

Urban Dynamics — Decision Support

Newspapers around the country show that traffic congestion, vulnerability to natural hazards, open space, and air and water quality are in the public eye. Americans also recognize that smart urban growth creates jobs and homes and contributes to economic well-being. The growth of urban and suburban population is not new, but a growing urban population that enjoys high per capita consumption of resources has put sustainable development on the political scene. Political leaders are working to address environmental issues while stimulating the economic growth and vitality of their communities.

We must understand the consequences of urban change to address sustainable development strategies. Urban growth is changing natural habitats, their animal and plant communities, and their relationship with human habitats. Sustainable sources of clean drinking water may be stressed in rapidly growing regions. Urban growth affects the availability and transportation of natural resources needed for urban infrastructure (e.g., stone, gravel, and crushed rock).

This increase is part of the Administration's Lands Legacy initiative, State Planning Partnerships program. The

additional funding will support the Lands Legacy's objectives, and in particular, help States and communities preserve local lands and habitat. With the proposed funding, the USGS will expand its efforts to understand landscape change in large metropolitan regions and also assess the impacts of such changes on regional ecosystems and resources. USGS will also improve and apply technology for monitoring, analyzing, and predicting landscape changes. Investigations of urban growth will draw on historical trends to compare the effects of physical, social, and economic factors on land use changes. USGS will investigate the factors that control growth and the effects growth has on natural resources and will transfer historical data and analytic tools to organizations around the country for their use in planning for sound urban growth.

USGS scientists will compile historic growth data at regional scales across the Nation; use geographic analysis to reveal the rates, patterns, causes, and consequences of growth; develop and use models to simulate urban futures; and apply the data and analyses to societal problems. Building on current studies of the dynamics of urban environments in

areas such as San Francisco/Sacramento, Baltimore/Washington, New York City, Philadelphia/Wilmington, and Portland/Vancouver, the USGS will focus on other major urban regions around the Nation. The USGS works closely with its partners on these projects, to ensure that study results can be used by a wide range of customer groups.

Local and State decision-makers need decision support tools and scientific information to make informed land management decisions. They need to understand the impacts of land use change on natural habitats, the environment, local ecology, and other resources. University researchers rely on USGS national databases and use USGS products to develop and calibrate models of future urban growth and its impacts on the environment. Community groups and the public can use data and an increased understanding of land use change to make better decisions for healthy, growing communities.

The USGS can help local and regional community leaders achieve sustainable growth. Through research and analysis, the USGS brings unbiased scientific observation and data to bear on complex issues related to urban growth. Combining scientific data, information, and understanding with analytic tools will help local leaders solve these issues. The USGS has the unique ability to provide broad scientific expertise at a regional scale in an impartial way.

National Mapping Program	(Dollars in Thousands)
Geographic Research and Applications	+\$10,000

As the nation's largest water, earth and biological science and civilian mapping agency, the USGS works in cooperation with more than 2000 organizations across the country to provide reliable, impartial, scientific information to resource managers, planners, and other customers. This information is gathered in every state by USGS scientists to minimize the loss of life and property from natural disasters, contribute to sound economic and physical development of the nation's natural resources, and enhance the quality of life by monitoring water, biological, energy, and mineral resources.