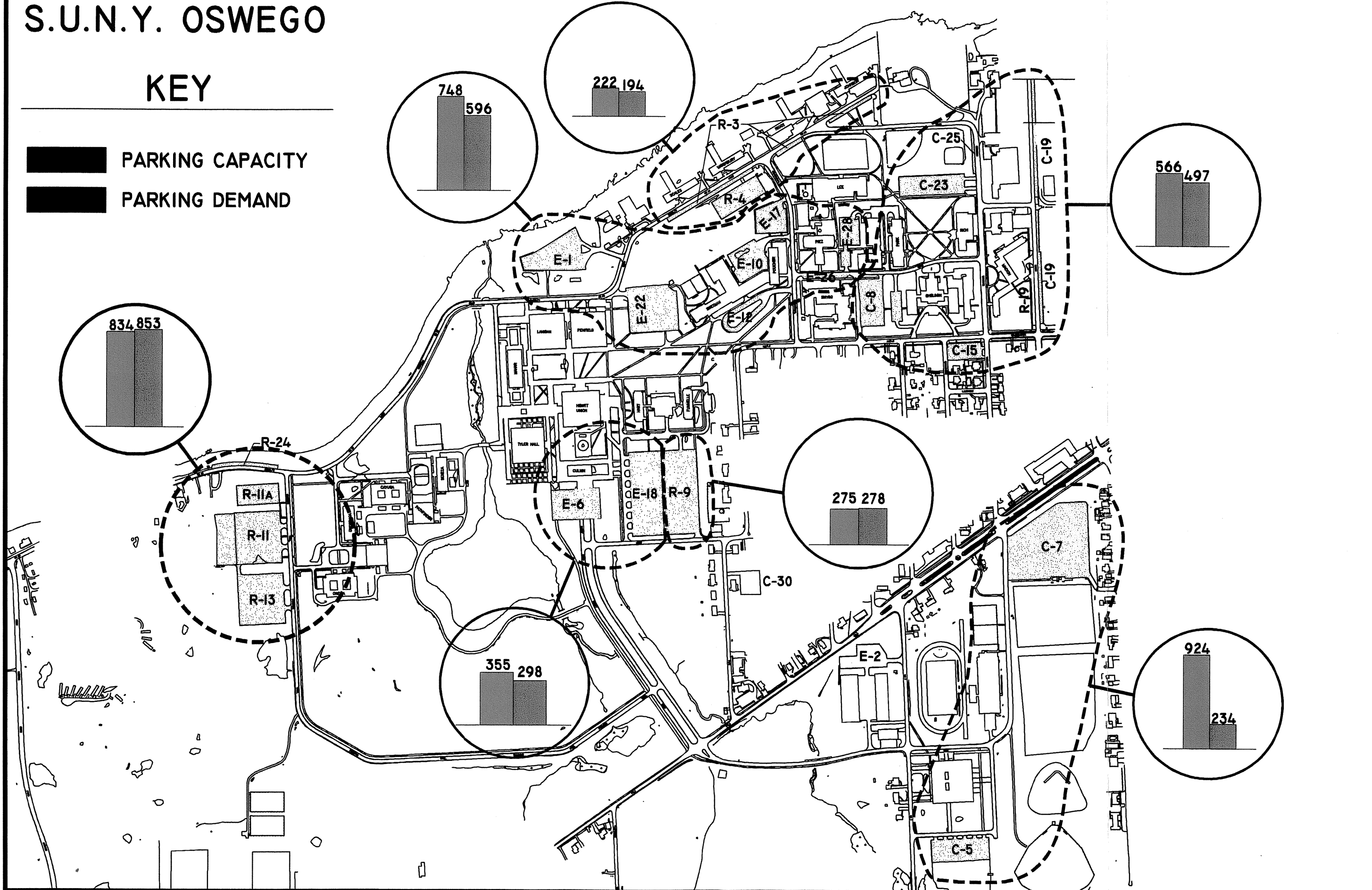
Construction of the Campus Center is anticipated to be completed in 2006 while the Swetman and Poucher Halls are expected to be complete in 2007. The College does not anticipate any increases in students and only minimal increases in faculty/staff in the foreseeable future.

In conjunction with these projects, various academic programs and services will be relocated as indicated in Table V.

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KEY

-  PARKING CAPACITY
-  PARKING DEMAND



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PARKING CAPACITY AND DEMAND BY AREA

FIGURE 8

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TABLE V
ACADEMIC PROGRAMS AND SERVICES RELOCATIONS





Office	Current Location	Future Location
School of Education (Dean's Office)	Swetman	Sheldon
School of Business	Swetman	Rich
Curriculum & Instruction	Swetman	Wilber
English Department	Swetman	Swetman
Modern Language & Literature	Wilber	Swetman
Philosophy	Piez	Swetman
Center for Excellence in Learning & Teaching (CELT)	Lanigan	Swetman
Continuing Education	Swetman	Swetman
Disabled Student Services	Swetman	Swetman
Career Services	Culkin	Swetman
Experience-Based Education	Swetman	Swetman
Student Advisement	Culkin	Swetman
Volunteer Services	Swetman	Swetman
First Year Group	Swetman	Swetman
Honors Program	Mahar	Swetman
Interdisciplinary Group	Swetman	Swetman
Office of Learning Services	Swetman	Poucher
Computer Lab	Swetman	Swetman
Seminar Rooms	Swetman	Swetman
Fitness Center	Swetman	Swetman
Student Organizations & Media	Hewitt Union	Swetman
Admin. & Campus Life Offices	Hewitt Union	Swetman
Auditorium	Hewitt Union	Swetman
Meeting Rooms	Hewitt Union	Swetman
Copy Center	Hewitt Union	Swetman

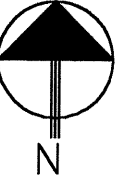
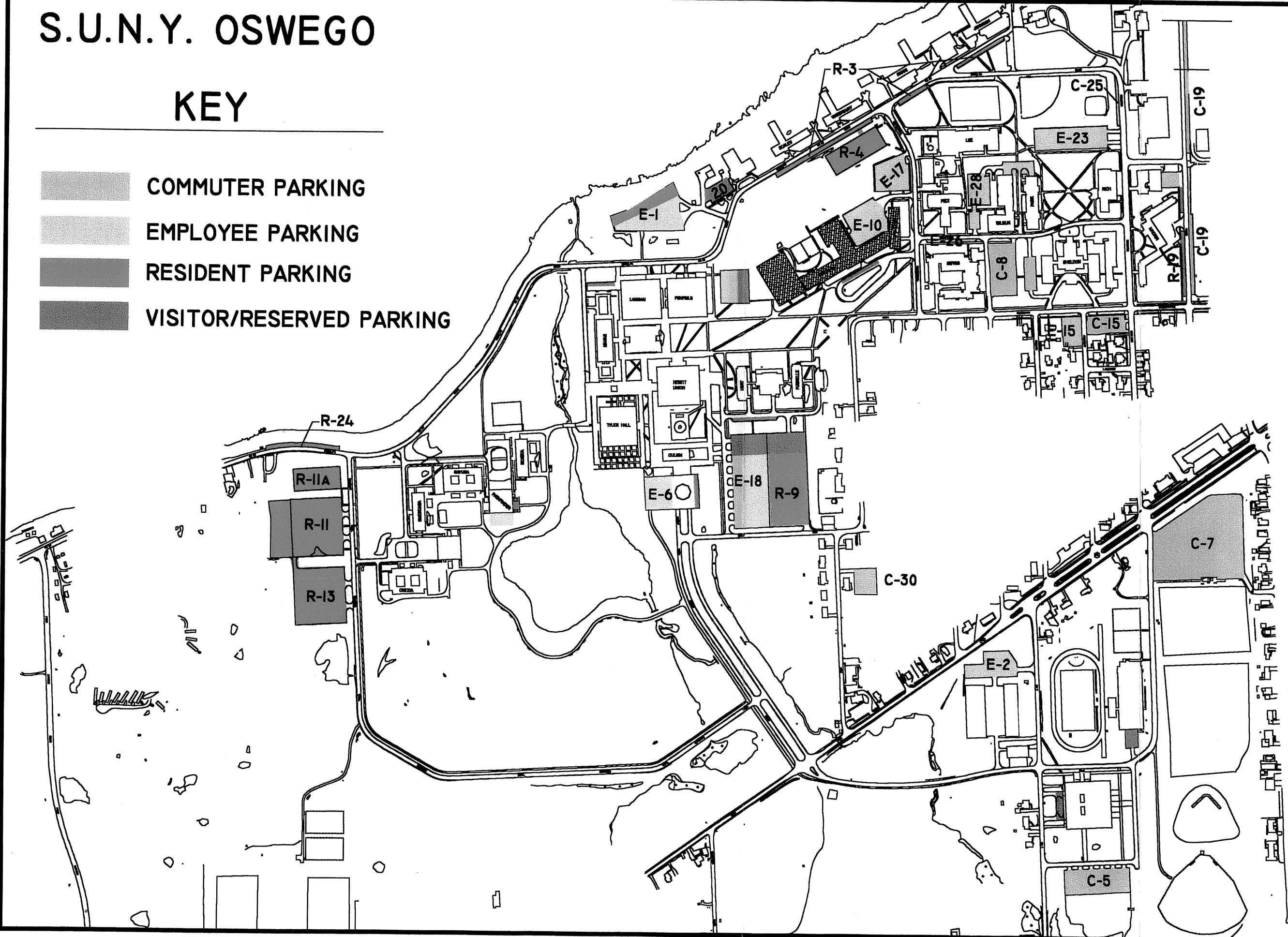
B. Parking Modifications

The proposed construction of the Campus Center building will result in complete loss of parking in Lots E-12 and E-22. In addition, relocation of some of the academic programs and services noted in Table V results in re-allocation of parking within the existing parking lots serving the various buildings. As a result, Lot C-23 will be re-allocated from a commuter lot to an employee lot (E-23) to accommodate employees that will be relocated and/or displaced due to the proposal. Those commuter students currently parking in Lot C-23 will be required to park in Lot C-7 and use the free shuttle bus service. Employees currently parking in lots E-12 and E-22 will be relocated to lots E-1, E-18, E-17 or E-23. **Figure 9** depicts the changes in parking allocation on the campus.

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KEY

-  COMMUTER PARKING
-  EMPLOYEE PARKING
-  RESIDENT PARKING
-  VISITOR/RESERVED PARKING



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FUTURE PARKING LOT
 ALLOCATION
 FIGURE 9
 CHAZZEN JOB# 90280 SRF JOB# 22069.0

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A detailed description of relocation of parkers from one lot to another is included in the Appendix of this Report.

C. Re-Distribution of Existing Traffic

Based on the relocation of services and related parking modifications, trips to and from each lot are re-distributed throughout the network accordingly. Methodology used to define and effect the resulting traffic diversions is contained in the Appendix of this Report.

A projection matrix, combining the existing traffic volumes (Figure 5) with the net effect of trip diversions described above, is established to define the cumulative effect of diverted trips within the network. The future traffic condition for the entire network is established and assumes the ultimate full build-out occupancy as proposed at the time of completion of the Swetman and Poucher Halls renovation and the new Campus Center. Figure 10 depicts the future traffic flow conditions, and is representative of the AM and PM peak intervals of a typical day, while classes are in session.

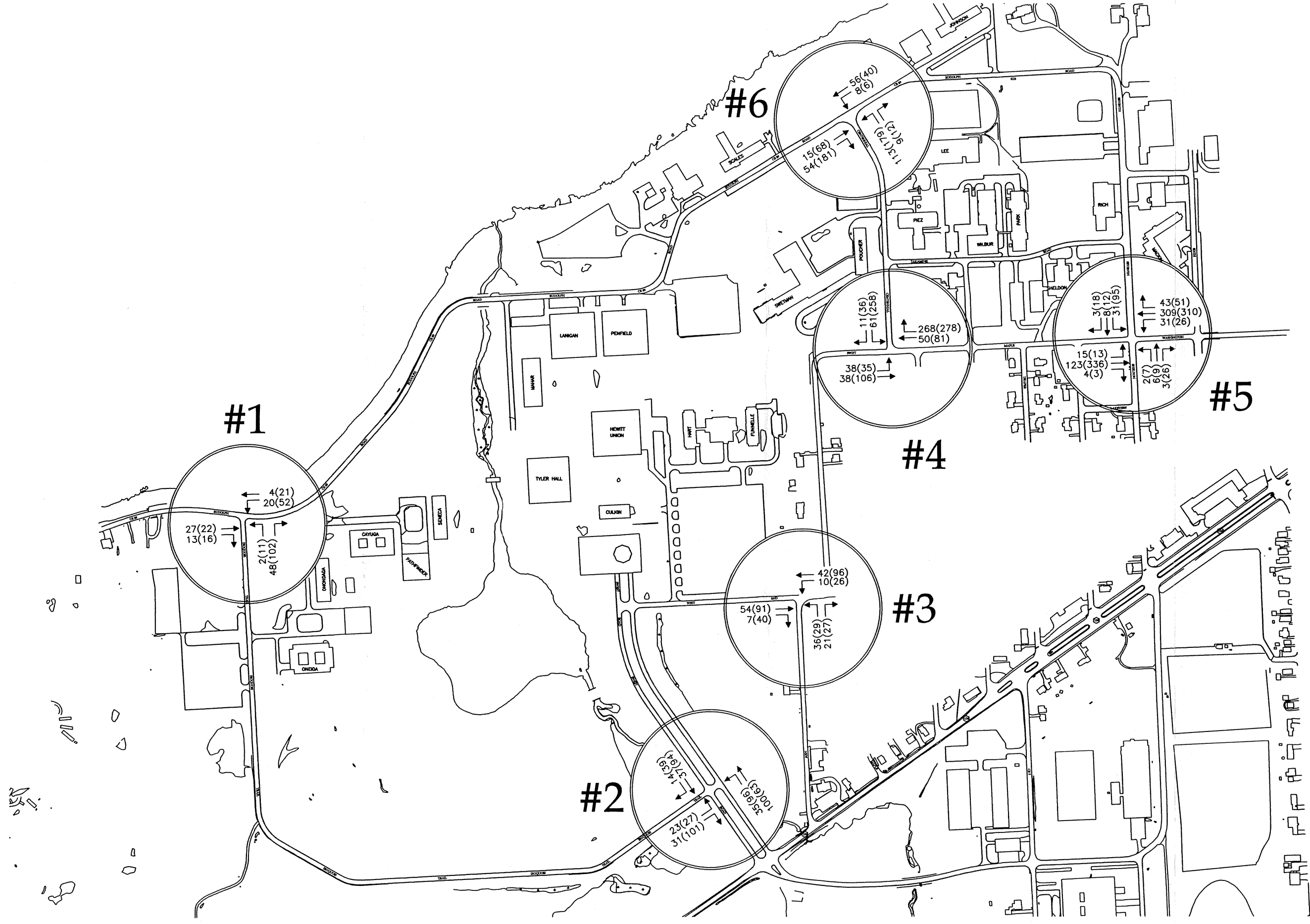
D. Special Events

Special events that currently take place at Romney Field House, such as hockey games and commencement, will now be held at the new Campus Center adjacent to Swetman Hall. For the purpose of determining impacts and required/recommended mitigation, three events have been evaluated: a hockey game, commencement, and a daytime event requiring vendors/presenters to enter the campus. Calculations related to evaluation of these special events are included in the Appendix of this Report.

Hockey Games

As previously identified, hockey games are typically held on Friday and Saturday nights beginning at 7:00 PM and ending around 9:30 PM with an average attendance of approximately 1,200 people. Three to four hundred vehicles currently park in the lot at Romney Field House of which 60% originate on other areas of the campus (i.e. resident students who drive to the game).

Given the new location of the Campus Center at the heart of the campus, those resident students currently driving to Romney Field House will no longer use their vehicles, they will instead walk to the Campus Center. It follows that the remaining 40% of the traffic (160 trips assuming 3 people per vehicle) arriving from off-campus locations will now desire to park close to the Campus Center.

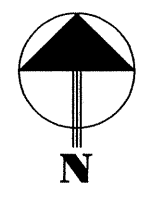


KEY - 00(00) = AM(PM)

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FUTURE WEEKDAY PEAK
HOUR TRAFFIC VOLUMES
FIGURE 10
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The continuous 24-hour count data collected throughout the campus was collectively reviewed to identify the difference in network traffic, comparing peak hour traffic to the hour that would coincide with the game time arrivals. Traffic volumes during the peak arrival time for hockey games (6:00 to 7:00 PM) were found to be 40% to 50% lower than traffic volumes during the PM peak commuter hour at the study area intersections.

The existing peak hour turning movements at the study area intersections were then adjusted accordingly based on the difference between traffic volumes during the PM peak commuter hour and the hour from 6:00 to 7:00 PM (when game-goers are expected to arrive on-campus). As a conservative estimate, it was assumed that 200 vehicles will arrive on-campus between 6:00-7:00 PM. The anticipated trip allocation and distribution to the affected network is included in the Appendix.

It is anticipated that many of the employee and commuter parking lots surrounding the Campus Center (e.g. E-6, C-8, and E-18) will have capacity reserves (during the arrival time) that can support the volume of traffic with needs to park on-site.

Traffic volumes at the study area intersections are significantly diminished by 9:30 PM, when the games typically end and people are exiting the campus.

Commencement

Given the new location of the Campus Center, adjacent and connected to Swetman/Poucher Halls, vehicle parking will no longer be concentrated at the Romney and Laker parking lots. Parking will instead be focused around Lots R-11, R-13, E-6, E-18 and lot R-9. However, all of these lots are not capable of supporting the parking demand of 1,500 vehicles. As such, a certain percentage of people will be encouraged to park at the Romney and Laker parking lots and a shuttle bus service will be provided. It is anticipated that 75% of people attending the graduation ceremony, from off-campus, will arrive from the east via Route 104, and the remaining 25% will be from the east on Route 104 based on information provided by the College.

As a conservative approach, it was assumed that 1,500 vehicles will arrive on campus one hour prior to the graduation event and 1,500 vehicles will exit campus one hour immediately following the event. These volumes were calculated and distributed to the highway network and are included in the Appendix of this Report.

Daytime Event

Due to the construction of the new campus center facility, it is anticipated that, from time to time, there may be large events that could generate an additional parking demand above and beyond the average daily demand. Although these events will be sporadic in nature, they could include such venues as job fairs and regional conferences.

It is anticipated that such an event would invite approximately 200 people from an off-campus location, and the remaining attendees would most likely be already on campus, such as students and/or faculty. For sporadic venues, as described above, it is conservatively assumed that 200 off-campus attendees will generate 154 new vehicular trips (1.3 people per vehicle) entering the campus during the peak parking demand time of the campus (between 10:00 AM and 2:00 PM).

VI. IDENTIFICATION OF IMPACT

The proposed Rehabilitation of Swetman and Poucher Halls and the new Campus Center will impact several aspects of the campus. Each category of impact is discussed in the sections below. Mitigation to offset the probable impacts is offered in Section X.A. below.

A. Capacity Analysis

The capacity of a highway system is predicated on two components: the capacity of the included roadway sections and the capacity of the affected intersections along the route. The roadway sections involved can accommodate the proposed increase in traffic projected with very little impact to through traffic based on the analysis in this Report.

Intersecting roadways generally provide the initial constraint on a system's capacity. Efficiency at the intersections becomes the critical constraint for capacity. Vehicle interactions at these points must minimally be analyzed to assess the projected capacity levels.

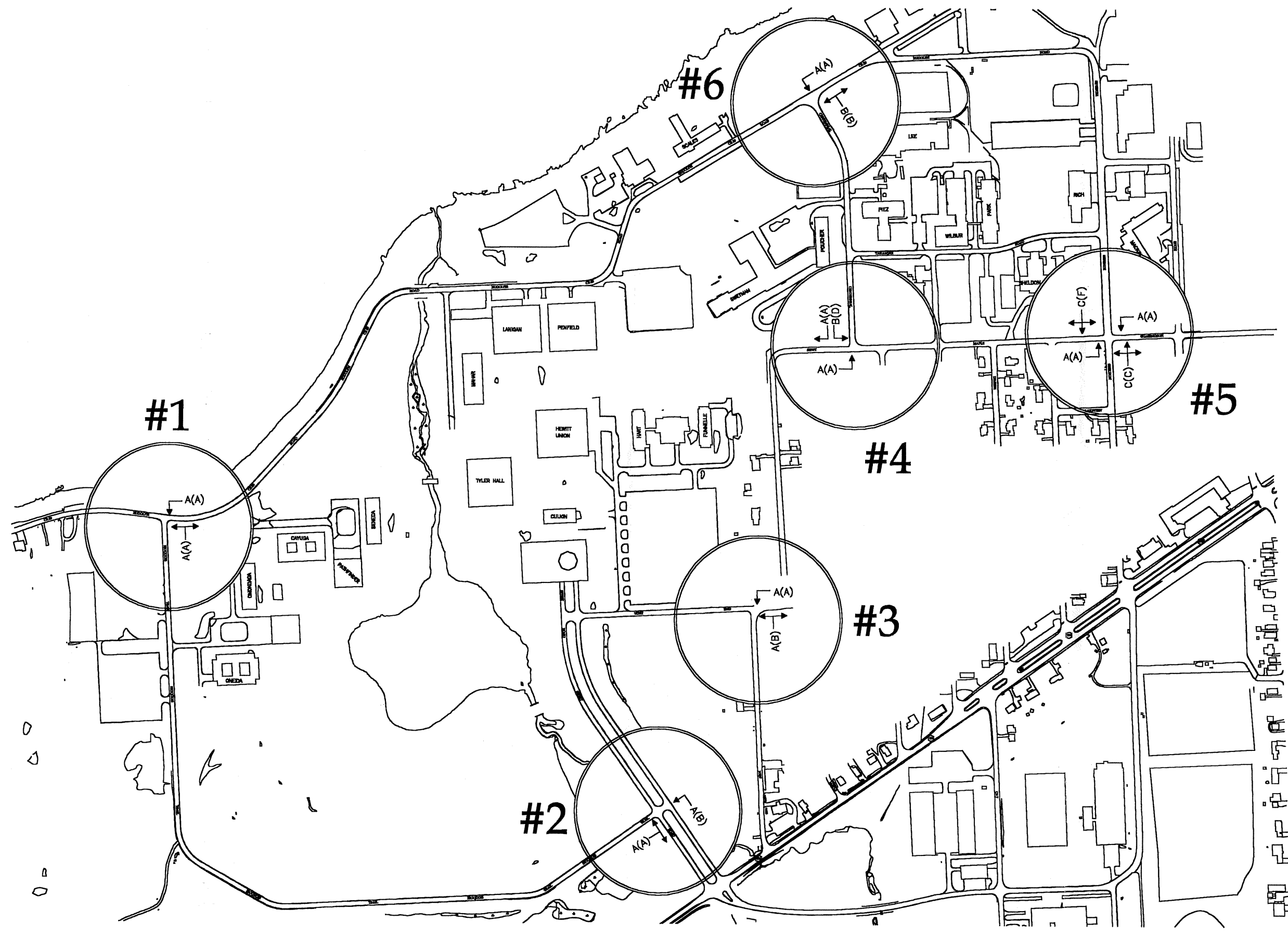
The standard procedure for capacity analysis of signalized and unsignalized intersections is outlined in the 2000 Highway Capacity Manual published by the Transportation Research Board. The procedure yields a Level of Service (LOS) as an indicator of how well intersections operate. Level of Service is defined in terms of delay which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Traffic modeling software, SYNCHRO 5, was used to analyze the operating conditions at the study area intersections.

The concept of Level of Service is defined as a qualitative measure describing operating conditions within a traffic stream, and their perception by motorists and/or passengers. Six Levels of Service are defined for analysis purposes. They are assigned letter designations, from "A" to "F", with LOS "A" representing the best conditions and LOS "F" the worst. Suggested ranges of service capacity and an explanation of Levels of Service are included in the Appendix.

The future traffic conditions that result from renovation of Swetman and Poucher Halls and the new Campus Center were analyzed to assess the operations of the existing study area intersections (typical weekday: AM, PM peaks). In addition, future capacity conditions related to special event traffic, specifically a Friday night hockey game, was also evaluated. Capacity results of the existing, future development conditions, and noted special event conditions are listed in Table VI. All capacity analysis calculations are included in the Appendix. The discussion following the table summarizes the existing and future capacity conditions. In addition, existing and future levels of service at each intersection are shown in Figures 11 and 12, respectively.

TABLE VI
CAPACITY ANALYSIS RESULTS

DESCRIPTION	EXISTING CONDITIONS (WEEKDAY)		FUTURE CONDITIONS (WEEKDAY)		FUTURE CONDITION (EVENT)
	AM PEAK	PM PEAK	AM PEAK	PM PEAK	PM PEAK
Int. # 1 CR 89-Rudolph Rd / Iroquois Trail Westbound Left - Rudolph Road Northbound - Iroquois Trail	A A	A A	A A	A A	A A
Int. #2 Iroquois Trail / Sweet Rd Northbound Left - Sweet Road Eastbound - Iroquois Trail	A A	B A	A A	B A	A A
Int. #3 West End Avenue / New St Westbound (Left) - West End Avenue Northbound - New Street	A A	A B	A A	A B	A A
Int. #4 Washington Blvd / Centennial Dr Eastbound Left - Washington Boulevard Southbound (Left) - Centennial Drive Southbound (Right) - Centennial Drive	A B A	A D A	A B A	A D A	A B A
Int. #5 Washington Blvd / Sheldon Ave Eastbound Left - Washington Boulevard Westbound Left - Washington Boulevard Northbound - Sheldon Avenue Southbound - Sheldon Avenue	A A C C	A A C F(164.4)	A A B C	A A C F(51.5)	A A B C
Int. #6 Rudolph Rd / Centennial Dr Westbound (Left) - Rudolph Road Northbound - Centennial Drive	A B	A B	A B	A B	A A



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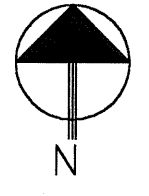
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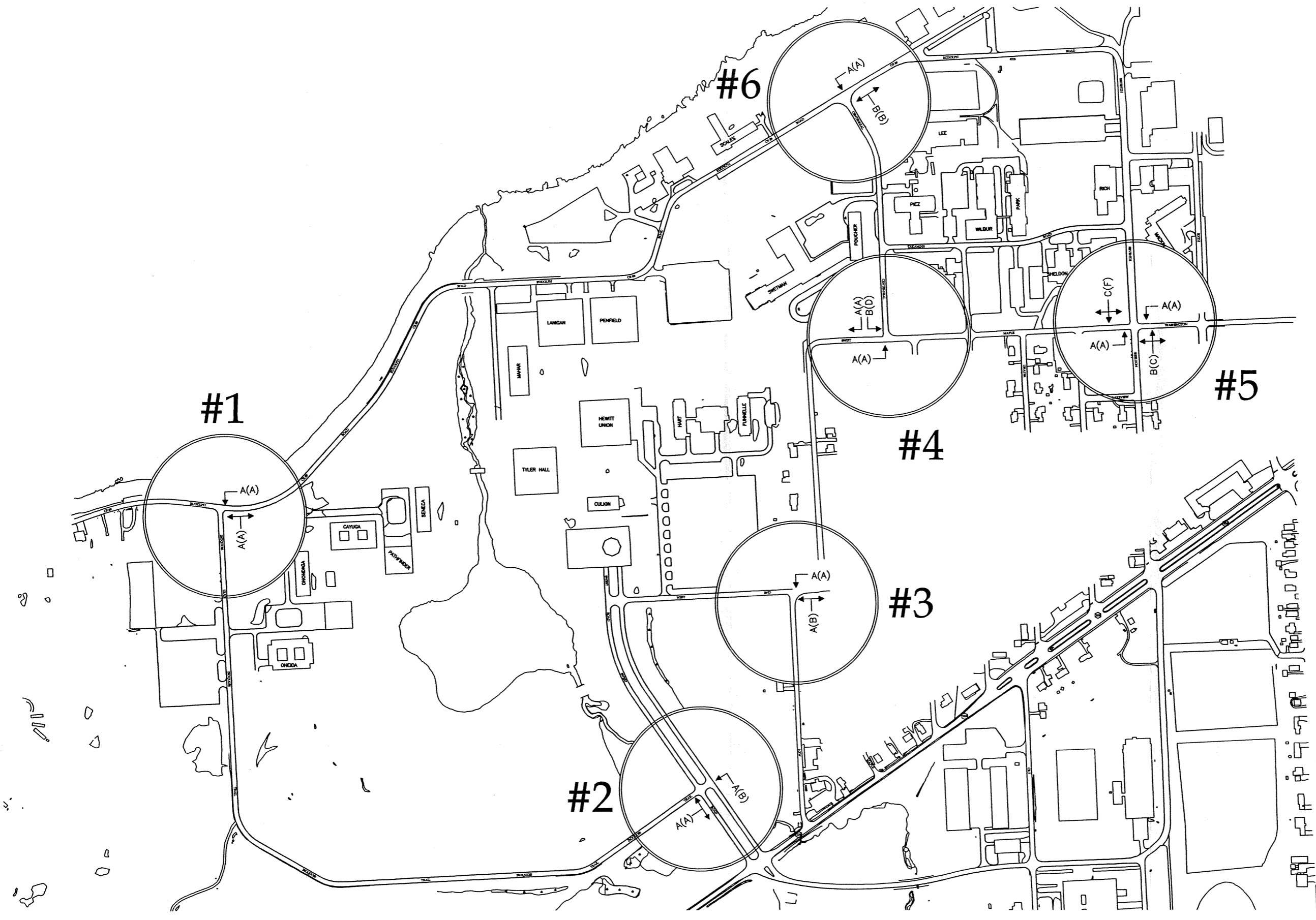
EXISTING INTERSECTION
LEVELS OF SERVICE

FIGURE 11

CBAZEN JOB# 90280 SRF JOB# 22069.0

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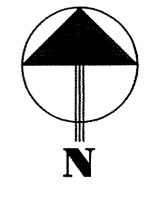
FUTURE INTERSECTION
LEVELS OF SERVICE

FIGURE 12

CHAZEN JOB# 90280

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NETWORK IMPACT:

Intersection #1 CR 89-Rudolph Rd / Iroquois Trail - The CR 89-Rudolph Rd / Iroquois Trail intersection currently operates at an above average Level of Service (LOS "A") on all approaches during both peak hours. Addition of new and redistributed campus traffic results in similar weekday operating conditions on all approaches. The intersection is expected to operate at above average Levels of Service (LOS "A") during the identified special event as well.

Intersection #2 Iroquois Trail / Sweet Road - The Iroquois Trail / Sweet Road intersection operates at above average Levels of Service (LOS "B" or better) on all approaches during both peaks under the existing conditions as well as the future weekday and special event conditions.

Intersection #3 West End Avenue / New Street - The West End Avenue / New Street intersection currently operates at above average operating conditions (LOS "B" or better) on all approaches during both peak periods. Addition of new and redistributed campus traffic will continue to provide above average operating conditions during both weekday peak periods. The intersection is expected to operate at above average Levels of Service (LOS "A") during the identified special event as well.

Intersection #4 Washington Boulevard / Centennial Drive - The eastbound, Washington Boulevard left turn movement and the southbound, Centennial Drive right turn movement both operate at an above average Level of Service (LOS "A") during both peaks under the existing weekday peak conditions as well as the future conditions. The southbound, Centennial Drive left turn movement currently operates at a LOS "B" during the AM peak and a LOS "D" during the PM Peak and will continue to operate at these Levels of Service under the future weekday conditions. The intersection is expected to operate at above average Levels of Service (LOS "B" or better) during the identified special event as analyzed.

Intersection #5 Washington Boulevard / Sheldon Avenue - The eastbound and westbound, Washington Boulevard left turn movements to Sheldon Avenue both operate at an above average Level of Service (LOS "A") during both weekday peaks under the existing conditions and will continue to operate at these Levels of Service under the future and special event conditions. The northbound, Sheldon Avenue, approach operates at average Levels of Service (LOS "C" or better) under the existing conditions. Addition of new and redistributed campus traffic results in similar operating conditions at this approach during the PM peak. The Level of Service improves (LOS "C" to "B") at this approach during the

AM peak due to the redistribution of commuters who are currently parking in Lot 23 and who will be rerouted to Lot C7 as discussed in Section V.C.

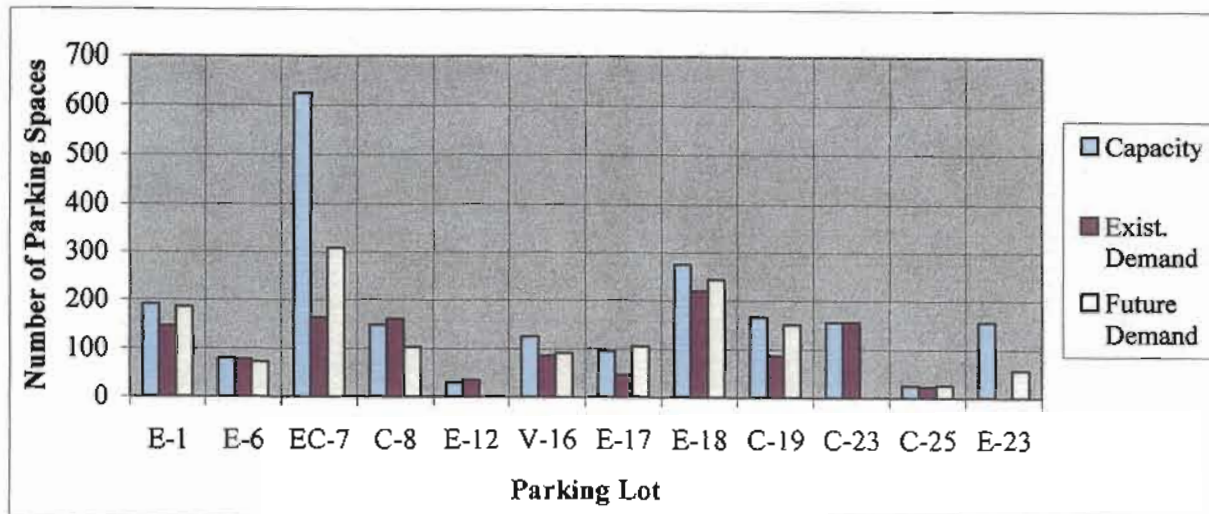
The Level of Service analysis indicates that the southbound left turn exiting Sheldon Avenue is shown to operate at LOS "C" during the AM peak and LOS "F" during the PM peak under both the existing and future conditions. It is noted that sample peak hour delays for this movement were observed in the field, and the observations did not confirm the delay levels produced in the model for the PM peak (they were less). Queues intermittently developed (maximum noted: 8 cars), but were routinely discharged, indicating that there was sufficient capacity from an actual gap capacity standpoint. It should also be noted that the left turn movement from this approach are expected to decrease as a result of the redistribution of commuter traffic, and as such, will operate better than the existing condition. The southbound, Sheldon Avenue, approach to the intersection is expected to operate at an average Level of Service (LOS "C") during the special event that was analyzed.

Intersection #6 Rudolph Road / Centennial Drive - The Rudolph Road / Centennial Drive intersection currently operates at above average Levels of Service (LOS "B" or better) on all approaches during both weekday peak hours. Addition of new and redistributed campus traffic results in similar operating conditions on all approaches. The intersection is expected to operate at above average Levels of Service (LOS "A") during the special event as well.

B. Parking Modifications

Due to the proposed changes, as described in the previous section of the report, the individual impacts to all of the effected parking areas are shown in **Figure 13** below.

FIGURE 13
IMPACT OF PROPOSAL ON PARKING LOTS



As shown in the graph above, individual parking lots will each be effected differently by the proposal. Parking Lots E-1 and E-18 will see an increase in employee vehicles due to the elimination of Lot E-22 by the proposal. Lot E-6 will see a slight decrease in overall demand due to the reallocation of programs on campus. Lot EC-7 will see an increase in demand due to the conversion of Lot C-23 to E-23. Although it is shown this project will have a net decrease effect on the demand for parking at Lot C-8, it is anticipated that other commuter students will fill this lot to its maximum capacity. Parking Lot E-12 will essentially be eliminated by the proposal, and employees will then park in Lots E-10 and/or E-17. Visitor lot 16 will most likely see a slight increase in demand due to the new campus center. As previously mentioned, the School of Business will move to Rich Hall, and it is anticipated that Lots C-19 and C-25 will have an increase in demand by commuter students due to the proximity of the parking lot to the building and the elimination of Lot C-23.

C. Transit Service

In general the bus routes will not change as a result of the Rehabilitation of Swetman and Poucher halls and construction of the Campus Center. The existing bus stop on Centennial Drive will be relocated to the reconfigured drop-off loop that services Swetman and Poucher Halls and the Campus Center. Increased parking in the commuter lots at Romney Field House and Laker Hall will increase demand for shuttle bus service.

D. Pedestrian Circulation

The new Campus Center will draw more pedestrian traffic to the immediate area. This may exacerbate existing areas that are already

deficient of pedestrian amenities. In particular, significant pedestrian crossings and potential safety concerns (discussed in Section VII.) are identified at the Washington Boulevard/Centennial Drive intersection. There are also significant pedestrian crossings on Centennial Drive which are in conflict with heavy vehicular traffic.

The proposal centers pedestrian activity at the Campus Center. A reasonable walking distance for pedestrians in this area is 1,320 feet (1/4 mi.) based on a 5 1/2 minute walk at 4 feet per second. **Figure 14** shows the limits of that zone extending from the Campus Center. Nearly half of the student residences are located within this zone and adequate shuttle bus service will be provided to student residential areas outside of this zone. Sufficient parking for the Campus Center is also provided within this zone for typical weekday activities.

E. Special Events

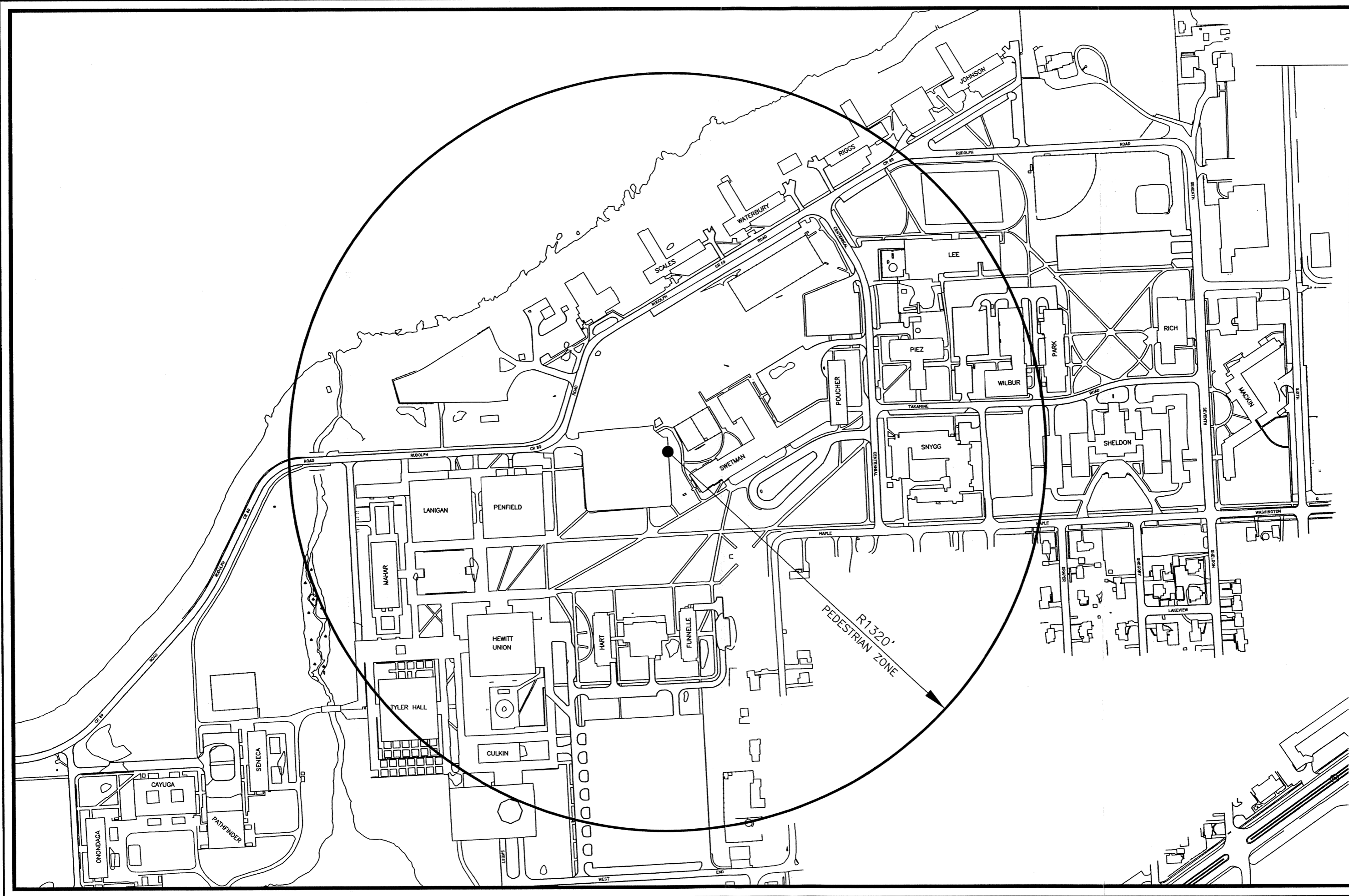
As previously described in the report, three separate special events were evaluated to determine the extent of the impact that the proposal will have on the overall campus traffic and parking demands.

Hockey Games

The first event evaluated is a typical hockey game that is currently held at the Romney Field House and as a result of the proposal will now be held at the Campus Center facility. Due to the fact that the hockey games are generally held at night, when the traffic volumes on the roadway are significantly reduced, and the employee and commuter parking lots adjacent to the Campus Center are empty, there will be adequate intersection operational capacity as well as adequate reserve parking capacity for vehicles entering the campus for a nighttime event, such as a hockey game.

Commencement

The volume of vehicles arriving on campus for the unique spring time event, Commencement, will have a direct impact on both traffic and parking on the S.U.N.Y. Campus. Various parking lots on campus will be utilized: R-11, R-13, E-6, E-18, R-9, and EC-7, as well as Centro bus service providing shuttles from Lots R-11/R-13 and Lot EC-7 to the Campus Center. Assuming all 1,500 vehicles arrive one hour prior to the event and all 1,500 vehicles exit during the one hour following the event, this will directly affect various intersections on campus as well as the adjacent arterial roadway (Route 104). Special traffic event management techniques will need to be utilized to handle the influx of traffic during this event.



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AREA OF REASONABLE
 WALKING DISTANCE

FIGURE 14

CHAZZEN JOB# 90280 SRF JOB# 22069.0

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 AND / OR SURGE SPACE

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Daytime Event

For a special event that may occur during peak weekday times, careful consideration was given to the existing parking demands on campus, adjacent to the campus center, to determine the available parking capacities and/or deficiencies. Due to the elimination of Lot E-22, by the proposed plan, the demand of lots adjacent to the proposed campus center are either at, or approaching, full capacity during daily peak times. As previously stated in the report, 154 new vehicular trips can be expected from an event such as this, of those trips approximately 20 will be able to park at the new lot adjacent to the Campus Center, leaving the need to park 134 vehicles elsewhere on campus. It has been determined by SUNY representatives that using the shuttle lots at Romney Field house and/or Laker Hall is not a viable option in this case. As such, it has been determined that additional parking adjacent to the campus center will be needed to accommodate such an event.

F. Emergency Vehicles

The proposed plan only impacts emergency vehicle access to Swetman and Poucher Halls. Emergency vehicle access to Swetman and Poucher Halls and the new Campus Center will be provided by Iroquois Trail on the west, Rudolph Road on the north, West End Avenue, Swift Street and Washington Boulevard on the south, and Centennial Drive and Sheldon Avenue on the east. Emergency vehicles can access the individual buildings via the reconfigured loop road at the front of Swetman and Poucher Halls and the Campus Center and via adjacent parking areas. Emergency vehicles will also continue to access buildings by driving along paved walkways and/or grass areas.

G. Accessibility

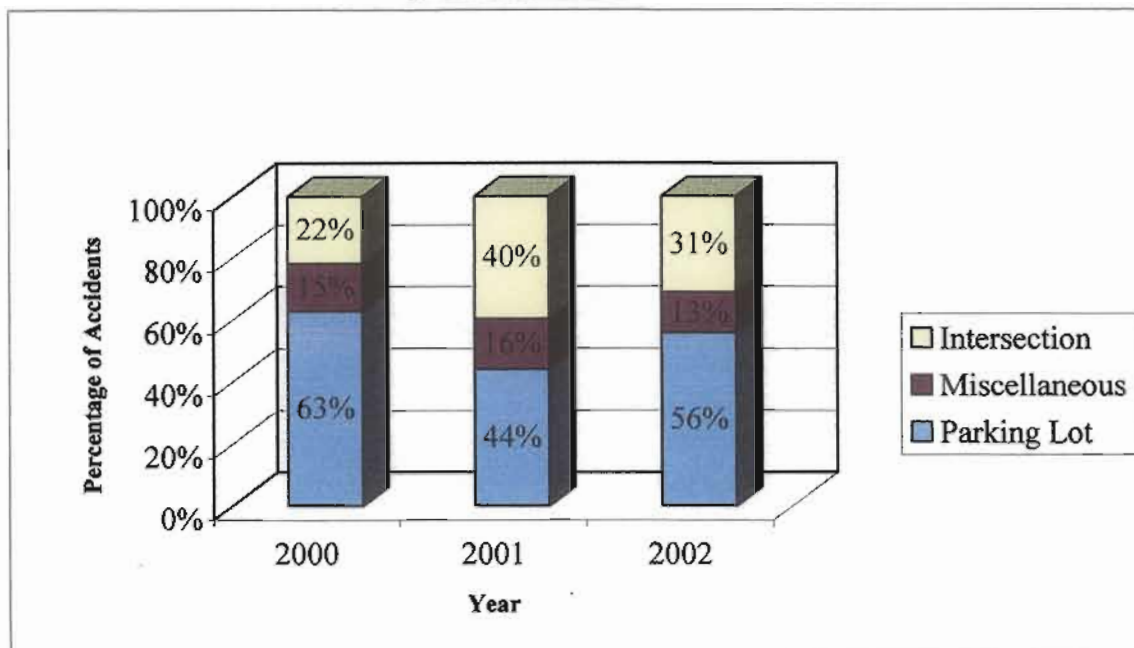
The proposed plan will have very little impact on accessible parking availability. The two parking areas that will be completely eliminated as a result of the project, E-12 and E-22, currently provide one accessible parking space. The new, 69 space parking lot adjacent to the Campus Center will provide 10 new accessible parking spaces thereby increasing the total number of accessible spaces campus-wide.

VII. SAFETY INVESTIGATION

Accident reports for the entire SUNY Oswego campus were investigated to assess the safety history. The accidents included in the current review generally occurred between 2000 and 2002. During this period, 223 accidents were documented over the entire campus. More than half of these accidents, 122, occurred within various parking lots on the campus. Sixty eight accidents occurred at intersections. The chart, shown in Figure

15 below, depicts the distribution of accidents including those located in parking lots, at intersections, and in other miscellaneous locations throughout the campus.

FIGURE 15
ACCIDENT SUMMARY



The project accident history was further investigated to identify high incident areas and possible trends/causes of the accidents. Given the multitude of locations of accident occurrences and relatively low number of accidents per location, high incident areas were identified as locations where 3 or more accidents occurred over the three-year study period. This analysis documented number, location, type and cause of accidents at the identified locations. Table VII lists the combined results of the type of accidents that occurred at the identified locations.

Accident (collision) diagrams have been produced for the high accident locations in the study area to identify specific clusters or repetitive patterns and are included in the Appendix. Based on the information depicted in the collision diagrams, each location was field investigated to discern what factors may be contributing to the incidents. An assessment of the collective information indicates that most accidents could be, in whole or in part, attributed to inclement weather conditions (slippery pavement, poor visibility).

Recent field investigations documented sight distance limitations due to excessive snow storage at the radii of these intersections. Since the noted intersections had the highest concentration of accidents, it would make sense to give these locations the initial priority in clearing intersection sight lines of excessive snow accumulation as needed.

An accident cluster was noted at the Centennial Drive / Washington Boulevard intersection involving westbound right turns (from Washington) and southbound traffic on Centennial Drive. These incidents could be attributed to the combined horizontal and

TABLE VII
 ACCIDENT INVESTIGATION RESULTS - INTERSECTION
 S.U.N.Y. OSEWGO (2000-2002)

INTERSECTION	DESCRIPTION OF ACCIDENT											TOTAL	%
	REAR END	OVER- TAKING	LEFT TURNS	SIDE- SWIPE	BACKING	RIGHT ANGLE	FIXED OBJECT	OUT OF CONTROL	PEDESTRIAN OR BICYCLIST	RIGHT TURNS	OTHER		
Centennial / Washington	0	0	2	0	0	0	1	4	2	0	0	9	23.08
Washington / Swift	0	0	0	0	0	0	3	3	0	0	0	6	15.38
Iroquois / Sweet	1	0	2	0	0	0	0	0	0	2	0	5	12.82
Centennial / Rudolph	0	0	2	0	0	0	0	1	0	0	0	3	7.69
Rudolph / Lot #3 (Waterbury)	1	0	1	0	2	0	0	0	0	0	0	4	10.26
Parking Lot #1 / Rudolph	1	0	2	0	1	0	0	0	0	0	0	4	10.26
Iroquois (at bend)	0	0	0	0	0	0	2	2	0	0	0	4	10.26
Seneca Circle / Cayuga Drive	0	0	1	2	0	0	1	0	0	0	0	4	10.26
TOTAL	3	0	10	2	3	0	7	10	2	2	0	39	100.00
%	7.69	0.00	25.64	5.13	7.69	0.00	17.95	25.64	5.13	5.13	0.00	100.00	

vertical alignment at the noted intersection. Inclement weather conditions also contributed to these accidents. This is of particular concern as the east/west crossing of Centennial Drive has significant pedestrian activity.

VIII. ENVIRONMENTAL LIVABILITY

The majority of the roadways in the study area primarily function for the benefit of the campus and/or as a high volume through roadway (i.e. Washington Boulevard). The exception to this is Swift Street which provides direct access to several residential properties that are unrelated to the College. Therefore, the future traffic levels on Swift Street were also investigated from a resident's perspective versus the typical drivers perspective.

The concept of Levels of Service as defined in the Federal Highway Administration's Highway Capacity Manual, represents " a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and /or passengers."

While traffic flow measures in this context are solely from the drivers perspective, an equally important measure generally lacking in most Traffic Impact Studies involving residential areas is to instead take into account a resident's viewpoint of traffic. The influence of traffic on the quality of life (or livability) of the residents within the vicinity of the project is often a more appropriate consideration.

Each person's concern for traffic and its impact on his/her quality of life is a function of numerous variables: traffic volume and speed, vehicle composition, temporal distribution of traffic, dwelling setback from the street, presence of children, and numerous resident demographic factors.

As such, no one single volume threshold at which residents normally become irritated can be generally applied. The type of roadway and the perception the roadway exhibits to the residents greatly influences the threshold levels.

Residents' complaints about traffic volumes escalate whenever the actual conditions on the street differ from the residents' expectations as to what conditions on that particular street should be. Although there is not a linear relationship between complaints and traffic volume, there is a certain volume range in which resident expectations seem most likely to differ from actual conditions.

Local street design considerations, specified in Residential Streets, Third Edition, 2001, developed jointly by the National Association of Home Builders, American Society of Civil Engineers, Institute of Transportation Engineers, and the Urban Land Institute recommends an average daily traffic volume range between 400 - 1,500 vehicles per day for local functioning streets such as Swift Street. Neighborhood street design criteria specified by the American Society of Civil Engineers, National Association of Home Builders, and Urban Land Institute recommends an average daily traffic volume below 250 vpd for local streets, and between 250-1000 vpd for subcollector roadways. The

most recent edition of Transportation and Land Development published by the Institute of Transportation (ITE) in 2002 indicates the following maximum ADT volumes for residential streets:

Major Residential Collector	15,000 vpd
Minor Residential Collector	3,000 vpd
Local Street (2-ways out)	200 vpd

Based upon the projected peak hour volumes on Swift and New Streets as shown in Figure 10, the estimated future average daily traffic (ADT) is shown in Table VIII.

TABLE VIII
EXISTING AND FUTURE ADT ON SWIFT AND NEW STREETS

Roadway	Segment	PM Peak Hour Total Volume vehicles per hour (vph)			Average Daily Traffic (ADT)* vehicles per day (vpd)		
		Existing	Future	Change	Existing	Future	Change
New Street	Route 104 to West End Avenue	119	122	+3	1,020	1045	+25
Swift Street	Washington Blvd to West End Ave	271	258	-13	3,000	2,860	-140

* The future ADT is estimated based on ratios of existing peak hour volumes to existing ADT data.

The change in traffic identified is a result of reallocation of programs as previously identified in the Report.

Both Swift Street and New Street are characteristic of minor residential collector type roadways due to their adjacency to the College and connectivity they provide. The volumes shown in Table VIII are characteristic of a minor residential collector and within acceptable levels for livability thresholds according to the thresholds cited above.

IX. ASSESSMENT OF CAMPUS-WIDE ISSUES

This section of the Traffic Impact and Parking Study provides a campus wide investigation of vehicular and pedestrian traffic to identify and prioritize future capital improvement projects that may be required due to current or additional deficiencies as identified by the investigation. This evaluation is conducted as a supplement to the traffic and parking impacts resulting from the proposed Swetman and Poucher Halls Renovation and New Campus Center identified in the previous sections.

A. Review of Recommendations from Previous Reports

A *Landscape and Signage Assessment* was completed in February 2001 by Trowbridge & Wolf Landscape Architects. This study identified several observations of existing deficiencies or areas in need of improvement and went on to recommend potential solutions. These recommendations have been reviewed and are discussed below.

1. In order to facilitate the proposed loop road, the following campus roadway modifications are recommended:
 - extension of a new road from Iroquois Trail to the eastern entrance of the West End Avenue parking lot,
 - realignment of the Sweet Road and West End Avenue intersection,
 - continuance of the proposed loop road from the extension at Sweet Road through the West End Avenue parking lot,
 - reconfigure the intersection of Washington Boulevard and Swift Street and the proposed loop road,
 - Realign Rudolph Road through the existing parking lot north of Lanigan and Penfield Halls,
 - Reconfigure the intersection of County Route 89, Iroquois Trail, and Rudolph Road (County Route 89 would 'tee' into Iroquois Trail)
2. Install a new campus entrance at Sheldon Avenue and Washington Boulevard incorporating pedestrian crossings.
3. Limit access to the Snygg Hall parking lot to Washington Boulevard and the Sheldon Hall drive only.
4. Install a gateway treatment at the Washington Boulevard/Sheldon Avenue intersection including a landscaped median on Sheldon Avenue.
5. Install stop signs and raised crosswalks at the Sheldon Avenue/Takamine Street intersection.
6. Reduce the size (pavement) of the Rudolph Road/Sheldon Avenue intersection and realign the entrance to Shady Shore westward such that it is perpendicular to Rudolph Road.
7. The following modifications are recommended to facilitate the creation of pedestrian spine from east to west across the campus:
 - Close Centennial Drive from Takamine Street south,

- Relocate the drop-off for the primary entrance of Swetman Hall further south,
 - Relocate the existing bus stop on Centennial Drive,
 - Open Takamine Street to vehicular traffic to access the Sheldon Hall drop-off and east parking lot; redesign the remainder of Takamine Street as part of the pedestrian spine,
 - Develop a network of pedestrian walkways in the vicinity of Tyler Hall and Hart/Cooper/Funnelle Halls to create an academic quadrangle,
 - Limit vehicular access to the walk behind Seneca Hall to emergency and service vehicles only,
 - Redesign the Pathfinder Hall parking lot as a pedestrian plaza (servicing can be relocated to the soon-to-be-built service road),
8. Improve roadway alignment at the Route 104/Sheldon Avenue-Barns Drive intersection and signalize.

Each of the above items have been reviewed and are determined reasonable for further investigation. Due to the limitations incurred in the site investigation process (i.e. snow cover), these items can be reviewed further when weather permits.

B. Campus-wide Parking Needs

Planning for parking facilities at Colleges and Universities requires recognition of the unique character of each campus. In estimating parking requirements it is important to identify specific activities. The State University of New York at Oswego is a place of employment, and a place of residence for both students and staff and caters primarily to its own students and does not typically host local or regional events for outside interest groups.

Parking space needs at colleges and universities are affected by:

- Daytime and evening enrollment,
- Mix between commuter and residential population, size of faculty and staff,
- Location and frequency of special events,
- Opportunities for ride-sharing and public transport,
- Availability and cost of parking, and
- Policies regarding automobile usage and parking.

SRF & Associates recommends a planning approach for the State University of New York at Oswego that emphasizes an ongoing balance between parking and transportation demand management options. Emphasis is placed on maintaining a parking supply with a 10% “effective supply” cushion, improving utilization and allocation of existing parking

resources, maintaining and enhancing parking and transportation demand management programs, including transit, shuttle, and other transportation alternatives.

College Parking Characteristics

Table IX, below, presents general College parking demand factors and their impact on higher or lower parking demands. Nine of the twelve demand factors indicate a tendency toward a higher than average parking demand at the SUNY Oswego campus.

***TABLE IX
COLLEGE PARKING DEMAND FACTORS AND IMPACT***

<i>State University of New York at Oswego Parking Demand Factors</i>	<i>Comments</i>	<i>Impact</i>
Projected Growth (Student Enrollment)	Limited growth in daytime student enrollment is projected.	-
Commuter / Residential Mix	Moderate commuter population. Strong single occupancy vehicle usage. Of a total student population of nearly 8,716, there are 3,815 beds for on-campus student residents.	+
Size and Frequency of Special Events	SUNY Oswego hosts occasional, special events, including job fairs, guest speakers, cultural events, sporting events, etc. The new Campus Center is likely to increase demand for special events	+
Class Scheduling	Majority of classes are scheduled during the daytime, Monday – Thursday, to meet customer preferences. This increases peak parking demands.	+
Suburban Campus	The suburban campus contributes to more reliance on single occupant vehicles.	+
Percentage of Auto Drivers	SUNY Oswego’s percent of auto drivers is estimated to be higher than many universities due to limited public transportation and transportation alternatives programs.	+
Cost of Parking	SUNY Oswego’s parking costs are among the lowest of comparable SUNY Institutions. Rates have not seen a significant increase in several years.	+
Availability of Parking	Parking availability currently reflects a surplus of 1,060 spaces. The College has sufficient flexibility to meet occasional and unexpected variations in parking supply.	+
College Policies Discouraging Automobile Use	SUNY Oswego has no policies restricting the use of automobiles. The typical student profile reflects a strong dependence on private vehicles for transportation to work, childcare, etc. There are minimal policies limiting student parking on the basis of class (freshman, sophomore, etc.) or residence status.	+
Opportunities for Alternative Transportation	Transportation alternative programs, including transit, shuttles, bicycle, car pool, telecommuting, flexible hours, etc. are available, but few.	-
Access to Public Transportation	Public transportation in this area of Oswego is adequate and is likely to remain consistent if not more limited due to continued financial pressure on transit operating systems.	+
New Campus Developments	New campus developments are aimed at improving the academic and residential qualities of the College. No growth is associated with any future projects at this time.	-

+ = Contributes to a higher than average parking demand.

- = Contributes to a lower than average parking demand.

Despite having characteristics that promote a greater demand for parking in general, SUNY Oswego currently has a ratio of parking space-to-student population of 0.34 (2,929 spaces/8,716 students). The current *main campus* supply provides only marginal support and flexibility to meet current peak parking demands and the occasional loss of parking supply due to construction, maintenance and other activities. While parking occupancy in the core area of campus area is very high, hundreds of spaces sit empty every day in the lots south of Route 104, making the system cost ineffective as well. In order to more efficiently use the existing parking supply, it will be necessary to move some members of the SUNY Oswego community to the empty spaces. Every effort should be made to encourage the use of this parking through cost incentives and good transit, but ultimately, fully utilizing the entire SUNY Oswego parking supply will require restricting access to the core area of campus and adjacent areas to certain user groups. There are several alternative approaches that should be developed through further investigation and study, which are outlined below.

Status-Based System

In this approach, the historical SUNY Oswego pattern of granting parking priority to faculty and staff is continued.

Market-Based System

An alternative approach to the status-based system described above is a more market-based approach. A market system would have the same fundamental objective as a status system – reducing the number of permits that are eligible to park on the core campus area. However, a market system would eliminate lot designations for faculty/staff, resident students, or commuter students. Instead, these designations would be replaced by designations for each area of campus, such as "E" parking on the eastern end of the central campus area, "W" parking on the western end of the enteral campus area, "L" parking for the lakeside residences, "SP" parking for the area surrounding Swetman and Poucher Halls, "HU" parking in the vicinity of Hewitt Union and so on. All designations would be allowed to park at the Romney Field House and Laker Hall lots as well, but not on other areas of the campus besides their designated area.

Transportation Management Issues

The College should begin considering now how additional funding may be developed for the transportation system, for costs will surely rise as parking moves farther from the core. The issues of managing and funding the transportation system may lead to the consideration of a different management scheme.

Parking and transportation need to work hand-in-hand to serve the campus. This will be even more necessary in the future than it is today. As parking and campus circulation changes are made, the transportation system will need to adjust to meet the needs of those who park and need to ride a bus to eventual destinations.

The amount of required on-campus parking space should be determined separately for resident students, commuter students, and faculty/staff. Typical ratios require 0.5 spaces per resident and commuter student plus 1.0 space per faculty/staff. Based on the current population at SUNY Oswego (3,350 resident students plus 5,366 commuter students plus 922 faculty/staff) and typical parking ratios 5,280 parking spaces are required. The campus currently has a total of 4,715 parking spaces. It is desirable to provide 5 to 10 percent more spaces than are required during times of peak parking demand. The measured peak parking demand was 3,758 parked vehicles on the campus. In order to provide parking on-campus for the current peak demand, 4,135 parking spaces would be required on the campus. This indicates that there is sufficient parking on the campus to meet the peak parking demand with more than a 10% cushion. An important recommendation contained in this Plan is to maintain a space-to-student ratio as a key planning benchmark. This is a primary goal of the recommended parking development plan.

Table X provides a comparison of the number of permits sold for each user group to the number of spaces available. The table also includes a comparison of the existing oversell ratio at SUNY Oswego and a typical oversell at other universities. Oversell is the ratio of permits sold to available spaces. The typical oversell indicates the number of permits that can be sold to achieve effective occupancy of parking facilities.

TABLE X
COMPARISON OF PERMITS SOLD TO AVAILABLE SPACES

Classification	Permits Sold	Spaces Available	Existing Oversell	Typical Oversell
Employee	2,085	1,213	1.72	1.10 - 1.30
Resident	1,695	1,375	1.23	1.05 - 1.15
Commuter	2,208	1,554	1.42	1.50 - 1.80

Table X reveals the existing oversell ratio of Employee and Resident lots are higher than typical ratios at other universities, and the commuter ratio is lower. SUNY Oswego's Parking Consultant suggested the reason for the high oversell ratio of Employee permits is partly due to the fact that some employees may register more than one vehicle in their household. The oversell ratio for Residents points to the fact that the college may

want to consider discouraging freshman residents from bringing a car on campus. The commuter oversell ratio is slightly lower than other college averages, and appears to be adequate, however the problem still exists to encourage commuter to park at the shuttle lots and not overcrowd existing on-site (non-shuttle lots). The college should continue the practice of encouraging commuters to park off-site at commuter lots, thus decreasing the volume of vehicles traveling in and around the central campus.

In addition, the current mixture of parking spaces (resident student vs. commuter student vs. employee) provides a relatively high percentage of resident student spaces as compared to other comparable universities. This percentage, along with the overall demand for parking on the campus, can be lowered using demand management strategies. The following list provides potential parking demand management strategies:

1. Prohibit freshman vehicles on campus,
2. Require freshman to park vehicles in remote lots,
3. Raise parking rates and provide a tiered rate structure (e.g. charge higher fees for more desirable lots and lower fees or no fees for shuttle lots),
4. Require all employees to pay for parking based on salary and/or desired parking location,
5. Reduce fees for carpooling,
6. Convert lot C-8 to an hourly pay lot.

X. MITIGATION AND RECOMMENDED CAMPUS IMPROVEMENTS

This report addresses the traffic and parking related impacts that can be expected from development of the current proposal, and assesses the longer term needs of a Campus Master Plan. The following two sections address mitigation associated with these respective impacts and longer term campus needs.

A. Mitigation of Impacts Due to Rehabilitation of Swetman and Poucher Halls and the Campus Center

The following list summarizes recommendations for improvements, as related to the immediate proposal:

1. *Establish traffic calming treatments along Centennial Drive from Takamine to the driveway servicing lot E-10.*

It is recommended that the pavement on Centennial Drive between Takamine and the driveway servicing lot E-10 be reduced to 20 feet. This will serve to slow vehicles, discourage through traffic from using Centennial Drive and will create a shorter crossing distance for pedestrians.

2. *Remove the bus drop-off and shelter within the above limits and relocate to the modified loop road fronting Swetman Poucher.*

This mitigation is required as a result of the mitigation identified in 1 above.

3. *Construct a median on Centennial Drive at Washington Boulevard for pedestrian refuge and separation of opposing traffic flow.*

This improvement is intended to mitigate two safety concerns. First, a significant volume of pedestrians were identified crossing in the east-west direction on the north side of the intersection during the AM peak hour. A median on Centennial Drive will provide a refuge for pedestrians and will simplify the crossing. Second, a cluster of accidents for westbound vehicles turning right onto Centennial Drive was identified through the Safety Investigation. The proposed median will act as a barrier to re-direct errant vehicles making this turn and will eliminate any conflicts between these errant vehicles and vehicles that are southbound on Centennial Drive.

4. *Develop and implement a pedestrian route identification system, as it pertains to changes in pedestrian flow resulting from the immediate proposal.*

Signage and educational materials (pamphlets, etc.) are needed to direct pedestrians from various areas of the campus to the new Campus Center.

5. *Develop and implement an informational signing plan for Special Events (including hockey games).*

Informational signage must be placed along roadways in strategic locations to inform motorists destined to the Campus Center.

6. *Develop and implement an informational signing plan for Graduation / Convocation Events.*

Informational signage must be placed along roadways in strategic locations to direct motorists to preferred event parking.

7. *Remove, modify, or install new categorical parking lot signage as appropriate.*

Given the changes in allocation and location of parking lots, existing signs will require modification and new signs identifying new parking lots must be installed.

8. *Construct a new surface parking lot (south of West End Avenue and East of Sweet Road) to provide for year round dynamic demands and VIP parking for events that may occur during the day.*

Although the campus has an adequate overall parking supply, the majority of the surplus parking spaces are located south of Route 104 at Romney Field House and Laker Hall. VIP parking should be provided in close proximity to the Campus Center. To accommodate the potential daytime demands for parking that would compete with the typical peak demand for proximate parking, a new parking lot should be constructed. This parking lot may serve day to day campus needs and be cleared of vehicles for VIP parking during events. The most logical location for such a parking lot is south of West End Avenue and East of Sweet Road opposite existing lots E-18 and R-9.

Table XI identifies the costs associated with the above improvements.

TABLE XI
COST OF IMPROVEMENTS RELATED TO REHABILITATION OF
SWETMAN/POUCHER AND NEW CAMPUS CENTER

Identified Mitigation	Cost
A 1	\$35,000.00
A 2	\$5,000.00
A 3	\$10,000.00
A 4	\$5,000.00
A 5	\$5,000.00
A 6	\$5,000.00
A 7	\$2,500.00
A 8	\$230,000.00

B. Recommended Campus Improvements

We support the recommended traffic and parking goals and objectives of the Campus Concept Committee:

- Safe, convenient, and available parking and transport for all members of the campus community.

- Preserve and enhance the integrity of the pedestrian corridor or spine from Rich Hall, along Takamine St., through and around Swetman Hall, and proceeding west to Penfield Library, Lanigan Hall, and to the western residence halls as indicated in **Figure 16**.
- Preserve and enhance the residential nature of the lakeside buildings and areas along Rudolph Road.
- Meet the requirements of the ADA with all projects and improvements.

To that end, we support recommendations made in the 2001 Landscape and Signage Assessment to promote construction of a circulatory loop surrounding the campus and eliminate vehicular traffic that currently severs the pedestrian spine as indicated in **Figure 17** which has been excerpted from that Report. The proposed loop road will separate the various users (i.e. vehicles, pedestrians, etc.) and will identify a hierarchy of roadways. Primary access roads will provide access and circulation throughout the campus and secondary access roads will provide direct access to key areas of the campus requiring service and/or other special access. Secondary access roads should be located judiciously with consideration given to providing accessibility within the design constraints.

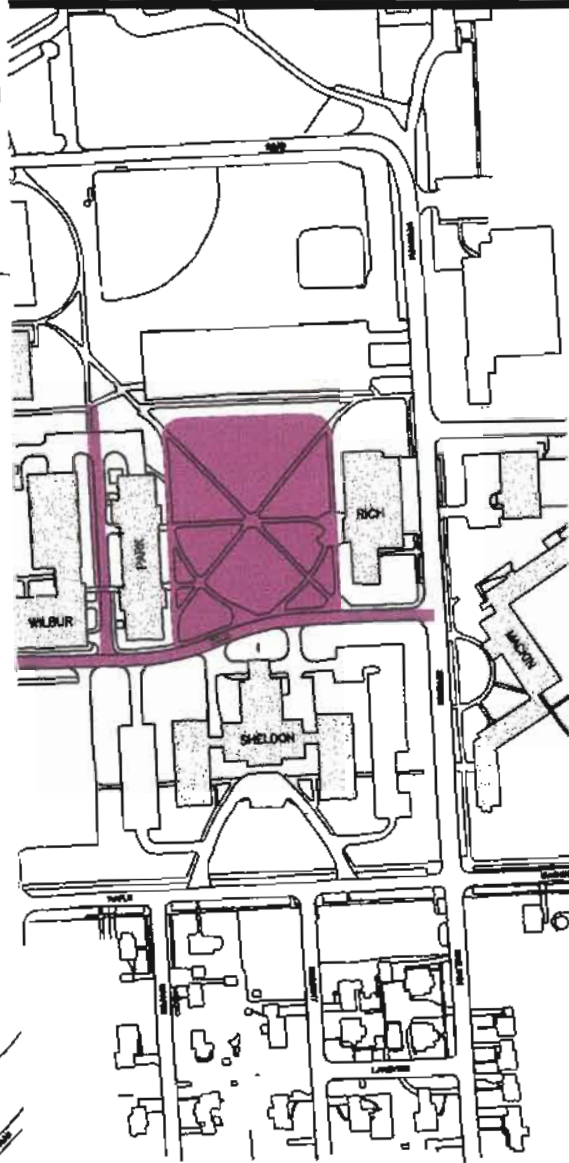
We also support the recommendations regarding a gateway treatment at Washington Boulevard and Sheldon Avenue. The exact type and extent of treatment needs to be determined with input from the College. Potential treatments may range from a simple signing application to modifying the entire intersection; for example a modern roundabout would create both an aesthetic gateway treatment and also improve intersection safety and operations. In addition, we support a median treatment on Sheldon Avenue, informational signing, and landscaping and other elements that could provide aesthetic enhancements. However, these recommendations should be evaluated further. Many of these recommendations cannot be evaluated at this time due to the ground cover and weather conditions.

S.U.N.Y. OSWEGO

KEY



PEDESTRIAN ZONES



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PEDESTRIAN SPLINE

FIGURE 16

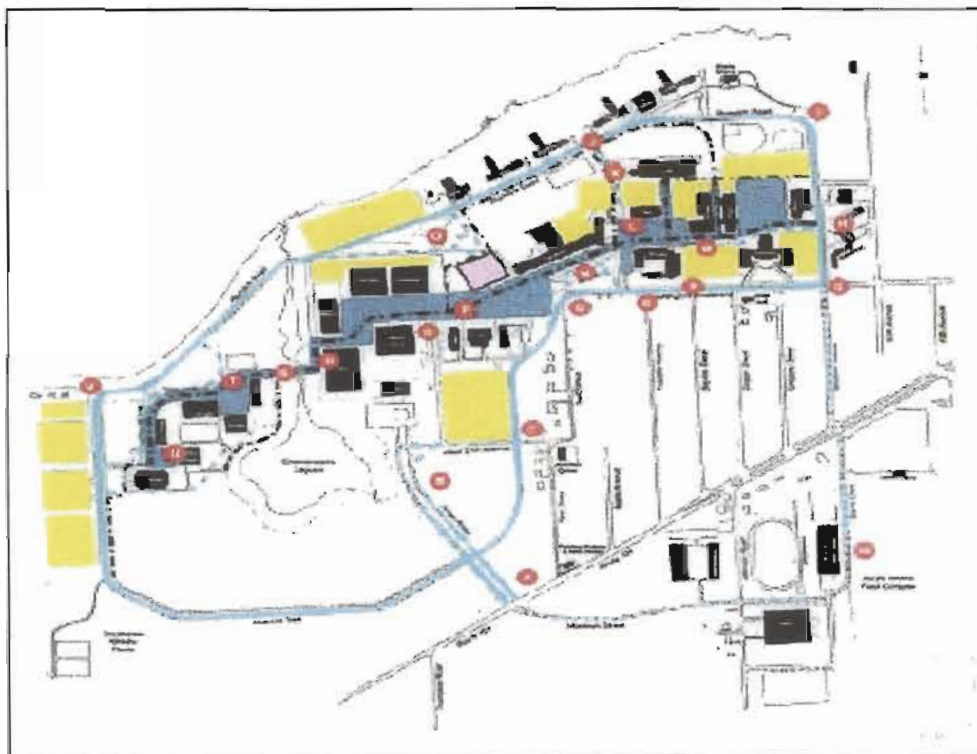
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REHAB SWETMAN AND POUCHER HALLS
AND / OR SURGE SPACE

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FIGURE 17
CAMPUS CIRCULATION



In addition we offer the following detailed recommendations based on the study to date:

- 1a. Investigate pedestrian crossing issues across Route 104 at Barnes Drive:
 - Gap study and pedestrian count to support delineated crossing
 - Warrant investigation to identify need for signalized pedestrian crossing
- 1b. Install pedestrian signal, if warranted.
2. Develop and implement a pedestrian route identification system, on a campus wide basis.
3. Establish a campus identification "gateway" treatment at the Washington Boulevard / Sheldon Avenue intersection.

4. Define and delineate, via pavement markings and signs, a pedestrian crossing at the Rudolph Road / Centennial Drive intersection.
5. Shuttle serviced should be evaluated after completion of the project and after traffic volumes and patterns have stabilized to assess the potential need for additional shuttle service.
6. The existing parking space/student ratio of 0.34 should be maintained.
7. Efforts to displace commuter students from the main campus parking areas to perimeter and remote lots should be continued.
8. Masterplanning efforts to traffic calm, and ultimately sever, Centennial Drive should be undertaken incrementally. Begin with recommendation number 1 in section X.A. above and continue with less restrictive means (i.e. alternatives that limit traffic on Centennial Drive such as conversion to one-way flow) until the link can be severed completely.

Table XII identifies the costs associated with the above recommendations.

TABLE XII
COST OF RECOMMENDED CAMPUS-WIDE IMPROVEMENTS

Recommended Improvements	Cost
B 1 a	\$5,000.00
B 1 b	\$45,000.00
B 2	\$10,000.00
B 3	\$10,000.00
B 4	\$2,500.00

XI. CONCLUSION

This report concludes that all identified impacts can be addressed through the intermediate recommendations as defined. Long term campus wide needs will be ameliorated with consideration to the prioritized recommendations list. Future campus projects will consider all prioritized items, and implement the same based on the defined improvement location, on-going construction chronology, and funding sources available at the time.