

# The University Consortium for Geographic Information Science

## Research Priorities



### GI PARTNERING

#### THE PRIORITY

The nature of environmental and socio-economic phenomena and solutions requires data that cross organizational and jurisdictional boundaries, and are developed in horizontal and vertical partnerships that are the building blocks of local, regional, national, international, and global spatial data infrastructures.

#### DESCRIPTION OF RESEARCH CHALLENGE

With the steady rise in adoption and use of geographic information systems (GIS), there has been a proliferation of spatial data available in digital form and a considerable increase in the number of users and producers of such data.

From a technical perspective, data in electronic form is now far easier to exchange, share, or integrate. However, from an organizational perspective, there has been a general inability and often unwillingness to exchange data across boundaries, with concomitantly low levels of coordination.

In the United States, several national initiatives relate to the building of nationwide partnerships and data infrastructures (e.g. e-Government, National Spatial Data Infrastructure, The National Map, and GeoSpatial-One-

Stop). Those initiatives call for development of an "information highway" to connect the variety of spatial data producers and users, including governments at all levels, private sector, and academic institutions.

Spatial data infrastructures (SDIs) allow for improved access and sharing of geographic information. They prevent duplication of effort and redundancy in developing geographic databases that present a significant impediment to more efficient, effective, and equitable use of GIS throughout society. Partnerships are the key to SDI developments and yet little is known about what is required to achieve successful cooperation and collaboration across a variety of scales, as the examples listed below illustrate.

Spatial data infrastructures are developed locally, regionally, nationally, internationally, and globally. Analyzing their configuration, participants, and impact will yield an important knowledge base for improving their effectiveness and overall utility.

In a similar way, it is only through understanding what motivates organizations to work together that we can devise policies and strategies for establishing and sustaining geographic information partnerships. The motivational factors work differently for organizations of various types (e.g. pri-

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ate, public), levels (e.g. state, local, national, or international), and resources (e.g. human, fiscal, and technological).

Regional partnerships that seek to guide and/ or influence regional planning and urban development are critical for enabling creative solutions to environmental and socio-economic problems. Integrated, multi-jurisdictional spatial data are the prerequisite for any metropolitan planning process. Where do we stand? What does (will) it take to move these processes forward in ways that increase collaborative decision making and the improve quality of life?

Looking beyond the state, province or region, the development and maintenance of national and global datasets are essential assets for global decision making. A complete national and worldwide coverage with datasets that are of common relevance and utility is yet to be accomplished. What are the principles and models to guide and advance this process? The current knowledge base is scarce and yet the support for the types of projects outlined here has been limited.

### IMPORTANCE OF RESEARCH CHALLENGE

Benefits from geographic information-related partnering go beyond efficiency. Coordinated databases promise to stimulate inter-organizational and inter-jurisdictional cooperation and collaboration and result in the provision of a better information base for management and strategic decisions. To date, however, joint activities with geographic information occur too infrequently to produce the expected benefits. Development of functional spatial data infrastructures still lies ahead, with coordination and partnering among various data producers and users representing perhaps the most challenging task.

### EMINENT RESEARCH QUESTIONS

What structures, processes, and policies are used in inter-organizational and inter-jurisdictional partnerships created to facilitate building and exchange of geographic information? Which contextual factors affect establishment and sustainability of such partnerships? How effective are different mechanisms in contributing to the building of spatial data infra-

structures? What are the key products, services, and resources enabled by the partnership-based approaches to geographic information?

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