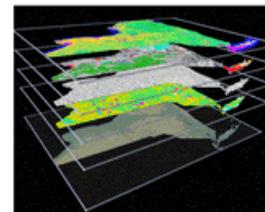# A Compendium of Community Models for GIS Development

A Quality Communities Partnership Project

Towns of Amherst and Clarence || Broome County || Town and Village of Camden
Town of Colonie || Town of Plattekill || Ulster County || Warren County

Quality Communities Initiative

The Quality Communities Initiative demonstrates New York State's commitment to working with local government leaders and community organizations to find smart, innovative solutions to strengthen our economy and environment, and improve the quality of the place we call "home." There were several recommendations made to achieve the goals of this initiative, one being to support the development of GIS in Communities across the state and encourage membership in the GIS Data Sharing Cooperative. One of the methods of accomplishing this is to present examples of how GIS is used in municipalities. We hope that these models, which provide concise "how to" descriptions of differing uses of GIS, will inspire development of new programs and assist current users of GIS as well.

What is GIS?

A GIS is an electronic information system that analyzes, integrates, and displays information based on geography. GIS systems have powerful visual display capabilities that present the results of analysis on maps at a wide variety of scales, ranging from very large (accurate to within inches) to very small (accurate only in broad overview). GIS is regarded as the best technology to understand and solve problems associated with data whose common attributes are related to place and geography.

What is a Cost-Benefit of GIS?

Determining the cost-benefit of an investment in GIS is an important and often difficult undertaking. One of the reasons for the difficulty is that GIS programs often allow communities to do things they have not been able to do before--therefore there is no obvious basis for before and after comparison. Nevertheless, the costs and benefits of a GIS program can be identified and estimated and this kind of assessment should help you make sound investment decisions. Some of the costs to consider include: a feasibility study or needs assessment, hardware, software, maintenance contracts, data entry, data transfer, data purchases, data development, training and technical support for system users, supplies, overhead such as rent and utilities, and salaries. Benefits are much more difficult to quantify than costs and they depend on the applications you will run. Some common benefits are increased revenue from making land parcels more productive; decreasing the costs of providing some public services; attracting additional commercial activity and jobs; increasing the efficiency and timelines of public services such as fire protection; and preventing or discovering the cause of health problems stemming from conditions of the environment.

What can GIS do for my Community or Organization?

A well-designed GIS can help you answer questions like these:

- Where are the most desirable locations in our community to locate a new business or recreational facility?
- What is the most efficient route from the fire house to a fire at the Industrial Park at various times of day?
- Is there a relationship between the location of an old dump site and the incidence of childhood cancer nearby?
- How has the habitat of the white tail deer changed over the last five years and what is causing the change?
- What intersections have been the site of personal injury accidents in the past three years?
- How will a proposed manufacturing plant affect our community's water supply?

The value of GIS and spatial data can be seen most dramatically in applications like these that promote economic development, public health and safety, and environmental quality. Moreover, these applications share many common information needs, so information collected by one organization can often be reused by others, thus reducing the cost of the most expensive GIS resource--the information itself.

Community Models

(Summer 2003)

The Community Model descriptions below are brief highlights of these programs with a link to the more comprehensive outline. The models all handle GIS a little differently and hopefully you will see one or more which can be of benefit to you in your efforts to develop or enhance your GIS programs. Contact information is also included for any questions you may have.

Town of Amherst and the Town of Clarence

Towns of Amherst and Clarence: The Amherst and Clarence Youth Planning Project's primary objective was to encourage students to participate in the ongoing comprehensive planning efforts in their communities. By involving students in the process of planning using GIS and other means, town officials hoped that students would develop a greater understanding and appreciation of the influences and impacts of planning decisions on their hometown and surrounding communities.

Broome County

This program involved early on coordination of GIS program development with a Master Plan for sustainable economic development. It demonstrates a successful collaborative effort with community organizations. GIS included; brownfield identification as well as parcel information, transit route locator, road information, census tract, and block locator information.

The Town and Village of Camden - located within the Tug Hill Region

This model highlights a GIS Starter Kit created by the Tug Hill Commission for use by the Town and Village of Camden in a pilot capacity. The Kit includes customized GIS data on a CD as well as programming to manipulate the data. Training on use of the Kit is also provided. The Commission is a member of the NYS Data Sharing Cooperative and serves as an Intermediary Custodian of the data from the Cooperative. The Commission downloads it, reprojects it and passes it along to Cooperative member municipalities in the region. The Kit is user friendly and serves primarily as a reference for planning and zoning administration.

Town of Colonie

This program got off the ground in 2 years with a good planning effort and limited staff. At this time the GIS program contains volumes of valuable data and all Town departments can access the information online. Residents can also view parcel information and other geographic information online. The asset management program could be a good model for other Towns required to report for GASB34, a new federal finance regulation for the reporting of assets by municipalities. This may also serve as a quick-start model under certain circumstances.

Town of Plattekill

The GIS program highlights a collaborative effort in starting a GIS program with surrounding municipalities. The development focused on zoning, wetland and property use data which was used to build a master plan. They realized larger entity support through data sharing with the County and State and took advantage of the Ulster County Environmental Management Council Training program.

Ulster County

This program highlights a successful partnership with municipalities and an effective community oriented training program operated by the County Environmental Management Council which includes the school district, faculty, students and local officials.

Warren County

This program has many strengths and is also a great model for how a larger entity can assist smaller ones to develop their own GIS programs. The county's GIS is available to all County and municipal employees over the Internet or Intranet. Activities such as training, data, and map production to name a few, are available to employees over the Intranet. This model also demonstrates successful management of municipal GIS implementation from the County level.

A Compendium of Community Models for GIS Development

Project Name: Amherst and Clarence Master Plan Curriculum Project
(Summer 2003)
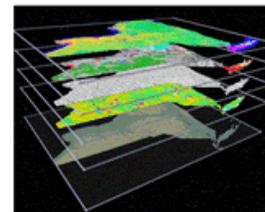
GIS Municipal Model Project Outline

Municipalities: Town of Amherst, Town of Clarence

Project Name and Description: Amherst and Clarence Youth Planning Project

The Amherst and Clarence Youth Planning Project involved the successful collaboration of the towns of Amherst and Clarence, located in Western New York , the State University of New York College at Buffalo , and four school districts: Amherst , Clarence, Sweet Home, and Williamsville. The Project's primary objective was to encourage students to participate in the ongoing comprehensive planning efforts in their communities. By involving students in the process of planning, town officials hoped that students would develop a greater understanding and appreciation of the influences and impacts of planning decisions on their hometown and surrounding communities. Students were also encouraged to understand the interrelationships between the communities' natural and social attributes. Linked to the ongoing comprehensive planning processes in both towns, involving youth in the planning process was intended to broaden public participation while providing students and their teachers with exciting opportunities to apply classroom knowledge to the real-life situations occurring within and between their communities.

Teachers from the four districts worked with community planners and Buffalo State College faculty to develop lessons in a variety of subjects such as government, social studies, science, art and technology. Each lesson was designed to involve students in activities related to comprehensive planning and community development.

An important feature of the Project was the development of a website to provide teachers and students with ready access to community planning and project information. This information, the teacher's lesson plans, and other information was posted to the Website. The Website will be maintained and updated in the future to encourage continued student involvement in their community. The Website is located at:

http://www.amherst.ny.us/archive/govt/planning/comp_plan/schools/intro.htm

The Internet is an emerging medium for accessing public information and eliciting public participation. The Project Website featured email correspondence with public officials and an online (web-based) geographic information system (GIS), the Youth Map Machine. Teachers were provided with training on the use of GIS, and the towns developed online GIS maps and applications. Students learned to navigate the GIS system, providing them with an understanding of the geography of their community and its relationship with the neighboring community. In addition, the Project provided the towns with the necessary hardware and software to develop and maintain an interactive web-based mapping system. These resources have been used to develop and implement several applications that are linked to the Website, improving and enhancing opportunities for public participation in the two communities.

Project status and schedule:
Project initiation January – March 2001
Procure and provide technical support January 2001 – December 2003
Summer 2001 Teacher workshop June 2001
2001 – 2002 Project development & support 2001 – 2002 School Year
Summer 2002 Teacher workshop July 2002
2002 – 2003 Project support & implementation 2002 – 2003 School Year
Project finalization December 2003

Resources and funding sources:
Quality Community funds expended: $42,127
Participant direct and in-kind expenses: $67,022
Total project cost: $109,149

Involved Agencies, and state and local government/academic and private sector partners:
Buffalo State College – provided GIS, planning, and curriculum development instruction, as well as use of college GIS computer labs.

Supporting Parties:

Williamsville Central Schools , Amherst Central Schools , Clarence Central Schools , Sweet Home Central Schools

Benefits to the Municipality and Community:

Students were given the opportunity to learn about and participate in planning issues relevant to their community and that of the neighboring town. The intricacies of planning, the difficulty in balancing multiple community goals, and the application of technology were demonstrated to students through various activities and instruction. It is believed that the interest shown by students in these activities can be sustained and expanded upon, resulting in the students becoming more aware and involved in their communities. Both towns made significant progress toward the goal of increasing involvement by extending participation to youth, a group often overlooked in community planning.

Member of Data Sharing Cooperative:

Amherst – Yes

Clarence – No

Collaborative Effort:

The collaborative efforts among the various partners proved vital to the Project's success. Teachers were given an opportunity to work with teachers from other districts and schools, as well as personnel at Buffalo State College and the Towns of Amherst and Clarence. In addition, several teachers from different disciplines (such as science, history, and art) worked together on developing and teaching lesson plans. The towns also worked together with Buffalo State College personnel. This positive legacy of collaboration created relationships that can be built upon in future activities and initiatives. It may also prove to be a model for others interested in pursuing a similar project.

Model Features:

The products developed through this Project will continue to be valuable educational resources. Because unit and lesson plans were developed using New York State standards, they are transferable to other schools in the state. The Website and Youth Map Machine are helpful information resources on community planning and GIS geared towards middle and high school aged students. In addition, since the New York State Social Studies curriculum emphasizes the use of original documents and local resources in instruction, the website content will serve as an invaluable resource for teachers. Several schools purchased ArcView8x licenses with funds provided through the Grant. The schools can use ArcView8x to supplement the Youth Map Machine. The towns can now provide other digital geographic resources directly to the schools to help students learn more about their community and become more active participants in planning for its future.

Keys to Success:

There were several keys to the success of the Amherst and Clarence Youth Planning Project. The Project had the support of elected officials in both municipalities, as well as school administrators in the four school districts. Also, because the towns of Amherst and Clarence had collaborated on previous projects, this experience could be drawn upon in participating in the Youth Planning Project. Buffalo State College also proved to be an important educational and technology resource and partner in the Project's success. Finally, the Town of Amherst Office of Information Technology provided invaluable experience with technological resources and capabilities that were essential to the development of the website and online mapping technologies.

Amherst and Clarence Demographics:

Location: Western New York north of the City of Buffalo–suburban communities
Population: Town of Amherst - 116,510 and Town of Clarence - 26,123 (2000 Census)
County: Erie

Contact:

Daniel Howard, Associate Planner & Project Manager
Town of Amherst Planning Department
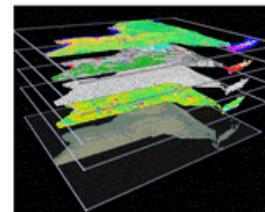5583 Main Street
Williamsville , New York 14221
Telephone: 716-631-7051
Fax: 716-631-7153
Email: dhoward@amherst.ny.us

A Compendium of Community Models
for GIS Development

Project Name: Broome County GIS Development Program
(Summer 2003)

Municipality: Broome County

Project Description:

Broome County coordinated implementation of its GIS program with a concurrent project involving development of a dynamic plan for sustainable economic development (BCPlan). The economic development plan is online at: http://www.thebcplan.com. The GIS program has had a significant impact on various aspects of the BCPlan, including Brownfield redevelopment activities, commercial and industrial site inventories, and downtown redevelopment initiatives.

The GIS program was initiated with grants from The State Archives and Records Administration (SARA) to fund preparation of a GIS implementation plan and acquisition of equipment, training, and application development. Development of a County GIS program was accelerated by preparation of the BCPlan, the first countywide planning effort in decades. The BCPlan included heavy emphasis on Brownfield redevelopment, and the County's GIS played an important role in this element of the plan.

To foster redevelopment of Brownfield sites, the Broome County Environmental Management Council created a Brownfield Subcommittee. With assistance from the Planning Department, the Brownfield Subcommittee created a database of over 80 sites of known or suspected contamination in Broome County. This database of potential Brownfield sites was then linked to the County's growing GIS. Using this inventory with its GIS component, the County was able to secure a $200,000 grant from the U.S. Environmental Protection Agency for investigating sites of suspected contamination.

As the Planning Department built its GIS, it reached out to various County agencies to market its new capabilities. The Planning Department worked with these agencies to create data layers and GIS applications targeted to their needs. Applications created and available internally include: Add Layers, Auto Layout, Parcel Information System, 1999 and 2002 Aerial Photography Viewers, Transit Route Locator, Road Information System, and Census Tract and Block Locator. As a result of these applications the GIS is easier to use for County staff, and is available at remote locations via the County's Intranet. Planning staff has begun to provide training and Intranet access to local municipalities.

Now that a number of internal applications are running successfully, the Planning Department has begun to develop systems for the public to access via the Internet. The first public system unveiled by the County is the Voting Information System. Visitors to the County's website can enter their address and learn the location of their polling place and the names of all of their elected representatives with links to their official home pages. The Broome County League of Women Voters has praised this system as an ideal means of linking voters to the elected officials. The Voting Information System is available from this link:

http://www.gobroomecounty.com/planning/PlanningGIS.php

Planning is now preparing to go live with a public version of its Transit Route locator for riders of the BC Transit system. The rollout of user-friendly applications, aimed at the general public, has helped justify the initial investment in the project.

Current priorities for GIS development include building infrastructure data layers, including utilities, water and sewer, and telecommunications. Additionally, Broome County is working in partnership with Tioga County, Broome County Soil and Water Conservation District and local MS4 municipalities to implement a coordinated stormwater management program to meet the NYS Dept. of Environmental Conversation (DEC) Stormwater Phase II Regulations requirements. One of the major activities to be undertaken in the near future is creation of GIS data layers of stormwater system features. This partnership is in the process of forming a formal coalition through intermunicipal agreements. The Planning Department intends to apply for DEC funding on behalf of the coalition to begin these initiatives.

Project Status and Schedule:

Work Item	Status
GIS data development (using BU Geography students)	Completed

Equipment and software purchase (using the BU Geography Department for training)	Completed and installation, training
Internal Application Development	On-going
Economic Development Plan (BCPlan)	Completed
Creation of GIS Administrator Position	Completed
Intranet/Internet Mapping Application Development	On-going

Resources/Funding Sources:

Broome County received two SARA grants - one in 1999 to fund a GIS implementation plan and a second in 2000 to partially fund hardware and software purchases, training and application development. SARA provided a total of $91,617. The NYS Quality Communities Demonstration program provided $100,000 for development of the BCPlan, with additional funding provided by the private sector.

Involved Agencies:

The Broome County GIS was built with the active involvement of a variety of agencies and organizations. In addition to the Planning Department, the following organizations were central to the development of the program: Broome County Information Technology, Broome County Environmental Health, Broome County Division of Real Property, and Binghamton University Geography Department. Additionally, the County has fully supported GIS development efforts through the allocation of funds for aerial photography, mapping consultant services, software and hardware support and purchases, and the creation of a full-time GIS Administrator position.

Supporting parties are:

As the program was developed, support was garnered from a broad base of potential users. This user base includes the following:

Broome County Environmental Management Council Brownfield Subcommittee
Broome County IDA
Broome County Emergency Services
Broome County Board of Elections
Broome County Transit
Broome County Towns, Villages, and City

Benefits to the Community:

GIS provides efficient information management, decision making and cost savings to the County and its constituents using the services. It is also an efficient land use management and economic development planning tool.

The BCPlan's goals are to incorporate concepts of intermunicipal cooperation, public/private partnerships, improved quality of life, revitalization of existing communities, and protection of open space and natural resources through Brownfield redevelopment in its strategy for future growth and development.

Member of Data Sharing Cooperative: **yes**

Collaborative Effort:

A collaborative effort was demonstrated by the partnership with Binghamton University Geography Department for initial GIS training and application development. Broome County also partnered with NYSEG to acquire new digital aerial photography. The BCPlan's partnership with the Broome County IDA, Binghamton University and the private sector was also established. The Planning Department continues to broaden its partnerships with local municipalities, adjacent counties, and regional organizations.

Model Features:

Model features include the collaborative efforts between business, local governments, the academic institutions, and the community.

Keys to Success:

The GIS project has had two keys to success. First was the full support from the County Executive and Legislature at the start of the project. Second was initiative shown by the Planning Department to build on this initial support to create a broad user base for GIS.

Demographics:

Location: Southern Tier
Population: 200,536

Planning Division Heads:

Commissioner
Honorable Julie Sweet
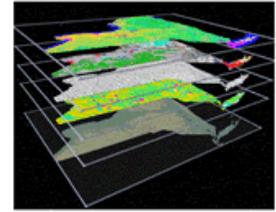(607) 778-2114

Chief Planner
Frank Evangelisti
(607) 778-2114

GIS Administrator
Doug English
(607) 778-2114

A Compendium of Community Models
for GIS Development

Project Name: The Tug Hill Commission Pilot GIS Program
(Summer 2003)

Municipalities: Town of Camden and Village of Camden located within the Tug Hill region.

Project Description:
The Tug Hill Commission Pilot GIS program offers a GIS Starter Kit, which has been utilized by both the Town of Camden and the Village of Camden. The program is small, and is used primarily as quick reference for planning and zoning administration. The program is operated by the Codes and Zoning Enforcement Officer for the Town and Village.

The Tug Hill Commission created a free GIS Starter Kit for the Camden jurisdictions and also provides training on the use of the Kit. It contains the free ESRI ArcExplorer viewer and customized GIS data on a CD. It is user-friendly and has become more and more popular with the other towns in the region. Approximately ten towns and seven villages are using the program for their GIS needs. The municipalities must have some computer savvy and their own equipment before getting a GIS CD. Tug Hill serves as an Intermediary Custodian of the data from the NYS Data Sharing Cooperative. As an Intermediary, they can download any data, reproject it and pass it along to Cooperative member municipalities in their territory.

Project Status and Schedule: Demand within the Tug Hill Region for the kit is increasing steadily.

Barriers and Impediments/How Overcome:
There is now a high demand for the Starter Kit, but limited staff at Tug Hill to provide the training and technical assistance needed. They deal with the demand as their resources allow. Tug Hill is hoping that other organizations within the region will help with technical assistance and support in the future.

Resources/Funding Sources:
The Tug Hill budget supports the Commission's GIS efforts. The Town and Village bought the equipment for Codes needs and were reimbursed in 2000 through the Code Enforcement program. They put the Codes and GIS programming on this equipment.

Involved Agencies:
The Agencies involved are the State Data Sharing Cooperative, the Town and Village of Camden, the Tug Hill Commission and the Northern Oneida County Council of Governments.

Supporting parties are:
Town and Village of Camden leadership support this project, along with the Tug Hill Commission.

Benefits to Community/cost savings:
The Camdens' zoning operation is much more efficient. The system provides for a more accurate and faster process and, in one case, eliminates most of the need for the NYS Dept. of Environmental Conservation to perform a wetlands delineation. Personnel costs are contained in that there is only one system operator for both municipalities. GIS information and services are now available to residents free and from one location, saving them time and money.

Program Costs:
Tug Hill experiences the costs of staff and time, along with CD costs. Service is free to the communities. Costs to the municipality include equipment and personnel to operate the system. Service to the residents of the municipalities is free.

Member of Data Sharing Cooperative: Both Camden municipalities are members. They access Cooperative data through the Tug Hill Commission.

Collaborative Effort:
The Tug Hill Commission working with the Camdens and other municipalities, and them in turn working with each other, to build and maintain a GIS demonstrates a solid collaborative effort. One person working for both Camdens demonstrates an efficient use of resources.

Model Features:
The Tug Hill Commission as Intermediary Custodian between the NYS Data Sharing Cooperative and the member municipalities may serve as a useful model for other similar entities to emulate. In addition, the simplicity of implementation and operation of the program is another incentive. This also is a good quick-start model for small municipalities to implement GIS at fairly low cost, with the assistance of an entity

like the Commission.

Keys to Success:

Educating the communities as to the benefits of GIS and the Starter Kit, prior to installation of the Kit, proved beneficial to project success. Tug Hill marketed the Kit at conferences, meetings and through a newsletter. The Commission provides the Kit, training and some technical assistance. This process simplifies and lowers the cost of entry into a GIS program for the municipalities, making it an attractive and beneficial venture. Leadership support in the municipalities, as well as personnel to operate the system, also contributes to the success of the program. The Kit is easy to operate, requiring a PC with Windows 95.

Demographics:

Location: Tug Hill Plateau - Central New York – West of The Adirondack Park
Population: Town of Camden-5,028; Village of Camden 2,330
Square Miles: 52

Contacts:

Tug Hill Commission
Matt Johnson
(315) 785-2380
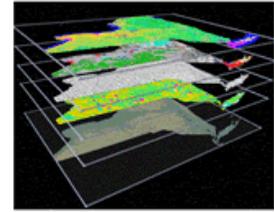http://www.tughill.org -- Matt@tughill.org

Town/Village of Camden and Town of Florence
Tyler Henry
Zoning and Codes Enforcement Officer
(315) 245-3136
henryfour@yahoo.com

A Compendium of Community Models
for GIS Development

Project Name: Town of Colonie GIS
(Summer 2003)

Municipality: Town of Colonie

Project Description:
In 1996 the Town of Colonie recognized the benefits and importance of a GIS system and implemented a program to evaluate and collect data in the Department of Public Works. Parcel data, road centerlines, water and sewer data was collected. In 2000, the Town established a full-time GIS Coordinator to oversee and direct all GIS activities in the Management Information Services (MIS) Department. The GIS has grown to include maps and layers for most Town departments including Dept.of Public Works, Planning, Parks, Police, Fire, and Emergency Medical Services.

Project Status and Schedule: Now that the GIS system contains so much valuable data, the number of projects and uses for GIS is almost unlimited. In 2001, GIS was introduced and made available to the public via an online mapping application located on the Town's home page at www.colonie.org. The public can quickly and easily view geographic data, obtain parcel information, search for property or locate information on school/fire/election districts, zoning and land use.

An asset management system will soon be implemented to track and maintain detailed asset infrastructure for DPW, water, sanitary, and highway departments. The application will be integrated into our existing GIS. This system will issue and track work orders, facilitate the inventory of physical assets, track maintenance history, assist in creating reports, and support inspections and tests including TV inspections, hydrant inspection, valve inspection, and hydrant flow tests. The asset management system will greatly assist in reporting for GASB34 – a new federal finance regulation for the reporting of assets by municipalities.

Other GIS goals include development of a highway tracking program that will allow the Town to electronically track road repairs, paving schedules, etc.

GIS has also been used for numerous project studies including airport noise, tracking pesticide use for West Nile virus, park expansions, and planning projects.

The system also provides town departments with the ability to print updated maps on demand, an invaluable tool that saves money, time and provides much improved and more accurate information.

Barriers and Impediments/How Overcome:
Initially GIS was viewed as a tool for the DPW departments with very limited broad range appeal. Once the scope of the system was broadened and GIS became more accessible to other departments, the benefits and advantages of this system were realized. The GIS Coordinator developed and conducted numerous in-house training programs to help department employees become comfortable with the system.

In the beginning of the data collection effort, serious thought was not given to the collection of metadata. As a result, much of the metadata had to be reconstructed.

Resources/Funding Sources:
GIS has been primarily funded through the Town's budget. In the beginning of system development, the IDA also provided some start-up funding. A SARA grant was also secured to obtain some of the initial software licensing.

Involved Agencies:
Most Town departments are involved in the continued development and maintenance of GIS. Outside agencies, such as the Industrial Development Agency, the Planning Board, etc. use GIS for ongoing planning activities.

Supporting parties are:
It was imperative that the Town leadership, including the Town Board and Supervisor, recognized the benefit of a GIS system. Without their support, GIS would not have been developed.

Benefits to Community/cost savings:
All Town departments can access GIS from their locations and most paper maps have been eliminated. Residents can also access parcel information and other geographic information online. Accurate, updated information is available on demand.

The Town has not yet conducted a cost savings study. However, the DPW has streamlined UFPO (Underground Facilities Protective Organization) responses. The town's water, sewer and highway departments have historically each dispatched an employee to an excavator's UFPO location requests to mark locations of their departments infrastructure (hydrants, manholes, catch basins underground pipes, etc.). These field inspections had not previously been coordinated, tripling the number of visits to the site and increasing the amount of time necessary before excavation can take place at the site. There were 5,300 UFPO requests in 2001. In 2002 the town began to use GIS to streamline this process when possible (due to the ongoing development of the Town's digital infrastructure systems). UFPO requests are mapped with all pertinent feature information. The current goal is to task one town employee to mark all infrastructure features where previously it necessitated three personnel. The combination of the water, sewer and highway data will eliminate more than 10,000 estimated trips. This will conserve considerable gas and staff time. The streamlining of the UFPO process constitutes a substantial economic benefit for the Town of Colonie's as a result of its GIS.

Program Costs: - not available.

Member of Data Sharing Cooperative: yes

Collaborative Effort:
The Town maintains general parcel data for the Villages of Colonie and Menands.

Model Features:
Benefits to the Town and community are a very strong feature. The Asset Management Program could be a model for other municipalities with large budgets for management of infrastructure and reporting. Overall planning and implementation of a successful GIS, with limited staff and within 2 years is a good model.

Keys to Success:
Good planning along with leadership support, adequate funding, partnering when needed contributed to a good program. Moving GIS away from DPW and into the MIS Department broadened the appeal for additional uses. Having a strong GIS Coordinator who provides effective training programs and clear goals also contributes to success.

Demographics:

Location: Capital District, Albany County
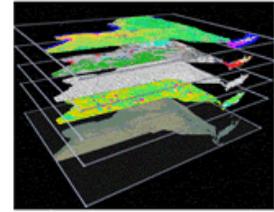**Population**: 80,000

Contacts:

GIS Coordinator
Robert Mateja
(518) 857-8178

MIS Director
Lisa Travis
(518) 783-2895

A Compendium of Community Models
for GIS Development

Project Name: Town of Plattekill GIS Program
(Summer 2003)

Municipality: Town of Plattekill

Project Description:
The program started 6 years ago when the Towns of Lloyd, Marlboro and Plattekill applied jointly for a GIS Feasibility Study Grant from the State Archives and Records Administration (SARA). They hired a consultant and Plattekill provided some in-house expertise in GIS as well. Plattekill concentrated its GIS development on zoning, wetland, and property use data, which was used in the creation of the Town's master plan. They secured much of their data from Ulster County, and hydrology data from the NYS State Data Sharing Cooperative. Some GIS training was provided by the consultant. Most of the training however came from the Ulster County training program which is free and managed by the Environmental Management Council (EMC).

Program Status and Schedule:
The program is up and running and is overseen by the part time Assessor who is also the full time GIS Coordinator.

Barriers and Impediments/How Overcome:
The length of time it took to get the program running—5 years, was a problem. Also, expanding and maintaining the data is a burden on the time of the full time GIS coordinator who is also the part-time Assessor for Plattekill and New Paltz. Other experienced in-house users relieved some of this burden.

Resources and Funding Sources:
The county with its training and data sharing programs was a great resource as well as the State Data Sharing Cooperative. SARA provided funding opportunities.

Involved Agencies:
Agencies involved were NYS State Data Sharing Coorperative, Towns of Lloyd and Marlboro, and the Ulster County EMC

Supporting Parties:
Support came from the Town leadership, the County, Towns of Lloyd and Marlboro, and the three Plattekill employees who had expertise in GIS.

Benefits to Community/Cost Savings etc.:
The EMC training program requires that a team comprised of the local government GIS person, a student, and a secondary school faculty member, take the training together. Classrooms are comprised of these teams of three. This is of great benefit to the academic as well as the local government communities and expands the resource base. The GIS data was also an effective time saving tool for the town in its efforts to build a master plan. Consistency, compatibility in programming and data among users, i.e. in-house and between the other two communities, created a compatible users environment.

Program Costs: Not available

Member of Data Sharing Cooperative: yes

Collaborative Effort:
Initial development of the program was undertaken by the three Towns who applied for the SARA funding for a feasibility study and also shared in the purchase of a plotter. Ulster County provided training in ArcView.

Model feature(s):

- The initial collaborative effort of the Towns to secure funding
- The development and use of GIS for master plan development
- The data sharing activity with the County and State
- The training program which included students and teachers from the community

Keys to Success:

Collaborative support structure
- Support from leadership
- Securing of funding and training resources.

Demographics:

Location: Lower Hudson Valley- Ulster county
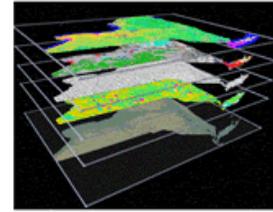**Population**: 9,000

Contacts:

Assessor and GIS Coordinator
Mike Dunham
for Plattekill and New Paltz
(845) 883-7331

A Compendium of Community Models
for GIS Development

Project Name: Ulster County GIS
(Summer 2003)

Municipality: Ulster County

Project Description:

This program was started in 1995 with funding from the New York City Dept. of Environmental Protection. A consultant was hired to provide initial training. Arc Info software was purchased and tax maps were converted from paper into digital format. Tax maps were digitized from 1999-2001. A tax maintenance package was also purchased. Ulster County has developed an Memorandum of Understanding (MOU) with the Towns of Lloyd, Plattekill, and Marlboro. The MOU states that they fund their own parcel conversion and the county will provide quarterly updates of tax parcel information along with technical support.

Program Status and Schedule:

Tax map conversion is complete. An emergency 911 management component was started in 2000 and scheduled to be completed in 2003. Digital maps containing streets, center lines, building footprints, driveways, addresses, etc will be produced. The county is also planning to offer user group format training to towns within the county—see "Training" below.

Barriers and Impediments/How Overcome:

Early equipment/software incompatibility problems may have been overcome with better planning.

Resources and Funding Sources:

- Initial funding came from the New York City Dept. of Environmental Protection.
- The State Archives and Records Administration (SARA) supplied funding for the map conversion project in1999.
- New York State GIS Data Sharing Cooperative supplied data.
- CUGIR- Cornell University Geospatial Information Repository also supplied data

Involved Agencies:

- Towns of Marlboro, Lloyd and Plattekill
- New York State GIS Data Sharing Cooperative
- New York State GIS Coordinating Body's Digital Orthophotography program

Supporting Parties:

Supporting parties included the County Legislature, Training Program-Local School Districts and faculty, and Non-profits.

Benefits to Community/Cost Savings etc.:

Decision making is easier and faster. Real Property offices are more efficient with subscription services in place. Training program: School districts and local government have been brought together for training resulting in schools receiving equipment and tools-see "Training" segment below.

Program Costs: Not Available

Member of Data Sharing Cooperative: Yes

Collaborative Effort:

An MOU with the Towns of Lloyd, Plattekill, and Marlboro states that they fund their own parcel conversion and the county will provide quarterly updates of Tax parcel information along with technical support. The County Environmental Management Council (EMC) provides free training programs to students, teachers and local government personnel(officials)-see "Training" segment below.

Model Feature(s):

- Collaborative effort with towns
- Successful use of data from State Data Sharing Cooperative
- Leadership support
- Community involvement-(schools and local govt) with creative training program

The training program may be replicable through organizations similar to EMCs and is a great example of management through volunteerism and collaboration with the community and the State to secure resources which are shared statewide.

Keys to Success:

- Leadership support and funding sources
- Collaborative arrangements with towns
- Using data sources of State and Cornell
- Effective training program through County EMC partnering with state, non-profits and schools.

Training Program:

Eight years ago the Environmental Management Council (EMC) became the County specified GIS training group. EMC developed a funding proposal and was funded by the New York State Dept. of Environmental Conservation (DEC) to create a regional environmental database and GIS education program. EMC utilizes a "Watershed Based Approach" and applies it through Service Learning practices. EMC formed and is the lead agency for the Mid-Hudson Service Learning Institute (MHI), which is a collaborative partnership sponsored and funded through the New York State Education Department and the Corporation for National and Community Service. Partners include; EMC, Ulster County Community College, Ramapo College of New Jersey, Kingston Schools, Ellenville Schools, Rondout Schools and Lower Esopus River Watch. Major program support was provided by the Environmental Systems Research Institute, LEICA Geosystems Earth Resources Data Analysis System, Clark University Software project IDRISI , Home Depot, WalMart, Lowe's, Agway, General Electric and Central Hudson.

EMC utilizes its county budget, in-kind services provided by its partners and financial support from corporate donors to leverage grant funds to support its Geographic Information Technologies (GIT) training program. Classes are free to teachers and students, government employees are charged for books and consultants pay a reduced fee. The training is community oriented and designed to deal specifically with local environmental and land use planning issues.

Preference for classes is given to groups that register as a team comprised of a teacher, a student and a local government official/staff person. Registering as a team qualifies the teacher to receive a free Schools and Libraries site license for ArcView, Image Analyst, Spatial Analyst and ArcPad. The team also receives a hand held Garmin GPS 12, a CD-ROM with training exercises, data and other resources. New York State teams are also eligible for Service Learning mini-grants up to $1,500 to help implement a Service Learning project in their school or community which utilizes GIT.

The program is offered locally in Ulster County to a statewide audience and opened to a national/international audience once a year through the Conference on Remote Sensing in Education (CORSE) in conjunction with Cayuga County Community College, the Institute for Applied Geospatial Technology and SUNY College for Environmental Science and Forestry.

To date over 200 teams (600 participants) have been trained and over 1,500 individual students for a total of 2,100 program participants.

Demographics:

  Location: Lower Hudson Valley
  Population: 177,749

Planning Dept Head: Herbert Hekler, AICP-

Contacts:

  Ulster County GIS
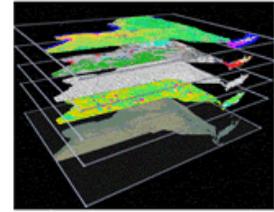 Rick Umble
  (845) 340-3004

  EMC/MHI Director
  Rick Fritschler
  (845) 687-0267
  rfrits@aol.com

A Compendium of Community Models
for GIS Development
Project Name: Warren County GIS
(Summer 2003)

Municipality: Warren County

Project Description:
In June of 1999, after more than a decade of struggling with tax parcel conversion issues, Warren County hired a full-time GIS Administrator. The GIS Administrator is located within the Planning Department, but works closely with Real Property, other county departments, and local municipalities in the County. Because most of the municipalities are small, rural communities with limited resources, the County has made a concerted effort to provide training, data, and customized GIS tools for use by town, City and Village employees. The County has assisted most of the municipalities in the County with setting up their own geographic information systems. All of the municipalities within the county use GIS regularly, either through a custom ArcView application at the desktop level, or through a custom ArcIMS application over the Internet. The Planning Department also provides GIS services to the other county departments through a custom ArcIMS application available over the county intranet, providing training, developing data, and assisting departments with map production and spatial analysis when needed.

Program Status and Schedule:
The County's GIS is fully operational and available to all county and municipal employees over the Internet or intranet through an ArcIMS application. Tax parcel mapping is up-to-date, regularly maintained in AutoCAD, and converted annually to a GIS format. The County has downloaded all available relevant data layers from Cornell University Geospatial Repository (CUGIR) and the New York State GIS Clearinghouse and has obtained data from the Adirondack Park Agency. Warren County has also begun to collect and develop its own data, including zoning, utility and public works infrastructure, and road centerlines. The Real Property Department, with assistance from the GIS Administrator, is beginning to convert and maintain its tax parcels in an ArcGIS Geodatabase format, which should enable GIS users to have more current parcel information.

Barriers and Impediments/How Overcome:
Warren County's GIS efforts began in the late 1980's under pressure from the New York State Office of Real Property Services to move its tax maps into compliance with state standards. The program floundered for more than a decade with a lack of GIS leadership at the County level, poor advice from consultants, problems with contractors, and hardware issues. Finally, in the late 1990's County leaders realized that they had invested a large amount of money into data development and had little, if anything, to show for it. The County formulated a three year plan for GIS and decided to hire a full-time GIS Administrator to help get the tax parcel project back on track and implement the GIS plan. Since 1999, the County has successfully completed the tax parcel conversion project, met all goals outlined in the initial plan, and is moving forward with a new set of objectives.

Resources and Funding Sources:
When the County's GIS efforts first began in the 1990's, the County received $12,000 from the Adirondack Park Agency's Local Planning Assistance funds. Recently, the County received $73,000 from the New York State Archives' Local Records Management Improvement Fund grant program, which it used to purchase hardware and software (including ArcIMS), procure training, and hire consultants to develop custom applications. In 1997, in anticipation of beginning a GIS program in the Planning Department, the County set aside $50,000 from its General Fund to establish a GIS Capital Fund, which was used to purchase hardware and software and partially fund the GIS Administrator's salary for the first year. Since then, the County has established a regular, yearly budget for GIS.

Involved Agencies:
Warren County and most municipalities within the County.

Supporting Parties:
The Adirondack Park Agency has provided monetary and technical assistance throughout the project. In the initial phases of the project, the state Office of Real Property Services helped convince the County Board of Supervisors that it was on the right track with GIS. The County Board of Supervisors has been very supportive of the GIS effort. In addition, the County has worked closely with municipalities to provide assistance with selecting computer hardware, training, data, and customized GIS tools.

Benefits to Community/Cost Savings etc.:
Having a functioning GIS has increased the efficiency and quality of service in a number of departments within the County, including the Planning Department, Real Property, the Sheriff's Department, and the Department of Public Works. Nearly every department in the County

has taken advantage of the GIS in one way or another. The County's management of GIS efforts at the municipal level allows towns to acquire GIS software for a lower price through bulk purchases. Managing GIS efforts in this way also allowed municipalities to get up and running with GIS without requiring costly consultants or additional expenditures beyond purchase of hardware and software. In addition, since the County is very aware of the GIS needs of its municipal users, it has been able to provide training, data, and tools that are specifically geared towards their requirements. Standardizing systems in municipalities throughout the county and holding regular GIS Users Group meetings and training sessions have allowed GIS users at the town level to assist and encourage each other.

Program Staffing Needs: Currently, the County has one full-time GIS employee.

Program Costs:
The County has a separate, dedicated yearly GIS budget. Below is the budget for 2003:

<div align="center">

Salary: $47,070
Equipment: $ 4,500
Administration, Supplies & Contract Services: $15,900

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Member of Data Sharing Cooperative: Yes. Data from the Cooperative is used for County purposes and is made available to the towns for their use.

Collaborative Effort:
As described above, the County has collaborated with municipalities within the County to a large extent, which has helped the municipalities take full advantage of GIS in their daily work. In addition, the County has worked with towns to develop data, such as zoning, which has benefited both the towns and the County.

Model Feature(s):
This is a rural county that has a successful and productive working GIS relationship with most of its towns. Success is due, in part, to the fact that the county law form of government (Town Supervisors also act as County Legislators) has enabled the lawmakers responsible for making decisions about GIS at the County level to see GIS being successfully implemented in their towns from a first-hand perspective. Managing of municipal GIS implementation from the County level is fairly unique within the state and has proved to be very successful in Warren County.

Keys to success:
Hiring a full-time GIS Administrator was crucial to the success of this program. In addition, having an initial plan for GIS implementation (which has been updated as needed) helped the County set and meet goals. During the beginning stages of establishing the GIS program, the GIS Administrator did a few fairly quick projects, such as creating results maps after local elections, and town maps with layers readily available from the Adirondack Park Agency and the State GIS Clearinghouse. These maps attracted the attention of County department heads and town supervisors without requiring major time expenditure on the part of the GIS Administrator. A good working relationship with the county departments, the towns, and the Board of Supervisors has garnered enthusiasm for the program and has helped insure its continued success.

Demographics:

Location: North Country, Lake George area, eastern portion of Adirondack Park
Population: 63,303
11 Towns, 1 City, 1 Village

Contact Information:

Warren County Planning Department
Sheri Norton
GIS Administrator
1340 State Route 9
Lake George, NY 12845
Phone: 518-761-6410
Fax: 518-761-6411
Email: nortons@co.warren.ny.us
Website: www.co.warren.ny.us/gis