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to Coastal Carolina University Master Plan Committee and Steering Committee

from Sasaki Associates, Inc.  
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project name Coastal Carolina University Master Plan

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subject Transportation: Existing Conditions Summary – Access & Parking

**Overview**

This memorandum documents the existing conditions analysis of access and parking, including regional system characteristics, traffic volumes, and transit services; on campus conditions and parking supply and demand; and a summary of access issues at the University based on available data and comments by University facilities planning and management staff.

**Regional Analysis**

System Characteristics. The Coastal Carolina University (CCU) Campus is located between two major corridors in Conway, SC: US Highway 501 which is a principal arterial and SC Highway 544 which is a minor arterial as classified by the South Carolina Department of Transportation (SCDOT). University Boulevard is a four-lane divided roadway, which serves as the main entrance in to CCU and intersects SC 544 to the west and US Highway 501 to the east. Both intersections are signalized. Chanticleer Drive is the main loop that separates the interior of the campus from the exterior. Chanticleer Drive intersects University Boulevard at two signalized intersections (Chanticleer Drive West & Chanticleer Drive East). Approximately 750 feet east of Chanticleer Drive East, is the intersection of Technology Boulevard and University Boulevard. Technology Boulevard is the main entrance in to Horry Georgetown Technical College (HGTC). This intersection is currently under construction and will operate as a two lane roundabout before the fall semester begins. Approximately 1000 feet east of Technology Boulevard is the intersection of University Boulevard and US Highway 501. Founders Drive connects SC Highway 544 and Chanticleer Drive, providing a secondary access to students and faculty from the north on US Highway 544. Off campus student housing at University Place is located south of University Boulevard off of US Highway 544.

Figure 1 shows the regional road and rail system.

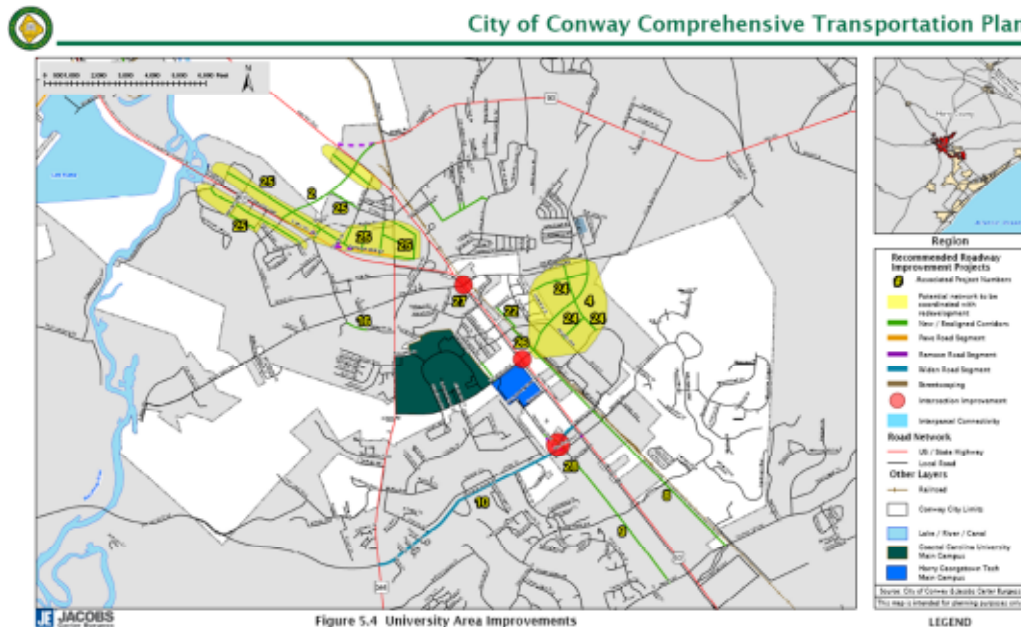


Fig.1. City of Conway Comprehensive Transportation Plan – University Area Improvements

**Traffic Volumes.** The SCDOT performs and publishes Average Annual Daily Traffic (AADT) counts on a yearly basis. The counts for 2009 are not yet available. Figure 2 shows the counts for 2008. The closest count stations to CCU are:

- Station 161 on US Highway 501 Between SC Hwy 544 and SC Hwy 31
- Station 242 on SC Highway 544 Between US Hwy 501 Bus. And SC 955
- Station 161 - AADT of 50,700 on US Hwy 501 in 2008
- Station 242 - AADT of 21,000 on SC Hwy 544 in 2008

A traffic count was performed on Wednesday and Thursday, Aug. 26 and 27, 2009 at the intersection of University Blvd. and SC Highway 544. The findings indicate that approximately three-quarters of vehicles entering University Blvd. from Rte. 544 are coming from the south, and one-quarter from the north. This suggests that more students live in the direction of Socastee than Conway, but also reflects the presence of the University Place housing just to the south.

The SCDOT performed turning movement counts at the intersection of University Boulevard and Technology Drive on Thursday 2/3/09. A copy of these counts and the resulting warrants analysis has been provided by SCDOT. These counts are also referenced and analyzed in the Thomas & Hutton report entitled "Roundabout Analysis for Technology Boulevard/University Boulevard", dated March 2010. The capacity analysis for existing conditions resulted in a level of service (LOS) B for the left turn movement on University Boulevard both the AM & PM peak hours, and a LOS F for Technology Boulevard in both the AM & PM peak hours. The counts, warrants analysis and report are in the appendix.

The Roundabout Analysis for Technology Boulevard/University Boulevard also included traffic counts performed by Traffic Data Connection (TDC) on Wednesday, Feb. 18, 2009 at the intersection of University Boulevard and US Highway 501 from 7:00 AM-9:00 AM and from 4:00 PM-6:00 PM. Capacity analysis of the 2009 volumes resulted in an overall LOS C for the intersection during both peaks.

SCDOT recently installed a traffic signal at the intersection of US Highway 501 and Cox Ferry Road. Traffic counts were performed for this intersection on Wednesday Oct. 8, 2008. A copy of these counts and the resulting warrants analysis has been provided by SCDOT.



Fig.2. Average Annual Daily Traffic, 2008

Current Public Improvements Plans. The SCDOT District 5 section of the Statewide Transportation Improvement Program provides an index of Grand Strand Area Transportation Study (GSATS) Transportation improvement program plan. The project that stands out as having potential to affect CCU is The US 501 North Widening, which would add a Northbound Through lane on US Highway 501 from the Factory Stores to Gardner Lacy Road. This project would reduce traffic congestion on US Highway 501. As of now it is a long range project, since there is no time frame stipulated.

The Comprehensive Transportation Plan for the City of Conway dated December 2008, has targeted 11 projects as recommended for priority implementation to be the most beneficial. Of those projects the following will have an impact on CCU.

- University Boulevard extension to East Cox Ferry Road at Bellamy Road. This improvement has been identified to link CCU and the commercial area east of US Highway 501 without requiring travel on 501. This project provides a connection to SC Highway 90 as well.
- Singleton Ridge Road Widening.
- Improvement of Singleton Ridge Road / Technology Boulevard intersection, including signalization.

The proposed pedestrian bridge over US Highway 501 is an ongoing topic of discussion between the City of Conway and CCU. Thus far no decision has been made to proceed with it. The City has indicated an intention to take the lead, but the \$7 million price tag has left the project in limbo.

A roundabout is currently under construction at University Boulevard/Technology Drive. The roundabout construction is expected to be completed this summer.

Coast RTA Service. The shuttle bus routes serving CCU may be modified this fall to better serve the consolidated University Place and Campus Edge housing developments. Currently the following routes are listed by Coast RTA as having stops at CCU.

- Rte. 7, Conway to Myrtle Beach (6 buses/day)
- Rte. 17, serving CCU, University Place and East Campus. Sub-routes are the Bronze (University Place to Main Campus on 15-minute headways), Teal (Main Campus, East Campus and HGTC on 15-31-minute headways), and Black (University Place, Main and East Campuses on 48-minute headways)
- Rte. 22, University Place and Main Campus to Gateway Plaza in Conway (1 hour headways)
- Rte. 23, Campus Edge (30-minute headways)

### **On Campus Analysis**

Transportation on the CCU campus involves mobility at two levels: access between the main campus, University Place and East campus; and access within the main campus itself.

University Place, a CCU-owned townhouse development, is approximately one mile from main campus, or a 20-minute walk, mostly by narrow sidewalk directly adjacent to Rte. 544. Few people walk at present; about 10% ride a Coast RTA shuttle. The majority drive, either alone or in groups. University Place residents are allowed to park in the BB and EE lots as well as the Elvington lot and the Welcome Center overflow (the old University Blvd. right-of-way east of Baxley Hall – a total of 860 spaces, though commuter and main campus resident students are also eligible to use them. At University Place, there are a total of 1,893 parking spaces, or almost one for each of 1,952 residents.

East campus is also about a mile from main campus. The walk to East campus is inhospitable, involving crossing US 501 and railroad tracks just to get to the edge of the CCU property. As noted above, East campus is served by the Teal shuttle route, on 15-minute headways in the morning and 30-minute in the afternoon.

On the interior of the main campus, Chanticleer Dr. is the main artery. It echoes the horseshoe, around which the original CCU buildings were arranged. Founders Dr. gives the only other access to public streets, connecting Chanticleer Dr. West to Rte. 544.

With both parking lots and buildings arrayed along either side of Chanticleer Dr., pedestrian crossings are constant and somewhat random. Formal crosswalks have been established, raised or not, at the most frequently used, but crossings occur at almost all points, especially in the segment at the top of the loop.

Figure 3 shows the location of crosswalks along Chanticleer Dr.



Figure 3. Crosswalks on Chanticleer Dr.

### **Parking**

#### **Supply**

There are just over 6,100 parking spaces on campus. Figure 1 shows the campus parking map. Table 1 shows campus parking spaces by lot and assigned user.

<b>Lot</b>	<b>Student</b>	<b>F/S</b>	<b>Disabled</b>	<b>Other</b>	<b>Total</b>
A	21		2	4	27
B		52	4		56
C	137				137
D	44	50	6		100
E	134	23	6	1	164
G	83	49	6	15	153
I		5	4		9
J	93	58	5		156
M	30		5		35
O	5	16			21
P		17	2		19
Q		26			26
R	204		3		207
S		51	3		54
AA	63		4		67
BB	289		8		297
CC	46				46
DD	105				105
EE	241	5	7		253
HH	245				245
II	217	8	5	13	243
LL	45		3		48
NN	79	4	2		85
QQ	271		7		278
SS	46		5		51
UU	49	12			61
WW		54	3	15	72
Auxiliary @ LL	30				30
Elvington	123				123
Welcome Ctr overflow	207				207
Chanticleer Dr.	47	15	4		66
Independence Dr.	46				46
Atheneum Cir		61	2	21	84
Canterbury Ln	7		2	1	10
Tom Trout Dr.	15				15
<b>Core Campus Total</b>					<b>3,596</b>
University Place Total	1,831		62		1,893
Coastal Band Hall	22		1		23
Foundation Center	112		4		116
B&C Marine/Wetland	47		1	4	52
Coastal Science Ctr.	374	46	5	3	428
<b>Total</b>	<b>5,308</b>	<b>552</b>	<b>171</b>	<b>77</b>	<b>6,108</b>

Table 1. CCU Parking Inventory, by Facility and User Group

Of the 6,108 spaces, 3,596 are on main campus. 81% of main campus spaces (2,922) are available for student use; 14% (506) are dedicated to Faculty/Staff; but they can also use student spaces. (As noted above, a 500-space parking lot is currently in design and will be built behind the Welcome Center.) 1,319 of the 3,596 existing main campus spaces lie inside Chanticleer Dr.

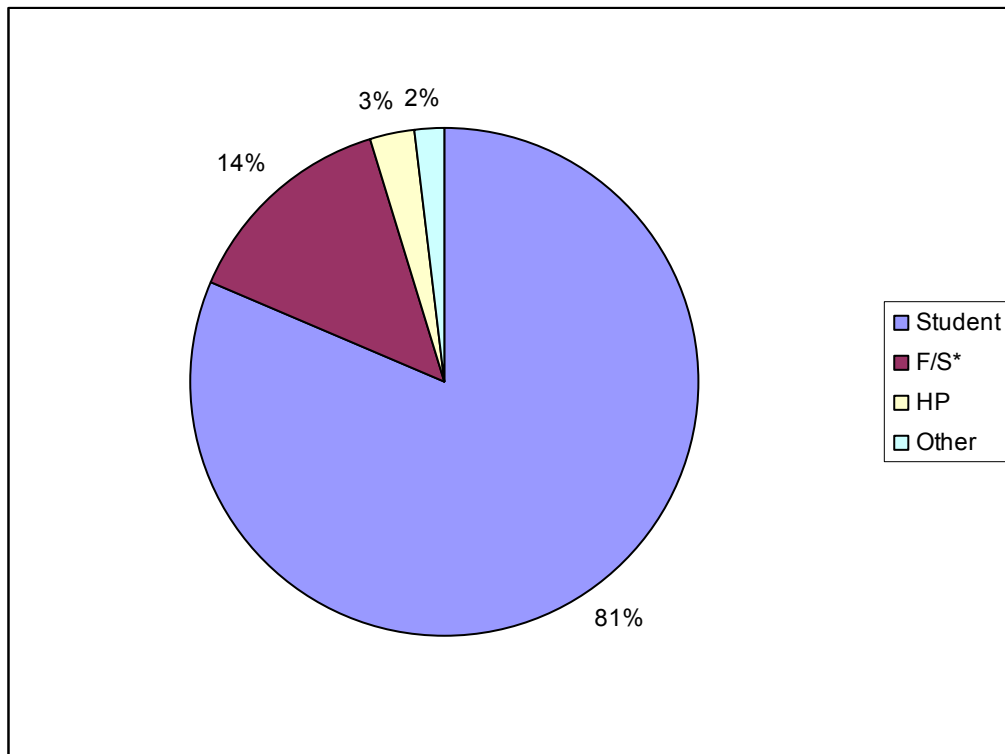


Figure 2: Allocation of Main Campus Parking Spaces by User Group

**Permits and Usage**

Permits are available to students at a nominal cost (\$50/year), and are free for faculty and staff. Occupancy of campus parking has not been surveyed, but is estimated by CCU to be at capacity. Of the main campus lots, only the BB (Township Circle) and Welcome Center overflow lots generally have any available spaces after 9:00 AM, and they fill by 10:30. Another measure of parking usage is activity at the overflow lot behind the Welcome Center. The overflow lot is the least convenient lot on campus. Between 9:00 and 9:30 there is a significant surge in arrivals at the overflow lot (25 to 31 vehicles, as recorded on Monday and Tuesday, Aug. 24 and 25, 2009), indicating that the main campus lots are full.

**Demand Projections**

On the assumption that the current parking supply is just adequate to serve the current campus population, estimates can be made of future parking need as enrollment increases. Headcount enrollment is currently 8,346. If enrollment were to grow to 12,500, it is estimated that the faculty/staff headcount would grow from today's 1,398 to 1,807. As a result, the unmitigated

demand for main-campus parking – assuming no change in parking need on a spaces/capita basis – would grow from 3,596 to 5,198. See Table 2.

	Existing			Future	
	Parking Spaces	Population	Spaces/Capita	Population	Parking Spaces
Student	2,922	8,346	0.28	12,500	3,536
F/S	506	1,255	0.85	1,807	1,725
Total	3,428	9,601		14,307	5,002
HP, Other	168				252
Grand total	3,596			14,225	5,254

Table 2. Unmitigated Main Campus Peak Parking Demand at 12,500 Enrollment

Future unmitigated core-campus parking need, in the event of enrollment increasing to 18,500, can be calculated by the same method at 6,868.

#### **SPECIFIC TRANSPORTATION ISSUES:**

On the basis of the information and data given above, and comments and concerns expressed by University facilities planning and management staff, following is a summary of access issues at CCU.

- a. Traffic on University Boulevard queues from Highway 544 to Chanticleer Drive, and from Rte. 501 to Technology Drive during peak traffic periods. The duration of these periods has not been measured. It is also unclear how the proposed Technology Blvd. roundabout will affect the current peak-hour congestion on University Boulevard. In order to analyze the traffic issues along University Blvd., it is recommended that the University collect turning movement traffic counts, for the duration of a typical mid-semester day, at the intersections of University Blvd. with Rte. 501, Technology Blvd., Chanticleer Dr. East, Chanticleer Dr. West, and Rte. 544.
- b. Pedestrian and bicycle access between main campus and University Place must be improved in order to reduce the number of students driving to class. In conjunction with potential land acquisition, improvements on the edge of the golf course, and development of the Fire Tower site (potentially as remote parking), an enhanced, more direct and lighted path might be constructed.
- c. Access across Rte. 501 to the East campus must be addressed. Safety of students crossing the highway is a serious concern. Remote parking is a feasible use of East campus land, but is problematic for that reason.
- d. There is a desire to move vehicular traffic from the interior of the campus to the exterior, thus making Chanticleer Dr. and the core of main campus more pedestrian friendly.
- e. Given the low level of available transit service and surrounding urban development, transportation demand management strategies to reduce parking need are of limited efficacy at CCU. Nonetheless, opportunities to change travel patterns should be fully explored. In particular, a more walkable main campus, higher percentages of students living on-campus, enhanced campus life and restrictions on main-campus parking by University Place residents will reduce the number of students driving to and around campus.



- f. Approximately 50% of traffic traveling to CCU from the north utilizes the Founders Drive entrance off of Rte. 544. There is concern about the volumes coming in to the existing parking lot R, resulting in a dangerous intersection at Chanticleer Dr..
- g. The campus has the potential to increase foot and bicycle traffic. Some additional bicycle racks have already been implemented, but there may be a need to identify more locations.
- h. Staff have received complaints regarding a shortage of parking from students, faculty and staff. It was noted that moving parking away from core-campus buildings will cause faculty to lose some priority parking.
- i. Accommodations need to be made for athletic events as all of campus parking is utilized and buses are needed to transport approximately 3,500 people to and from the parking lots.
- j. The status of Coast RTA is uncertain. A referendum has been placed on this fall's ballot that may lead to changes in RTA funding. There has been discussion of CCU purchasing and operating its own buses.
- k. Extending University Boulevard through East campus to Rte. 90 will improve thru traffic flow and likely result in an increase in volume.
- l. Alternative parking solutions could involve a parking garage, with preference expressed for pleasing aesthetics and an active first floor.
- m. It is possible that coordination with HGTC to offset class schedules could mitigate some of the traffic issues on University Boulevard.