Above Ground Storage Tank Map Book

• The Above Ground Storage Tank (AGST) Map Book was requested by the UNH Office of Environmental Health and Safety to provide the locations of features containing cooling oil, propane, and heating oil.
• Photos of each electrical transformer were incorporated into the AGST personal geodatabase using mapping software (ArcGIS 9.2).
• A list of specific issues was compiled and addressed in order to update the first version of the map book. This included creation of new building polygons, naming issues/correction, and other small corrections.
• New photo pages and attribute table updates were required to complete revisions to the map book (Figures 3 and 4).

Background
The function of the Energy & Campus Development Geographic Information System Group (ECD GIS) is to serve the University of New Hampshire (UNH) with mapping technology. To assist in this function, the ECD GIS Group teamed with the UNH Geography Department to create a GIS Internship. The objective of the internship was to increase the depth and breadth of knowledge about geographic information systems through experience with real-world projects. A second objective of the internship was to enrich UNH databases and holdings while earning academic credit. Over the course of the term, smaller training exercises and two larger projects were completed. The larger projects included: Above Ground Storage Tank Map Book and Telecom & Electric Mapping.

Tools
A Trimble 5800 Real Time Kinematic Global Positioning System (RTK GPS) was used for the collection of point features. A Bluetooth device connected the GPS receiver, data logger, and mobile phone (which acts as a modem). When connected via mobile phone to the Trimble 5700 Base Station at West Edge, the GPS unit is capable of ±1 cm horizontal accuracy and ±2 cm vertical accuracy. Additional tools included a laser distance meter and surveyor’s compass.

Abstract
The field computer was used to input and store feature location and attribute information.

Results
The Above Ground Storage Tank Map Book was completed for a UNH customer on a specific timetable. The Telecom & Electric Mapping Project focused on updating an existing database with RTK-collected points. Both projects will enrich the UNH infrastructure databases by providing the ECD GIS Group with updated positional and attribute information.

Training
ArcGIS 9.2 was used to manipulate data, create detailed attributes for features, and develop maps for display.
• Field training included the use of an RTK GPS unit to collect points, modify attributes, and calculate offsets.
• A utilities map of Quad Way was developed to display newly acquired skills.

Accomplishments & Skills
The following is a list of accomplishments and skills obtained over the course of the semester:
• Knowledge of Trimble GPS equipment and associated Trimble Geospatial Office software
• Common post-processing techniques were established
• Introduced to personal geodatabase creation and other ESRI spatial data file types
• Workplace etiquette, time management, and communication skills were refined
• Learned how computer-aided design (CAD) and other applications like Google Sketch-Up apply to ECD GIS projects

Photo 1: Electrical transformer
Photo 2: Henry operating RTK GPS

Figure 1: quad utilities map
1. point features were collected with RTK GPS. data were displayed on screen.
2. field techniques were strengthened with training exercises.
3. Trimble field computer
4. ArcPad allows the ability to view and edit GIS data while in the field.

Photo 3: Trimble field computer

Photo 4: Andrew measuring an offset

Photo 5: Henry using ArcPad on a Tablet PC

Figure 2: reference grid index

Photo 6: Field notebook

Figure 3: Quad Way Utilities Map

Photo 7: Partial list of uncollected features

Photo 8: Andrew using RTK GPS

Photo 9: Unlabeled manhole and emergency phone (blue light)