

LOCAL DECISION MAKER:

A GIS-BASED DECISION SUPPORT SYSTEM

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The comprehensive plan of most communities includes elements such as land use, economic development, natural resources, and mobility. Developing these plans and pulling together the necessary information requires considerable effort in time and money. Often, planning processes take months, and major efforts go into collecting base information such as existing land use and land cover, zoning, watersheds, traffic, economy, etc. Geographic Information Systems (GIS) provide an excellent platform for integrating a variety of information. However, not every community has the financial resources and technical expertise to implement a GIS program.

Developed by Purdue University, Local Decision Maker (LDM) is a GIS-based decision support system for comprehensive planning. Throughout the planning process, on-line users view as well as create GIS-based maps and supporting data, producing

snapshots of the socioeconomic and environmental conditions of a community. Rural and urban communities in Indiana that do not have in-house GIS expertise and resources can use the LDM for long range as well as current planning purposes. LDM is available free-of-charge at <http://purdue.edu/ldm>.

In 2006, the newly-formed Center for the Environment at Purdue University

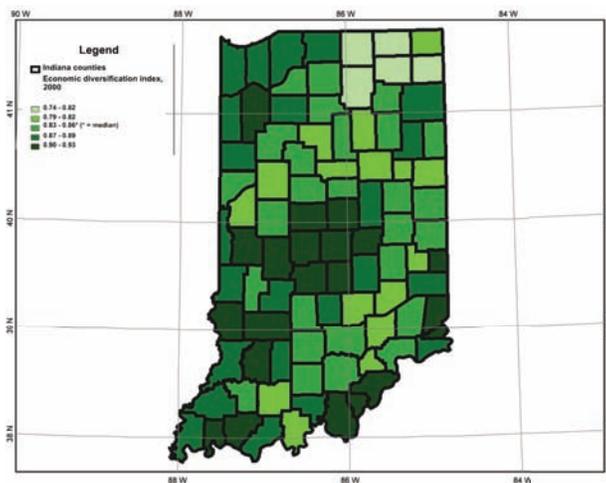
encouraged research and outreach experts to devise ways to emphasize natural resources in the planning efforts of Indiana communities. A diverse group of professionals formed a group and competed successfully for the available funds. It took about a year for the group to find common ground and an approach to combine their different interests and expertise. The end result is Local Decision Maker, an ambitious program to assist Indiana communities in their planning efforts.

The team's mission is to assist Indiana communities in making informed, integrated natural resource and economic development

decisions. The LDM tool provides state-of-the-art, science-based information to professional planners, plan commission members, decision makers, and citizens. Any county or community interested in updating its existing comprehensive

plan or developing a new plan, as well as private or commercial entities participating in a planning effort can obtain assistance two ways. A county can become a pilot county for LDM and thus participate and collaborate with the team in developing the tool. Otherwise, counties can use the on-line support system that includes help screens and videos, a feedback tool, and email.

The underlying framework for Local Decision Maker is a GIS-based decision support system that includes help screens and videos, a feedback tool, and email.



One of the numerous measures the LDM tool can display is the Economic Diversification Index

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For more information on Purdue University's Local Decision Maker (LDM), please visit:

www.purdue.edu/ldm

LOCAL DECISION MAKER (CONTINUED)

The Purdue Center for Regional Development will foster Indiana becoming the nation's leader in supporting creative, regional approaches to development, that build on three core values:

a voluntary approach;

the power of data, analysis, ideas and information;

the importance of dialogue, social capital development, and collaborative partnerships.

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Decision Maker (LDM) is the standard comprehensive planning process. A community begins with an assessment of existing conditions and trends, followed by development of a vision for the future, identification of scenarios, comparison of alternative scenarios, and implementation and monitoring of the preferred scenario. Currently, LDM consists of an extensive existing conditions database for Indiana (phase one of the project). Elements already developed – as well as in progress – include land cover and land use, demographics, environmental and natural resources, transportation and mobility, education, economy and labor market, health and human resources, housing, and governance.

The existing conditions are presented using a multiple-question format: simple questions that a community may want to know about their land cover, watersheds, natural resources, economy and other important variables. There are embedded links for each question that launch an interactive web mapping environment driven by terabytes of vector and raster GIS databases that support the primary elements of comprehensive planning. Using this interactive mapping environment, a community can view land cover changes, imperviousness in watersheds, rails to trails opportunities, employment levels, and distance from central business district to the nearest airport. With an hour or so of training, users can locate their counties, create maps, insert labels and titles, email existing or customized maps to planning members, and create Adobe Acrobat PDFs for future use in their planning documents, presentations, and press releases. Other features include connection to external mapping environments such as Google Earth and Virtual Earth. Communities can also upload and then use the full functionality of the map service to display and combine their data layer with available LDM layers.

Currently, LDM is powered by ESRI's ArcSDE (spatial database engine) and ArcIMS (Arc Internet Map server) integrated with the Geocortex internet mapping environment. The servers at Purdue University receive terabytes of seamless aerial photographs from the Indiana University servers, which help reduce redundancies in data storage and management. Alternatively, with a few clicks on the website, a user can see, query, analyze, and study hundreds of maps powered from servers located at two different universities.

The Local Decision Maker (LDM) program engages professional planners, economists, natural resource experts, wildlife biologists, GIS specialists, web specialists, database experts, and information technology staff from within the campus, as well as extension educators, who are learning and using the tool in their respective communities throughout the state. Several counties have partnerships with LDM for assistance in comprehensive planning, while other plan commissions are using information in the LDM for current planning purposes.

The LDM team has conducted many workshops for land use extension specialists, local officials, education officials, consultants, county planners, and the pilot counties since the fall of 2007. "Train-the-trainer" workshops and technical assistance via email and telephone are also available. The program encourages faculty members to participate and provides a user friendly platform to present the results of their scientific research. Additionally, users also provide feedback on content of the maps or specific layers during workshops or by email. The technology of internet mapping has really bridged the path between university research and communities.

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