

The National Map—Hazards and Disasters

The Nation Needs *The National Map*

As one of the cornerstones of the U.S. Geological Survey's (USGS) National Geospatial Program, *The National Map* is a collaborative effort among the USGS and other Federal, State, local, and Tribal partners to improve and deliver topographic information for the Nation. It has many uses ranging from recreation to scientific analysis to emergency response. The geographic information available from *The National Map* includes ortho-imagery (aerial photographs), elevation, geographic names, hydrography, boundaries, transportation, structures, and land cover. *The National Map* is easily accessible for display on the Web, as products and services, and as downloadable data. Other types of geographic information can be added within the viewer or brought in with *The National Map* data into a Geographic Information System (GIS) to create specific types of maps or map views.

The National Map is a significant contribution to the National Spatial Data Infrastructure (NSDI) and provides high quality, integrated geospatial data and improved products and services including new generation digital topographic maps. *The National Map* is foundational to implementation of the Department of the Interior (DOI) Geospatial Modernization Blueprint and meeting the DOI mission. *The National Map* also underpins the USGS Science Strategy, which is based on a systems approach to help address multi-faceted issues, provide better understanding of earth processes, and evaluate broad causes and consequences of the use and management of natural resources. *The National Map* promotes this type of interdisciplinary science by providing nationally consistent, trusted geospatial data and establishing a consistent national geographic context.



Flood damage



The aftermath of a hurricane

The National Map Provides the Starting Point

Federal, State, and local response and management personnel must have current, reliable, and easily accessible geographic information and maps to prepare for, respond to, or recover from emergency situations. In life-threatening events, such as earthquakes, floods, or wildland fires, geographic information is essential for locating critical infrastructure and carrying out evacuation and rescue operations.

The USGS promotes partnerships to ensure that base map data are up to date, readily available, and shareable among local, state, and National users. *The National Map* enables other government agencies, private industry, and the public to link and share additional data that provide even more information. These efforts with state and local governments have helped standardize the data by reducing data inconsistencies between neighboring jurisdictions and will help fill in the gaps for those places where data are lacking.

Natural Hazards

Hurricanes, wildfires, floods, earthquakes, and other natural events affect the Nation's economy, infrastructure, property, and lives. In addition to its mapping activities, the USGS provides critical, up-to-the-minute (real-time) information. In cooperation with organizations across the country, the USGS gathers and disseminates real-time hazard data to relief workers, conducts long-term monitoring and forecasting to help minimize the impacts of future events, and evaluates conditions in the aftermath of disasters.

The National Map makes accessible the base geographic data layers needed in planning and responding to disasters. In a flood situation, for example, the integration of feature attribute data from the hydrography data layer with real-time stream flow-gage data allows scientists to predict the timing and magnitude of downstream flooding in support of emergency operations.

For wildland fires, the integrated elevation, transportation, land cover, and water feature data from *The National Map* are



Wildland fire damage

used by emergency operations specialists to plan the distribution of fire-fighting equipment and personnel, and are combined with other data such as wind direction, speed, and relative humidity to model and predict the behavior of a fire.

Other Emergencies

The events of September 11, 2001, have emphasized that complete and up-to-date geographic information and maps must be immediately available. Most people either live or work in the metropolitan areas of the United States. These cities also are State capitals or major centers for banking, health care, industry, transportation, and special activities including major conventions and sporting events. Many densely populated areas are subject to natural disasters because they are located on earthquake faults, rivers, and ocean coasts. These areas also are vulnerable to human-induced disasters. As such, the USGS is focusing efforts to implement *The National Map* so that up-

to-date high resolution base geographic information is available and easily accessible on the Web for the Nation's urban areas.

The USGS is working with Federal, state, and local agencies to provide critical map information needed to respond effectively to disasters of all types. Some of the information needs include the following:

- Current, high-resolution map data and information, including true-color imagery;
- Elevation data;
- Geographic names, structures, and boundaries of jurisdictions;
- Delineations of transportation and hydrography networks;
- Additional information about critical infrastructure, such as power and water utilities;
- Identification of places that could close access or evacuation routes;
- Information linked to mapped features, such as details about the capabilities of hospitals;
- Availability of information through the Web in a form that can be used for computer analysis and mapping; and
- Current digital image and topographic maps.



Earthquake damage

Further Information

More information about *The National Map* is available at <http://nationalmap.gov/>.

Information on USGS emergency management programs and resources is available at <http://www.usgs.gov/emergency/>.

For information on USGS products and services, call 1-888-ASK-USGS or visit the general interest publications Web site on maps, imagery, and publications at <http://www.usgs.gov/pubprod/>.

For additional information, visit the <http://ask.usgs.gov/> Web site or the USGS home page at <http://www.usgs.gov/>.

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