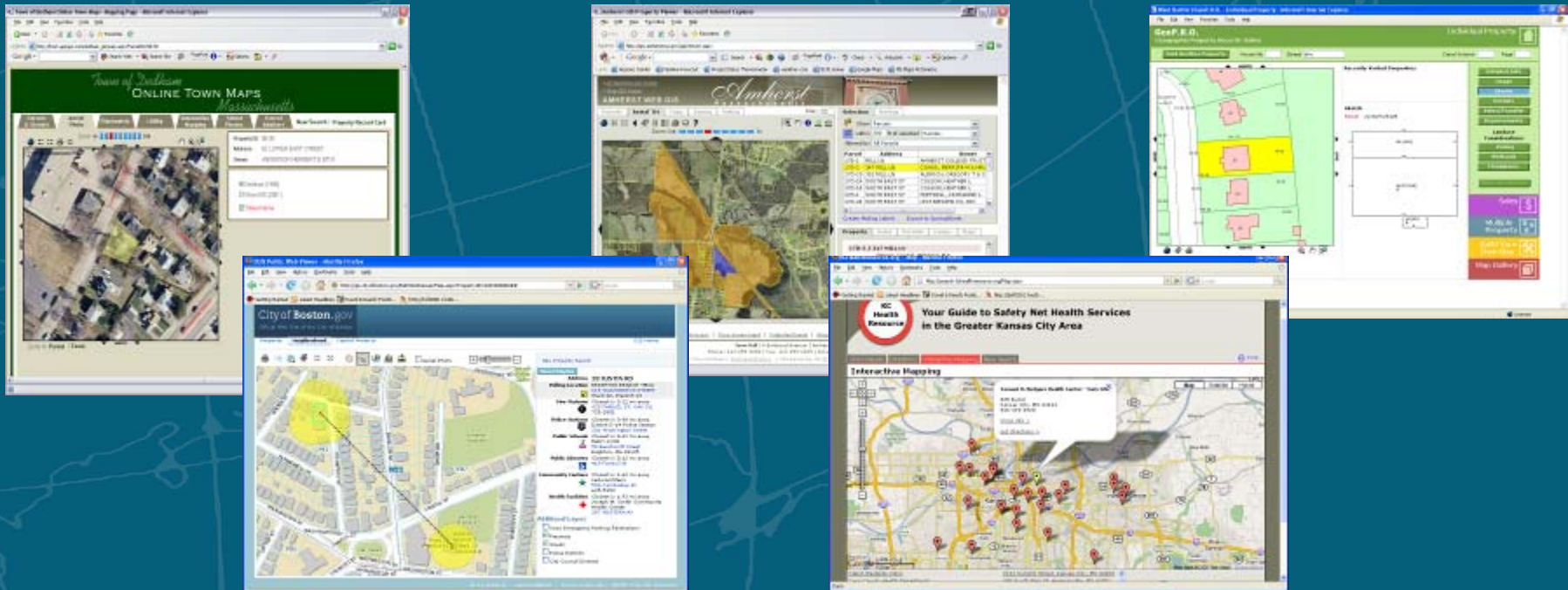


Spring NEARC 2009

Effective GIS for Smaller Municipalities in Challenging Economic Times



Overview

- **AppGeo's Experience and Perspective**
- **Characteristics of a Successful GIS**
- **Challenges of a Small Town GIS**
- **Potential Solutions to the Challenges**
- **Case Study**
- **Questions**

AppGeo's Perspective

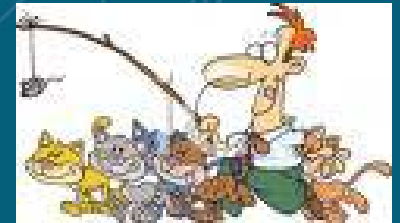
- We've worked with hundreds of towns – large and small
- Varying approaches to implementing GIS
 - Plan then build
 - Build foundation, then plan the rest, then build out
 - Build the foundation, fix the cracks, then plan and renovate
- Any of these approaches can be successful, but why such varying approaches?
 - Demands are similar, but resources vary widely
 - Money is not always the key to success or failure
 - Nor is planning always the answer, but it usually helps
- No specific "formula" for success, but there are common characteristics of success



What are the characteristics of a successful GIS?

- **Efforts are coordinated**

- A point person or coordination committee exists
- Regular communication regarding projects, new data, new applications
- Stakeholders are all represented
- Consensus (not always agreement) exists

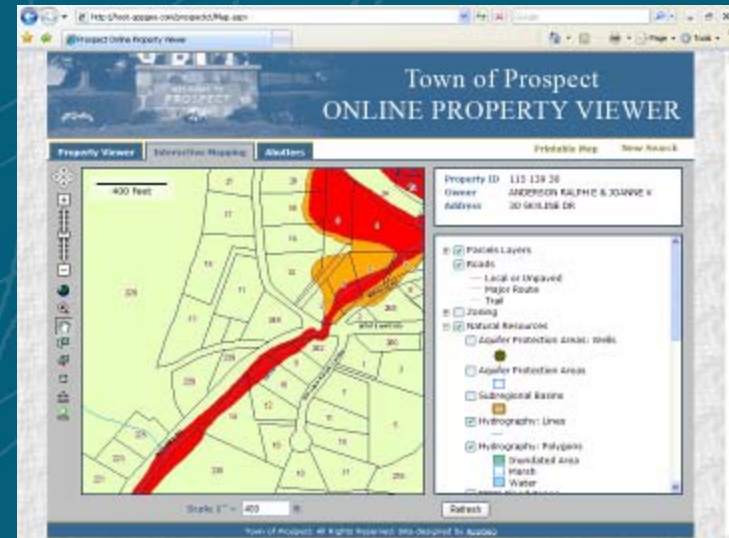


- **GIS Integrated with business processes and other systems**

- Provide answers to questions, not just access to data
- Integrate with COTS software where practical and applicable
- Provide answers to questions that would not be able to be answered without GIS

What are the characteristics of a successful GIS?

- **Data is readily available**
 - GIS data, maps, and tools are available to all staff that need them
 - Data, maps, and tools are available to the public (not necessarily called GIS)
 - Little to no training required to use technology
- **Data is maintained**
 - GIS data is kept up-to-date on regular basis
 - Varying frequencies based on need and content
 - Updates built into work flow process
- **Data is accurate enough**
 - Accuracy defined by intended use
 - Accuracy is improved over time
- **Adequate Budget**



Typical Challenges for Smaller Town GIS

- **Program may not be well Coordinated**
 - Usually no full-time GIS Coordinator
 - GIS often falls onto existing staff person without official recognition of responsibility
 - Limited communication with other stakeholders
- **GIS is stand-alone, not integrated with business processes and systems**
 - Often think of GIS as its own “destination”
 - GIS is often departmental
 - Lack of expertise with system integration
 - Lack of exposure to integration options that are available
 - Often, no full-time (or even part-time!) IT support



Typical Challenges for Smaller Town GIS

- **Data is not-readily available**
 - Data is often stored on local hard drive
 - Lack of sufficient software licenses to make available to all users
 - Infrequent use of system/data can be inefficient
- **Data is not maintained**
 - Lack skills and/or software to perform updates
 - Low quantity of updates =>false requirement, not necessary
 - Frequency of updates tends to be sporadic
- **Accuracy standard set too high**
 - Desire to make everything survey level accurate
 - Desire to map 100% of the features
 - Desire to collect everything you may ever want to know
- **Limited or no budget**

Potential Solutions, What We've Seen Work...

- **Coordination**

- Have regularly scheduled coordination meetings
- Use email to broadcast projects, data, and uses
- New staff, make sure they know what you have
- Build momentum early, small incremental achievements
- Prioritize – don't try to do everything at once
- Set reasonable, attainable expectations

- **Integration**

- Take advantage of COTS solutions where they exist
 - Lower cost of ownership
 - Proven and tested with broader user groups
 - But, check with experienced users first
- Think of GIS as a tool to solve a business problem
- Build tools into workflows, not workflows around your tools
- Use consultants as sounding boards

Potential Solutions, What We've Seen Work...

- **Data Readily Available**

- Take advantage of State and Regional Efforts
- Know what the Federal Gov't is up to
- Use web applications to make data accessible
- Evaluate Hosted Solutions vs self-hosted:
 - Provides low cost of deployment
 - Eliminates "stove piped" data
 - Minimizes IT support costs
 - Reduces software purchase and maintenance costs

- **Data Maintenance**

- Evaluate needs versus desires – How often is often enough?
- Add accuracy through your maintenance
- Set realistic completeness goals – 90/10 rule

- **People Issues**

- Personalities are as important as technical resources
- Support will come when they see tangible benefits

Potential Solutions, What We've Seen Work...

- **Why the web works...**
 - **People have access:** Ubiquitous high-bandwidth connectivity is here, or is it?
 - At home, at work, on phones, on the road
 - Still exceptions in rural areas
 - But that's changing: \$4.7 billion Broadband Improvement Act just approved in stimulus funds
 - **It's easy:** web literacy is widespread
 - **Centralized management**

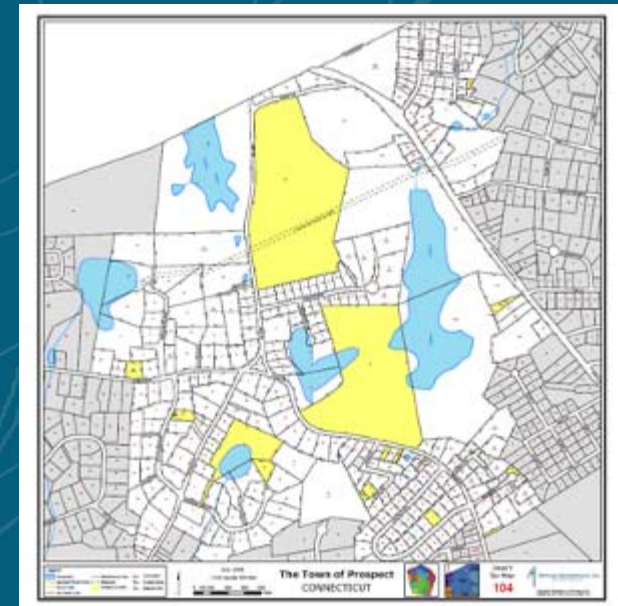
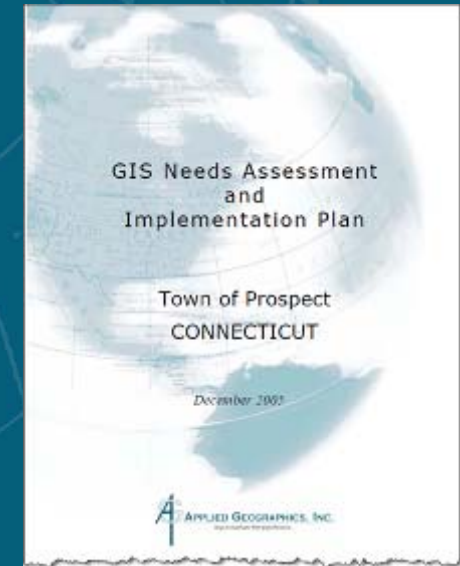
Case Study: Town of Prospect, Connecticut

- "The Best Small Town in Connecticut"
- Population: 9,250 +/-
- Households: 3,100 +/-
- Area: 14.5 Square miles
- Single Mayor since 1977, Robert Chatfield (16 Terms)
- Parcels: 3,800
- Annual Budget: \$6.9 Million



Case Study: Town of Prospect, Connecticut

- History of GIS in Prospect
 - 2005 Accomplishments:
 - Needs Assessment and Implementation Plan
 - Pilot Project:
 - 4 Tax Map Pilot Area
 - Base Map: Free CT DOT Orthophotos
 - Built consensus and proof on concept
 - 2006 Accomplishments:
 - Parcel automation
 - Tax Map Production
 - Primary user Assessor, but 4 departments also used tax maps
 - Data provided to departments in ArcExplorer and Adobe PDF



Case Study: Town of Prospect, Connecticut

- History of GIS in Prospect
 - 2007 Accomplishments:
 - Annual parcel updates
 - Updated tax maps
 - Link to Assessor's CAMA database – “live-link”
 - Natural resource and land use layers
 - Zoning Map
 - Wetlands/Soils
 - Sub-regional Watersheds
 - Public Water Supply Resources
 - FEMA Flood Plains
 - Land Use
 - ArcReader Application Development
 - 3 Departments using system
 - Various Consultants using data for plan of development
 - Appraisers using data for valuation of property

Case Study: Town of Prospect, Connecticut

- History of GIS in Prospect
 - 2008 Accomplishments:
 - Annual parcel updates
 - Web Site Development
 - Hosting of Web Site
 - Training of municipal staff
 - Townwide use of web-based application
 - Public Access of data
 - Average Web Site Usage:
 - 750-800 Maps/month
 - 140-150 Visitors/month, plus town staff
 - 7 days a week, most popular days Wed & Friday
 - Total Cost Expended to date: \$40,000



So what have been the key factors for Prospect's success?

- They stuck to the plan
 - They had a 5 year plan and they are 4 years into it
- ArcGIS Publisher Application and hard copy maps built early momentum and support
- GIS website expanded use and built public support
 - They were still resolving some data questions, but didn't get stuck waiting for perfection
- GIS Committee
 - GIS Committee is formal and very effective
 - Multi-departmental approach; departments with needs are invited to meetings and given support
 - Mayor is engaged and supportive
- Incremental improvements continued to gain support each year
- Data has been maintained annually

GIS Trivia Question: Where are we all headed eventually with GIS?

Cemetery GIS



Town of Dedham
BROOKDALE CEMETERY
Massachusetts

Cemetery Mapping

Logout Return To DPW Main Menu

Lot Info [view headstone](#)

Lot No. 1405E
 Location Elder Path
 Owner Peter S Conlan

Graves In Lot

Grave #	Burial Date	Deceased Name
1D	08-10-1922	Annie J Lanier
1S	03-13-1995	Helen L Harkins G
2D	05-16-1934	Franklin P Conlan
2S	05-23-1934	Elizabeth F Conlan
3D	11-04-1913	John Joseph Lanier
3S	07-16-1946	Albert F Conlan
4D	10-08-1894	Peter S Conlan
4S	02-07-1962	Leo P Conlan

Available Data Layers

- Cemetery Lots
- Cemetery Parcel Bounds
- Cemetery Path Names
- Fences
- Parcels

Search Lots / Graves - Microsoft Internet Explorer

http://host.appgeo.com/DedhamCemetery/Search.aspx

Town of Dedham
BROOKDALE CEMETERY
Massachusetts

Logout Return To DPW Main Menu

Search Burial Date by: Day Range

From: (select date) To: (select date)

Search Results found from last search: 661

Lot #	Grave #	Owner	Date of Burial	Deceased Name	Underlie	Path	Map
03096	0	Beaton, Mrs Margaret E	07-17-1962	Beaton, Hale James E	McDonald Way Dedham Ma	Path	Map
03966	0	Kreutzl, Hugo E Estate Of	08-09-1984	Kreutzl, Henry E		Crocus Path	View Map
04048	0	McKenzie, George	11-05-1948	McKenzie, Baby	Pollock Dedham Ma	Crocus Path	View Map
1477	0	Pitts, Donald	02-06-1947	Pitts, Robert S	Mahoney Cambridge Ma	Crocus Path	View Map
1479	0	James, Alexander	06-02-1946	James, Baby Boy	Cannon Dedham Ma	Crocus Path	View Map
1731	0	Rockwood, George	03-24-1924	Rockwood, Stillborn Male		Crocus Path	View Map
1766	0	Walsh, Joseph M	06-29-1967	Walsh, Baby Girl	Cannon Dedham Ma	Crocus Path	View Map
4844	0	Chamberlain, Lu Lu J	09-12-1914	Chamberlain, Roger Stanley	Smith Higgins Funeral Home Dedham Ma,	Crocus Path	View Map

Questions...?



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