

IHSM 660 – Geographic Information Systems Applications:
Homeland Security and Emergency Management
Summer 2009

Case Study

All students are required to complete a project on a topic of their choice related to the course. Students may conduct a case study on how a GIS is being used in support of homeland security and/or emergency management efforts, conduct a user needs assessment for developing a GIS for homeland security and emergency management purposes, describe how GIS can be used for detection, preparedness, prevention, protection, and response and recovery for a specific emergency event, or review a book or monograph on a topic related to GIS and homeland security and emergency management. All topics must be approved by the instructor before a student begins work on his or her project.

The following are the specifications for the applications project:

1. The student must post a one-page proposal for the case study in the Assignment area of the Blackboard Web site by Friday, June 12. The proposal should include a discussion of what you plan to do and how you plan to do it. I will review the proposal and email you any comments by Monday, June 15
2. The student must prepare a double-spaced report with a minimum of 8 to 10 pages. The APA style format must be used to document all references. The paper must include a cover sheet, table of contents, executive summary, introduction, discussion of the topic, description of the importance of the project to homeland security and emergency management, conclusion, and a minimum of 5 references from books and articles.
3. The report must include a cover sheet with the title of the report, the student's name, course number, and date. The coversheet, along with the table of contents and any diagrams, tables, and references do not count toward the minimum page number. The assignment must be posted in the Assignment area of the Blackboard course Web site by Friday, August 14.

The grading rubric for the case study is as follows:

<i>Item</i>	<i>Points</i>
Cover page, table of contents, and executive summary	1
Introduction	5
Discussion of the topic (including tables and diagrams)	15
Importance of the project to homeland security and/or emergency management officials	10
Conclusion	5
Organization of the report; proper grammar and punctuation; correct citation of references	4

As indicated in the course syllabus, the case study is worth 40 of the 100 points used to determine your course grade.

Suggestions

ESRI's online GIS library (<http://training.esri.com/campus/library/index.cfm>) is a useful tool for finding published articles on GIS and homeland security and/or emergency management. Using the advanced search option, I found 55 papers related to GIS and homeland security, and 85 papers related to GIS and emergency management. Also, ESRI's *GIS for Public Safety* Web page (http://www.esri.com/industries/public_safety/index.html) is a good source of information on homeland security and/or emergency management applications.

Suggested topics for the case study project include:

1. Use of GIS in response to Southern California wildfires
2. Use of GIS following Hurricane Katrina
3. Case study: Maryland's Emergency Management Mapping Application (EMMA)
4. Use of GIS in support of critical infrastructure protection
5. GIS data interoperability
6. A review of the 2004 Rand Corporation report (*Mapping the Risks: Assessing the Homeland Security Implications of Publicly Available Geospatial Information*)
7. Case study: The National Geospatial-Intelligence Agency's Palanterra system
8. Potential use of GIS in support of public health emergencies, such as pandemic flu
9. Use of GIS for mobile and in-vehicle mapping
10. Use of GIS for crime analysis
11. Case Study: The Maryland Emergency Geographic Information Network (MEGIN)
12. Case Study: Homeland security and emergency management applications available via the Geospatial One-Stop (<http://www.geodata.gov>)
13. Use of open source Web mapping applications (Google Maps, Microsoft Virtual Earth, and Yahoo! Maps) by the public during emergencies
14. Case Study: FEMA's HAZUS-MH application
15. Case Study: CATS for emergency response
16. Case Study: ESRI's Disaster Response and Assistance Program
17. Use of ESRI's homeland security data model
18. Case Study: RMGSC National Wildland Fire Applications (<http://wildfire.usgs.gov/>)
19. Case Study: ESRI's MapStudio for Homeland Security
20. A review of the Homeland Infrastructure Foundation-Level Data (HIFLD) Working Group (<http://www.hifldwg.org/>)
21. A review of the U.S. Department of Homeland Security's National Infrastructure

Protection Plan (http://www.dhs.gov/xprevprot/programs/editorial_0827.shtml).