

GIS and Planning

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Introduction

Urban/regional planning is concerned with evaluating and developing programs that benefit our neighborhoods and communities. Planners deal frequently with issues such as population growth, transportation, education, economic development, public services and the environment.

Examples

Because of the role geography plays in many of these issues, GIS is one tool used frequently by planners. Examples of GIS/planning applications include:

- Land use mapping – Most counties and many large municipalities throughout the U.S. develop comprehensive plans that are used to help regulate land development. GIS is used both in the development of the comprehensive plan and also in the administration of the plan. Comprehensive plan examples on the Internet are numerous and include:
<http://www.metrokc.gov/ddes/compplan/> (King County, WA)
<http://www.dsd.co.pima.az.us/CPupdate/comp1.html> (Pima County, AZ)
<http://www.co.hanover.va.us/planning/coexsum.htm> (Hanover County, VA)
- Representing values of the community – One of the more exciting potential uses of GIS is its “capacity to democratize information - both what is recorded and who has access to it. (www.policylink.org, Feb., 2003)” GIS technology enables local communities and grass-roots organizations to conduct neighborhood change analysis, identify development opportunities, improve community support systems, and organize policy change.
<http://www.policylink.org/EquitableDevelopment/>
<http://www.senteco.com/gis/intro.htm>
- Farmland preservation – Planners involved in farmland preservation often use the U.S. Department of Agriculture’s Land Evaluation and Site Assessment (LESA) model to develop preservation priority scores for tracts of land. This model deals with physical factors like soil productivity and erosion, as well as cultural factors like economic productivity and development pressures. GIS is the perfect tool for integrating and weighting these multiple layers of information.
<http://www.lic.wisc.edu/shapingdane/facilitation/agriculture/options/bulletin.htm>
<http://crssa.rutgers.edu/projects/preserve/>
<http://www.gis.psu.edu/outreach/lesa/>
- Building permit issuance – Municipalities regulate the construction of new buildings by issuing building permits. GIS can aid in determining if proposed construction meets certain spatial criteria such as whether it is in an historic district, a wetland, or a floodplain. It can also be used by potential developers to obtain basic information required for filling out a permit.
<http://www.farragut.com/buildPermit.htm>

http://www.esri.com/industries/transport/israel_airport.html

- School redistricting – Because of population shift and the opening and closing of schools, communities must regularly deal with the issue of school redistricting. GIS makes it possible to evaluate possible redistricting scenarios much more efficiently than ever before.

<http://www.digitalcorp.com/abschool.htm>

<http://www.theomegagroup.com/schoolplanner.htm>

<http://www.esri.com/industries/k-12/bval9703.html>

- Transportation planning – GIS is used to solve a number of transportation planning problems such as managing and reducing traffic accidents, building efficient bus routes, managing traffic signalization, and snow removal to name just a few.

<http://tmip.tamu.edu/clearinghouse/docs/gis/flyer/flyer.pdf>

http://www.gis.com/specialty/transportation/transportation_print.html

PRI Resources

This document only touches on some of the many ways GIS can be used as a tool in planning. Hardcopy GIS/planning case studies and texts may be found in the GIA Core library in 802 Oswald:

Mark Birkin, Graham Clarke, Martin Clarke and Alan Wilson. 1996. *Intelligent GIS: Location Decisions and Strategic Planning*. York, NY: GeoInformation International (John Wiley).

Ian Bracken and Christopher Webster. 1990. *Information Technology in Geography and Planning*. London, UK: Routledge.

R.W. Greene, 2000. *GIS in Public Policy*. Redlands, CA: ESRI Press.

R.W. Greene, 2001. *Open Access: GIS in e-Government*. Redlands, CA: ESRI Press.

W.E. Huxhold. 1991. *Introduction to Urban GIS*. Oxford, UK: Oxford University Press.

Paul Longley and Graham Clarke [Eds]. 1995. *GIS for Business and Service Planning*. New York, NY: GeoInformation International (John Wiley).

Andy Mitchell, 1997. *Zeroing In: Geographic Information Systems at Work in the Community*. Redlands, CA: ESRI Press.

Other textbooks include:

John Stillwell, Stan Geertman and Stan Openshaw. 1999. *Geographic Information and Planning*. New York, NY & Berlin, Germany: Springer-Verlag.