



Wisconsin

1. Organizational Approach to GIT:

The Wisconsin Division of Forestry (<http://www.dnr.state.wi.us/Org/land/forestry>) in the Department of Natural Resources (DNR) (<http://www.dnr.state.wi.us/>) has used GIT extensively for several individual applications and has an enterprise-wide approach to its implementation. The Division works with the GIS Services Section of DNR's Bureau of Enterprise Information and Technology Applications to develop and support GIS applications, which are then used by field staff and analysts. The GIS Services Section provides most GIS services for the Division, although some are acquired through contracts for with external providers. Currently, the Division is contracting GIS and remote sensing (RS) expertise from the GIS Services Section, from which a GIS Project Leader is assigned to support the Division's efforts in the development and implementation of aerial photography and GIS applications. The Division maintains a GIS Coordinator position; however, it is currently vacant. Responsibilities of the Coordinator position include coordination of all GIS/GIT activities for the Division, including contracting for service providers within, and outside of DNR. In light of the position's vacancy, assistance is provided by the DNR GIS Project Leader. Currently, the Division's Section Chief for Forestry Program Support is its lead GIT contact. The Section Chief's responsibilities include direct supervision of support staff in the Division, including the GIS Coordinator. Under the vacancy, the Section Chief works with the GIS Project Leader. It is anticipated that the Coordinator position will be filled in the near future. GIS support for regional Division staff is available through DNR's central office. However, this approach is not optimum for adequate GIS support of these regional staff, so DNR is piloting two regional support positions to establish permanent support positions in regional offices. The Division is developing an IT Strategic Plan which will direct GIT activities (<http://www.dnr.state.wi.us/org/at/et/>). At the same time, DNR is implementing an enterprise-wide approach to data, as discussed below. The current planning effort addresses the need to train and develop GIT uses in regional and field offices, as well as in the central office. In addition to the Division, county forestry departments, such as Bayfield County, also use GIS.

2. GIT Applications and Data Utilized:

The Division uses GIS and GPS generally for a variety of forestry applications, including **forest characterization**, such as inventories; **assessment** and mapping; timber management on **state lands**; and **fire** mapping. GIS is also used for **forest health** (insect and disease); **wildlife** habitat inventory and wildlife and vegetation ecology monitoring. Digital orthophotos are used in most applications. Furthermore, the Division uses infrared aerial photography for management plans on **private lands** and **fire** applications, as well as satellite imagery for **land cover** applications. Cooperation with federal agencies include efforts that developed ecological classification systems consistent with the National Hierarchical Framework of Ecological Units (NHFEU), and Albers and Omernik approaches to projection and ecoregion mapping.

A project to automate forest compartment stand maps for the six major state forests was completed with the GIS Services Section in 1994. The automated stand maps were developed using SPOT data and infrared aerial photography and installed at field offices in each of the state forests with appropriate hardware and software to give field foresters the ability to update them and tabulate data compiled for individual stands. These changes are then uploaded to DNR's central database. The Division and DNR also participated in development of the Wisconsin Initiative for Statewide Cooperation on Landscape Analysis and Data (WISCLAND) (<http://www.dnr.state.wi.us/org/at/et/geo/data/wlc.htm>), a voluntary partnership of public and private entities facilitating the development of several statewide themes. WISCLAND coordinated the completion of a statewide rural **land cover** dataset interpreted from LANDSAT-7 Thematic Mapper (TM) images.

The Division has a full suite of ESRI software products for GIS, including ArcView, ArcInfo, ArcSDE, and ArcIMS. The RS processing software used is ERDAS Imagine. Additionally, DNR acquires aerial photography of the state every two years. The photos are infrared, black and white leaf-on with a scale of 1:15,840 and are available from DNR's website. Satellite imagery, including SPOT panchromatic, LANDSAT TM and Space Imaging panchromatic data, is also used on a project-specific basis. Some of the geographic data used by the Division is internally created, while other data is obtained from DNR and outside contractors. Most GIS services for the Division are provided by DNR's GIS Services Section, although some GIS services are acquired through contracts for with external providers.

Available statewide data in enterprise ArcSDE include: a 1:24,000-scale representation of the Public Land Survey System, a 1:24,000 hydrology layer derived from 1:24,000 scale U.S. Geological Survey (USGS) quadrangle blue lines, and a 1:24,000 DNR Managed Lands (ownership) layer. A current DNR effort is underway to "hang" existing project and tabular Oracle databases to these framework layers for enterprise solutions for data sharing and development via an ArcIMS infrastructure. As mentioned above, the Division is currently developing an IT Strategic Plan to address these issues according to DNR's long term IT Planning efforts (<http://www.dnr.state.wi.us/org/at/et/>). In addition, DNR has used a satellite technology software program called F1 Guard in a pilot study to determine its effectiveness in providing data solutions for forestry applications.

3. Statewide and Other GIT Linkages:

Two Wisconsin organizations that serve in statewide GI/GIT coordination roles are the Office of Land Information Services (OLIS) (<http://www.doa.state.wi.us/olis/index.asp>) and the State Cartographer's Office (SCO) (<http://www.geography.wisc.edu/sco/>). OLIS is located within the Department of Administration (DOA) and is the focus of GI/GIT activities in Wisconsin state government. OLIS provides administrative support to the Wisconsin Land Information Program (WLIP), which establishes policy, sets standards and provides funding to local governments to modernize their land records and GI/GIT activities. Additionally, OLIS includes a GIS Service Center that provides GIS services to DOA and other state agencies by request and/or through contracts. The SCO is a unit of the University of Wisconsin-Madison, and provides several functions, including serving as an information and data clearinghouse.

Several groups specifically address GI/GIT; however, the Wisconsin Land Information Board (WLIB) serves as the lead GI/GIT group in the state and manages the WLIP. The Board and program are supported by OLIS staff, which primarily review state agency and county modernization plans and administer the distribution of WLIP grant funds to counties. The Wisconsin Land Information Association (WLIA) is a private, non-profit, grassroots organization of professionals, including individual, corporate, and non-profit members. WLIA shares information through sponsoring annual meetings, hosting special workshops, and publishing a quarterly newsletter (<http://www.wlia.org/>). The Division is connected to the state GI/GIT infrastructure through DNR and participation in WLIA.

The Wisconsin Land Information Clearinghouse (WISCLINC) is the state gateway to GI and metadata, related land and reference information, and the Wisconsin agencies that produce or maintain these items. WISCLINC is also a registered node in the web of NSDI clearinghouses (<http://wisclinc.state.wi.us/>). A new effort is the Wisconsin Land Information System (WLIS), which is envisioned to be an Internet-based system that will provide access to land information distributed throughout all levels of government. One of the primary initial applications of WLIS will be in the support of locally based comprehensive planning for "Smart Growth" activities.