

Feb 7th, 11:30 AM - 12:30 PM

Theories and Applications of Geospatial Technologies

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11:30 – 12:30 PM (Room 1311)
Theories and Applications of Geospatial Technologies
Chair: Dr. Hua Liu, Department of Political Science and Geography

Light Rail Assessment in Hampton Roads with Geospatial Technologies

By **Joseph Coley** (Mentor: Dr. Hua Liu)

The past thirty years in Hampton Roads, Virginia traffic has come to nearly a halt. This project tries to find the answers to the following questions with the assistance of Geographic Information Systems (GIS): What would the benefits be of installing light rail in Hampton Roads and where would it be installed? In determining the answer we will be taking into consideration areas of population, preexisting easements, urbanized areas and economic areas of interest in determining light rail placement in Hampton Roads. After careful consideration there would be ten sub-stations and two main train stations for commuter use. This development will have eased traffic congestion while bringing economic success to shopping districts in Hampton Roads. The rail also brings the five cities that make up Hampton Roads together for a larger metropolitan feel and one identity.

Pedestrian and Bicyclist Safety in Hampton, Virginia

By **Jayne Evangelista** (Mentor: Dr. Hua Liu)

Every year thousands of pedestrians and bicyclists are involved in accidents involving motor vehicles. The objective of this project is to determine where these types of accidents occurred in the city of Hampton, not including Langley Air Force Base, between June 1, 2013 and May 31, 2014. Directional distributions, hotspots, and cold spots associated with each type of accident are determined to statistically analyze the accidents. The results find that there were a total of 56 accidents: 39 involving pedestrians and 17 involving bicyclists. It also finds that the section around the junction of West Mercury Boulevard and Interstate 64 is the most dangerous for pedestrians.

Potential Wetland Loss for Poquoson, VA Due to Sea Level Rise

By **Jeffrey Rollins** (Mentor: Dr. Hua Liu)

The objective of this project is to utilize GIS and remote sensing technologies to estimate the total loss of wetlands due to inundation by sea level rise in the City of Poquoson over the course of the next 20-30 years. In order to achieve the objective, we will use an existing sea level rise model to evaluate the possible range of elevations in the next twenty years for the study area, and then project those elevations onto a digital elevation model of Poquoson. Using these projected elevations, we will be able to find the range of total area of wetlands that have been inundated with a water column deep enough to drown them in situ. As a result we expect to depict a set of “before and after” maps and to outline current wetlands and the range of possible areas of wetland loss.