

Coastal Community Enables Existing IT Investments with GIS

Town of Nags Head, North Carolina



Case Study:
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IT Investments with GIS
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Nags Head is located in Dare County and has all of the challenges faced by coastal communities; seasonal influx of population, threats of natural disasters, environmental concerns, and delivery of user-friendly services. Nags Head had acquired various software packages to assist with the daily running of operations in the Town. Many of these applications tracked information that was geographic in nature such as; building permits, crime incidents, and utility customers. As is typical with many Towns and Cities, Nags Head had begun utilizing GIS but in a limited manner - only within Planning and Development. With the expansion and development of the area, the Town had outgrown the tools that had once been sufficient to manage their resources.

Nags Head decided that it needed a town-wide GIS Implementation Plan to insure that its investment in GIS was optimal. Nags Head retained the services of Geographic Technologies Group (GTG) to conduct a Needs Assessment and Implementation Plan. Jim Northrup, IT Director, required that the plan focus on how to leverage existing IT investments and to clearly define for the elected officials how the technology would save the Town time, lives, and money. Staff were interviewed and a final plan was adopted by the Town Council.

The first priority for implementing enterprise GIS in Nags Head was providing town-wide access to GIS data. The town had access to several GIS layers from Dare County and realized they would see an immediate benefit from making this information available across the organization. Nags Head implemented GISmo from GTG as the town-wide GIS data browser. GISmo provided an easy-to-use data browser for staff to be able to access GIS information for daily use. Once the departments had access to GIS they quickly wanted access to information specific to their daily tasks.

According to Nags Head IT Director Jim Northrup "We knew we were already storing much of the information the departments were requesting in existing databases, the challenge was making this information available via GIS."

The town acquired GTG's GeoManager application to unlock the potential of its existing databases. GeoManager utilizes geocoding to generate X,Y coordinates for records in existing databases and then stores those coordinates in the database. Initially, the town generated coordinates by geocoding against street centerlines and parcels. This method allowed existing information to be mapped in the GIS, but the limitations of this method were soon realized. By using parcels, records are mapped to the center of the appropriate parcel, but there is no way to account for multiple addresses on a single property.

Geocoding against centerlines places records along the street based on the assumption that addresses are evenly distributed. Clearly, neither of these methods were sufficient to accurately map the Town's existing information.

To address these issues the town contracted with GTG to create a master address layer. A master address layer contains a valid point location for every address in a jurisdiction. The town identified the MUNIS utility database as its primary address resource. GTG used the MUNIS records and a combination of geocoding, field work, and manually moving points to create a complete address layer for Nags Head.

Nags Head now has a discreet address point for all addresses and can match existing IT records to these points (such as crimes, fires, building permits, etc.) Once the address layer was complete all of the pieces were in place for Nags Head to unlock the full potential of its existing IT resources. The master address file provided the reference against which to accurately geocode existing data.

GeoManager provided the functionality to integrate existing databases and GIS, and GISmo provided a platform for viewing all of the information.

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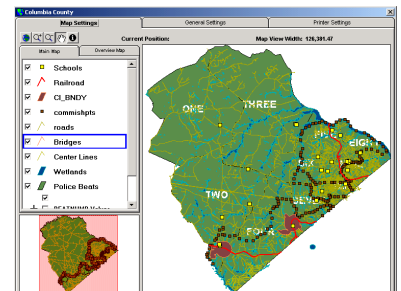
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This system provides the ability to integrate all of the Town's data resources via a single interface. Town databases integrated with GIS include:

- Black Bear Permits and Inspections
- Database Microsoft Access Solid
- Nags Head Continued
- Waste Customer Database
- MUNIS Utility Billing Database
- OSSI Police Records Management System
- Fire Programs Fire Records Management System

These new capabilities have had a significant impact on town operations. One excellent example of how these investments have benefited the city is the establishment of the Neighborhood Environmental Assessment (NEAT) Team. Town Manager J. Webb Fuller implemented the NEAT program which is comprised of members of multiple departments within the town whose task is to identify violations of the town code which may affect the aesthetics of the community.

NEAT members identify issues and enter them in an access database. GeoManager is used to map all of the records in this database and these records are made accessible in GISmo. Each issue is symbolized based on status and all issues more than 14 days old are flagged. Simply hovering the mouse over an issue provides additional information. This allows all staff members to see where open issues exist and which departments are responsible for resolving the issues. The application has even been used during council meetings to respond to council questions.



Fuller notes that if a police officer who is a member of NEAT looks at the data, he or she can determine if a junked car is in violation of town code and make a report to the proper department to address the issue. This helps streamline the process and gets the problem resolved more efficiently. GISmo is also being used for some of the traditional applications, including managing data on fire hydrant locations, testing, and results. Fuller notes that the town's fire service is being integrated into GISmo.

"We have become more effective at what we do," said Fuller. "Everyone can now look at data and understand whose responsibility it is to take care of a particular issue."

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Geographic Technologies Group
1202 Parkway Drive
Goldsboro, NC 27534
Phone: 1.888.757.4222
Fax: 919.759.0410
E-mail: info@geotg.com