Summary: Twin Cities Regional Planned Land Use GIS
Category: Project/Program/Tool
September 2002

For the first time, the seven-county Twin Cities Metropolitan Area has a planning tool that provides a base for regional planning among communities and a means to easily and reliably compare locally adopted land use designations. The Metropolitan Council,[1] with the help and guidance of MetroGIS[2] created a geographic information system (GIS) that contains the available planned-land-use information for the 190 communities in the metropolitan area. The Regional Planned Land Use (PLU) GIS also contains supplemental information that can assist community-development professionals in regional and sub-regional planning.

The PLU GIS features a standardized land-use coding scheme developed through a broadly collaborative process that involved local and regional community-development professionals. The basis of the scheme is a two-level, nested design that incorporates concepts and practices fostered by the Association of Professional Planners (APA) in their suggested guidelines for classifying land use. One level consists of 55 distinct land-use categories that closely reflect the locally adopted land-use designations. The 55 detailed codes are a subset of, and "roll up" into, 16 generalized land-use codes. The standardized coding scheme is not meant to replace the locally adopted land-use designations but rather simply assist users in comparing information among communities.

The PLU GIS is designed to be interoperable with other regional data, such as parcel boundaries and street centerlines. It provides multiple ways to select and view data, and is linked to MetroGIS-defined "intensity of use" measures such as housing density. The information in the PLU GIS is derived from each community's comprehensive plan, a plan mandated by state law under the Metropolitan Land Planning Act of 1995. Quarterly updates to the PLU GIS will be made for communities that officially amend their comprehensive plan.

The PLU GIS has a wide variety of regional and local applications. Calthorpe Associates[3] used the data to develop a baseline, regional-growth scenario, and two alternative "smart growth" scenarios, for the Council's current Smart Growth Twin Cities initiative. The planned-land-use data will be integral in the public discussions of the Council's *Blueprint 2030*, a growth and investment framework to guide the metropolitan region to 2030. The data can assist school and watershed districts, transportation and aviation planners, waste management operators, and commercial developers in monitoring service and predicting future need.

The PLU GIS was unveiled at a forum in May 2002 and is available to download free of charge at www.datafinder.org, the MetroGIS online data discovery and distribution tool.

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[1] Created by state law in 1967, the Metropolitan Council coordinates regional planning and operates critical regional services—including wastewater collection and treatment, and transit—for the seven-county Minneapolis-St. Paul metropolitan area.

[2] MetroGIS is a voluntary collaboration of government interests in the seven-county area. Its purpose is to promote and facilitate widespread geographic information sharing. Participants include elected officials and community development, planning and GIS staff from local communities, counties, school districts, watershed districts, state agencies and other jurisdictions.

[3] Calthorpe Associates is a Berkeley, CA, firm of urban planners, designers and architects known for its work in developing concepts such as New Urbanism, transit-oriented development and regional cities.

Twin Cities Regional Planned Land Use GIS
Outstanding Planning Award Criteria

Originality/Innovation. Few, if any, regions in the nation, and perhaps the world, have developed a GIS that effectively communicates planned-land-use information for as many as 190 contiguous communities in an integrated and uniform coding scheme. Fewer still have accomplished it through a broadly collaborative process/organization that includes both local and regional community-development professionals; in the Twin Cities, this organization is MetroGIS.[1] MetroGIS is held up as a national model for solving regional GIS information needs; the PLU GIS is the MetroGIS-endorsed solution to the planned-land-use information need. Through MetroGIS, communities and public agencies identified planned land use as one of 13 regional information needs that would assist them to better conduct their business and more effectively plan for the future. A uniform coding scheme was determined to be essential in effectively conveying the underlying land uses among communities' locally adopted land-use designations. A pilot project,[2] undertaken by seven contiguous communities in the region, developed a prototype uniform coding scheme. The coding scheme was reviewed by a broad group of professionals, at multiple junctures in the project, and modified as needed to capture the breath of land-use diversity in the region. Implementing the endorsed coding scheme, the Metropolitan Council's GIS Unit built the regional GIS, which again went through a peer review process before adoption.

When Peter Calthorpe, of Calthorpe Associates, presented the regional growth scenarios to the Metropolitan Council in May, he remarked that the Twin Cities has "the best data we have worked with anywhere. You are on the cutting edge of this kind of analysis."

Transferability. The regional coding scheme, with its two-tiered, nested design and broad review by planners from a variety of jurisdictions, is likely to be highly transferable to other regions, though some modifications to account for local circumstances could be expected. In the Twin Cities, discussions are already occurring with "collar counties" to the seven-county region about expanding the dataset to facilitate joint transportation, natural habitat corridor and watershed planning. In addition, the uniform coding scheme for planned land use will provide an excellent starting point for building a regional existing land use data set, also an information need of the MetroGIS community, now in the planning stages.

Quality. The deliberative and highly participatory process used to develop the PLU GIS ensured its high quality and utility for planners and other GIS users in the region. The tiering of information in the coding scheme accomplishes the goal of allowing "apples-to-apples" land use comparisons without compromising the integrity of local land-use designations. The project models an excellent use of resources through collaboration. It also represents an immeasurable time and cost savings for both public planners and private consultants who can download the data free of charge over the Internet.

Comprehensiveness. One of the outstanding features of the PLU GIS is its interoperability with other MetroGIS-endorsed information solutions such as parcels and census geography. It is one of 13 currently defined regional GIS information needs identified by the MetroGIS community for which solutions are being designed to be easily integrated for analysis of relationships. The

PLU GIS allows the Met Council to more effectively assess the availability of land and the potential for growth and development in the region. It is proving to be an invaluable tool in working with local communities to develop a regional growth strategy into the future.

Public participation and collaboration. Because of its abstract nature, the development of GIS tools is not a process in which the general public is involved. If one thinks of the public for this project to be planners in the region—the people who will be using this product—the process for developing it was highly participatory, as noted above. The MetroGIS community, through its work groups, Coordinating Committee and Policy Board, identified common information needs. A pilot project involving the seven communities of the I-35W Coalition was initiated to develop a prototype coding scheme, which became the subject of a broad peer review forum. A work group was formed to deal with technical issues involved in designing the structure of the GIS, and upon completion the PLU GIS was again the subject of a peer review forum and modification. Planners and GIS staff from school districts, watershed districts, soil and water conservation districts, state agencies and others, in addition to local communities and regional government, were among those involved.

Role of planners. (See above.)

Effectiveness/Results. The PLU GIS is a great time-saver. Planners no longer have to labor over differing local plans to determine how land-use definitions match up across communities. Any geographical subset of the data may be extracted and comparisons made only within that area. Government planners and private consultants alike are finding the data useful. As noted above, the Council is using it, in concert with local communities, to help develop alternative growth scenarios for the region. The data help the Council determine the amount of land available for development in the next several decades. Older suburbs, such as Roseville, are using it to study their subregional markets and to determine best uses of available land for infill development. Groups like school districts can use the data to forecast enrollment and determine where new facilities may be needed or where school boundaries should be redrawn. The potential uses are innumerable.

Education. GIS tools such as the PLU GIS are helping to make the planning process more tangible, thus increasing its value, for both the public and policy makers who now have excellent visual tools with which to make decisions. Planners seem more accessible and understandable to the public when they come to meetings armed with excellent visual tools provided by GIS. During the Council's Smart Growth Twin Cities opportunity site and regional scenario workshops, GIS maps were an integral part of educating the public about development choices and trade-offs. One participant told the Council at the end of a workshop, "You've allowed us to be dreamers, and we've never had that opportunity before. Thank you."

[1] See http://www.metrogis.org/data/about/index.shtml for an explanation of MetroGIS's broadly participatory Common Business Information Needs process. Regional policy specifics concerning data content specifications and roles and responsibilities for the various custodian organizations can also be viewed via the links at http://www.metrogis.org/data/index.shtml.

[2] See http://www.metrogis.org/data/datasets/planned_land_use/index.shtml#history for a detailed explanation of the pilot project conducted for MetroGIS by the I-35W Corridor Coalition.