Background
Beautiful Wrightsville Beach is one of North Carolina’s most popular tourist attractions. However, the first intersection into Wrightsville Beach, just across the bridge from the mainland where US-74 and US-76 split, is not an asset to the area and, in fact, is generally regarded as failing. It is a Sixties-era intersection design with multiple islands and every movement in a separate leg. There is often a long queue of traffic built up trying to heading east on US-76, where that movement must stop for traffic heading west on US-74. Besides the delays, there are also a fair number of crashes at the intersection and the intersection is a significant barrier to pedestrian and bicycle travel. Given the context, the NCDOT cannot just go through and tear up everything to rebuild the intersection. They need to look at improvements that have relatively minimal impacts to the surrounding area, and that maintain access to the many surrounding businesses. A roundabout was suggested, and may be the best solution, but the NCDOT has not looked at anything in-depth yet.

State Senator Joe Crawford originally asked Division Engineer Allen Pope about the intersection, and in turn Mr. Pope asked Jim Dunlop of the NCDOT Congestion Management Unit about it. Unit staff currently do not have the time to look at it, and, given the budget crunch at the NCDOT right now, contracting with a private engineering firm to conduct a study is not possible either. Mr. Pope and Board of Transportation Member Lanny Wilson both liked Mr. Dunlop’s idea of having this become a class project for CE 595A, and indicated that they will be willing to help as needed.

Objectives
The US-74 and US-76 intersection will be your CSS case study. During the case study your team will conduct a feasibility study of improvements at the target intersection within a context sensitive framework. In particular, your team will:

- Refine the background statement given above into a useful purpose and need statement;
- Define the context of the proposed project;
- Develop a few reasonable improvement alternatives;
- Conduct an initial analysis of those alternatives, including of the congestion, safety, aesthetic, human, and natural impacts;
- Obtain feedback from a reasonable sample of stakeholders; and
- Develop recommendations to the NCDOT.

Your recommendations to the NCDOT for the next round of their process should include:

- Which alternatives they should study in depth,
- What major issues they should expect to confront,
- Who should be on the multidisciplinary team they should convene, and
- What public outreach methods they should use.
Resources
Besides all of the usual information sources available on the web, at the library, etc. there are extra resources available for this case. First, the course web site contains a 2003 aerial image of the intersection from the New Hanover County GIS unit. They may have other useful data as well. Second, the NCDOT Congestion Management Unit will arrange for the Traffic Surveys Unit to conduct a count at the intersection this September. Very soon after the September 5 field trip, your team needs to let the instructors and Mr. Dunlop know what you want counted and for how long. Third, there is a permanent count station located just to the west of the drawbridge. Again, your team needs to make a request through the instructors and Mr. Dunlop regarding what data in what format you would like. Fourth, the Congestion Management Unit will provide copies of recent collision reports. Fifth, all of the people mentioned earlier, as well as other NCDOT and Town staff and leaders, are available for consultation (after appropriate clearances through the instructors and Mr. Dunlop).

Areas of Responsibility
Teams will have 4 or 5 members. Each team member will contribute to all areas of the project, but will have primary responsibility for one important area. In a team of 4 members the responsibilities will be:

- Traffic
- Roadway design
- Human impacts
- Natural impacts

In a team of 5 members, the fifth responsibility will be for aesthetics and placemaking.

Milestones
In general, teams should attack the case study as material is presented in class. For example, immediately after the class discusses multidisciplinary teams your team should discuss the recommendation you must make for multidisciplinary participation in this case. In particular, though, five important specific milestones loom for the semester:

September 26: Submit draft purpose and need, context discussion, and alternatives list.
October 24: Progress report on analyzing alternatives, and plan for involving stakeholders.
November: Stakeholder involvement event(s).
December 5 or 7: Present recommendations to Congestion Management Unit and others.
December 8: Submit final report.