GIS and Your Community




DR. STEPHAN J. GOETZ, DIRECTOR

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www.cas.nercrd.psu.edu/GIS

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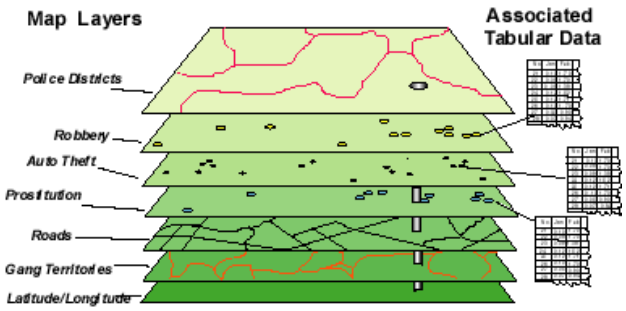
This publication provides examples of how small and rural communities use GIS as well as links to web based resources. If you would like to have your site considered for inclusion on this web page please send an e-mail to *nercrd@psu.edu.*

Along with the federal government and private industry, state and local governments also began to use GIS applications widely in the 1990s. Since then, GIS applications have become an integral part of many local government functions. Basic applications in small communities include tax mapping; land management; police, fire and 911 systems; water conservation; utility planning; transportation analysis; demographic analysis; and infrastructure mapping. These applications aim to answer simple questions like: Where is my voting district? Where do my kids go to school? Where do we build a project? Or more complex questions like: how do we re-route traffic? Are protected wild life areas too close to major sources of pollution?



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1-About GIS

a- What is GIS

FAQ about GIS This is an index of frequently asked questions (FAQ) about Geographic Information Systems (GIS) along with answers to these questions from U.S. Census Bureaus. *http://www.census.gov/geo/www/faq-index.html*

Geography Matters: What is GIS*?* A power point slide show from 'GIS.com'. *http://www.gis.com/whatisgis/whatisgis.pdf*

GIS touches our everyday life movie: As is the case with many technologies, most people remain unaware of GIS and its impact – an impact that is as far-ranging as it is useful – despite GIS having grown immensely in the last 15 years, despite hundreds of thousands of people now using the technology, and despite it affecting the daily lives of millions. To prove this, let's follow your daily routine and see how GIS helps you in ways that you never suspected. *http://www.esri.com/company/gis_touches/start.html*

Municipal GIS Resources (MA): The capabilities of a GIS can provide municipal governments with extraordinary quantitative and qualitative benefits. In fact, the technology can be the basis for revolutionizing how government processes work. Some of those benefits and changes can be achieved fairly early in the GIS development process; others will take much longer to realize. Not all GIS capabilities are suitable for all towns/cities. A GIS cannot be developed in a matter of months and its full benefits can take years. The time requirement is only partly what is required to build a database and procure a system; training people to use the system and, perhaps most importantly, changing their work processes can be as complicated as the system development.
http://www.state.ma.us/mgis/munigis.htm

USGS Geographic Information Systems: GIS technology can be used for scientific investigations, resource management, and development planning. For example, a GIS might allow emergency planners to easily calculate emergency response times in the event of a natural disaster, or GIS might be used to find wetlands that need protection from pollution. *http://info.er.usgs.gov/research/gis/title.html*

What is a GIS and What Does it Do? The Cornell University Community and Economic Development Toolbox is designed to provide accessible tools to local community and economic development (CED) practitioners, such as community leaders, newly elected officials, extension educators, and community technical assistance providers, so that they are more knowledgeable about basic CED issues and are better equipped to assist in decision making and determining the future of their communities.
http://www.cardi.cornell.edu/cd_toolbox_2/tools/gis.cfm

b- Learning Resources

ESRI Virtual Campus: ESRI Virtual Campus is a source for training, education, research, and discussions in geographic information systems (GIS). Today, our course selection continues to expand. We offer courses that teach the latest GIS technology as well as how different industries use GIS and the science of geographic information. The Virtual Campus Library offers the most comprehensive guide to GIS literature on the Internet. *http://campus.esri.com/*

GIS.com: GIS.com is a portal to GIS information on the Web created by ESRI, a GIS software developer. The site is intended to educate anyone interested in GIS technology on the value it brings to their day-to-day activities. The site also provides GIS users with resources to help them in their work. *http://www.gis.com/*

GIS at Penn State: The Penn State's Geospatial Information Systems (GIS) Council Home Page is maintained by the Gould Center. Geographic information systems (GIS) have become indispensable tools for governance, for commerce, and for environmental and social science. The demand for innovative geographic information products, services, and know-how is strong, and increasing. Consequently, the need for basic and applied research and education in geographic information science (GIScience) has never been greater. Penn State is well known around the world for its leadership in these endeavors. This site is your gateway to GIScience education, research, and outreach initiatives at the Pennsylvania State University. *http://www.gis.psu.edu/*

c- Online Certificate Programs

Penn State World Campus, Certificate in GIS
http://www.worldcampus.psu.edu/pub/gis/index.shtml

The NCGIA Core Curriculum in GIScience, Online course materials
http://www.ncgia.ucsb.edu/education/curricula/giscc/

The University of Montana Certificate in GIS
http://umtonline.net/index.real?action=ProgramDesc&subaction=EOS

d- Dictionaries

Dictionary of GIS Terminology (The ESRI Press)
http://umtonline.net/index.real?action=ProgramDesc&subaction=EOS

GIS dictionary from AGI *http://www.agi.org.uk/public/gis-resources/index.htm*

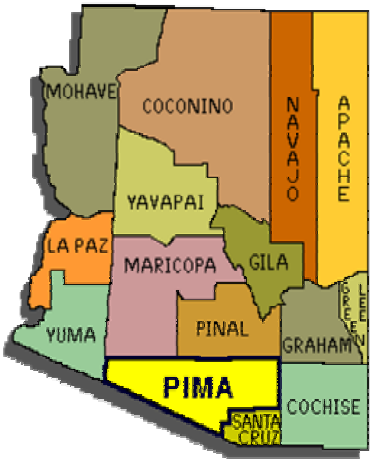
GIS dictionary: Online, from the University of Edinburgh Geography Dept. and Association for Geographic Information *http://www.geo.ed.ac.uk/root/agidict/welcome.html*

More GIS Dictionaries and Glossaries: There are many online glossaries of GIS terms and acronyms. Find your favorite from this list. We recommend you compare the definitions from three sources to get a better idea of what the term means.
http://www.gis.com/resources/library/dictionaries.html

2- How Communities Use GIS

Maricopa County (AZ) GIS Portal: This site was created to help you quickly and easily locate GIS maps, their associated data, and other GIS related information for Maricopa County. *http://www.maricopa.gov/assessor/gisPortal/gis_portal.asp*

Pima County (AZ) Department of Transportation GIS: The Interactive Mapping and Automated Geographic Information Network (IMAGIN) Project was formed in 1987 under the County Manager's office. It consisted of a small staff, a technical advisory group and a policy committee. The Pima County Assessor's Office and five County departments were represented on each committee: Planning and Development Services (now the Development Services Department), Transportation, Wastewater Management, Parks and Recreation, and Management Information Services. The primary goal for these participating departments was to develop, establish, and maintain a comprehensive and integrated GIS system for Pima County. h*ttp://www.dot.co.pima.az.us/gis/*



Yavapai County (AZ): Yavapai County government uses GIS technology throughout several departments, including the assessor's office, elections, planning and building, roads, and flood control, comprising nearly 200 users. The GIS division is responsible for the design and maintenance of the county's GIS, which is used to generate the various geospatial datasets such as parcels, roads, zoning, and district boundaries. *http://www.co.yavapai.az.us/departments/gis/gismain.asp*

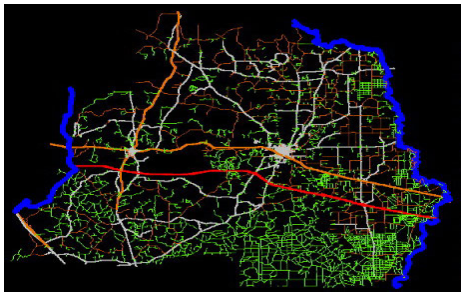
Napa County (CA): Napa County is building a Geographic Information System to provide the community with convenient, single-point access to a wide variety of map/parcel information. The system will retrieve both graphic and text data from county databases as individual layers. These layers are assembled into an interactive graphic image and displayed through a standard Web browser. As the GIS capability grows, it will bring land use, environmental, emergency, utilities, and other valuable mapping information to everyone living or working in Napa County. *http://gis.napa.ca.gov/*

Boulder County (CO): Since 1987, GIS technology has become an integral part of almost all of Boulder County's governmental functions: property assessment; land use and zoning; road construction and maintenance; emergency and law enforcement; snow plowing; open-space acquisitions, operations and management; wildfire mitigation; health concerns; and precinct delineation. As a public service, Boulder County makes some of its GIS data layers available to the public. Cost recovery layers are available for sale. General distribution layers are available for the cost of reproduction or free of charge when downloaded from this Website. *http://www.co.boulder.co.us/gis/*

1:24,000, aerial photographs of eastern Boulder County were taken in April 1999

Charlotte County (FL): Charlotte County's GIS Department creates and maintains spatial information to aid in the creation of maps and data analysis to support County departments and their customers. *http://www.ccgis.com/*

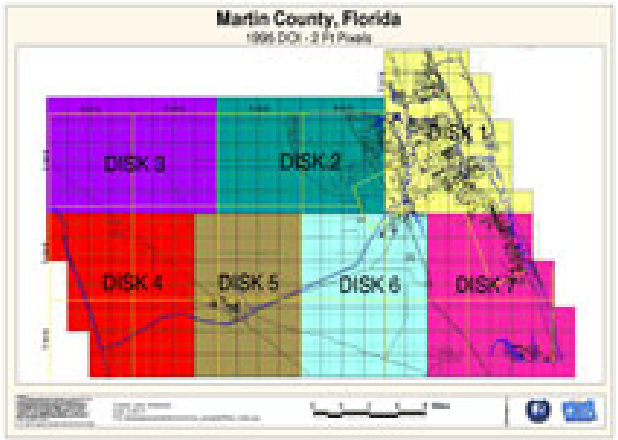
Lee County (FL) Property Line: This service allows access to the Lee County Property Appraiser's Geographic Information System from the Internet. It is the same mapping system used throughout Lee County government, and provides on-line access to the County's cartographic data. All the maps in GIS are "live" to provide the most current information. *http://www.leepa.org/*



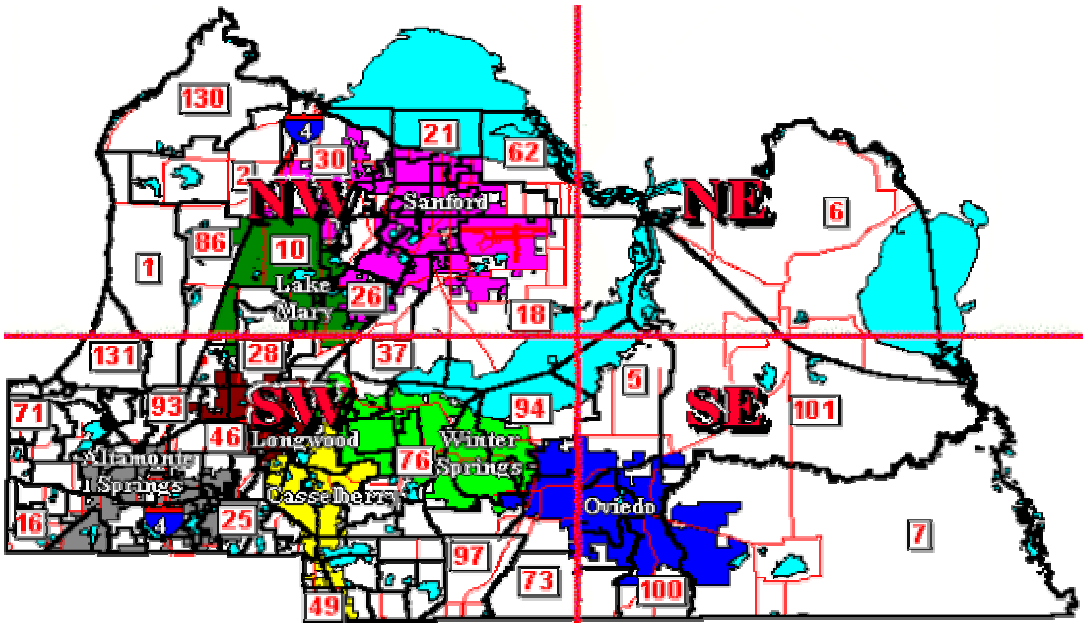
Madison County (FL): GIS / 911Addressing. Madison County is in the beginning stages of addressing all habitable structures in the county, with the exception of the municipalities at this time. The goal is to create an addressing system that is usable by all who need to use it and is at the same time, as easy to maintain as possible. *http://county.freeyellow.com/*

Marion County (FL) Spatial Data Explorer: Spatial Data Explorer allows users to create "live" maps and query public information from the Marion County GIS. Data and map layers available for viewing and querying include, but are not limited to, parcels and property records. *http://maps.marioncountyfl.org/*

Martin County GIS (FL): The Martin County GIS team is implementing an Enterprise-wide GIS to help encourage all county departments to actively use GIS information. In addition, we are continuously involved in reviewing GIS information, applications, and uses as it relates to Martin County business systems and needs. *http://www.martin.fl.us/GOVT/depts/isd/gis/*



Seminole County (FL) GIS Division: The Board of County Commissions GIS program was started in 1994. Since then, over 180 layers of data have been automated for County Departmental and Division use. Seminole County GIS takes advantage of existing fiber wide area network (WAN) and local area networks (LAN) to tie together widely separated County offices in order to have efficient and effective ways of sharing data. *http://www.co.seminole.fl.us/gis/*



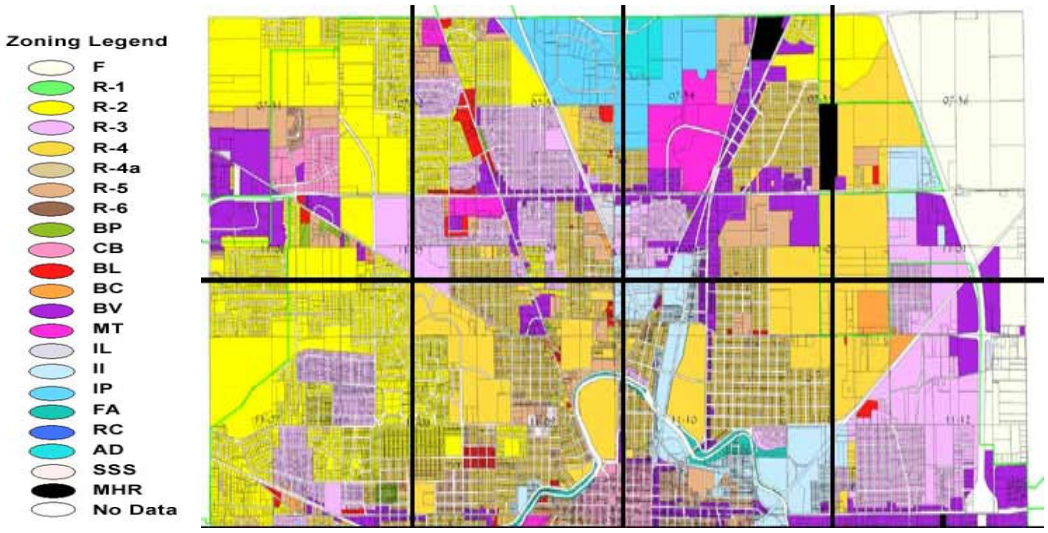
Seminole county voting precincts map

Tallahassee-Leon County (FL): Tallahassee-Leon County GIS is the Geographic Information Systems (GIS) program for the City of Tallahassee, the Leon County Board of County Commissioners, and the Leon County Property Appraiser's Office. This site presents information about the GIS program, map data and map products currently available, and Internet Mapping applications. *http://www.tlcgis.org/*

McLean County (IL): The McLean County Geographic Information System is a cooperative effort of several local government agencies that seek to provide better information, while reducing duplication of effort. Through cooperative resource management, McLean County GIS is developing a county-wide system to better serve the public and to aid in the local government decision making processes. (Most of the services are for a fee.) *http://www.mcgis.org/*

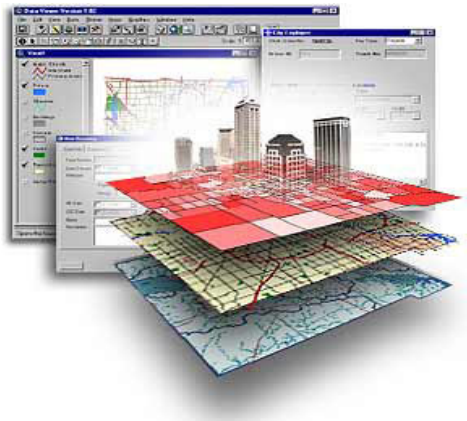
City of Bloomington (IN): The ITS GIS Group is responsible for maintaining and enhancing Bloomington's GIS. The group maintains and creates map data, related databases, and GIS software applications, trains city employees on the use of its GIS, produces maps and data reports for city departments, and facilitates public requests for GIS maps and data. *http://www.city.bloomington.in.us/its/gis/index.html*

Delaware County (IN) GIS Department: Information on this website includes: Fire Hydrant Survey Map; Muncie Tree Inventory Map; Muncie Corporate Boundary Map; Center Township Zoning Map; Delaware County Precinct Map; Delaware County Election District Map; Muncie Outdoor Warning Siren Location Map; 2015 Delaware County Traffic Volumes Map.
http://www.co.delaware.in.us/Departments/GIS/index.htm



Delaware County Center township zoning map

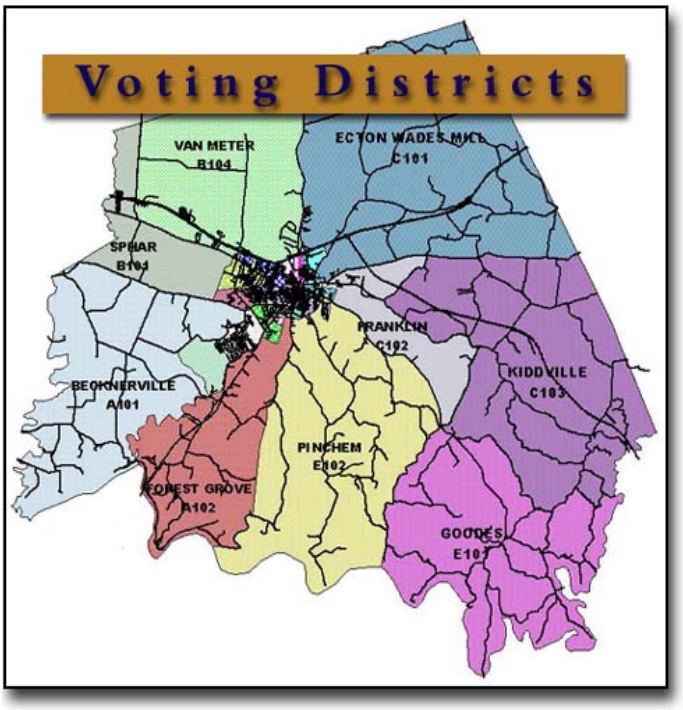
Hamilton County (IN) GIS: Information on this Website includes: Hamilton County Online Map room and the Hamilton County Traffic Count Map room.
http://www.co.hamilton.in.us/gis/start.html



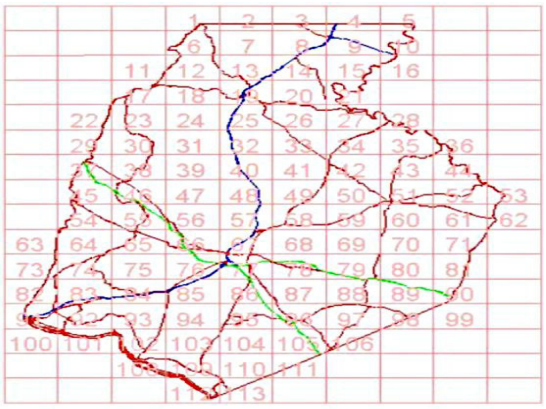
Marion County and The City of Indianapolis (IN): The Indy GIS Team provides GIS support for city and county departments and agencies. This includes maintaining geographic data, creating and maintaining customized programs, and providing user support and training for employees. *http://www.indygov.org/gis/*

Tippecanoe County (IN): Information on this Website includes: Management Information Technology Services (MITS); GIS Property Maps; Data Downloads; MITS GIS Services; Who to Contact in MITS GIS; Disclaimer and Metadata; GIS Links.
http://gis.county.tippecanoe.in.us/

Clark County Geographic Information System (KY): The Clark County GIS (CCGIS) Consortium, formed in 1997, was organized to provide Winchester and Clark County with a computer-based tool for mapping, organizing information, and analyzing places and events. CCGIS is a valuable community asset that can assist in the ordinary business of individuals, businesses, organizations, and governmental entities. GIS information is organized in logical coverage layers, one for each type of information being accumulated and reported (i.e. street centerlines, waterlines, street lights, etc.) CCGIS currently has over 100 coverage layers and is working on new coverage layers every day.
http://www.ccgisonline.com/



Baltimore County (MD): The GIS Services Unit was created to implement a countywide GIS to provide highly accurate, comprehensive, and current digital geographic data to all county agencies. A central database is being developed to allow agencies to access all layers of geographic information. The central GIS network also manages the software and applications. The County implementation plan is to convert digital planimetric (physical features as captured from aerial photography) data and digital ortho-photographs for the entire county in three stages. The first area converted is the Southeast portion of the County, next are the middle and western portion, with the rural northern portion as the third phase. All layers, which include buildings, roads, streams, vegetation, survey control, are being developed at 1" = 200' scale.
http://www.co.ba.md.us/Agencies/infotech/geographic_information_systems/index.html

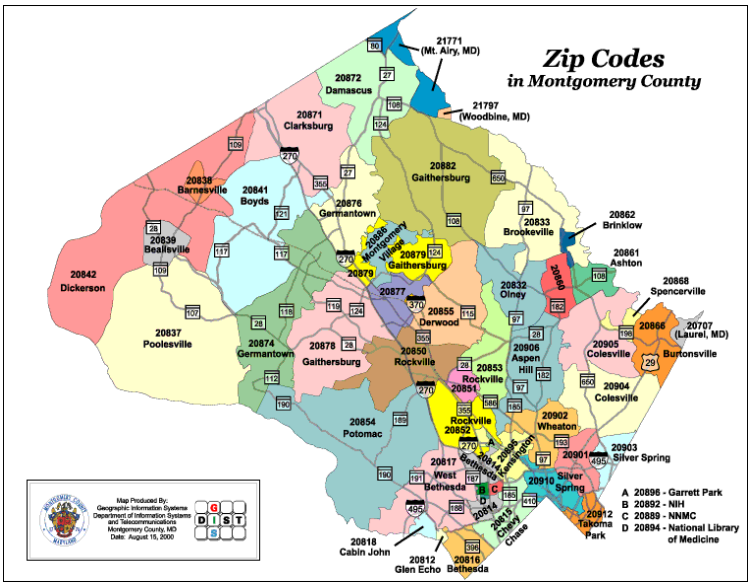


Water and Sewer Map: Select Water and Sewer Maps by clicking on the corresponding number.

Frederick County (MD): This GIS effort has been ongoing since 1994. While most of the GIS data layer development has historically taken place in the departments of Planning and Zoning and Public Works, the county is now working to integrate its approach, including centralized functions such as the development and maintenance of core data layers, development of data standards, system administration, and general oversight. It also includes GIS projects in numerous departments.
http://www.co.frederick.md.us/GIS/

Montgomery County (MD) Planning Board GIS: This site provides information on the location, length, and amenities for over 100 miles of park trails, as well as detailed maps of Montgomery County parks. A quarterly newsletter features news of GIS use and maintenance in

Montgomery County. Other GIS related activities and events are included. This page also includes a GIS cost-Benefit Assessment report for Montgomery County.
http://www.mc-mncppc.org/gis/index.shtm



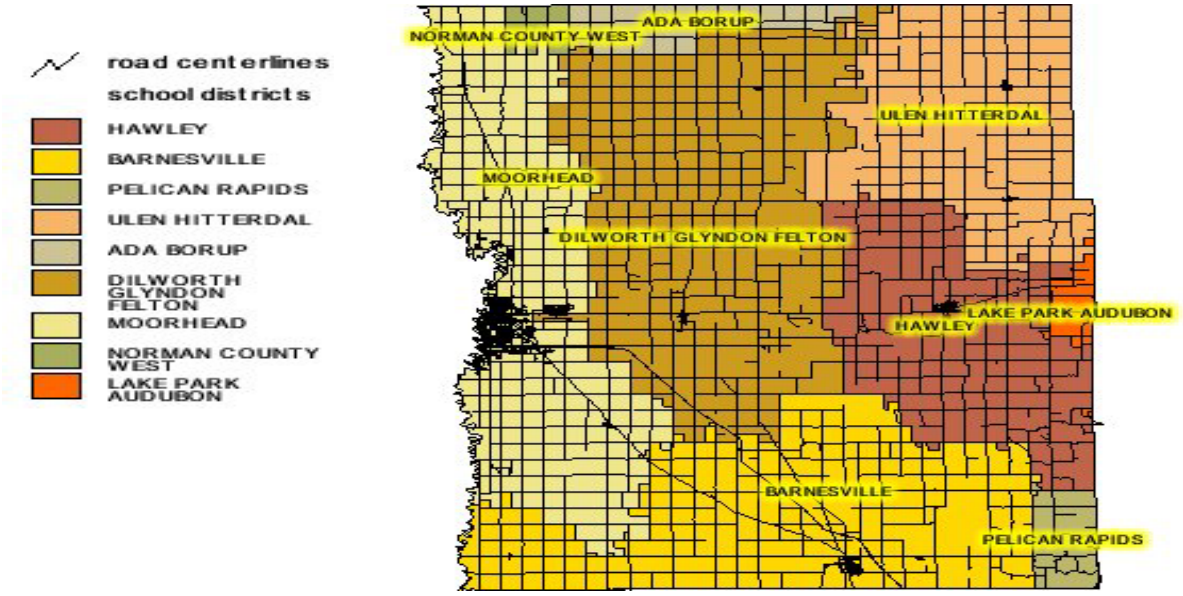
Montgomery County (MD) GIS Services: The Montgomery County GIS Website is designed to: disseminate maps, spatial data, information, and publications; deliver local and national GIS news and events; and provide access to staff, related Websites and search engines. The Montgomery County GIS team offers consulting services, database management, custom maps, application development, and training services to executive Branch departments and offices using a variety of local (stand-alone or Intranet) and wide area (Internet) network solutions. Applications are: Agricultural Preservation and GIS, DHCA's Apartment Rental Guide, DTS-GIS Wins NACo Awards, eMontgomery's Ball Field Location Guide, GIS and Public Safety, DPWT's Recycle/Refuse Pickup Day Tool, Streetlight Maintenance Reporting, Wireless GIS, and Urban Forestry. *http://gis.co.mo.md.us/gis/default.asp*

Prince George's County (MD) M-NCPPC Planning Department: The Geographic Information Systems (GIS) Section is the central repository of geographic information for Prince George's County. The section is responsible for the development, maintenance, update, analyses, custom display and distribution of geographic information to the various divisions of the Department, other County agencies and the public. There are currently more than 70 different spatial layers in the repository. The layers are divided into two categories: Washington Suburban Sanitary Commission (WSSC) tiling structure, and County wide layers.
http://www.mncppc.org/imd/main.htm

West Springfield Town (MA): The first step in developing the West Springfield GIS was the completion of a set of engineering grade (1" = 40' scale) digital Planimetric/Topographic base maps of the town. The second step in developing the West Springfield GIS was the completion of a GIS-based parcel mapping system. All property deeds were researched and mapped to fit the planimetric/topographic base maps. Available applications are tax maps, topographic maps, enhanced street maps, basic street maps, aerial photo center points, voting districts, map sheet indices, recreation facilities, and several layers of data.
http://www.west-springfield.ma.us/gis/default.htm

Washtenaw County (MI): This county program is housed in the Planning Department. Its mission is to create a comprehensive GIS to encourage collaboration between Washtenaw County and local public and private interests, and as a result will allow for more effective and efficient decision making at both the county and local levels.
http://www.co.washtenaw.mi.us/MAPS/GISindex.htm

Clay County (MN): Clay County, Minnesota, uses GIS to provide current and accurate geospatial (map) information to county departments, other agencies, and the general public. The primary goal of Clay County GIS is to reduce duplication, increase productivity and enhance decision making capabilities. Additionally, public access to data is a priority. *http://www.gis.co.clay.mn.us/*



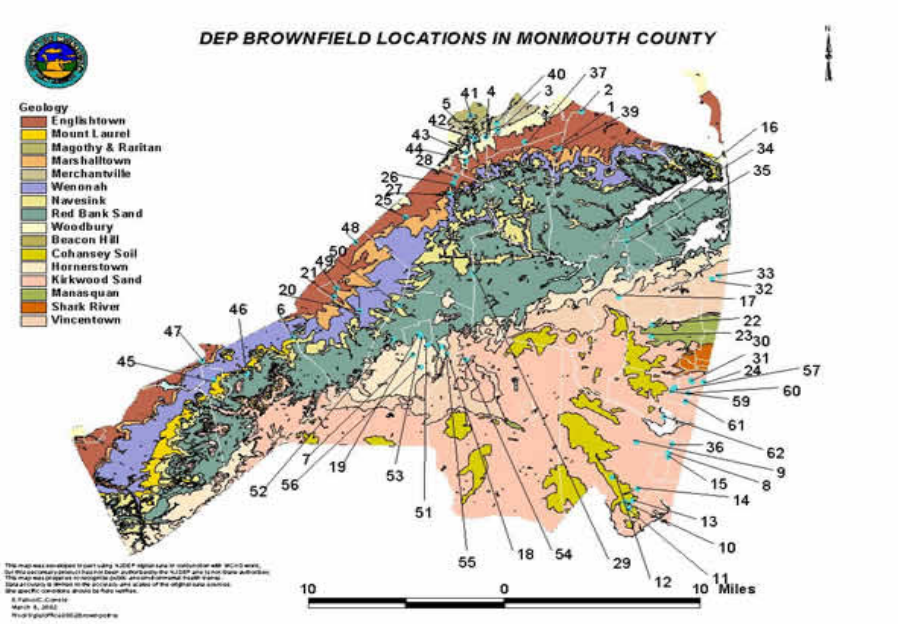
Gallatin County (MN): Components of the Gallatin County GIS are ground control; graphic and photographic data; mapping software; and retrieval mechanisms. The GIS Department provides professional mapping production and Internet mapping services to all county departments and limited services to the public. This Website features online mapping applications and other vital information for greater access. *http://www.gis.co.clay.mn.us/*

Missoula County (MT): The Mapping/GIS Division is a department of the Missoula County Surveyor's Office. The division provides the following services: Parcel base mapping for Missoula County (including the City of Missoula); base map services to county offices and the public; special mapping requests and GIS analysis to county departments; addressing and private road naming; 911 support; mapping/GIS support to the Office of Emergency Management; Missoula County Map server support and development; Missoula County GIS Strategic Plan implementation; mapping support to the Montana Department of Revenue, mapping/GIS support to the county commissioners' projects coordinator. *http://www.co.missoula.mt.us/Mapping_GIS/*

Hunterdon County (NJ): Since 1991, Hunterdon County has been developing its GIS to serve many of the planning, data management, and constituent services normally associated with county government. Applications include: Road Centerline Inventory, Rail Networks, Surrounding Road Centerlines, Municipal Boundaries, Lakes and Streams Official County Map, Road Classification Map, Road and Bridge Project Mapping, Bridge and Culvert Inventory, municipal buildings, police, fire, rescue, other county facilities and schools, lyme disease cases, emergency management/E911 – pilot, stage county park asset management and trail maintenance, countywide parcel development, 911 addressing project, facilities management, sign management, capital improvement planning, departmental integrated facilities file, radon cluster study areas,

groundwater impact study, public/non-community water supply locations, cross-acceptance mapping project, land development map, agricultural development areas (ADAs), interstate 78/route 31 corridor study, county road bicycle facility assessment, short line railroad study, county growth management plan, county-wide transportation model, park trails inventory, megan's law mapping, personnel tracking. *http://gis.co.hunterdon.nj.us/*

Monmouth County (NJ) Health Department GIS: The site serves 21 Monmouth County municipalities that contract for public health services. Important statutory roles of the department include: County-wide environmental control services involving solid waste, water pollution, air pollution, noise, environmental laboratory services, GIS electronic mapping and management of our bathing beach water quality. Applications are: Air & Noise Map; Drum Search Map; Millstone Maps; RBA Maps; Wreck Pond Maps. *http://www.visitmonmouth.com/health/*



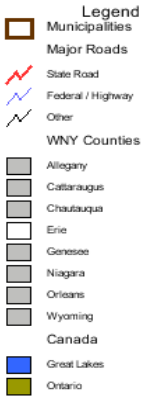
Somerset County (NJ): Somerset County's GIS Website is part of the ongoing effort of the Board of Chosen Freeholders to implement technology that will better inform its residents, businesses, and visitors. Current projects include: framework data development, interactive web based mapping, megan's law notification, emergency response, emergency management/E-911, smart growth strategic plan, county health, asset management. *http://www.njgin.co.somerset.nj.us/*

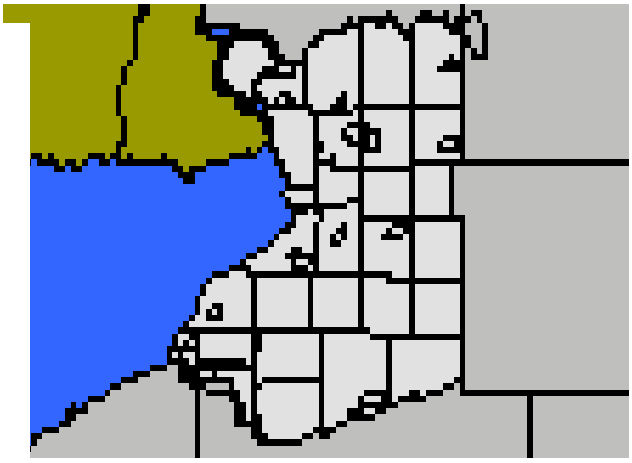
McKinley County (NM) GIS Center: Spatial data available includes: political boundaries, transportation, digital elevation models, GIS utilities. *http://www.cia-g.com/~gismc/*

Broome County (NY) Planning, Mapping, and GIS: The mission of Broome County GIS is to distribute GIS capabilities and information to county departments, local municipalities, and the public regardless of their expertise or experience with GIS. Broome County GIS has been developed over the last several years largely within the Department of Planning and Economic Development. Other county departments benefiting from GIS include: Emergency Services, Binghamton Metropolitan Transportation Study, Real Property Tax Service, Public Works, Solid Waste Management, Office for Aging, Transit, Environmental Management Council, Parks and Recreation, Elections, the Legislature, and Environmental Health. Information Technology (IT) also plays a crucial role assisting with hardware, software, and internet issues. Broome County GIS is responsible for two broad areas: Application Development and Data Maintenance. *http://www.bmtsonline.org/planning/PlanningGIS.php*

City of Ithaca (NY): Ithaca's Demographics, Mapping and GIS Data Center Website serves staff, elected officials, and citizens, as well as contractors, consultants, agencies, students, researchers and companies with an interest in the City. *http://www.ithacamaps.org/*

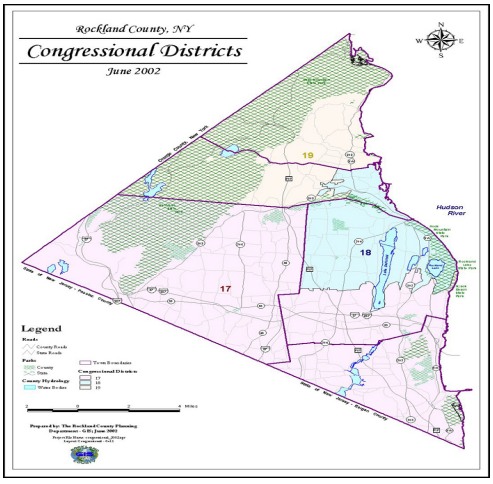
Erie County (NY) Internet Mapping Project: The "Erie County Internet Mapping System" is designed to provide access to the most popular layers of digital maps. Users can create and print their own maps and locate information on a variety of subjects, including property parcels, roads, parks, school districts, and environmental data. *http://www.erie.gov/maps/*





Nassau County (NY): This paper describes events surrounding the January 25, 1990, crash of Avianca Flight 052 bound for New York's JFK Airport. The crash, in a wooded suburban community on Long Island's North Shore, killed 73 people. This tragedy provides a unique opportunity to discuss the impact Geographic Information System (GIS) has in emergency situations. Fire and Rescue responders could not reach staging locations because traffic quickly blocked access. Utility personnel experienced difficulty in reaching the site to remove downed wires and restore power. Emergency medical crews were stymied in their efforts to move victims to area hospitals because of limited access to the crash site. This paper describes how GIS could have helped, and how knowledge gained is being used in the design of the County's GIS. *http://www.odyssey.maine.edu/gisweb/spatdb/urisa/ur94062.html*

Rockland County GIS (NY): The GIS system grew out of the digital tax mapping program and was originally developed to help the County's planners make better land use decisions. However, as the system became more advanced, the GIS system became a multi-faceted tool useful to many other County agencies. The Department is now in the process of developing an enterprise GIS system which would incorporate a single GIS data server accessible by other County agencies. *http://www.co.rockland.ny.us/planning/gis/mapping.htm*

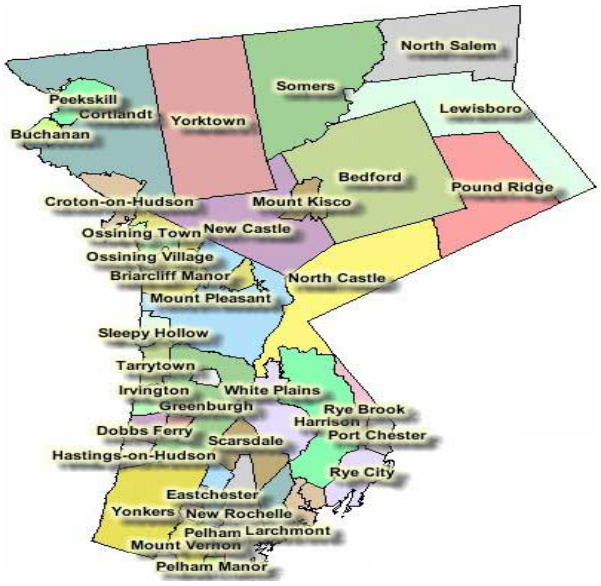


Suffolk County (NY): Suffolk County uses GIS technology for emergency response planning, business development, transportation planning and analysis, soil and water studies, school district mapping, and more. The goal of Suffolk County Information Services' GIS coordination effort is to link GIS users and developers in an effort to share data freely between county departments and agencies and across local government boundaries. *http://www.co.suffolk.ny.us/gis/*

Tompkins County (NY): Information on this site includes all static maps produced for Tompkins County, published by GIS, downloadable in PDF form; GIS data; list of data repositories and data information; much more information and links. *http://owasco.co.tompkins.ny.us/gis/*

Ulster County Information Services (NY): This website lets users query, locate, and analyze tax parcels within the county based on parcel ID, address, or other criteria such as land use and parcel size. The parcel viewer can be used for analyzing and locating tax parcels in those Ulster County municipalities that have been digitized. *http://gis.co.ulster.ny.us/pviewer/*

Westchester County (NY): Westchester County GIS develops, maintains, and distributes digital data. County GIS staff support GIS applications and programs in both county and local governments. Westchester County GIS provides a variety of on-line maps that focus on environmental and cultural features in the county. Interactive Maps include: 2001 Westchester County Legislative Districts, Environmental Features, Community Facts, etc. *http://giswww.westchestergov.com/*

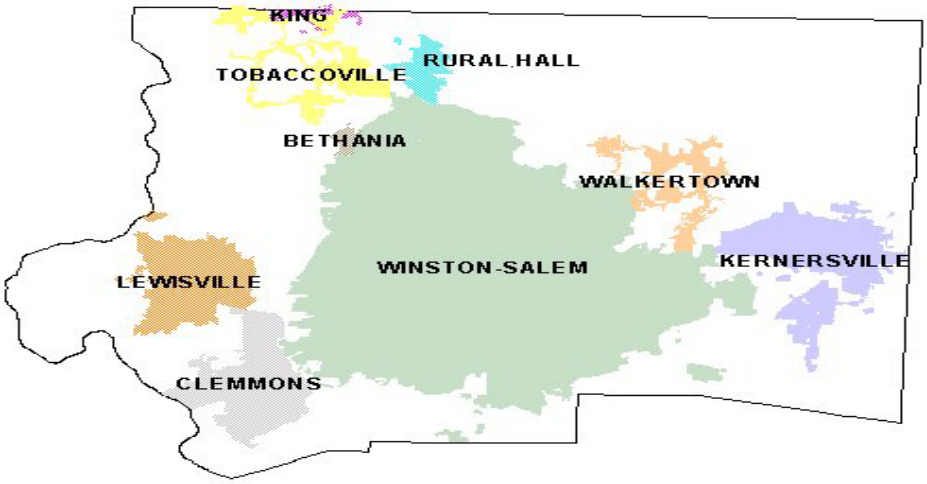


Cabarrus County (NC): Geographic Information Systems data owned by Cabarrus County is considered public records within North Carolina. Online applications include: parcel info, zoning info, flood zone, voter direct, parks and rec., and route mapper. *http://166.82.128.222/gis.html*

City of High Point GIS (NC): Information on this website includes: address and parcel locator; GIS data clearinghouse and documentation; GPS base station data; and imagery viewer. *http://commnt2.ci.high-point.nc.us/*

Durham City (NC): Durham Geographic Information Systems (Durham - GIS) is dedicated to providing customers with access to computerized information such as tables, maps, plans, and other graphic documents. City and county departments are developing applications such as land records information, street centerlines, hydrology, and digital aerial photography. *http://www.ci.durham.nc.us/departments/gis/*

Forsyth County (NC): Information on this Website includes a Geo-Data explorer and tax bill inquiry system. The Tax Bill Inquiry System lets users search the collections database for unpaid accounts and for paid accounts for the current and one previous billing year. *http://www.co.forsyth.nc.us/tax/tax.htm*

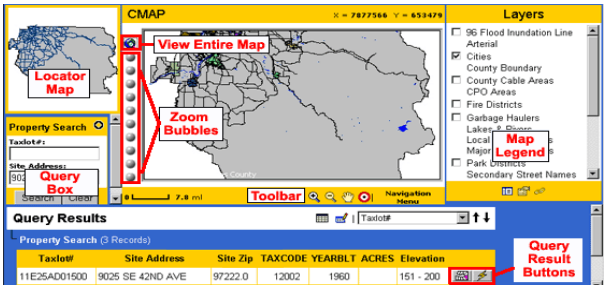


Johnston County GIS (NC): An on-line GIS application lets users display, browse, query and print Johnston County maps and data. The map, aerial photo, and attribute file download provides information for experienced GIS and CAD users, including tax parcels, tax assessment data, aerial photos, contours, soils, and other files for use with GIS software. *http://204.168.68.180/mainpage.cfm?category_level_id=420*

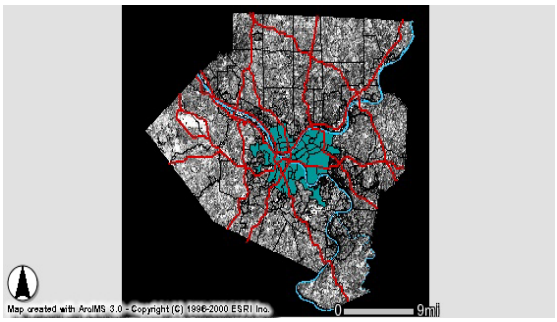
Greene County (OH) Property Maps: The website contains interactive map and property information for Greene County. *http://www.co.greene.oh.us/gismapserver.htm*

Lake County (OH) Enterprise GIS: This website lets users view plats, archived tax maps and property and document searches. Lake Navigator allows users to look at the county in various layers, including bridges, road centerlines, buildings, two-foot contours, pavement edges, and transmission towers. Other layers provide access to parcels, sub-lot numbers, lot dimensions, aerial photography, natural resources, and civil divisions. *http://www.lakegis.org/*

Clackamas County (OR): CMap is Clackamas County's Internet Map Viewer. With this tool, you can access county GIS data interactively and quickly over the World Wide Web. By selecting the layer of information, such as an address or tax lot number that you want to see, you can find a wealth of data linked to maps on your Internet browser. You can turn on and off data layers about services, jurisdictions, zoning, and much more and the map will be redrawn using the data for which you asked. Full color plots of ortho aerial photography are available. These photos can be used by themselves or we can overlay other GIS information on them such as tax lots, contours, soils, etc. *http://www.co.clackamas.or.us/gis/*



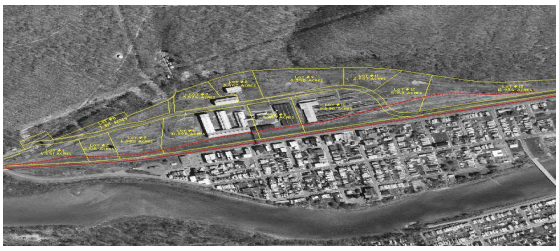
Allegheny County (PA): The Allegheny County GIS Web Site is provided via the Intranet to Internal County Offices and employees and to the public through the external Internet site. This site was developed to assist Allegheny County personnel in accessing GIS data and utilizing GIS tools to illustrate spatial information. It is hoped that this tool will aid County personnel in their decision making processes. The site is designed for users to be able to utilize electronic maps of the county in order to zoom into an area of interest or specific location, print out a map of items of interest and also to access database information. Essentially the same capabilities that are provided to internal users are provided to the public. This page includes the maps that are currently available, help documentation, and information on the data layers that are in use on the site. *http://www.county.allegheny.pa.us/dcs/gis.asp*



White: municipalities, green: wards, blue: rivers, red: major highways

Chester County (PA) DGIS Geographic Information Systems: Chester County incorporates GIS in several departments and agencies that use geographic data in their key business functions. The county program is managed by the GIS group within the IT department. The agency is now responsible for: Critical address and E-911 related data development and maintenance activities; cadastrals (tax parcels); GIS map/data responsibilities; land record modernization involving UPI (Uniform Property Identification) numbers; maintaining basic tax map/record and other GIS layers; application development to make GIS useful and to support needed functions of county agencies; distributing county GIS data through its data distribution program; and the GIS Consortium. *http://www.chesco.org/gis/index.html*

Clinton County (PA) GIS: The Clinton County GIS Department was created in May 1996. Aerial photography of the county makes up one integral part of the GIS package.
http://www.clintoncountypa.com/gis.htm



Another integral part of the GIS puzzle was the digitizing of the county's tax assessment maps. The paper assessment maps were digitized and geofitted to the planimetric base.

GIS data viewer of Clinton County: green: municipal boundary, red: center lines, purple: railroads

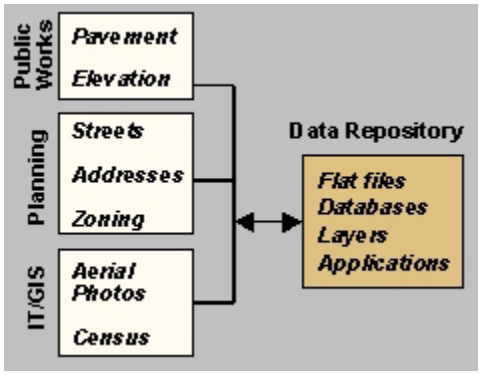
Cumberland County (PA) GIS Department: The GIS Department provides a range of services to Cumberland County residents, municipalities, businesses, and to county and state government. These services include access to public information; specialized data processing services including data conversion and digitizing support; resources for spatial analysis of county information; GIS needs assessment; technical support; map production; and to create and maintain GIS coverage in support of county departments. *http://www.ccpa.net/gis/*

Lancaster County (PA): Available applications include MapOptix website setup, Global Positioning System fire hydrants for Lancaster County, rideshare project, road centerline upgrade project, and federal emergency management agency maps.
http://www.co.lancaster.pa.us/gis/site/default.asp

Mifflin County (PA) Mapping Department: The Mapping Department is responsible for implementing a county-wide GIS used by Mifflin County and its municipal partners, including Derry Township, Granville Township, Bratton Township, Oliver Township, Wayne Township, Burnham Borough, McVeytown Borough, Juniata Terrace Borough, Kistler Borough, Decatur Township, Armagh Township, Menno Township, Mifflin County Conservation District, Brown Township, Mifflin County Regional Police, Granville Township Municipal Authority, Brown Township Sewer Authority, and the Municipal Authority of the Borough of Lewistown. The Mapping Department serves three departments within county government: Emergency Services, Assessment, and Planning. Mapping will provide updated digital maps to the 911 dispatch center and serve as the contact point for anyone who may need to determine a new address. Assessment parcel maps will be maintained as new subdivisions are added. Maps of land use and zoning are just some examples of the mapping needs of the Planning Department. Municipal partners will use GIS to access county information on roads and parcels, as well as maintain their own data on road surface management, zoning, and building permits. Municipal Authorities will use GIS to keep a handle on their extensive inventory of pipes and equipment, while also being able to tap into data other organizations have.
http://www.co.mifflin.pa.us/mifflin/cwp/view.asp?A=635&Q=409076

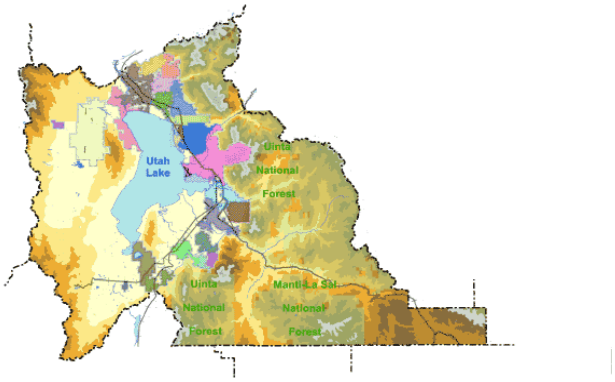
University of Rhode Island Environmental Data Center (RI): This web page provides a variety of information and data sets for Rhode Island, showing diverse applications for small communities. For example, one "Critical Lands in Rhode Island" shows conservation, landfill sitting, coastal and freshwater wetland restoration assessment, shoreline change analysis, biodiversity mapping, natural hazards risk modeling, Lyme disease risk assessment, wildlife management, landscape characterization, and environmental monitoring of near-coastal environments for several communities such as Exeter Critical Lands, Hopkinton Critical Lands. *http://www.edc.uri.edu/criticallands/*

Richland County (SC): Richland County GEOgraphic Information Systems (GIS) is both a division of the Information Technology (IT) Department and a county-wide program of spatial data and application development. The IT/GIS team is responsible for the development of the County's baseline digital spatial databases and for providing state-of-the-art mapping and data services to County departments, citizens, local governments, and businesses. Current projects include: data framework development, internet mapping service, assessor database property search, census 2000 internet application, 3D modeling of downtown Columbia, satellite imagery collection, street addressing, update GIS implementation plan, redistricting council boundaries, pavement management, storm water inventory, fire hydrant locations, vector control. *http://www.richlandmaps.com/rcgeo.html*



Carbon County (UT) GIS: Website contents include: What is GIS? Global positioning system base station; county maps online. *http://gis.co.carbon.ut.us/*

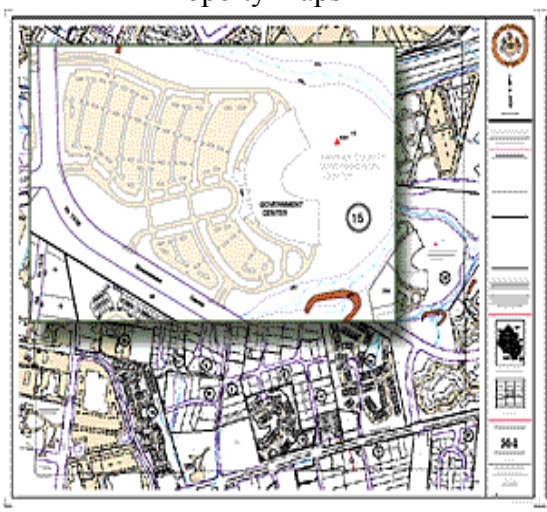
Utah County (UT) GIS: The GIS Division serves internal and external GIS needs for Utah County and its citizens. Applications include: Utah county area map; Utah county atlas; real-time parcel viewer; recorder's office map filing images; survey data; parcel shape file generator; voting/polling locator; GIS data download; hazards viewer; planning zones. *http://www.co.utah.ut.us/Dept/IS/GIS.as*



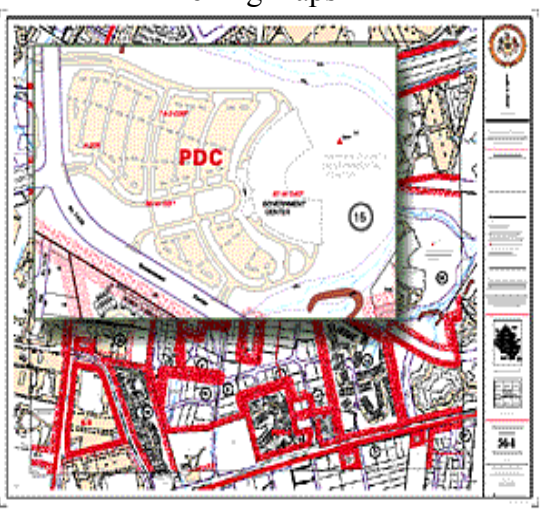
Utah County Area Map

Fairfax County (VA) GIS and Mapping Home: The Website includes: GIS & mapping; general information; location map; FAQ's; forms; metadata; on-line products and services; map gallery; aerial/ortho viewer; DTA parcel finder; Fairfax time machine; office products and services; maps; aerial photography; and GIS data. *http://www.co.fairfax.va.us/maps/map.htm*

Property maps



Zoning maps

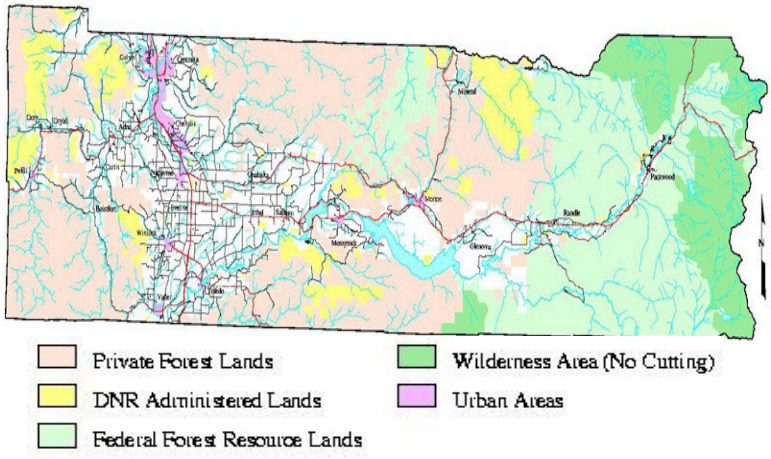


Montgomery County (VA): An interactive map allows users to add layers, such as municipal boundaries, ag-forest districts, and zoning. *http://www.webgis.net/montgomery/*

Clark County (WA) GIS: Digital maps of Southwest Washington include: land parcels, boundaries, surveys-plats, environmental, ESA listings, and transportation. Available applications include Clark-View GIS and Assessor Map. In 1992, Clark County began a vacant lands analysis to determine the potential capacity of urban growth areas for the next 20 years to the year 2012. County staff met with interested parties from the development and environmental community to collectively examine criteria to be used to compute the supply of land available for development within each urban growth boundary. From the process, a methodology was developed using GIS as the primary data source.
http://www.rtc.wa.gov/ccweb/

King County (WA) GIS Center: The King County GIS Center manages the King County Geographic Information System, a cooperative, multi-department GIS. It provides efficient, high-quality GIS leadership, coordination, infrastructure, and services to meet the business needs of clients within King County. *http://www.metrokc.gov/gis/*

Lewis County (WA): The GIS/Mapping Division is responsible for providing GIS applications, services, and map and data products to all county offices and departments for county management, planning, and operation. It also provides services to outside agencies, organizations, and individuals, at cost, when time is available. The first major GIS applications were the geographical control base (global positioning system control points and road centerlines, public land survey grid, donation land claim boundaries); public works (environmental maps and county road atlas); communications E-911 dispatch addressing; community development and planning (urban growth management maps, critical resource lands); and assessor land parcel maps. *http://www.co.lewis.wa.us/PublicWorks/lewisgis.htm*



Pierce County (WA): This page was an application of Map Your Way. There are three ways to get started with Map Your Way: Click on the map to set your starting point or select something to search or enter an address to set your starting point. *http://triton.co.pierce.wa.us/map/start.cfm*

Thurston County (WA) Geo Data Center: The Thurston Geo Data Center provides staff with accurate spatial geographic information and supports GIS use in their daily operations. The center also provides support and services to federal, state, and local agencies, private businesses, and the general public. In addition, the center provides custom data and map services. An online map application allows viewing of geospatial data such as wetlands, areas prone to flooding, zoning, and urban growth areas. *http://www.geodata.org/online.html*

3-Where you can get help in your region

a- State and Local data and Mapping sources

ARKANSAS
Arkansas GIS Office: The Arkansas Geographic Information Office (AGIO) was created to educate the public and to provide information regarding land and mapping data resources to various entities throughout the state. The office completes state and federal spatial data projects and works in conjunction with the Arkansas State Land Information Board (ASLIB). *http://www.gis.state.ar.us/AGIO.htm*

ARIZONA
Arizona GIS data, Arizona State University Libraries: This website provides a gateway to various sites across the state. *http://www.asu.edu/lib/hayden/govdocs/maps/azgisdata.htm*

CONNECTICUT
Connecticut GIS User to User Network: This voluntary association of individuals and organizations uses GIS-based technologies and data. The network connects users through workshops, meetings, and the Internet to share ideas, to learn about GIS activities, to explore collaborative opportunities, and to discover information resources. *http://ctgis.uconn.edu/index.htm*

Green Valley Institute: The GVI Geographic Information Systems (G.I.S.) Data Center: GVI was created through a formal partnership between the Quinebaug-Shetucket National Heritage Corridor and the University of Connecticut's College of Agriculture and Natural Resources. Programs are made possible through active involvement of the Corridor's Natural Resources and Agriculture (NRA) Committee. The GIS Center offers both digital and hard copy map data and technical expertise for town commissions and land trusts.
http://thelastgreenvalley.org/gvi/gis.html

MAGIC: Content on this Website includes the Map and Geographic Information Center and Connecticut Land Use Land Cover Maps. *http://mapserver.lib.uconn.edu/magic/*

DELAWARE
Delaware Spatial Data Clearing Center: The Delaware Spatial Data Clearinghouse supports the coordination efforts of the Delaware Geographic Data Committee (DGDC) and the State Mapping Advisory Committee (SMAC). Data and documentation (metadata) have been contributed primarily by State and local government agencies.
http://gis.smith.udel.edu/fgdc2/clearinghouse/

FLORIDA
Florida-County-GIS Maps, Zoning, Land Use, Flood Zones: Some Florida counties provide information critical to real estate developers, lenders, investors, appraisers, engineers and land planners. The header for each listed county is linked to the county's GIS index page, with subheaders representing category maps. If the county is not listed, it does not have a GIS Website.
http://www.florida-business-data.com/county-gis.htm

ILLINOIS

Illinois Counties GIS data: Access county Department of Natural Resources data sets and associated metadata files by browsing the counties. You may also select from a Map. *http://www.isgs.uiuc.edu/nsdihome/webdocs/county.html*

INDIANA

Indiana GIS Initiative Information Access Center: The Indiana GIS Initiative (INGISI) is a grass-roots, ad-hoc organization that coordinates Indiana GIS by disseminating data and data products, education and outreach, adoption of standards, and building partnerships. Since 1997, INGISI's open membership has grown to over 450 individuals from over 150 organizations representing a variety of GIS interests in Indiana. INGISI meets quarterly. Members are invited to participate on all INGISI Committees. The Indiana Geographic Information Council is the executive body to INGISI. *http://www.state.in.us/ingisi/about_us/ingisi.html*

Indiana County City and Local GIS Data: by Indiana University, University Information and Technology Services. Indiana Cities on the site include: Bloomington, Indianapolis, plus Monroe County. Local Areas include: Bradford Woods and Indiana University. *http://storage.iu.edu/DOQQS/city_county.html*

LOUISIANA

Atlas, The Louisiana Statewide GIS: Here you will find GIS and mapping data on the state of Louisiana. *http://atlas.lsu.edu/*

MAINE

Maine GIS Data Catalog: The catalog provides the public with access to the digital geographic data in the Maine Geographic Information System, maintained by the *Maine Office of GIS (MEGIS).* Users may use this site to download geographic data and the associated metadata. *http://musashi.ogis.state.me.us/catalog/catalog.asp*

MARYLAND

Chesapeake Bay and Mid Atlantic from Space: The principle purpose of this Website is to make remotely sensed data, and specifically impervious surface data, available to state and local government agencies. This Website also provides background information on imperviousness and its environmental effects, and on the principles and use of remotely sensed data. *http://chesapeake.towson.edu*/

MASSACHUSETTS

MASSGIS: This is the Commonwealth's Office of Geographic and Environmental Information, within the Massachusetts Executive Office of Environmental Affairs. Through MassGIS, the Commonwealth has created a comprehensive, statewide database of spatial information for environmental planning and management. Recent legislation established MassGIS as the official state agency assigned to the collection, storage and dissemination of geographic data. The legislation gives MassGIS the mandate to set standards for geographic data to ensure universal compatibility. *http://www.state.ma.us/mgis/gis_toc.htm*

Massachusetts Executive Office of Environmental Affairs Community Preservation Initiative: EOEA sponsored the creation of a set of build-out maps and analyses for all 351 cities and towns in the Commonwealth of Massachusetts. The maps and analyses depict currently

developed and protected land and what the community would look like if remaining undeveloped land were developed in accordance with local zoning.
http://commpres.env.state.ma.us/content/buildout.asp

MINNESOTA
Metro GIS data finder for Minnesota: Data Finder is a mechanism for sharing GIS data among users in the Twin Cities Metropolitan Area. Data-Finder provides metadata describing GIS data sets and access to download many GIS data sets. *http://www.datafinder.org/*

Minnesota Counties Working with Geographic Information: This Website provides contact information for each of Minnesota's 87 counties, a starting point to direct questions about geographic data and GIS technology. It was developed through informal surveys conducted by the Land Management Information Center in 2000 and is updated annually.
http://www.lmic.state.mn.us/cty_contacts.html

NEW HAMPSHIRE
NH GRANIT: Welcome to the NH GRANIT Website, providing access to New Hampshire's statewide GIS. Through this site we offer you access to a range of resources, including: search and retrieval of GRANIT data descriptions (metadata), retrieval of primary GRANIT data layers, posting of news related to database developments, announcements of meetings and events, mapping of core data sets, and access to a catalog listing of photography covering various New Hampshire geographic units. *http://www.granit.sr.unh.edu/*

NEW JERSEY
GIS Center New Jersey: The center is dedicated to assisting government agencies and non-profit organizations in their use of GIS and related technologies. The center provides expertise to organizations with their own in-house GIS operations and conducts GIS-related projects for those without GIS capability. The GIS Center operates as a joint project of the Stony Brook-Millstone Watershed Association and the Upper Raritan Watershed Association.
http://www.giscenter.org/

New Jersey County Maps: GIS County maps are available from the New Jersey Department of Transportation in two formats: as a PDF file and a zipped PDF file.
http://www.state.nj.us/transportation/gis/county_maps.htm

New Jersey Big Map by New Jersey Department of Environmental Protection: A conceptual smart growth map, developed by the New Jersey Department of Environmental Protection, uses an overlay method that considers a number of environmental factors that are protective of surface water, ground water, and species habitats in non-metropolitan areas. The multiple GIS data layers are integrated in a manner that sorts the New Jersey's land and water areas into tiers with broad common characteristics.
http://www.state.nj.us/dep/antisprawl/mapdetails.html The Big Map

New Jersey Geological Survey: The NJ Geological Survey is a public service and research agency within the NJ Department of Environmental Protection. NJGS collects and provides geoscience information to government, consultants, industry, environmental groups, and the public.
http://www.state.nj.us/dep/njgs/geodata/index.htm

New Jersey Spatial data Clearing House: The clearinghouse is operated by the NJ Office of Geographic Information Systems. The goal is to provide New Jersey citizens and the GIS community with a comprehensive site to find and share GIS information, spatial data, interactive mapping applications and resources. The NJ Spatial Data Clearinghouse is part of a national network of spatial resources that comprises the National Spatial Data Infrastructure (NSDI). The site promotes communication among users, data development partnerships, data set duplication, and the use of GIS and spatial data as decision support tools. *http://njgeodata.state.nj.us/*

OGIS, New Jersey Office of Geographic Information Systems: This website was designed to show how GIS works to solve problems and support decision-making. The office plays a leadership role in coordinating GIS throughout New Jersey. *http://www.state.nj.us/ogis/*

NEW YORK
New York State GIS Clearinghouse: This Website offers a variety of items, including maps, training, GIS coordination and assistance, and ortho and raster imagery.
http://www.nysgis.state.ny.us/index.html

NYS Spatial Data: The State University of New York at Albany Center for Technology in Government offers background publications on GIS.
http://www.ctg.albany.edu/publications/reports/sharing_the_costs

Cornell University Geospatial Information Repository: CUGIR is an active online repository in the National Spatial Data Clearinghouse program. CUGIR provides geospatial data and metadata for New York State, with special emphasis on those natural features relevant to agriculture, ecology, natural resources, and human-environment interactions.
http://cugir.mannlib.cornell.edu/

NORTH CAROLINA
North Carolina County and Cities GIS: This is the North Carolina State University Interactive Mapping site.
http://www.lib.ncsu.edu/stacks/gis/webmap.html#local

OHIO
GIS Service Bureau: The Website provides services to state agencies and local government, including training and education, geo-coding analysis, map production, data conversion, geo-data distribution, and application development. *http://www.state.oh.us/das/dcs/gis/*

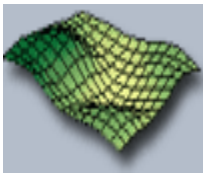
PENNSYLVANIA
PAGIC Pennsylvania Geospatial Information Council: PAGIC was established in 1999 and includes Commonwealth of Pennsylvania agencies, boards and commissions, the Legislative Office of Research Liaison, and participating partners that are statewide associations and nonprofit organizations. PAGIC's primary purpose is to cooperatively, across agency jurisdictions, facilitate the sharing of common geospatial data; develop and recommend management approaches to data development and sharing; develop partnerships with public and private sector organizations, local, other state, and federal agencies. *http://www.pagic.state.pa.us/base.html*

PASDA, Pennsylvania Spatial Data Access: The Pennsylvania Spatial Data Access system (PASDA) is Pennsylvania's official geospatial information clearinghouse and the Common-

wealth's node on the National Spatial Data Infrastructure (NSDI). The PASDA clearinghouse provides for the widespread sharing of geospatial data, eliminates the creation of redundant data sets, and serves as a resource for locating data throughout the Commonwealth through its data storage, interactive mapping/web GIS applications, and metadata/documentation efforts. *http://www.pasda.psu.edu/*

RHODE ISLAND

University of Rhode Island Environmental Data Center, Geo-Spatial Data Analysis Laboratory: The Environmental Data Center (EDC) is a GIS laboratory in the URI Department of



Natural Resources Science, College of Environmental and Life Sciences. EDC supports the use of contemporary tools of spatial data processing in the analysis of environmental data through collaborative research with faculty in the Department of Natural Resources Science and projects with agencies external to URI. *http://www.edc.uri.edu/edc/*

The Rhode Island Geographic Information System (RIGIS): The Rhode Island Geographic Information System (RIGIS) is a consortium of government and private organizations employing computer and communications technology to manage and use a collective database of comprehensive geographically related information. The mission of the RIGIS is to monitor, coordinate, and provide leadership for activities related to the use of GIS technology within Rhode Island, to support initiatives to implement or use the technology, and to manage and provide access to a common database of geographically referenced information. The RIGIS database is the most comprehensive and detailed of any state in the country and contains information on almost all aspects of Rhode Island's natural and cultural resources. Major areas of research at the EDC are spatial data modeling, ecological mapping, and data integration for environmental applications. *http://www.edc.uri.edu/rigis*

VERMONT

Community Planning Tools for Vermont: This Website contains county and town data profiles and interactive maps. *http://crs.uvm.edu/rpcs/*

Spatial Analysis Lab, University of Vermont: The lab is a research facility located in the School of Natural Resources (SNR). Lab staff are employees or students in SNR. Facilities are often shared with collaborators from other units (e.g., Geography Department, Gund Institute for Ecological Economics, and the USDA Forest Service Northeastern Research Station). The mission of the Laboratory is to apply appropriate techniques in GIS, remote sensing, and spatial statistics to problems in natural resource ecology and natural resources planning. The Lab specializes in biodiversity analysis, land-cover mapping, planning for conservation lands, and development of new applications for natural resource management.
http://www.snr.uvm.edu/www/pc/sal/index.html

VCGI, Vermont Center for Geographic Information: VCGI is a public non-profit supported through Vermont's property transfer tax, and grants and fees paid for the products and services it provides to clients (e.g. the VT Agency of Transportation and the VT Enhanced 9-1-1 Board). The storage and provision of free digital geographic data created by members of the VT GIS community (VGIS) are two of the most important tasks. The site includes a data warehouse. *http://www.vcgi.org/*

WEST VIRGINIA

West Virginia GIS Technical Center: The center, housed at West Virginia University, is intended to provide focus, direction and leadership to GIS users for digital mapping and remote sensing. *http://wvgis.wvu.edu*/

b- Other Data and Mapping Sources

American Fact Finder (Census Bureau): This Website includes over 50 layers of data, including Census of Population and Housing data.
http://factfinder.census.gov/java_prod/dads.ui.map.ref.RefMapPage

Big Book: Yellow pages with integrated mapping. Find locations, create maps.
http://www.bigbook.com/

Bruce Gittings' Digital Elevation Data Catalogue: There are two documents provided here: the "Introductory" page from the monthly posting of data and the Catalogue itself.
http://www.geo.ed.ac.uk/home/ded.html

Bureau of Transportation Statistics GIS: The Bureau of Transportation Statistics (BTS) (GIS) is a national resource for transportation spatial data and GIS in transportation information.
http://www.bts.gov/gis/index.html

DDTI, Digital Data Technologies, Inc.: DDTI creates GIS for county and local governments. Using global positioning and a voice recording data collection system, DDTI can create an intelligent road centerline network, complete with field-verified addressing to enable the correct mapping of spatial data. DDTI has developed GIS software and Internet that are said to improve client productivity, enhance community services and aid public safety.
http://www.ddti.net/iView.asp

ESRI (Environmental Systems Research Institute) data sets: Some data on this site are available for free; other data is fee-based. *http://www.esri.com/data/index.html*

Enviromapper: Includes a wide range of environmental data layers. Also: Query mapper, site-info, zip-info, county-info and basin-info. Data downloadable from Envirofacts page: Environmental Conservation Online System (Fish & Wildlife Service) Environmental & wetlands data.
http://maps.epa.gov/enviro/html/mod/enviromapper/

Federal Geographic Data Committee (FGDC): The FGDC is developing the National Spatial Data Infrastructure (NSDI) in cooperation with organizations from State, local and tribal governments, the academic community, and the private sector. *http://www.fgdc.gov/*

Geo Community GIS Data Depot: Data available from this site requires users to be proficient in GIS and may require access to GIS software ... novice users should be aware of this before purchasing data. Numerous data holdings are available for free download, otherwise, data can be downloaded via our "Premium" option or written to CD-ROM. *http://data.geocomm.com/*

Geography Network: The Geography Network is a global network of geographic information users and providers. It provides the infrastructure needed to support the sharing of geographic information among data providers, service providers, and users around the world. Through the Geography Network, you can access many types of geographic content including dynamic maps, downloadable data, and more advanced Web services. *http://www.geographynetwork.com/*

Geo-spatial Data Gateway: The one stop source of natural resources data. *http://www.lighthouse.nrcs.usda.gov/gateway/gatewayhome.html*

Hydrologic Unit Boundary Data: Hydrologic unit boundaries define the area extent of surface water drainage to a point. The GIS coverage will be available via the Internet to everyone, including federal, state, local government agencies, researchers, private companies, utilities, environmental groups, and concerned citizens. The database will assist in planning and describing water use and related land use activities. *http://www.ftw.nrcs.usda.gov/huc_data.html*

Land Use Land Cover: by state, 1.250.000 scale For All States: Quadrangles that fall (either partially or completely) within a state can be located by selecting the state name. *http://edcwww.cr.usgs.gov/glis/hyper/guide/1_250_lulcfig/states.html*

Map-Blast: Create map, find locations, get directions. *http://www.mapblast.com/*

National Atlas of the United States: The new National Atlas includes products and services designed to stimulate children and adults to visualize and understand complex relationships between environments, places, and people. It contributes to our knowledge of the environmental, resource, demographic, economic, social, political, and historical dimensions of American life. *http://nationalatlas.gov/index.html*

National Cartography and Geospatial Center Geospatial Data Resources: The list of priority datasets are based on the most frequently requested datasets by NRCS State and Field Offices. They are available to you by request. States and counties or service center areas and datasets must be identified in your request. All data are delivered in UTM NAD 83 format on CD-ROM, FTP, tape or email, depending on data volume. *http://www.ftw.nrcs.usda.gov/gdr/home.html*

National Climatic Data Center (NCDC): NCDC is the world's largest active archive of weather data. NCDC produces numerous climate publications and responds to data requests from all over the world. NCDC operates the World Data Center for Meteorology which is collocated at NCDC in Asheville, North Carolina, and the World Data Center for Paleoclimatolgy which is located in Boulder, Colorado. *http://www.ncdc.noaa.gov/oa/ncdc.html*

National Map(USGS): The National Map is a consistent framework for geographic knowledge needed by the Nation. It provides public access to high-quality, geospatial data and information from multiple partners to help inform decision making by resource managers and the public. The National Map enhances America's ability to access, integrate, and apply geospatial data at global, national, and local scales. *http://mapping.usgs.gov/*

National State Soil Geographic Database (STATSGO): State general soil maps made by generalizing the detailed soil survey data. The level of mapping is designed to be used for broad planning and management uses covering state, regional, and multi-state areas. STATSGO data are designed for use in a (GIS). STATSGO data are available in the USGS Digital Line Graph (DLG-3) optional distribution format. NRCS soil map symbols are not normally carried within the DLG-3 file; however, these map symbols are made available as a unique ASCII file when NRCS soils data are distributed in the DLG-3 format. STATSGO data are also available in ArcInfo 7.0 coverage and GRASS 4.13 vector formats.
http://www.ftw.nrcs.usda.gov/stat_data.html

NOAA's Coastal Assessment and Data Synthesis System: includes over 30 layers of coastal data in digital format and an interactive mapping tool to view data and compare estuaries; zoom, pan, locate and list data. *http://cads.nos.noaa.gov/*

NOS MapFinder Coastal photography, coastal survey maps, geodetic control points, historical maps and charts, environmental sensitivity index maps, nautical charts, hydrographic survey outlines, water level stations, estuarine bathymetry. *http://mapfinder.nos.noaa.gov/*

Ocean GIS Online Mapping: Over 50 layers of coastal and ocean data. Also downloadable from: OPIS page. *http://www.csc.noaa.gov/opis/html/ocean.htm*

Protected Areas Geographic Information System (PAGIS) Online Mapping
Interactive mapping of selected National Estuarine Research Reserves.
http://www.csc.noaa.gov/pagis/html/online.htm

Shoreline Data Rescue Map Server (NOAA)
High resolution shoreline data, currently (2/24/00) available for NC, SC, GA, AL, MI, PR. Also downloadable as Arc/Info export files. *http://www.csc.noaa.gov/products/shorelines/*

SSURGO - Soil Survey Geographic Database: Soil data for GIS use. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) data base. Mapping scales generally range from 1:12,000 to 1:63,360; SSURGO is the most detailed level of soil mapping done by the Natural Resources Conservation Service (NRCS). SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships, and county natural resource planning and management. The user should be knowledgeable of soils data and their characteristics.
http://www.ftw.nrcs.usda.gov/ssur_data.html

State of Land GIS Coverages: The links below will take you to the metadata for the various State of the Land base-map coverages. The metadata follow standards set by the Federal Geographic Data Committee. In the metadata under "Citation Information," you will find the online linkage to the coverages file. All coverages are in Arc/Info Export format (.e00) and are compressed using standard .zip compression. Files can be uncompressed using unzip or compatible software. All Puerto Rico coverages also include the U.S. Virgin Islands. Our standard U.S. map template shows how we usually display these coverages. These are the coverages used to make most State of the Land maps; they are not necessarily the most current coverages available and

may or may not be appropriate for your purposes. These coverages do not meet National Map Accuracy Standards. If you use these coverages, please be aware of our disclaimer. Similar coverages are also available from the Water Resources Website and the National Atlas, both maintained by the U.S. Geological Survey. We also maintain a list of other GIS & Data sites within NRCS. *http://www.nrcs.usda.gov/technical/land/aboutmaps/coverages.html*

TIGER Mapping Service (Census Bureau): Over 50 layers of data, including census of population and housing data. *http://tiger.census.gov/cgi-bin/mapbrowse-tbl*

The WWWVL Cartography Resources An index of interactive online mapping services. *http://monarch.gsu.edu/jcrampton/maps/*

USGS EROS (Earth Resources Observation Systems) data center: *http://edcwww.cr.usgs.gov/*

USGS Tools for Creation of formal metadata.
http://geology.usgs.gov/tools/metadata/tools/doc/mp.html

Yahoo! Maps
Create maps, find locations, get directions. *http://maps.yahoo.com/py/maps.py*

4- Other GIS Applications:

CITY green: American Forests' CITYgreen is a GIS application for land-use planning and policy-making. The software conducts complex statistical analyses of ecosystem services and creates easy-to-understand maps and reports. CITYgreen calculates dollar benefits based on your specific site conditions. *http://www.americanforests.org/productsandpubs/citygreen/*

Cornell University Web-interactive environmental justice application (WEACT): WEACT is intended to enhance community awareness of environmental hazards in northern Manhattan. The maps and 'tour of hazards' presented here are an incremental step toward the fulfillment of WEACT's mission. They are the result of a joint project between WEACT and students from the City and Regional Planning Department at Cornell University. Cornell students created this web page based on interviews with area residents about environmental hazards in their neighborhoods. *http://www.crp.cornell.edu/projects/westharlem/*

Environmental Modeling and Monitoring, The University of Edinburgh Department of Geography: Website includes research case studies that demonstrate how GIS can be used under different conditions. *http://www.geo.ed.ac.uk/home/research/gisresearch.html*

Geography Network: The Geography Network is an excellent resource for finding and building geographic applications. Developers can use Geography Network content, including GIS Web services and dynamic maps, to build custom applications.
http://www.geographynetwork.com/publishing/publishers.jsp

Inforain GIS: This Website presents Ecotrust's GIS portfolio, a network of information allowing users to achieve a deeper understanding of their local watersheds, estuaries, and forests. It allows a broader comprehension of these places within a bioregional context. GIS data is used to create regional and community databases based on watershed boundaries. Data layers are available for download, and interactive mapping applications provide functionality similar to sophisticated GIS software. *http://www.inforain.org/*

NOAA Coastal Services Center, GIS examples: This Website has links for more than 25 projects that use GIS. *http://www3.csc.noaa.gov/CSCweb/genericPage.asp?bin=7#Projects*

PAMAGIC: "Local Government Handbook for GIS implementation Within the Commonwealth of Pennsylvania." *http://www.pamagic.org/*

Pennsylvania Department of Environmental Protection Geographic Information Systems: Here you will find information on applications and links to learn more about GIS around Pennsylvania and within the Department. eMap PA is a mapping application that displays DEP permit information on a dynamic web based Map Server. The application integrates permitting information with various statewide data layers on one single map controlled by the user.
http://www.dep.state.pa.us/external_gis/gis_home.htm

Pennsylvania GIS Consortium: A comprehensive GIS Watershed Plan has been initiated for the Upper Susquehanna-Lackawanna American Heritage River. Although this plan is focused on

environmental features and problems, it is expected that data acquisition and GIS decision support tools will help facilitate deployment of GIS for local government and local administrative agencies. The plan will be a valuable resource to guide the region on numerous economic development and environmental remediation projects throughout Northeastern and Central Pennsylvania. *http://www.pagis.org/CurrentWatershed.htm*

Pennsylvania's West Nile Virus Surveillance Program: The West Nile Virus project, a cooperative project of the PA Department of Environmental Protection, the PA Department of Health, the PA Department of Agriculture, and ESRI, Inc., uses GIS as the basis for its comprehensive network that provides surveillance and tracking of mosquitoes that carry the virus. *http://www.westnile.state.pa.us/*

Projecting Land Use Change: This Website is a summary of models for assessing the effects of community growth and change on land use patterns. *http://faculty.washington.edu/pwaddell/Models/REPORTfinal2.pdf*

The Institute for Resource Information Systems (IRIS): is the focal point at Cornell University for programs in remote sensing, resource inventory, and GIS, supporting the environmental data and information needs of both the public and private sectors here and abroad. *http://www.cfe.cornell.edu/ciris/default.html*

The Land Evaluation and Site Assessment (LESA) Penn State Outreach Project: Penn State's Land Analysis Lab and Cooperative Extension GIS Program have developed the LESA ArcView GIS Application to streamline and improve the ranking process for evaluating land. The LESA ArcView interface allows users to identify a farm parcel and rank it against other applicant parcels in a matter of minutes. *http://www.gis.psu.edu/outreach/lesa/index.html*

The Precision Farming Primer: This Website covers GIS Technology and Site-Specific Management in Production Agriculture. *http://www.innovativegis.com/basis/pfprimer/Default.html*

WyGISC Wyoming Geographic Information Science Center: The research focus of WyGISC is in the use of advanced spatial technologies, such as GIS, 3-D visualization, and Global Positioning Systems to support decision-making and management of Wyoming's natural resources, while at the same time benefiting Wyoming's economy. The information transfer and decision support tools are provided to researchers, managers and the public with access to data required for making informed decisions. These tools also facilitate collaborative planning processes. WyGISC is a multi-disciplinary research program funded by the Wyoming National Science Foundation Experimental Program to Stimulate Competitive Research (EPSCoR) and the University of Wyoming. *http://www.wygisc.uwyo.edu/intro.html*

Wyoming Oil and Gas Resource Assessment (WOGRA) Mapper: The Wyoming Oil and Gas Resource Assessment (WOGRA) is an interagency project designed to provide comprehensive, consistent information on oil and gas resources throughout Wyoming. The assessment includes a qualitative designation of the geologic habitat in which oil and gas resources are likely to occur. *http://wogra.wygisc.uwyo.edu/misc/wograindex.html*

5-Online Journals, Articles, Papers:

Academic MapCalc: Educational Materials for Instruction in Grid-Based Map Analysis. *http://www.innovativegis.com/basis/Senarios/GIS01_MC.htm*

Community information: The need for a New Generation of Community Statistical Systems: report by Dan Romer, Susan Wachter and Sidney Wong *http://gispdc.wharton.upenn.edu/RESEARCH/Fannie_Mae.pdf*

Fogler Library GIS Journals: This list includes journals that researchers in spatial information science and engineering have found useful. The list was compiled through Spatial Odyssey, a joint project of the Fogler Library and the Department of Spatial Information Science and Engineering at the University of Maine. Information that may be found on the Webpages of these journals includes author instructions, current tables of contents, and full-text articles. *http://www.library.umaine.edu/sec/guides/gisjournals.htm*

Geoinformatica: An International Journal on Advances of Computer Science for Geographic Information Systems. *http://www.kluweronline.com/issn/1384-6175*

Geoworld: journal *http://www.geoplace.com/gw/*

Getting started with GIS: A Guide for Municipalities: published by Massachusetts Department of Housing and Community Development. *http://www.state.ma.us/mgis/Getting_Started_With_GIS.pdf*

GISCafe online technical papers: categories: AM/FM/GIS, Archaeology, Business, Cartography, Cultural, Education, Environmental, Geographic Presentation/Remote Sensing, Geology/Minerals/Soils, Government, Internet, Land Use, Natural Resources, Spatial Data Management, Topography, Transportation. *http://www01.giscafe.com/technical_papers/*

GIS Vision: The Independent Interactive Magazine for GIS professionals by GISCafe. *http://www.gisvisionmag.com/*

GIS Monitor Articles: Current Articles: the latest from the GIS press around the world. *http://www.gismonitor.com/articles/features/current_features.php*

Directions magazine: Your GIS News Source. *http://www.directionsmag.com/*

Homeland Security and Geographic Information Systems: Federal Geographic Data Committee, 2003. *http://www.fgdc.gov/publications/homeland.html*

Joseph K. Berry and BASIS Associates: have made numerous keynote, plenary, workshops and invited presentations, as well as written over two hundred papers on the analytic capabilities and applications of GIS technology. *http://www.innovativegis.com/basis/present/present.html*

Journal of Housing Research: Volume 9 issue 1, GIS and Real Estate related articles.
http://www.fanniemaefoundation.org/programs/jhr/v9i1-index.shtml

Mapping a Response: GIS is more important than ever, but state and local governments face many hurdles.
http://www.fcw.com/supplements/homeland/2002/sup4/hom-gis-12-02-02.asp

NCGIA (National Center for Geographic Information and Analysis) Initiative 16: Law, Information Policy and Spatial Databases: The National Center for Geographic Information and Analysis (NCGIA), with financial support from the National Science Foundation, is funding a research initiative on "Law, Information Policy, and Spatial Databases". Primary topics on which the research is focused include (1) access rights of citizens to publicly held information, (2) intellectual property rights in spatial databases, (3) privacy rights and principles, and (4) liability in the use, sharing, and distribution of geographic information system data and analysis results. To initiate the research effort, the NCGIA joined with the Arizona State University Center for the Study of Law, Science and Technology to host a "Conference on Law and Information Policy for Spatial Databases." Most of the papers produced for that conference are provided below. Also provided are a bibliography, additional papers reporting research results, and links to other resources relevant to geographic information system (GIS) legal issues. Updates will be provided as further work is accomplished. *http://www.spatial.maine.edu/I-16/I-16_home.html*

Online, Papers and Proceedings
http://www.geo.uni-bonn.de/members/haack/gis-proceedings.html

Online articles: Collection of online articles by GIS.com. *http://www.gis.com/trends/index.html*

Recent developments associated with decision support systems in water resources: by David W. Watkins, Jr. and Daene C. McKinney .
http://earth.agu.org/revgeophys/watkin00/watkin00.html

Spatial Odyssey; GIS Literature Database: Spatial Odyssey provides access to the tables of contents of many GIS conference proceedings and collections of articles published since 1991. Information on how to access the table of contents of GIS journals or search for journal citations and abstracts through commercial databases is also available at this site.
http://wwwsgi.ursus.maine.edu/gisweb/home.html

Spatial Odyssey; GIS Bibliographic Series: The GIS bibliographies list conference proceedings and various compendia of interest to GIS researchers. The citations are listed in order of appearance within the proceeding or compendium. A comprehensive list of publications indexed in the GIS Bibliographic Series is available.
http://wwwsgi.ursus.maine.edu/gisweb/biblio/home.html

Starting a County GIS Committee: Tips on starting a county GIS committee; Why, how to begin, who to include, what to expect.
http://www.oh.nrcs.usda.gov/waterres/county_gis_committee.html

"The use of GIS for monitoring and predicting urban growth in east and west St Paul, Winnipeg Manitoba, Canada" by S. Hathout
http://www.idealibrary.com/links/doi/10.1006/jema.2002.0596/pdf

Utilizing GIS for Emergency Planning and Beyond: by Rebecca (Becky) Ault, Pembina County Emergency Manager/911 Director "Pembina County has digitized road information and incorporated resident addresses for the 911 system. The County has automated the link between its 911 database mapping system, generating a map of the location of the caller. Route identification for responders is automated. A fax feature was implemented for emergency responders enabling them to receive a map of the call location as well as other information the dispatcher may send. What started as a project for the 911 system has evolved into a multiple department, multi-function system. This paper will attempt to show participants how digitized mapping can aid in emergency planning and also how it can be used in day-to-day operations in multiple departments." *http://gis.esri.com/library/userconf/proc02/pap0638/p0638.htm*

What a Basic County GIS includes: article by Kurt H. Schindler, MSU Extension
Land Use, Community Development Area of Expertise, Michigan State University Extension
Land Use Series - WEXF0015 , 01/25/02 *http://www.msue.msu.edu/imp/modlb/morefile/GIS.pdf*

6- Where to find GIS Software and GIS Tutorials

a- GIS Software

Erdas Products *http://www.erdas.com/home.asp*

ER mapper *http://www.ermapper.com/*

ESRI: GIS Software *http://www.esri.com/software/index.html*

Geographic Analysis and image processing software. Clark Labs *http://www.idrisi.clarku.edu/*

GRASS GIS (Geographic Resources Analysis Support System) is an Open Source/Free Software Geographical Information System (GIS) with raster, topological vector, image processing, and graphics production functionality that operates on various platforms through a graphical user interface and shell in X-Windows. It is released under GNU General Public License. *http://www3.baylor.edu/grass/*

Intergraph mapping and GIS solutions *http://www.intergraph.com/gis/*

Mapinfo *http://www.mapinfo.com/*

Mapmaker Free GIS download *http://www.mapmaker.com/*

Manifold systems *http://www.dnai.com/~manifold/products/products_set.html*

NGS PC Software *http://www.dnai.com/~manifold/products/products_set.html*

PROGIS Geo-INFOtainment *http://www.progis.co.at/English/default.asp*

Synergen GIS (Geographic Information System) Synergen GIS is said to coordinate assets based on geographical location information for buildings, equipment, fleet vehicles, piping, etc. Relationships between these data become more apparent when presented in an integrated visual format, enabling better and more accurate decision-making, improved organizational communication, and enhanced employee productivity. *http://www.synergen.com/overture/gis.html*

TAPSOFT: MapGuide includes tools to create, publish, and update online GIS and spatial data. *http://www.tapsoft.com/mg_toolset.html*

Tool kit homepage *http://www.itc.nrcs.usda.gov/toolkit/*

WATFLOOD Hydrologic Modeling (GIS and Hydrology)
http://sunburn.uwaterloo.ca/Watflood/

b- GIS Tutorials and technical information

Follow-up Reference Guide to Understanding GIS: The ARC/INFO Method
http://ice.ucdavis.edu/local/gis/arctutin.html

GIS Analysis with ARC-INFO: This is an introductory course in ARC-INFO. Here you will find a simple tutorial on using the ARC-INFO GIS. You can browse it as a lesson or download the files and work through the analysis in ARC-INFO yourself, using this as an on-line tutorial. *http://www.geog.buffalo.edu/arcinfo/aiwwwtut/ARChome.html*

NCGC (National Cartography and Geospatial Center): Technical Information about how to use software and data. *http://www.ftw.nrcs.usda.gov/ncg/ncg_technote.html*

NCGC's Geospatial Data Branch Toolbox (GDB): Arcview, ArcInfo, Avenue, Aml, NT Utilities, UNIX, Utilities, Metadata *http://www.ftw.nrcs.usda.gov/gdb_toolbox/toolbox.html*

7- More GIS on the Web

a- GIS Web Pages

ACSM American Congress on Surveying and Mapping Originally named the National Congress on Surveying and Mapping when it was founded in June 1941, the society sought to better coordinate the nation's surveying and mapping activities. Later the name was changed to the American Congress on Surveying and Mapping to encompass members from Canada and South America. Today, although the majority continue to come from the United States, ACSM's members include more than 7,000 surveyors, cartographers, geodesists, and other spatial data information professionals working in both public and private sectors throughout the world. *http://www.acsm.net/*

CGIS Center for GIS Georgia Institute of Technology Center for Geographic Information Systems is an interdisciplinary research center focused on GIS technology applications, education, providing cutting-edge innovative solutions to diverse real world problems. CGIS professionals encompass a wide variety of academic disciplines, and GIS experience. CGIS serves as a leader and catalyst for the advancement of GIS technology for academic institutions, private industry, and the public sector. *http://cgis.gatech.edu/*

Geography network There are three categories of geographic content available on the Geography Network: data, documents, and resources. Each category has a number of content types. Search for data if you want to download, order, or add data or map services directly to your map. Search for documents if you are interested in map files, static map images, and geographic information. Search for resources if you are seeking links to external Websites, data clearinghouses, GIS-based Web applications, and geographic services.
http://www.geographynetwork.com/

Geo-place: The Website is a source for spatial information.
http://www.geoplace.com/default.asp

GIS Training and Application, USDA Natural Resources Conservation Service, National Cartography and Geospatial Center: Our Goal is to make NRCS employees aware of available GIS training courses and to utilize NRCS training materials and procedures.
http://www.ftw.nrcs.usda.gov/gistraining/

GISCafe *http://www01.giscafe.com/*

GIS Linx! This site has been compiled to provide GIS users with a quick and easy source of information on a variety of issues. With over 1,700 links, GISLinx provides an invaluable resource for all your GIS needs. *http://www.gislinx.com/*

GIS lounge About GIS, Learning GIS, Reference Center, Career/Job, Cartography, GIS Community, Data, Events, Forum, Free GIS, Fun, GPS, Industry, LBS, Maps, Mobile GIS, Netzines, Product Showcase, Programming & OS, Remote Sensing, Software, Web GIS, Features, Link Library. *http://www.gislounge.com/*

GIS Monitor: Ultimate Map/GIS directory. *http://www.gismonitor.com/*

International Geographic Union: Geographic information is crucial to the knowledge economy in the 21st century. But, despite the advancement of the geographical information technology, geographic information is still underutilized, especially in decision making in the public and private sectors. There is a need to educate students not only on the geographical information technology, but also the applications of geographical information to meet the challenges of the knowledge economy and to enhance the role of geographers in the knowledge economy era. *http://hkusuc.hku.hk/cupem/igugisc/*

National Center for Geographic Information and Analysis: The National Center for Geographic Information and Analysis is an independent research consortium dedicated to basic research and education in geographic information science and its related technologies, including geographic information systems (GIS). The three member institutions are the University of California, Santa Barbara; the University at Buffalo; and the University of Maine. The consortium was formed in 1988 to respond to a competition for funding from the National Science Foundation, and continues to receive much of its funding from that source. Total funding to the consortium amounts to approximately $5 million per year. *http://www.ncgia.ucsb.edu/*

Open GIS consortium: OGC is an international industry consortium of more than 230 companies, government agencies and universities participating in a consensus process to develop publicly available geoprocessing specifications. Open interfaces and protocols defined by OpenGIS® Specifications support interoperable solutions that "geo-enable" the Web, wireless and location-based services, and mainstream IT, and empower technology developers to make complex spatial information and services accessible and useful with all kinds of applications. *http://www.opengis.org/*

San Francisco Bay Area automated mapping association BAAMA Vision: BAAMA is the vital organization of GIS professionals in the San Francisco Bay Region that promotes partnerships and teamwork with users of GIS technology to improve our environment and community. BAAMA Mission: The mission of BAAMA is to be the primary forum of the San Francisco Bay Region geospatial community that provides education for professional development; networking opportunities; leadership, coordination, and representation - and has fun doing it. *http://www.baama.org/*

The Bureau of Land Management GEOSPATIAL Information Center
"This directory contains a miscellaneous collection of GIS utilities and some data files. The executable programs are in EXE (DOS/Windows) format. Included is a PC version of the public-domain GIS program MOSS (Map Overlay and Statistical System.) Also included are conversion utilities between some of the popular GIS and graphics formats (MapInfo, AutoCad, ESRI, Tiger, VPF, SDTS, and MOSS, and probably some others.) The programs were contributed by various parties and are in varying states of development. All material dates from 1998 or before. GIS data files include an outline map of the 48 states, with county boundaries, of Bureau of Land Management (BLM) district boundaries, of the coastlines of the world, and miscellaneous other sets. Origin and accuracy of the data is unknown." *http://www.blm.gov/gis/*

The Association of American Geographers (AAG) For 97 years The Association of American Geographers (AAG) has contributed to the advancement of geography. The AAG, a scholarly, nonprofit organization founded in Philadelphia in 1904, advances professional studies in geography and encourages the application of geographic research in education, government, and business. It promotes discussion among its members and with scholars in related fields, supports the publication of scholarly studies, and performs services to aid the advancement of its members and the field of geography. The AAG manages several funded projects. Among current projects and sponsors are the CD-ROM for United States Geography (National Science Foundation), Activities and Readings in the Geography of the World (National Science Foundation), the Visiting Geographical Scientist Program (Gamma Theta Upsilon), Course Modules on Human Dimensions of Global Change (National Science Foundation) and Global Change in Local Places (National Aeronautics and Space Administration). Planned projects include one focusing on the research into the learning of geography and one that will develop instructional materials for the middle school world geography. *http://www.aag.org/*

The Association of Geographic Information The objective of the AGI is to maximize the use of GI for the benefit of the citizen, good governance and commerce. The AGI pursues these aims through a wide range of activities including lobbying, an active Website, a number of publications, specialist meetings and seminars throughout the country. These are all supported by our annual conference and trade exhibition. *http://www.agi.org.uk/*

The Document Conversion Resource Center: Welcome to the Document Conversion Resource Center, the definitive Website for information on: Scanning, CAD Conversions, GIS Databases and Map Conversions. *http://www.webcom.com/imt/home/*

The GIS Portal It is your Source for Mapping Technology since 1994. The GISPortal (also known as Great GIS Net Sites!) is one of the top Websites for Geographic Information System (GIS) industry information. If you like maps, mapping technology, cool on line 3D mapping software, and the best look at the GIS market anywhere, you've found the right place! *http://www.gisportal.com/*

The imaging and geospatial information society The mission of the ASPRS is to advance knowledge and improve understanding of mapping sciences and to promote the responsible applications of photogrammetry, remote sensing, geographic information systems (GIS), and supporting technologies. *http://www.asprs.org/*

TIGER, Topologically **I**ntegrated **G**eographic **E**ncoding and **R**eferencing system. U.S. Census Bureau. *http://www.census.gov/geo/www/tiger/*

University Consortium for Geographic Information Science The University Consortium for Geographic Information Science (UCGIS) is a non-profit organization of universities and other research institutions dedicated to advancing our understanding of geographic processes and spatial relationships through improved theory, methods, technology, and data. UCGIS membership is open to all U.S. academic and research organizations, as well as other organizations, that meet the membership criteria listed on the Membership page. Member Institutions will have the

opportunity to participate in reviewing and setting national research priorities in GIS specialties. *http://www.ucgis.org*/

Urban and Regional Information Systems Association The Urban and Regional Information Systems Association (URISA) is a non-profit association of professionals using Geographic Information Systems (GIS) and other information technologies to solve challenges in all state and local government agencies and departments. URISA is considered to be the premier organization for the use and integration of spatial information technology to improve the quality of life in urban and regional environments. Through its international, national and local chapter operations, URISA serves nearly 7,000 professionals worldwide. *http://www.urisa.org/*

USGS National Mapping Information National Mapping Information
http://www-nmd.usgs.gov/

b- GIS LINKS

GIS Resources Over the Web *http://unr.edu/homepage/daved/gislinks.html*

Nice Geography Sites: This is a collection of examples of geography-related sites all over the world. If you know a nice server, find an obsolete link or you have any comments, please let me know. *http://www.frw.ruu.nl/nicegeo.html*

The GIS gateway US Census Bureau *http://www.census.gov/ftp/pub/geo/www/gis_gateway.html*

Wisely's GIS Yellow Pages *http://sunflower.singnet.com.sg/~wisely/gislist.htm#A*

Yahoo GIS
http://d4.dir.dcx.yahoo.com/science/geography/geographic_information_systems__gis_/

The Northeast Regional Center for Rural Development
The Pennsylvania State University
7 Armsby Building
University Park, PA 16802-5602

814/863-4656; 814/863-0586 FAX; ***nercrd@psu.edu; http://www.cas.nercrd.psu.edu***