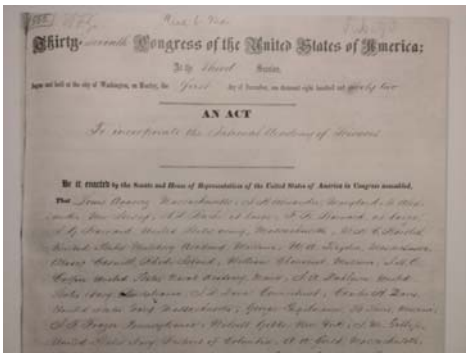
What is the Mapping Sciences Committee?

Keith Clarke
MSC Chair

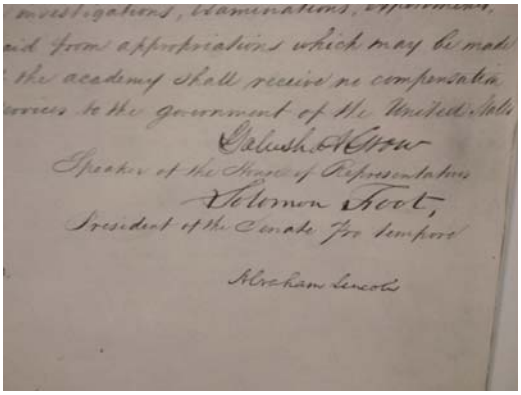
Origin of the National Academies


Thirty-seventh Congress of the United States of America:

AN ACT

To incorporate the National Academy of Sciences

Signed by the boss

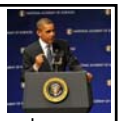

Speaker of the House of Representatives

Solomon Foot,

President of the Senate pro tempore

A. Lincoln

A little history



- Civil War *Act of Incorporation*, signed by President Lincoln on March 3, 1863, established voluntary service to the nation as its dominant purpose
- 1916 Academy establishes the *National Research Council* at the request of President Wilson to recruit specialists from the larger scientific and technological communities to participate in war advising
- President Wilson issues executive order at the close of WWI asking the Academy of perpetuate the National Research Council
- Subsequent executive orders, by Presidents Eisenhower in 1956 and Bush in 1993, have affirmed the importance of the National Research Council and further broadened its charter
- President Obama addressed the NAS on Apr 27, 2009 stressing value of expert scientific advice to the nation

The National Academies today

- The National Academies perform an unparalleled public service by bringing together committees of experts in all areas of scientific and technological endeavor
- Experts serve *pro bono* to address critical national issues and give advice to the federal government and the public
- Four organizations comprise the Academies: the *National Academy of Sciences*, the *National Academy of Engineering*, the *Institute of Medicine* and the *National Research Council*

MSC Origins

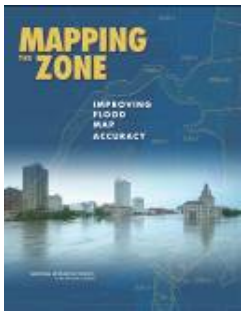
- In 1989, the National Research Council established the Mapping Science Committee to provide "*independent advice to society and to government at all levels on scientific, technical, and policy matters related to spatial information. It promotes the informed and responsible development and use of spatial data for the benefit of society*".
- **(The Role of the Mapping Science Committee in assisting the mapping of the United States** David J. Cowen)

Some recent reports (last 3 years)

- Ad hoc committee nominated and invited
- One or more meetings, workshops, briefings
- Committee synthesizes information and writes report
- NRC coordinates rigorous independent peer review
- Finding agency allowed to review and respond to draft during public comment period
- National Academies Press publishes report on paper and web
- Follow-up briefings and activities as necessary

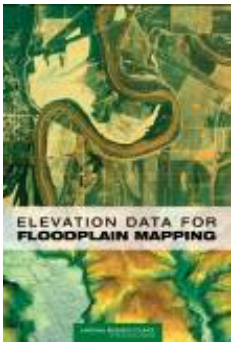
Mapping the Zone: Improving Flood Map Accuracy (2009)

- Examines the factors that affect the quality and accuracy of flood maps, assesses the costs and benefits of map improvement efforts, and recommends ways to improve flood mapping, communication, and management of flood-related data.
- Concludes that even the most expensive aspect of making more accurate maps—collecting high-accuracy, high resolution topographic data—yields more benefits than costs, and that FEMA should continue to invest in updating and improving its flood maps.
- Sponsors: FEMA and NOAA



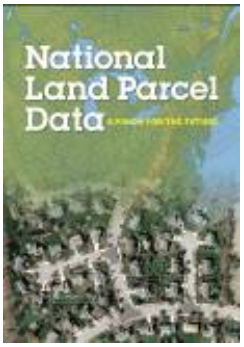
Elevation Data for Floodplain Mapping (2007)

- Examines the adequacy of the base map information available to support FEMA's floodplain map modernization program.
- Concludes that existing land surface elevation data are not adequate to determine whether a building should have flood insurance.
- Recommends that high-accuracy LiDAR data be collected nationwide and incorporated into the National Elevation Dataset that the USGS maintains for flood mapping and other applications.
- Sponsor: National Academies



National Land Parcel Data: A Vision for the Future (2007)

- Assesses the status of land parcel data (also known as cadastral data) in the United States.
- Concludes that nationally-integrated land parcel data is necessary, feasible, and affordable, and recommends ways to establish a practical framework for sustained intergovernmental coordination and funding required to develop a nationally integrated land parcel data system.
- Sponsors: BLM, Census, DHS, ESRI, and FDGC



A Research Agenda for Geographic Information Science at the United States Geological Survey (2007)

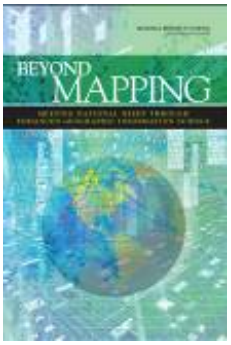
- Assesses current GIScience capabilities at the USGS, recommends strategies for strengthening these capabilities and for collaborating with others to maximize research productivity, and identifies research areas.
- Calls for an initial focus on improving the capabilities of *The National Map*, which will require research on information access and dissemination, data integration, and data models.
- Sponsor: USGS

Successful Response Starts with a Map: Improving Geospatial Support for Disaster Management (2007)

- Assesses the use of geospatial data, tools, and infrastructure in disaster management.
- Recommends significant investments be made in training of personnel, coordination among agencies, sharing of data and tools, planning and preparedness, and development of tools.
- Sponsors: NASA, NGA, NOAA, and USGS

Beyond Mapping: Meeting National Needs Through Enhanced Geographic Information Science (2006)

- Assesses the state of mapping sciences and identifies national needs for GIS and GIScience professionals.
- Recommends increased collaboration among academic disciplines, private companies, and government agencies; the implementation of GIS/GIScience at all levels of education; and the development of a coherent, comprehensive research agenda for the mapping sciences.
- Sponsors: Census, NGA, NOAA, NSF, and USGS



Priorities for GEOINT Research at the National Geospatial-Intelligence Agency (2006)

- Defines 12 hard problems in geospatial science that NGA must resolve to meet future needs. Many of these are related to data integration and the handling of spatio-temporal data.
- Also suggests promising approaches in geospatial science and related disciplines for meeting these challenges.
- Sponsor: NGA

2012/13 studies