National Geospatial Advisory Committee
Summary of 2020 Use Cases

Overview

In December 2019, the National Geospatial Advisory Committee (NGAC) established a Congressional Report Subcommittee to provide advice and communications materials to support the FGDC biennial report to Congress, which is required by the Geospatial Data Act. The purpose of the subcommittee is to "Develop materials and messages to tell the story of the critical importance of geospatial data, information, and tools to our Nation." To illustrate the impact of geospatial information, the NGAC developed a set of use cases demonstrating the power of geospatial data and tools in solving a wide range of critical local, regional, and national problems. While most of the use cases describe a local or state need, they also illustrate national issues that affect many parts of the country, and issues that transcend national boundaries. They describe the value of location, and how geospatial information makes a difference. This paper summarizes the NGAC use cases.

Why does geospatial matter?

Geospatial data have become a critical national asset. Dependence on spatial data and technologies spans all business sectors and levels of government. This geographic perspective allows decision makers to bring place-based and other information together from a wide range of sources to better understand problems and develop informed solutions.

In the case of the response to COVID-19, government leaders recognized the value of geospatial information systems to help respond and recover. Geospatial tools to monitor conditions associated with the outbreak of the COVID-19 virus and view predictive models that anticipated its spread and analyzed trends have been important components of their toolbox. The importance of knowing where the outbreak was growing, where the high-risk populations were located, where to locate testing facilities, the level of hospital bed capacity and medical supplies in the area, and location of business services for front line responders were a few of the critical information sources leveraged to mobilize limited resources. State-wide COVID-19 dashboards (e.g., Maryland: https://coronavirus.maryland.gov/) provide informative, geo-enabled views of critical information for leaders, health care professional, and citizens.

Summaries of NGAC Use Cases:

Floodplain Management: According to the National Weather Service over one-third of the states in the US are having or will have issues with flooding this spring and summer. The geospatial data and tools used for mapping, flood analysis, or communicating the risk to the citizens, business or government provide the foundation for the North Carolina Flood Mapping Program. Tools, such as interactive flood modeling, allow local leaders to more accurately identify populations at risk for flooding. The lessons learned and benefits of using geospatial tools integrated with other engineering and survey data can be applied by many other states and regions in addressing seasonal flooding issues as well as flooding due to storm events.

Social Services: Geospatial technology and data make government at all levels more efficient and effective. Social services across the country have become increasingly overburdened in the last decade. The Oregon Foster Care initiative illustrates the benefits of and the need for complete accurate address data integrated with administrative data to streamline social services in any state or local jurisdiction. Once locations of children in need can be traced across databases in multiple agencies, geospatial technology and predictive analytics can dramatically improve the child welfare system.

2020 Census: The United States Census is much more than just a head count. Census data informs decision making in the private sector and government. It determines how congressional seats are apportioned, how state and federal dollars are distributed, where businesses choose to ship products, and where they build new stores. Census data also determines funding for hospitals and other public health institutions. To do all that properly, the count needs to be accurate. US Census applied its own geospatial data and technology to create a tool to improve the quality and completeness of the 2020 Census collection. The Response Outreach Area Mapper (ROAM) Project is an example of the government using geospatial technology to work efficiently and effectively to ensure better quality results from the 2020 Census.

Health Crisis: Geospatial data is critical in addressing the National Opioid Crisis. The opioid epidemic kills 130 people a day in the U.S. and synthetic opioids are responsible for 67% of all opioid overdose deaths. Local to national mapping of the crisis reveals how significant this crisis is and how the epidemic varies at the state and local level across the nation. Mapping the crisis has helped decision makers identify hot spots, coordinate responses, prioritize and deploy resources, and educate the public on its impact. The same strategy as outlined in the case of northern Kentucky can be applied to other hot spots in the nation.

Public Infrastructure: Public infrastructure is often taken for granted. Its condition is certainly noticeable and crumbling roads are what people seem to notice most. The Topeka, Kansas Pavement Management Program, is an example of a geospatial asset management process used to effectively allocate resources to maximize the service life of paved roads. Geospatial technologies and analytics are integral tools for a successful asset management program. More importantly, geospatial technologies can quickly create a simple narrative for a complex process that can be replicated and applied to multiple jurisdictions.

The future geospatial difference

The ability to continuously create and interact with real-time spatial and temporal data is transforming the ways in which geospatial data are now collected, mapped, modeled, and used. The trend is realigning relationships while driving new geospatial applications across government, commerce, and society. Most importantly, this trend is an essential catalyst to improving our understanding, decision making and actions for key social, economic and environmental challenges.