

3

The Enterprise Implementation of GIS

Section 3: Enterprise Implementation

The Enterprise Implementation of GIS

1. **Quick Successes**
2. **Educate**
3. **Easy to Use**
4. **Enterprise Tools**
 - Old School vs. New School

The Enterprise Implementation of GIS

1. **Quick Successes**
2. **Educate**
3. **Easy to Use**
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 - Old School vs. New School

Quick Success

- ✓ **Each year will determine the success of your initiative**
- ✓ **Guarantee support from managers, directors, and elected officials**
- ✓ **How to “showcase” your successes**
- ✓ **Leverage press and media coverage**
- ✓ **Show successes and progress continually**

GPS Inventory

Pilot Project

Awards

Geodatabase
Design

GIS RETURN ON INVESTMENT



IMPROVE EFFICIENCY

GIS helps organizations reduce and eliminate redundant steps in workflow processes. By implementing GIS programs you can reduce workloads for your staff and you can develop new procedures, resulting in increased productivity and ultimately efficiency.



INCREASE PRODUCTIVITY

GIS puts accurate, current information at your staff's fingertips when they need it. It eliminates the need to waste time searching for lost data or trying to correct inaccurate data. Digital and electronic mapping can be easily accessed and shared among departments. And because information can be accessed and accurately, productivity improves in all departments.



SAVE TIME

Having the information when you need and want it saves time, staff resources, and ultimately money. Information can be made available to the public through a Web site or touch screen kiosks in convenient locations, reducing the demands on your staff.



SAVE MONEY

GIS helps control spending through cost savings and cost avoidance. Immediate savings can be seen through better decisions and increased productivity. Cost avoidance becomes apparent over time, as GIS helps organizations reduce and eliminate costs.



MAKE BETTER QUALITY AND MORE EFFECTIVE DECISIONS

GIS is a critical tool to query, analyze and map data in design support. GIS can, for example, be used to choose a location for a development that has minimal environmental impact, is located in a low risk area, and is close to a population center.



IMPROVE DATA ACCURACY

GIS creates maps from data. Paper maps can be digitized and translated into GIS. Maps can be created on any location, at any scale, and showing selected information to highlight specific characteristics. Precise GIS data enables users to generate accurate reports and produce quality maps instantly.



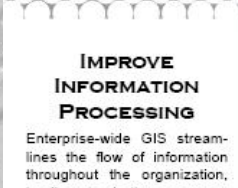
AUTOMATE WORKFLOW PROCEDURES

GIS helps automate tasks that expedite workflow and enhance your ability to react efficiently during a crisis. GIS can automate routine analysis, map production, data creation and maintenance, reporting, and statistical analysis.



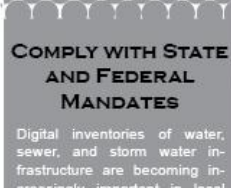
SAVE LIVES

In an emergency, GIS can lead rescuers quickly and accurately to the scene. In an emergency, every second counts. The time saved in locating a citizen can be the difference between life and death.



IMPROVE INFORMATION PROCESSING

Enterprise-wide GIS streamlines the flow of information throughout the organization, leading to better accuracy, better access, and increased efficiency in every aspect of the organization.



COMPLY WITH STATE AND FEDERAL MANDATES

Digital inventories of water, sewer, and storm water infrastructure are becoming increasingly important in local governments. A complete GIS program includes asset management, inventory control, and depreciation based on accurate and timely data including age, size, and construction materials; this allows managers to predict and schedule repairs and replacement.



PROTECT YOUR COMMUNITY

GIS helps public safety officials develop emergency plans and respond to disasters more effectively than ever before. GIS offers the tools to monitor conditions, recognize threats, predict consequences, and respond effectively and efficiently to man-made or natural disasters. GIS can also help officials deliver information to citizens during an emergency, through emergency notification systems and the Internet.



IMPROVE COMMUNICATION, COORDINATION, AND COLLABORATION

Good communication is the key to running an effective organization. GIS helps staff members and elected officials convey complex information in easy-to-understand formats.



PROVIDE DATA TO REGULATORS, DEVELOPERS, AND OTHER INTERESTED PARTIES

GIS makes it easy to deliver information for complex political and regulatory requirements. GIS allows regulators and developers to consider all pertinent data, which results in informed decisions and better results.



RESPOND MORE QUICKLY TO CITIZEN REQUESTS

With GIS data at hand, staff members can easily respond to citizen requests for information with maps. Maps are inherently easy to understand; they convey complex statistics and graphs clearly and easily.



IMPROVE CITIZEN ACCESS TO GOVERNMENT

Internet access to GIS information is the ultimate convenience for citizens: 24/7/365, from their home or office. Staff is then free to help citizens with more complicated requests, resulting in increased customer satisfaction.



EFFECTIVE MANAGEMENT OF ASSETS AND RESOURCES

Effective management starts with analyzing, tracking, managing, allocating, and conserving assets. GIS technologies make production and delivery quick and efficient with maximum benefits.

Return on Investment

PROBLEM

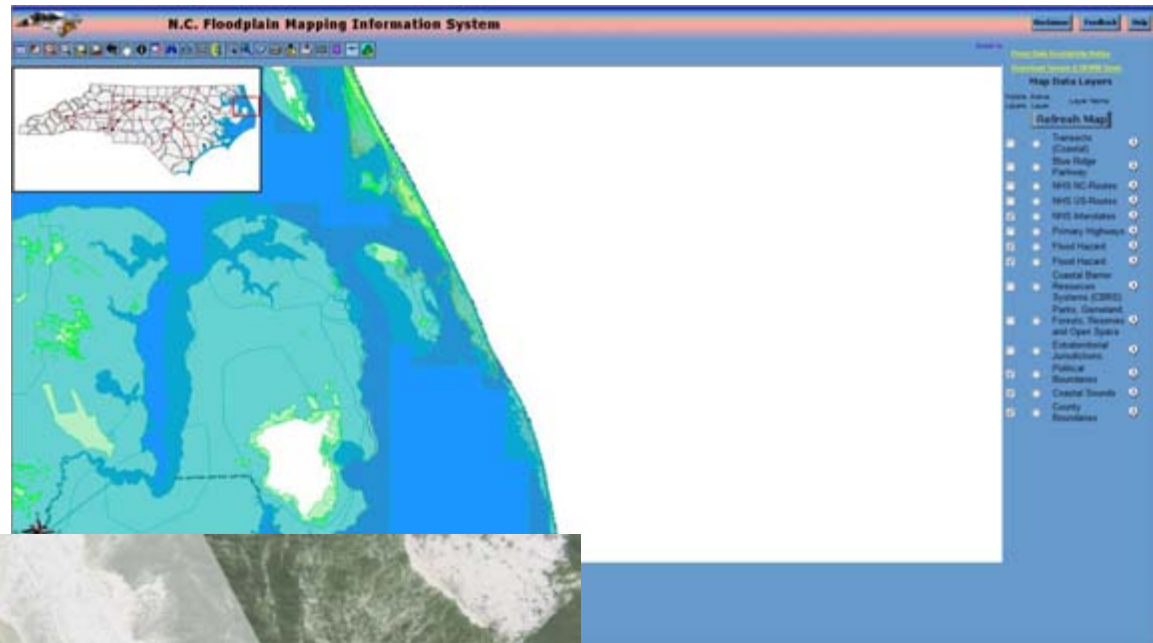
- The Town was up for the NFIP CRS Rating
- Needed to improve its ability to determine flood status



Return on Investment

SOLUTION

- Digitized key information
- Produced Requisite Mapping
- The comparison gave a quick and accurate record of properties that were located in flood zones

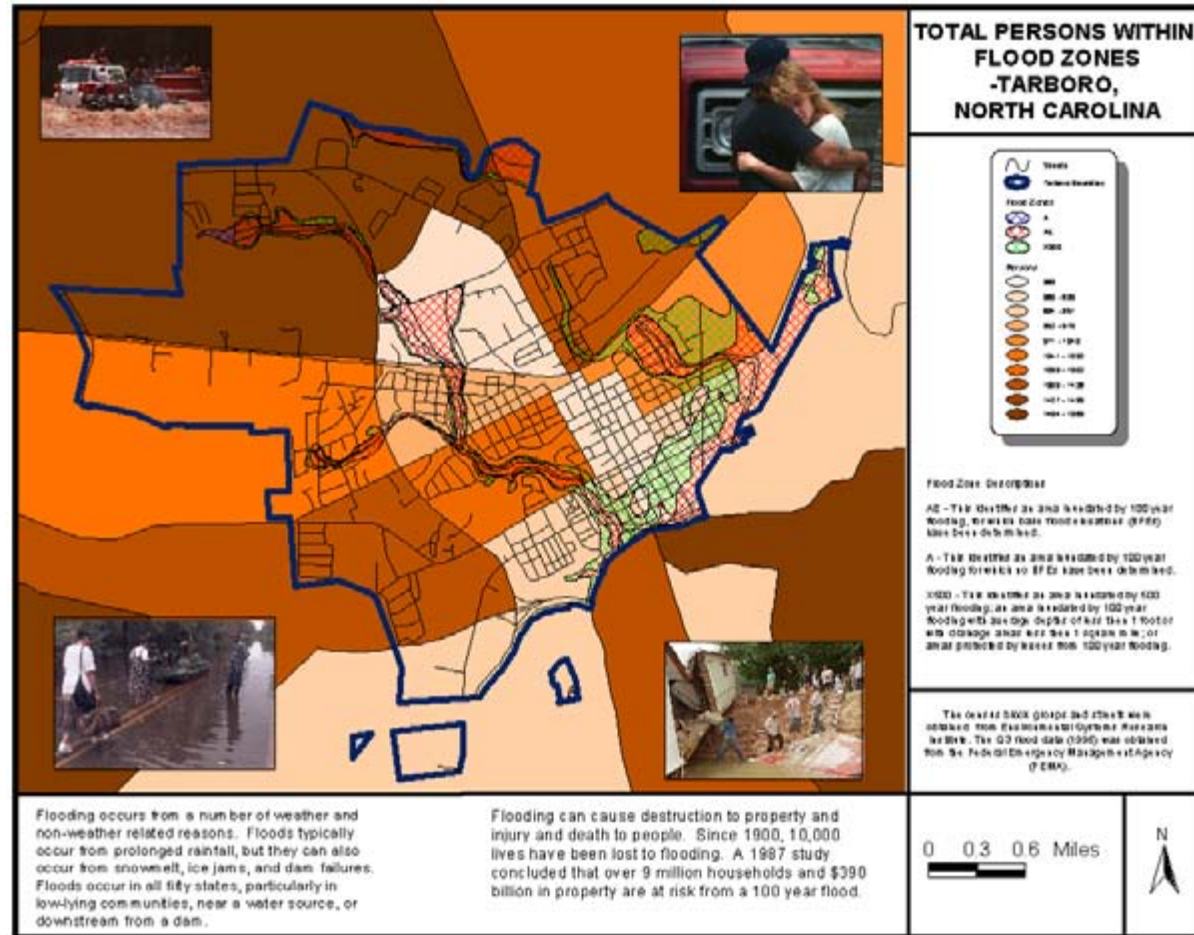


Return on Investment

RETURN ON INVESTMENT

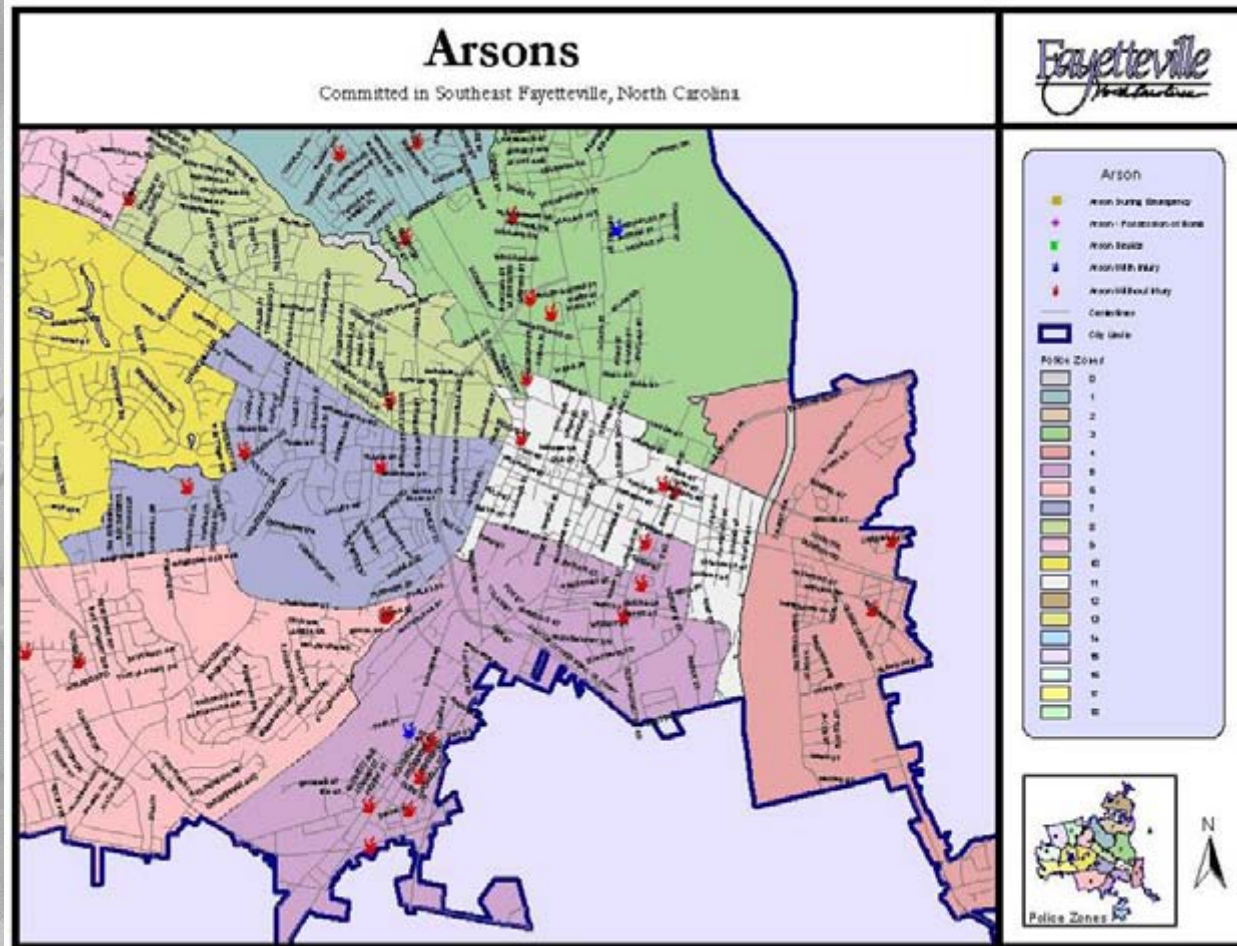
Save Time and Money

- CRS was reduced by two points. Annual saving to citizens of over \$500,000 annually
- The Town was able to save time and money, as GIS allowed the process of comparison to be reduced from 30 minutes per parcel to 5 minutes. Save 100s of hours a year.



Quick Success

City of Fayetteville, NC



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Preparedness and the Tsunami Resilient Community

City of Unalaska: Base Sea Level



Preparedness and the Tsunami Resilient Community

City of Unalaska: Base Sea Level + 30 Feet



Preparedness and the Tsunami Resilient Community

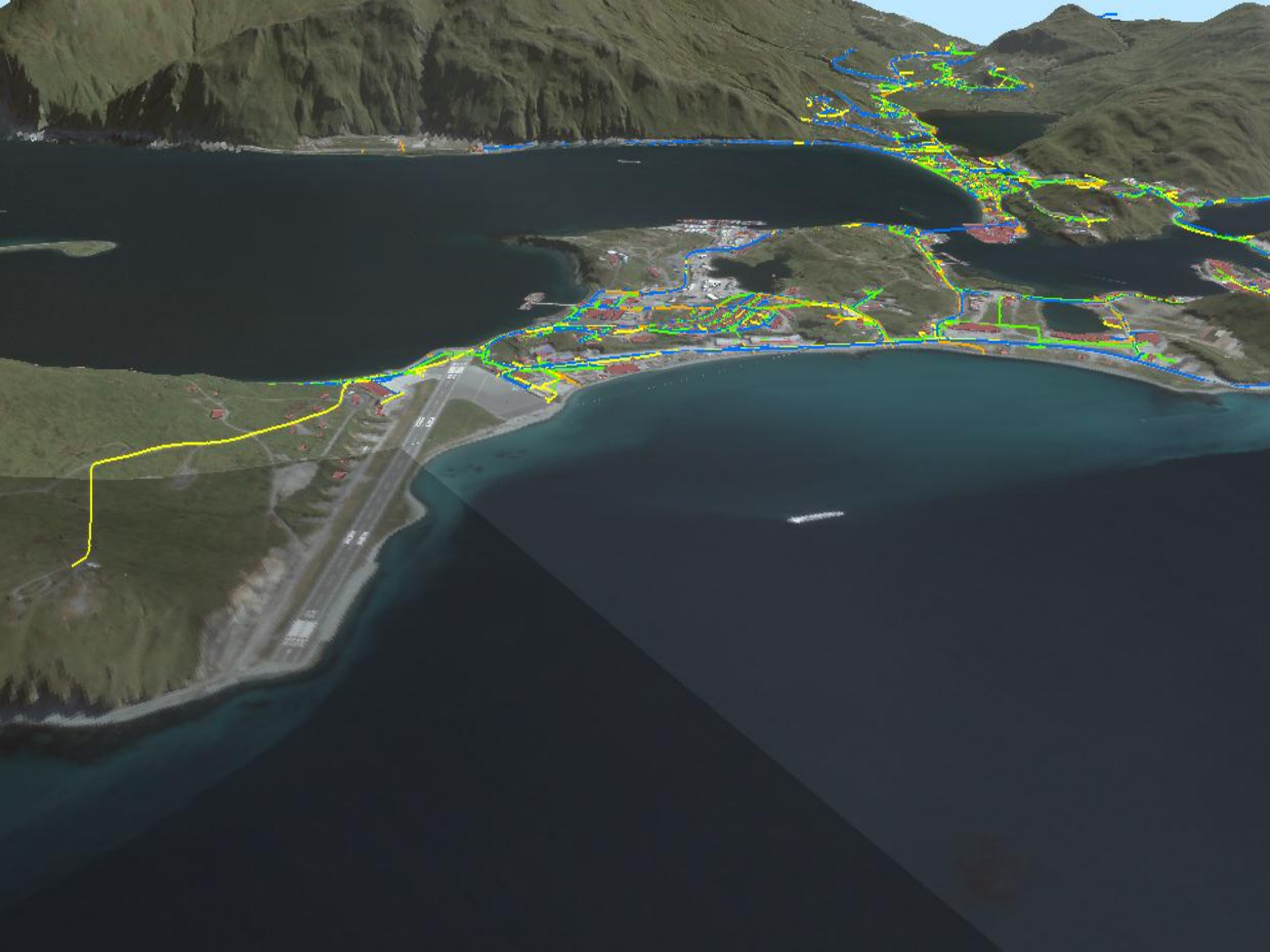
City of Unalaska: Base Sea Level + 50 Feet



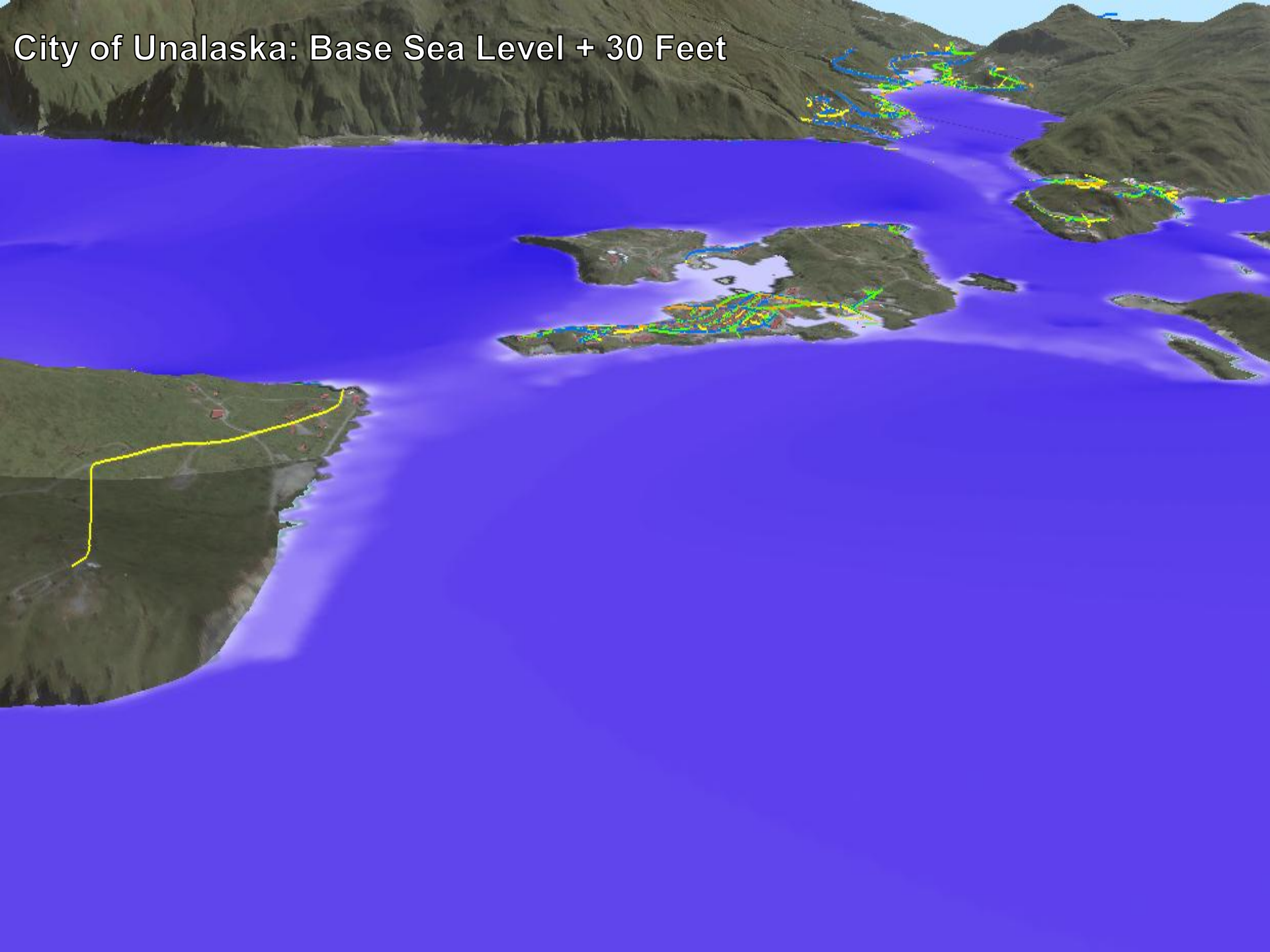
Preparedness and the Tsunami Resilient Community

City of Unalaska: Base Sea Level + 100 Feet





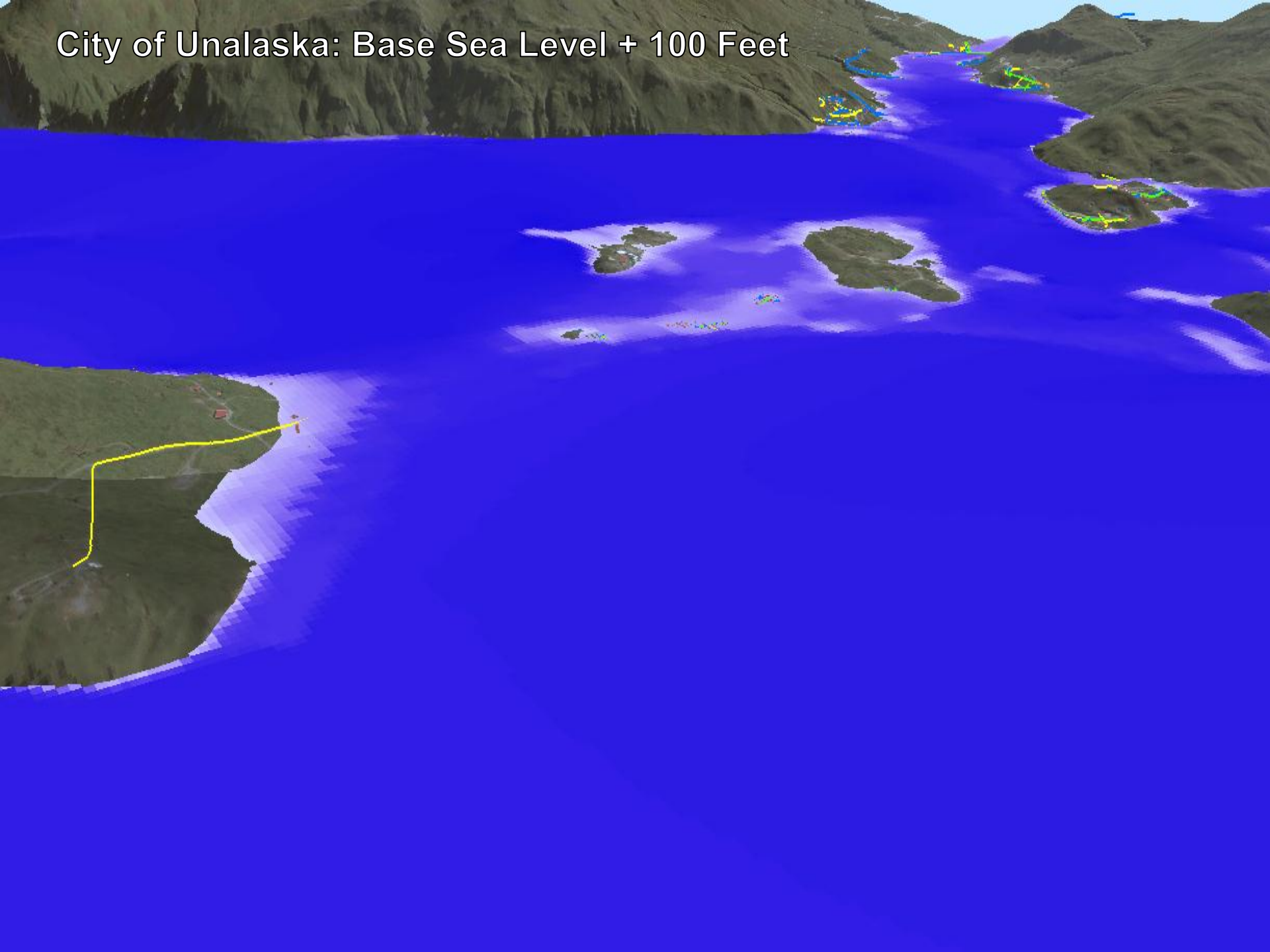
City of Unalaska: Base Sea Level + 30 Feet



City of Unalaska: Base Sea Level + 50 Feet



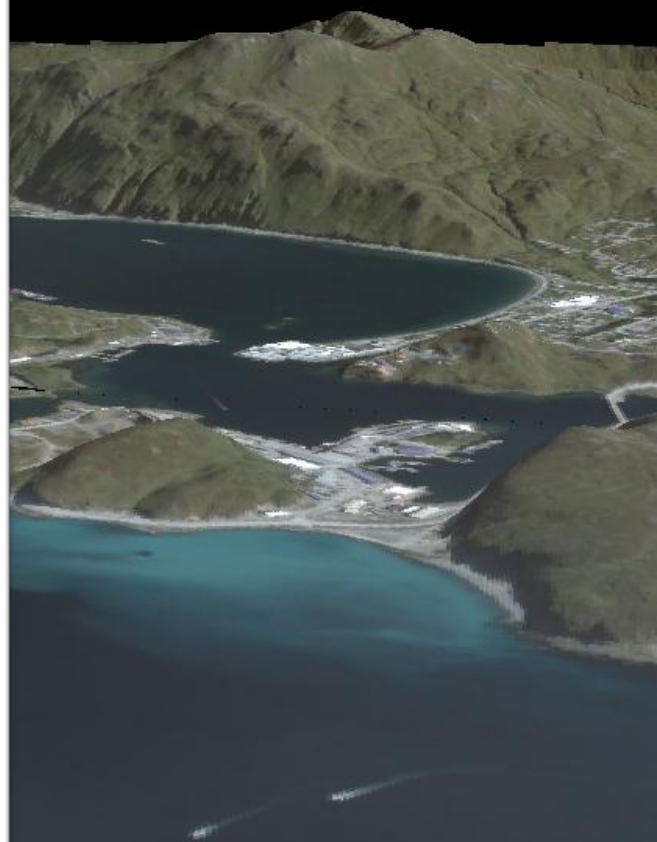
City of Unalaska: Base Sea Level + 100 Feet



On December 8, 2004, the Malaysian freighter *Selendang Ayu* went aground and broke in half at Skan Bay off Unalaska Island in the Aleutian chain. The accident sent 336,000 gallons of oil and 66,000 tons of soybeans into the water and onto the shores of the island. Six crew members died during a rescue attempt. State and federal agencies immediately sprang into action to minimize the damage and loss of life caused by the wreckage and the spill.

What Went Wrong: Wreck of the *Selendang Ayu*

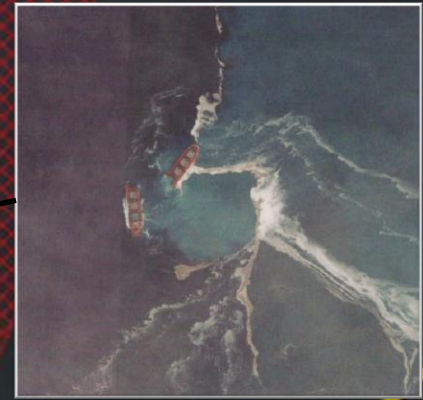
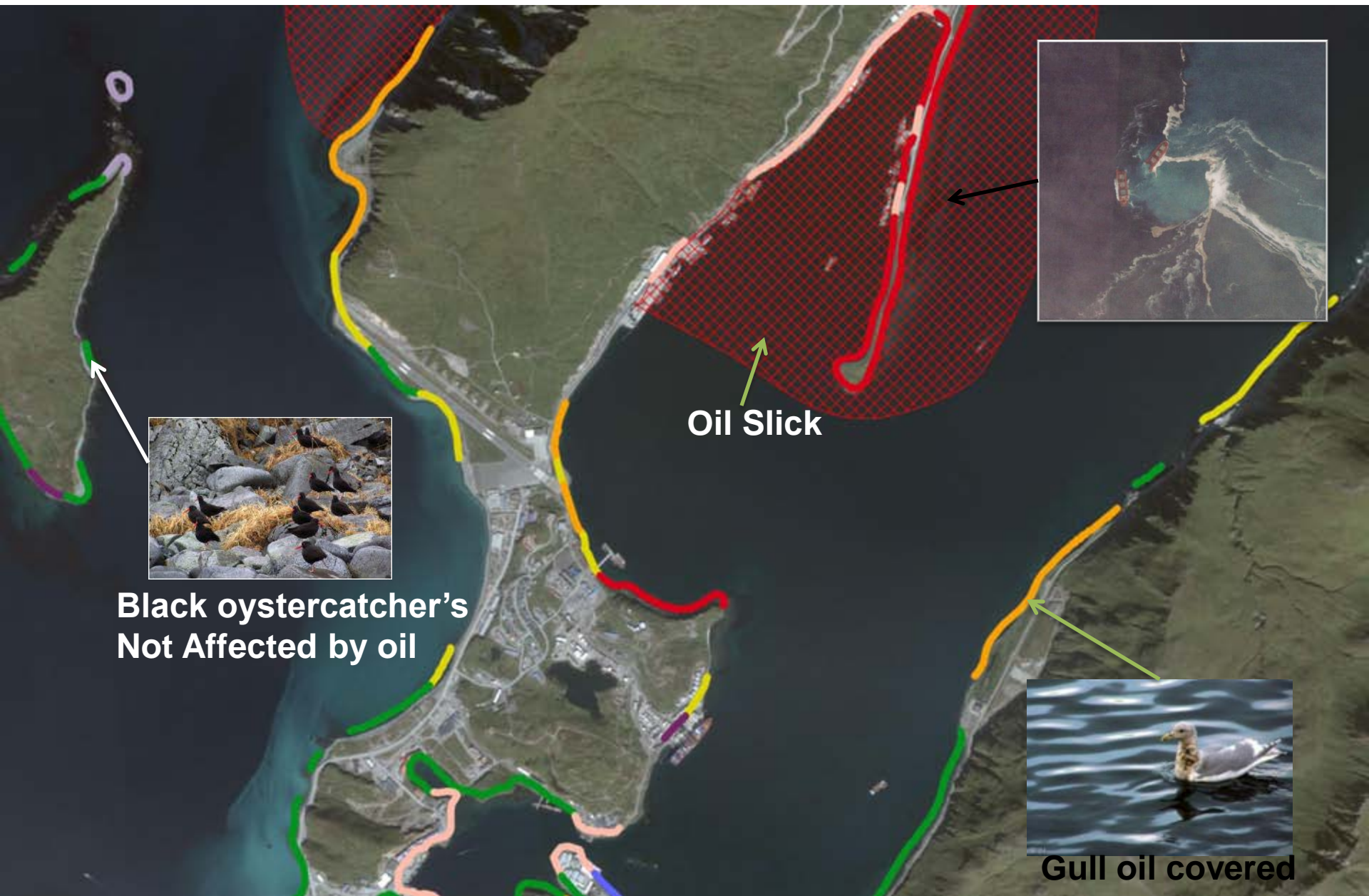
On Dec. 6, 2004, engine trouble left a Malaysian freighter adrift in the stormy Bering Sea. The next 51 hours were marked by desperate tow attempts, a fatal helicopter crash, heroic aerial rescues, and the worst Alaskan oil spill in more than a decade.



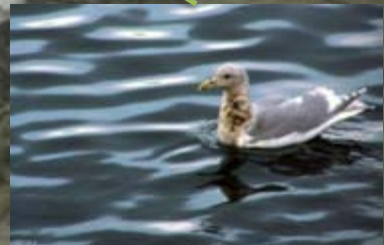
Mock Ship Accident – Resource Locations



Mock Ship Accident - Wildlife Shoreline Survey Results

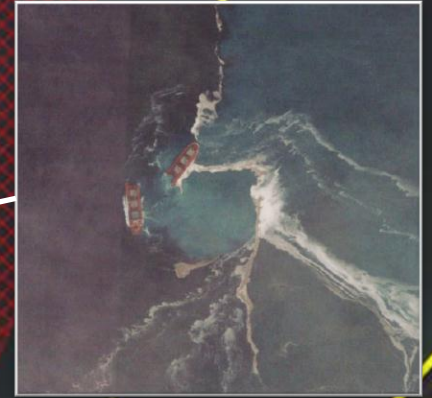


**Black oystercatcher's
Not Affected by oil**



Gull oil covered

Mock Ship Accident – Shoreline Clean Up Status



Completed

Oil Slick

Maximum Extent
of Oil Slick

Completed





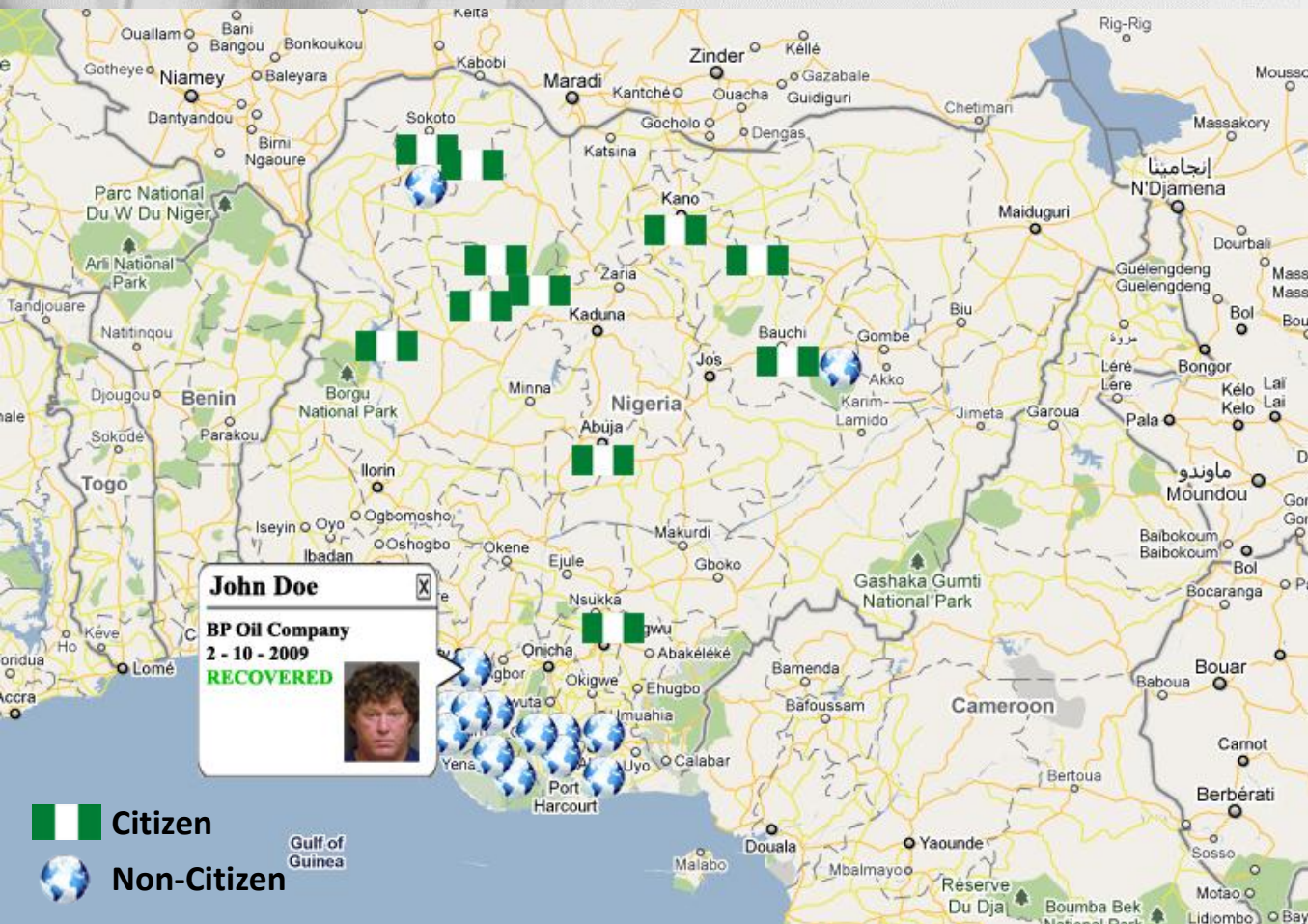
GPS/AVL Enabled Vehicles

- Track vehicles
- Route preplanning
- Identify areas to avoid
- Know where other emergency vehicles and critical assets are located





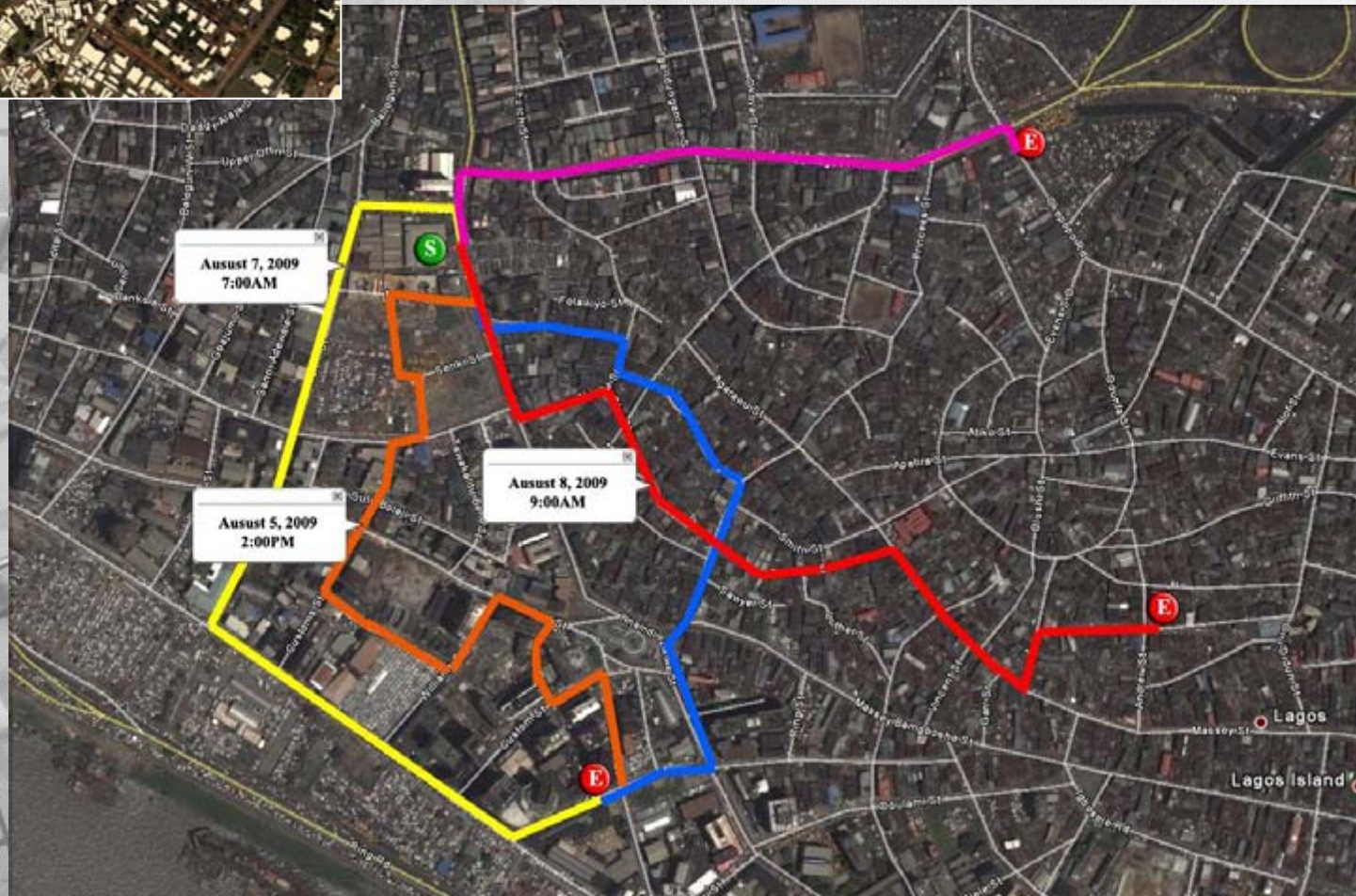
Kidnappings



- National Map of All Kidnappings
- Track the location of know insurgents
- Optimize protection patrols



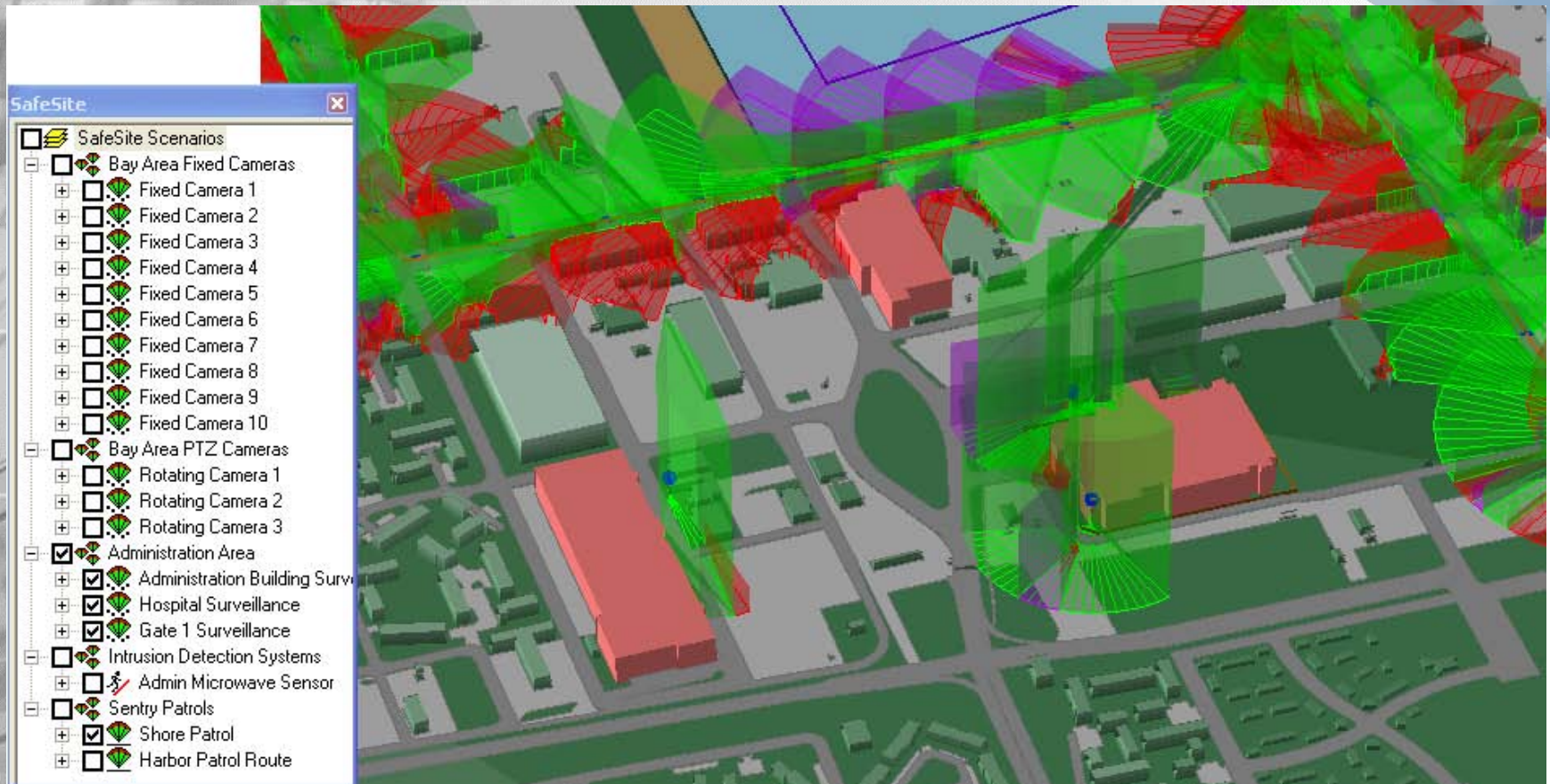
VIP Route Planning



- Thwart would be assailants
- Track routes by time and route
- Map motorcade and patrol logs
- Don't travel down the same road at the same time



Physical Security Planning



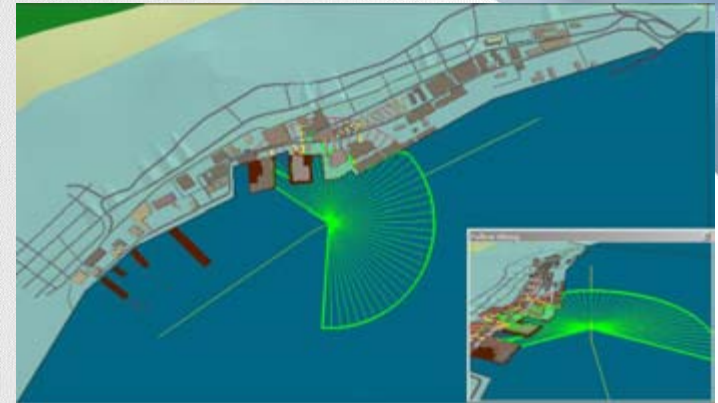


Patrol Planning

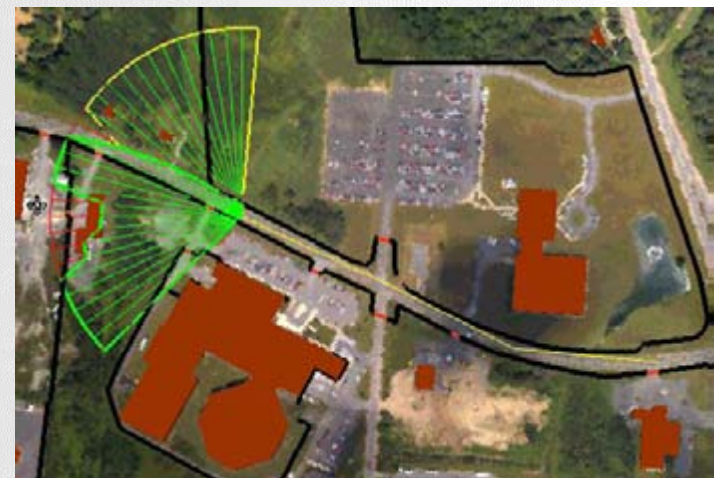
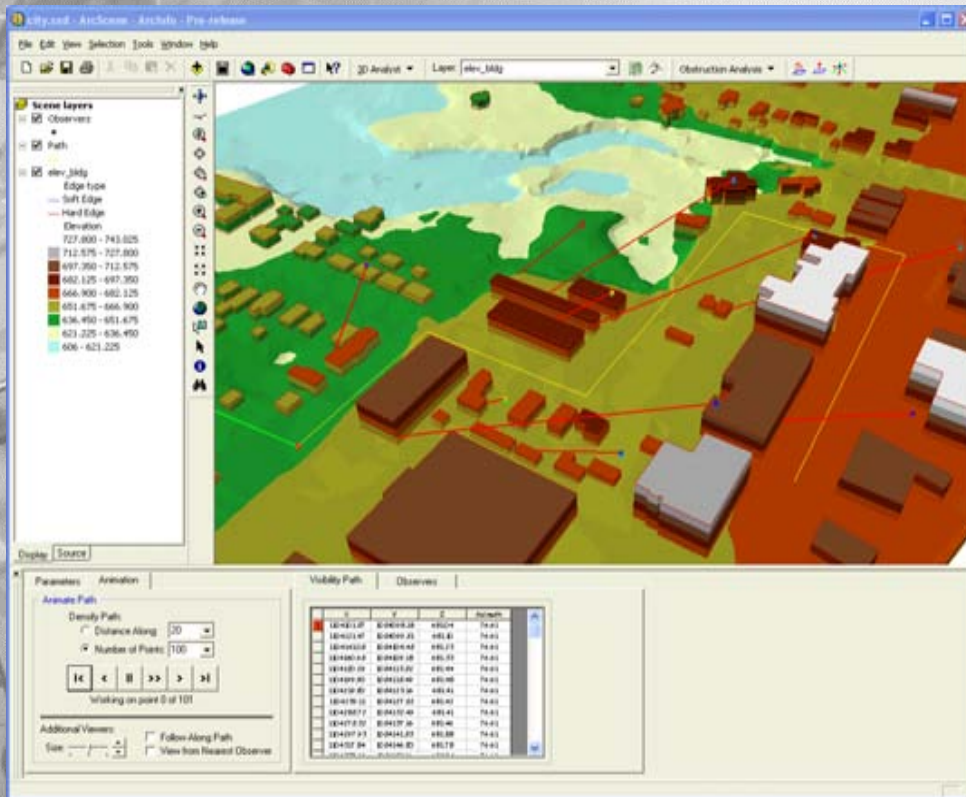
Analyzing Visual Exposure of Guard Posts and Patrol Routes of Critical Facilities

Land Movement, Convoys, and Motorcades

Port Security

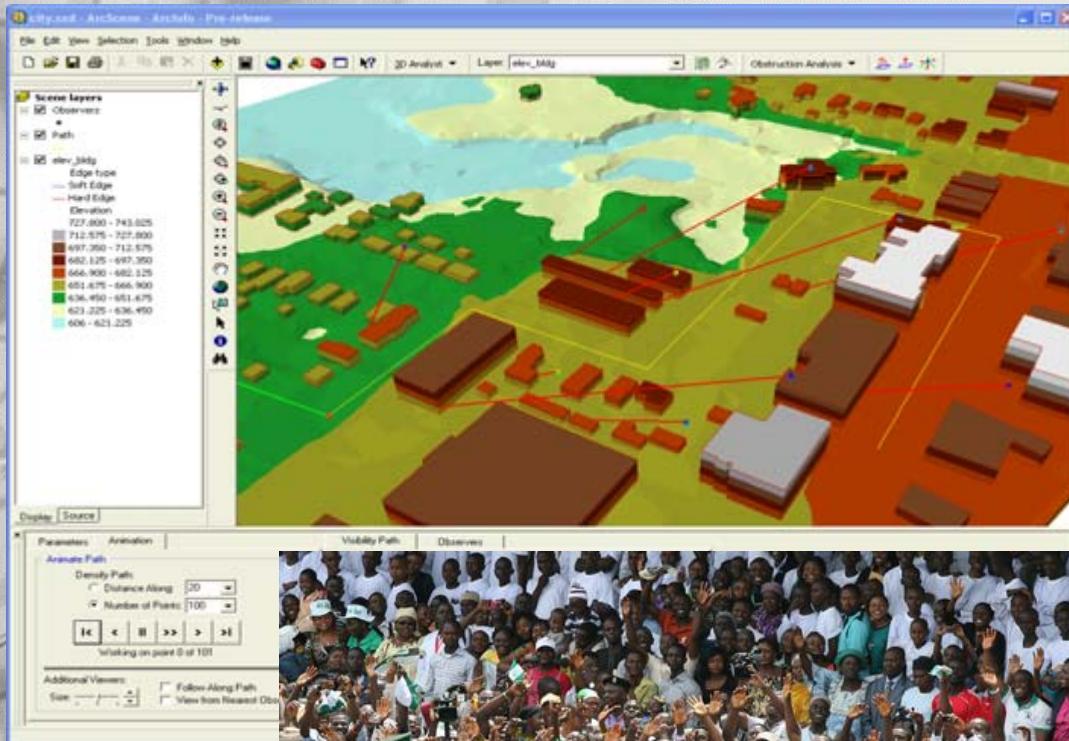


View Shed Analysis





Motorcades, VIP Protection

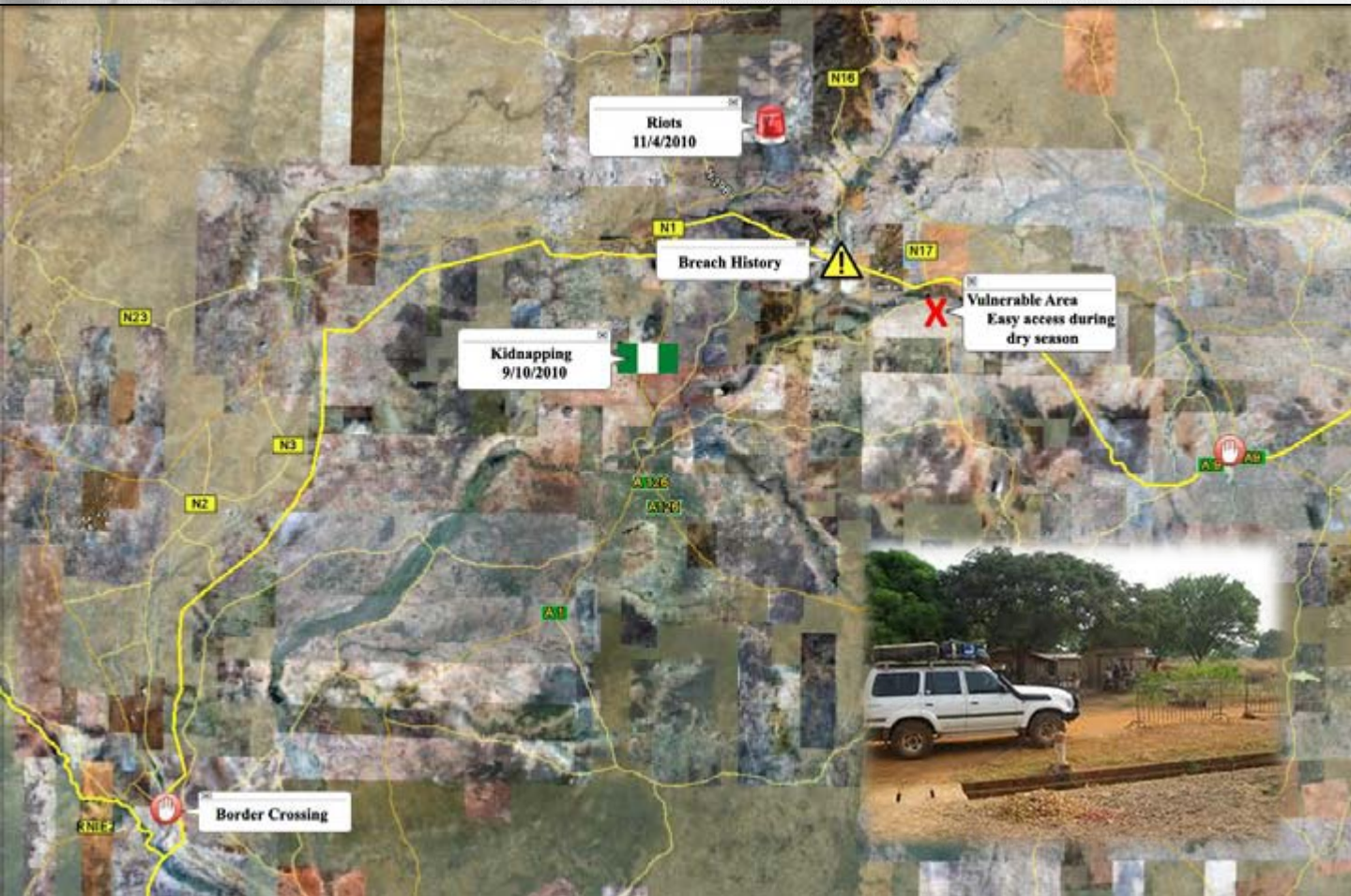


- Tracking
- Visibility analysis by motorcade/patrol
- Visibility analysis by security forces monitoring motorcade/patrol
- Threat analysis from snipers to deny firing points





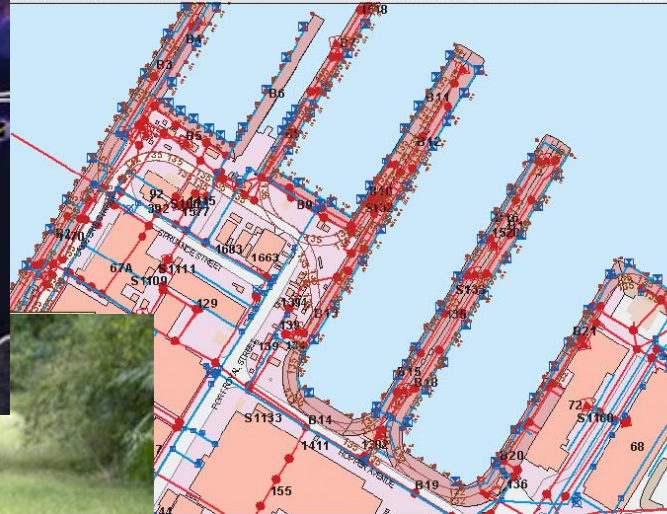
Border Security Nigeria and Niger



- Track all security breaches
- Identify areas of vulnerability
- Track cross border problems
 - Riots
 - Troop Movements
 - Ethnic Violence
- Track domestic problems
 - Riots
 - Kidnappings
 - Drug arrests
- Increase patrols in areas of high concerns



Oil Asset Protection

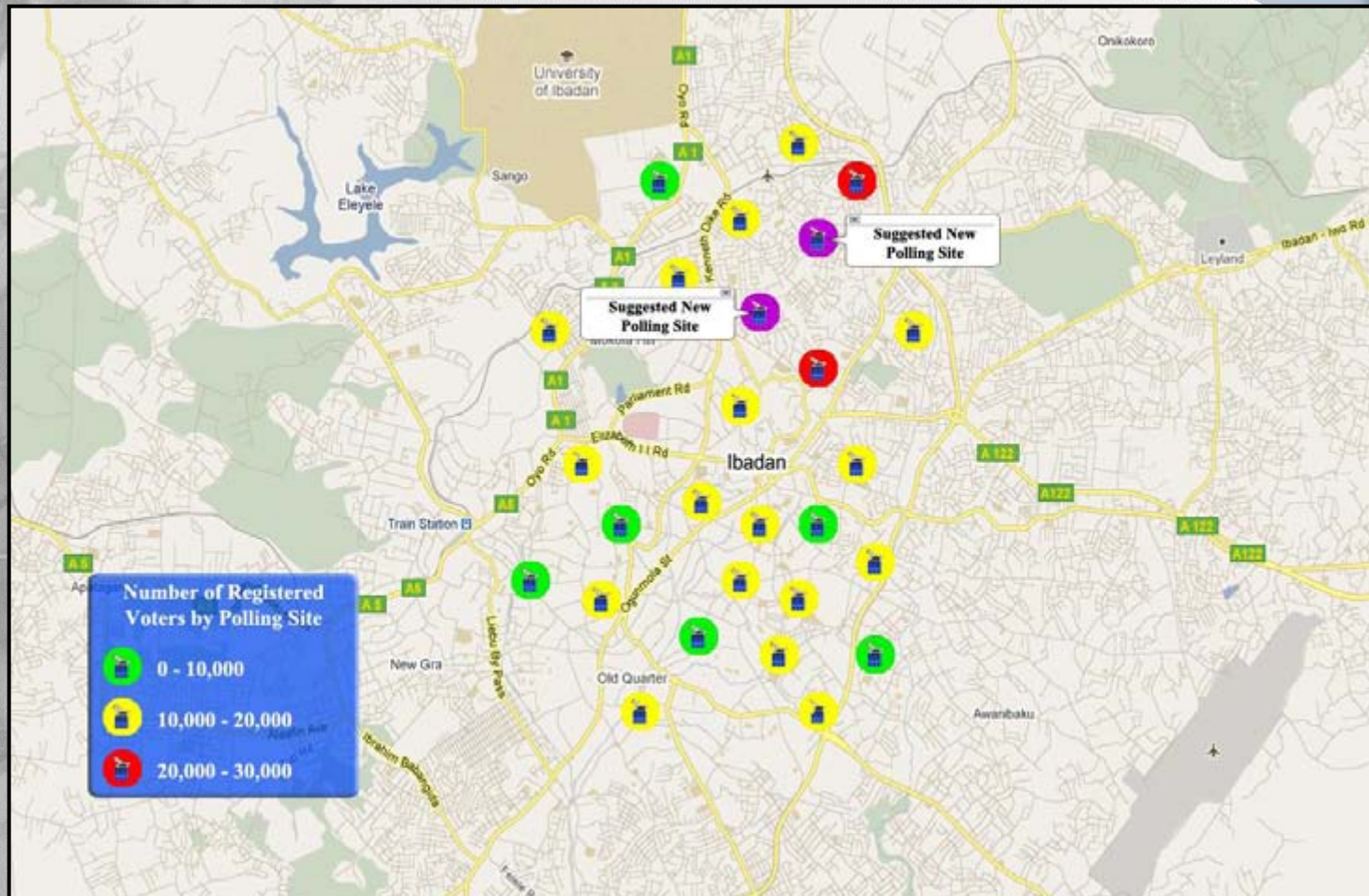


- Asset Inventory
- Vulnerability Assessment
- Map Past Insurgent Incidents
- Optimize Protection and Troop Location by Time of Day





Identify New Polling Sites to Alleviate Over Crowding



The Enterprise Implementation of GIS

1. Quick Successes
2. Educate
3. Easy to Use
4. Enterprise Tools
 - Old School vs. New School
 - ArcGIS Server Demo

Educate

Conferences

- ✓ How to best educate your entire organization
- ✓ Guarantee support throughout your organization
- ✓ How to make GIS indispensable for your agency
- ✓ Outsourcing vs. in-house education
- ✓ Select the best tools i.e. newsletters, user groups, conferences

Custom
Training

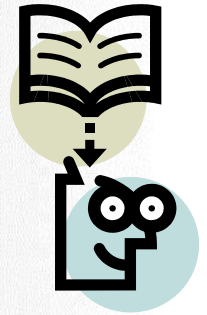
GIS Coordinator

Newsletters

Training Plan

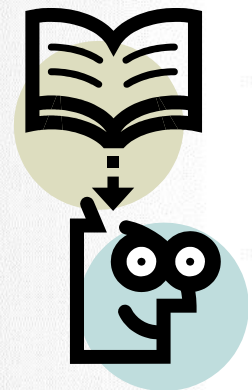
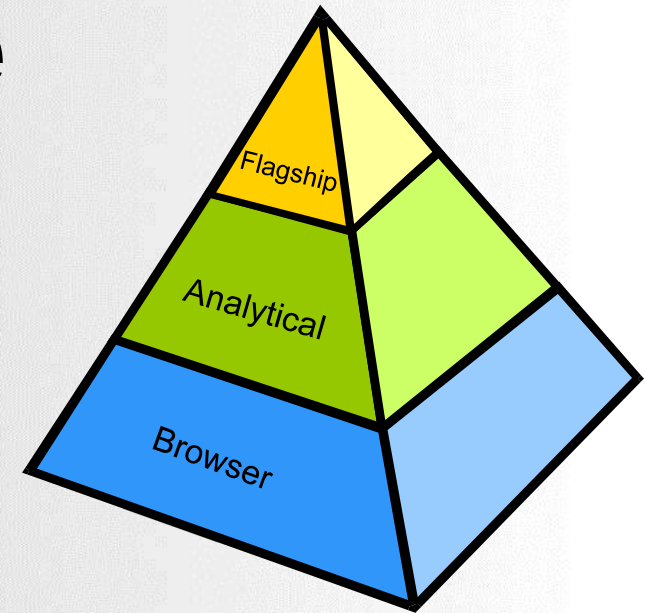
Educate

- Formal training
 - In-house
 - Vendor
- Newsletters
- Users Groups
- National Conferences
- One-on-one meetings
- Revisit the master plan



Educate

- Multiple tiers of use:
 - Power Users
 - Analyst Users
 - Browser Users
- All organizations have multiple users with multiple needs
- GIS is now accessible to everyone in an organization



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Easy to Use

- ✓ How to deliver the right tools to the right person
- ✓ Remove obstacles to GIS use
- ✓ Task specific solutions
- ✓ How to make GIS useful and easy-to-use
- ✓ New GIS tools to ensure enterprise-wide use
- ✓ GIS Applications with little training

Network Centric
Tools

Desktop GIS

Web Browser

Make it Useful and Easy to Use

If it's not easy to use, they won't use it.



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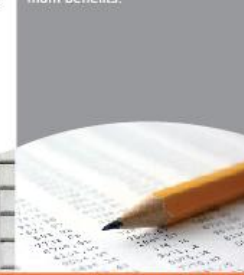
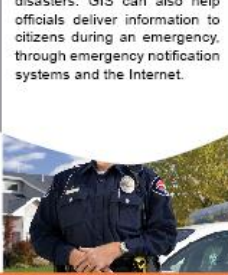
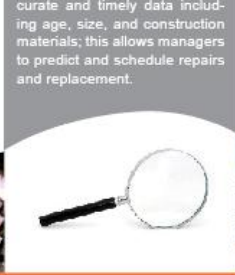
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PROBLEM

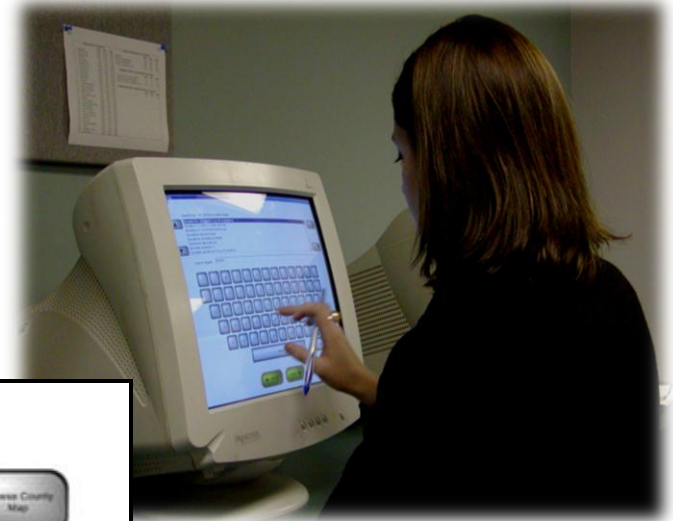
- Walk-in traffic volumes were growing in the assessor's office
- Phone calls were increasing
- Lines were lasting longer
- More development in the area caused more citizen requests



Return on Investment

SOLUTION

- GIS enabled the County to reduce wait time by 50%
- Residents were able to perform their own research
- GIS empowered people to print their own maps
- A higher approval rating was generated for the County



Return on Investment

RETURN ON INVESTMENT

Respond More Quickly to Citizen Requests

- Citizens can find information on their own instead of waiting in long lines or being put on hold
- Staff has more time to complete other tasks



The Enterprise Implementation of GIS

1. Quick Successes

- Tax Parcels
- Address Points
- Street Centerlines
- Aerial Photography

2. Educate

3. Easy to Use

4. Future Trends

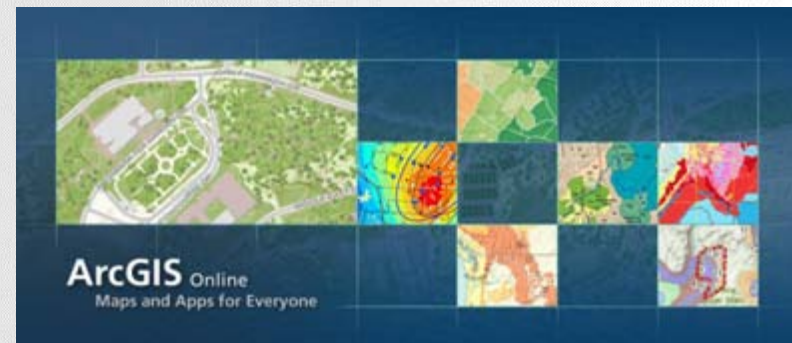
Ten Year Forecast of Trends

- GIS has evolved significantly since its inception
- Radical changes in software, databases, hardware, data creation methodologies, and end-user demands
- Keep an eye on the future
- Many local governments fail to do so
- They do not have a readily available path to implement the latest tools
- The expense of having to jump from old GIS technology to new is too onerous
- They are forced to continue with their antiquated tools
- The organization almost has to start over in order to modernize their GIS
- Should pay close attention to industry trends

Ten Year Forecast of Trends

Web Services and Data Sharing

- Although already in existence, web services and data sharing are just in their infancy
- The push in the GIS industry now is to make GIS data shareable and available
- Esri's software currently allows users to consume data from external feeds
- ArcGIS Online is a cloud-based geospatial content management system for storing and managing maps, data, and other geospatial information
 - Built on Esri's cloud infrastructure, it gives users access to geographic content shared and registered by Esri and GIS users around the world
 - Other vendors, such as Microsoft, are providing similar tools
- Over the next decade, GIS users will transparently be consuming data provided from any number of sources



Ten Year Forecast of Trends

Enterprise Integration

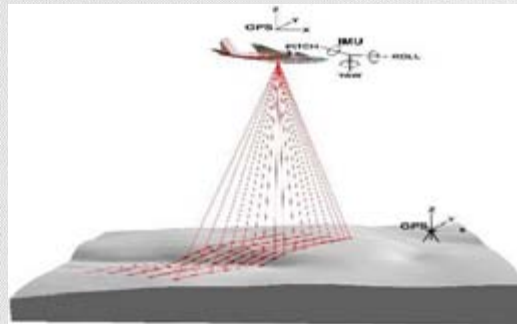
- GIS, as the integration tool for local government, has been heralded for many years
- The idea is that GIS becomes the portal into all databases within an organization (spatial and non-spatial)
- Integration between GIS, work management, asset management, outage management, and customer information systems is a desire of local government
- Utilizing a GIS address layer as the de-facto address database serving all non-spatial applications
- This has not been and will not be an overnight process
- Strides have been made over the past few years
- Local governments have begun to make integration a mandatory component of any new software system acquisition
- Software vendors are upgrading their software to meet this demand
- Over the next decade, this trend will continue
- Local government will inch closer and closer to accessing all of their enterprise data through a GIS front-end



Ten Year Forecast of Trends

Low Cost Spatial Data Collection Tools and Digital Data

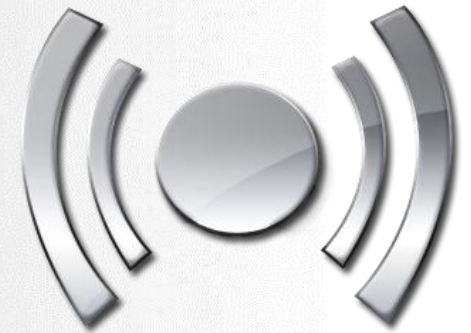
- The cost of data collection has plummeted over the past decade
- Tools have advanced, giving the ability for local government to acquire or collect much more information
- Data collection methods and data availability will continue to expand
- Local government GIS staff will need to integrate the ever increasing volume of data to include:
 - Radio frequency identification (RFID)
 - Automated meter reading (AMR)
 - Digital imaging cameras
 - Airborne and terrestrial LIDAR
 - Remote sensing satellites
- An ever increasing volume of digital data will be consumed via the GIS



Ten Year Forecast of Trends

Citizen Notification

- Public safety has led the way of late in implementing applications that will notify citizens if a crime occurs within a certain distance of their
 - Houses
 - Schools
 - Places of worship
- Citizens are beginning to expect this type of information to be emailed, texted, or automatically phoned to them
- GIS is utilized as the method of geo-enabling an existing database and juxtaposing the event in the database with the citizen's location of concern
- The demand for this type of information will continue to increase
- It will be expected that a local government will notify its citizens when a change of any type is occurring around them
 - Wayne County, North Carolina provides its citizens with the following information based on a user's geography
 - Geo-enabled crime
 - Inspection
 - Nuisance abatement
 - School/restaurant sanitation grade



Ten Year Forecast of Trends

Mobile GIS

- Mobile computing has exploded over the past few years
- Tablets and smartphones like the iPad, iPhone and Android devices now have applications available for products like Autodesk Mapguide
- The proliferation of smartphones will help increase the pressure on software companies to continue to produce mobile applications
- As computing power and capability increases for such devices, so too will the number of software companies offering mobile solutions
- Expect all GIS software companies to offer their core software on these mobile devices
- A majority of GIS end user applications will become untethered from the traditional personal computer





4



The Business Case for GIS

Section 4: Business Case for GIS

The Business Case for GIS

1. **Everyone Wants the Same Thing**
2. **16 Return On Investments (ROI)**
3. **ROI Case Studies**

The Business Case for GIS

1. **Everyone Wants the Same Thing**
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Everyone Wants the Same Thing: Measurable Results

While everyone in the organization has different day-to-day concerns, they all share the same ultimate goal: **Measurable Results**

- **Elected officials** may have little concern for functionality, but they do want to know how GIS delivers a return on the taxpayers' investment and can make the community a **better and safer place to live**.
- **City and County managers** focus on the governance of GIS, and how best to invest resources that benefit all of the stakeholders. Clear lines of **responsibility, accountability, and measurable results** are their chief concerns.
- **IT Directors and GIS Managers** concentrate on the challenges of bringing the technology to the users: **designing GIS architecture**, managing bandwidth demands, **budgeting for software and server acquisition**, and **training personnel**.

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GIS RETURN ON INVESTMENT



IMPROVE EFFICIENCY

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INCREASE PRODUCTIVITY

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SAVE TIME

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SAVE MONEY

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MAKE BETTER QUALITY AND MORE EFFECTIVE DECISIONS

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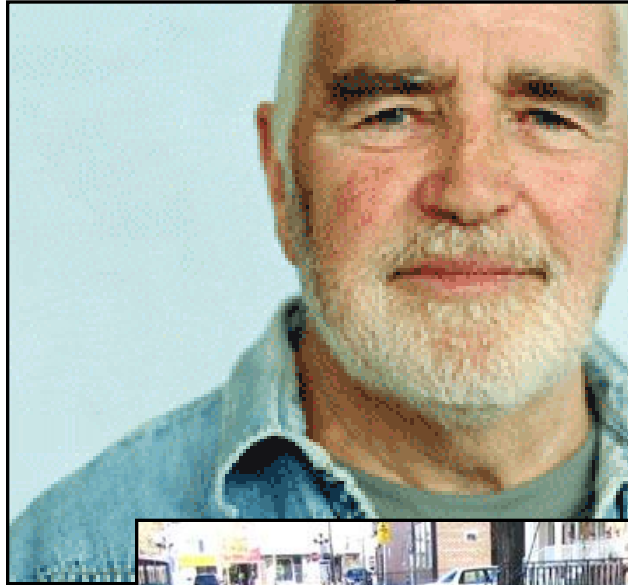
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PROBLEM

- Call came into E911 at 3:30 PM
- 62 year-old man brutally attacked in his own driveway
- Man was thrown into his own trunk and the assailants drove off in the same vehicle

Return on Investment City of Decatur, IL



Return on Investment

SOLUTION

- The operator was able to determine the man's location based on Phase II wireless compliance
- Police had no problem locating the vehicle within minutes
- After a short high speed pursuit, the assailants were apprehended



RETURN ON INVESTMENT

Save Lives

- Saved a 62 year-old man's life and potentially others
- Provides reassurance to the residents that they are much safer



Return on Investment

GEOGRAPHIC TECHNOLOGIES GROUP

648 North Spence Avenue

Goldsboro, NC 27534

1.888.757.4222

www.geotg.com

REAL-LIFE CASE STUDY

LGdispatch botches kidnappers joyride City of Decatur, IL



LGdispatch saves lives!

The Decatur Police Department recently utilized LGdispatch to help save a 62-year-old man's life. The City of Decatur Police Department purchased LGdispatch in 2004. This software is a Computer Aided Dispatch (CAD) mapping interface that provides E-911 dispatchers with an interactive map displaying the location of all emergency calls.

The Decatur Police Department's Emergency Services Coordinator (ESC) Gretchen Reynolds received an alarming 911 call on Monday, March 14 around 3:00 p.m. from a distressed victim. Apparently a 62-year-old man was violently attacked while sitting in his vehicle in his own driveway. The assailants beat him, robbed him, threw him in his trunk of his car and took off in the vehicle.

While lying in the trunk of his car, not knowing what the assailants were going to do, he dialed 911. His call was received by Decatur's ESC Gretchen Reynolds. The Decatur man was able to give Reynolds a description of his vehicle and his license number. Reynolds, using her LGdispatch mapping software's Phase II capability was quickly able to determine the location of the vehicle and pass the information on to the city officers and the Macon County deputies. Reynolds "re-bid" the cell phone signal to get the most current coordinates and then



Decatur Police Department, Emergency Communications Coordinator using LGdispatch software

entered the latitude and longitude information into the map in the E911 software. At that point she was able to display where the caller was located. The officers had no problem locating the vehicle and after a high speed chase the assailants crashed the vehicle and took off on foot. The officers apprehended the two assailants and were able to free the Decatur man from the trunk of the vehicle.

Without the LGdispatch software at Reynolds fingertips it would have made locating the victim utterly impossible since the victim was not aware of his location. Having access to LGdispatch insures that you have the most recent and reliable data at your fingertips to track E-911 calls.

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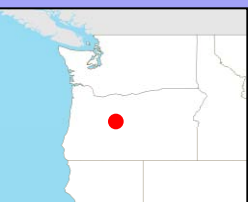
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Return on Investment

PROBLEM

- Experiencing maintenance tracking issues, as many vehicles were in need of repair
- Problem with knowing which areas of the City had been swept or cleared
- Too much paperwork
- Difficulties monitoring workloads
- Fuel consumption problems were wasting money



Return on Investment

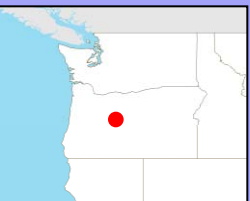
SOLUTION

Implement GIS and AVL to check and monitor:

- Speed of Vehicles
- Vehicle Routes
- Temperature of Engines
- Time Length of Blade Engaged

Deploy mobile mapping for workers to report problems such as:

- Regulatory Signs Down
- Plugged Storm Drains
- Uncovered Manholes



Return on Investment

RETURN ON INVESTMENT

Increase Productivity

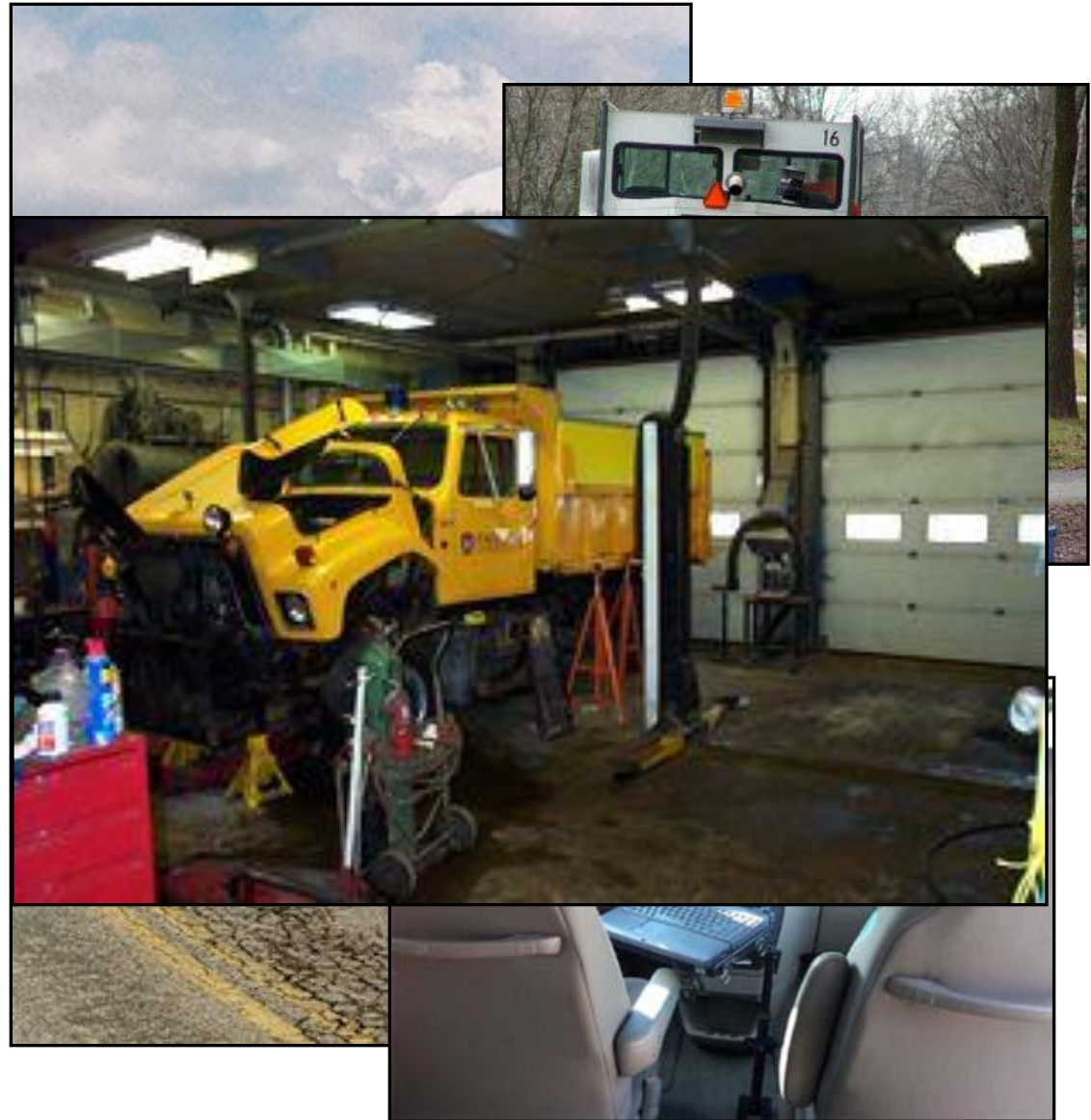
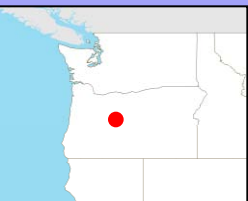
- An average of 10 more road segments per hour able to be swept
- An average of 20 more roads per hour able to be plowed
- Over 40% of encountered problems were reported in the field from working crews

Save Money

- Saved over 13,000 gallons in fuel costs for an entire year

Effective Management of Assets and Resources

- Reduced overdue repairs and maintenance



Return on Investment

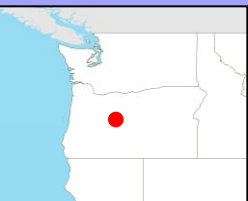
RETURN ON INVESTMENT

MEASURABLE RESULTS

Saved \$38,000 in Fuel Costs for One Year

Plowed More Roads on Average for a One-Year Period (28 days)

Swept 30,000 More Roads on Average for a One-Year Period (14 days)



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Return on Investment

PROBLEM

- New trees were planted, roads were repaired, and sidewalks were added on Vine Street.
- However, due to lack of tracking applications within the County, another CIP project was scheduled for that same area four months later.



Return on Investment

SOLUTION

- **Four** months later, the trees had to be removed, and the sidewalks torn up to make way for a previously planned capitol improvement project.
- To prevent this from happening in the future, the County implemented GIS within their County Maintenance and Planning departments.



Return on Investment

RETURN ON INVESTMENT

Save Time and Money

Once GIS was implemented to track all improvement projects, approximately \$100 K was saved annually.



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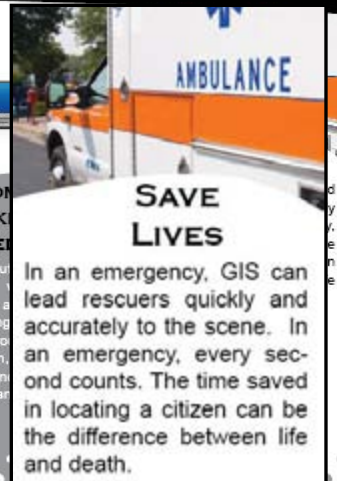
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PROBLEM

- A homicide occurred around 2 A
- There was a witness to the crime who identified the assailant



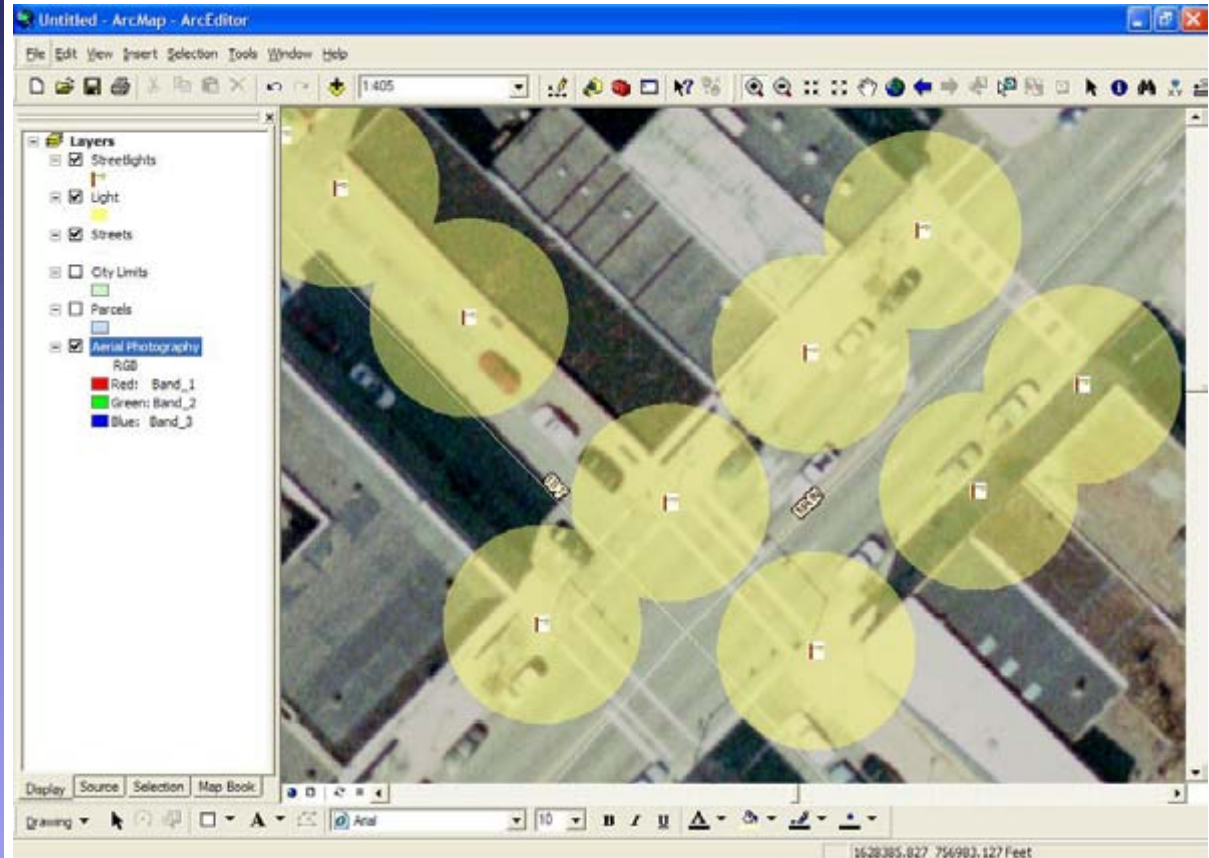
SOLUTION

- The Defense challenged the witness' creditability
- The Defense argued that the witness could not have identified the defendant clearly because there was not enough light in the area to make a positive ID



SOLUTION

- Prosecution was able to use GIS to buffer the street lights in the area where the crime occurred
- The buffered area proved that there was enough illumination for the witness to make a positive ID on the alleged attacker



RETURN ON INVESTMENT

Save Lives

- A convicted murderer was taken off the streets
- Provides reassurance to citizens that they are much safer with GIS



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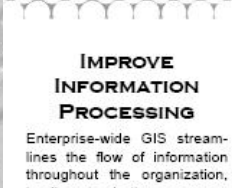
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Digital inventories of water, sewer, and storm water infrastructure are becoming increasingly important in local governments. A complete GIS program includes asset management, inventory control, and depreciation based on accurate and timely data including age, size, and construction materials; this allows managers to predict and schedule repairs and replacement.



PROTECT YOUR COMMUNITY

GIS helps public safety officials develop emergency plans and respond to disasters more effectively than ever before. GIS offers the tools to monitor conditions, recognize threats, predict consequences, and respond effectively and efficiently to man-made or natural disasters. GIS can also help officials deliver information to citizens during an emergency, through emergency notification systems and the Internet.



IMPROVE COMMUNICATION, COORDINATION, AND COLLABORATION

Good communication is the key to running an effective organization. GIS helps staff members and elected officials convey complex information in easy-to-understand formats.



PROVIDE DATA TO REGULATORS, DEVELOPERS, AND OTHER INTERESTED PARTIES

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RESPOND MORE QUICKLY TO CITIZEN REQUESTS

With GIS data at hand, staff members can easily respond to citizen requests for information with maps. Maps are inherently easy to understand; they convey complex statistics and graphs clearly and easily.



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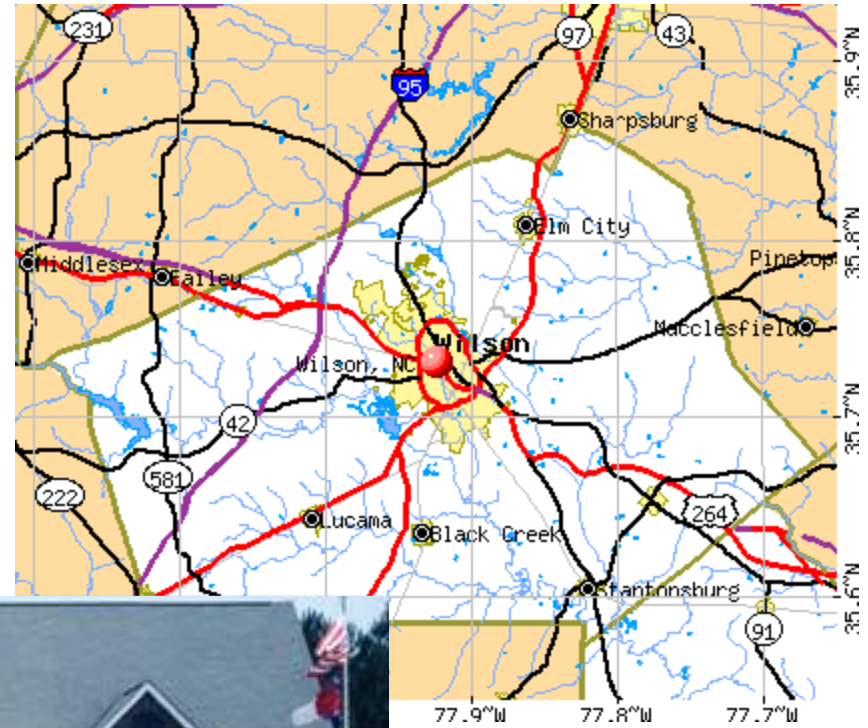
EFFECTIVE MANAGEMENT OF ASSETS AND RESOURCES

Effective management starts with analyzing, tracking, managing, allocating, and conserving assets. GIS technologies make production and delivery quick and efficient with maximum benefits.

Return on Investment

PROBLEM

- Wilson had five (5) fire stations, and were preparing to annex the northern area of town, adding a sixth fire station
- The addition of a sixth station would mean a tax increase for citizens in order to provide funding for the new station



Return on Investment

SOLUTION

- The City used GIS to show all areas that were covered in a four minute drive time.
- The City was able to run 35 different scenarios that would prevent the addition of a sixth fire station
- The best scenario proved that two of the stations could be relocated to cover 100% of the City with a four minute or less drive time.



Return on Investment

RETURN ON INVESTMENT

Save Time, Lives, and Money

- By simply relocating two stations, the City was able to save over \$2 million in five years
- The City also saved countless lives by reducing the drive time from 8 minutes to 4 minutes



GIS RETURN ON INVESTMENT



IMPROVE EFFICIENCY

GIS helps organizations reduce and eliminate redundant steps in workflow processes. By implementing GIS programs you can reduce workloads for your staff and you can develop new procedures, resulting in increased productivity and ultimately efficiency.



INCREASE PRODUCTIVITY

Accurate, current information at your staff's fingertips is needed, eliminating the waste of time searching for data or trying to locate data. Accurate electronic GIS maps are easily accessed by staff among all departments because information is accessed so quickly and accurately, productivity will increase in all departments.

COMPLY WITH STATE AND FEDERAL MANDATES

GIS leads to better accuracy, better access, and increased efficiency in every aspect of the organization.

GIS is important in local governments. A complete GIS program includes asset management, inventory control, and depreciation based on accurate and timely data including age, size, and construction materials; this allows managers to predict and schedule repairs and replacement.



SAVE TIME

Having the information when you need and want it saves time, staff resources, and ultimately money. Information can be made available to the public through a Web site or touch screen kiosks in convenient locations, reducing the demands on your staff.

PROTECT YOUR COMMUNITY

GIS helps public safety officials develop emergency plans and respond to disasters more effectively than ever before. GIS offers the tools to monitor conditions, recognize threats, predict consequences, and respond effectively and efficiently to man-made or natural disasters. GIS can also help officials deliver information to citizens during an emergency, through emergency notification systems and the Internet.



SAVE MONEY

GIS helps control spending through cost savings and cost avoidance. Immediate savings can be seen through better decisions and increased productivity. Cost avoidance becomes apparent over time, as GIS helps organizations reduce and eliminate costs.

IMPROVE COMMUNICATION, COORDINATION, AND COLLABORATION

Good communication is the key to running an effective organization. GIS helps staff members and elected officials convey complex information in easy-to-understand formats.



MAKE BETTER QUALITY AND MORE EFFECTIVE DECISIONS

A GIS is a critical tool to query, analyze and map data in decision support. GIS can, for example, be used to choose a location for a development that has minimal environmental impact, is located in a low risk area, and is close to a population center.

PROVIDE DATA TO REGULATORS, DEVELOPERS, AND OTHER INTERESTED PARTIES

GIS makes it easy to deliver information for complex political and regulatory requirements. GIS allows regulators and developers to consider all pertinent data, which results in informed decisions and better results.



IMPROVE DATA ACCURACY

GIS creates maps from data. Paper maps can be digitized and translated into GIS. Maps can be created on any location, at any scale, and showing selected information to highlight specific characteristics. Precise GIS data enables users to generate accurate reports and produce quality maps instantly.

RESPOND MORE QUICKLY TO CITIZEN REQUESTS

With GIS data at hand, staff members can easily respond to citizen requests for information with maps. Maps are inherently easy to understand; they convey complex statistics and graphs clearly and easily.



AUTOMATE WORKFLOW PROCEDURES

GIS helps automate tasks that expedite workflow and enhance your ability to react efficiently during a crisis. GIS can automate routine analysis, map production, data creation and maintenance, reporting, and statistical analysis.

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SAVE LIVES

In an emergency, GIS can lead rescuers quickly and accurately to the scene. In an emergency, every second counts. The time saved in locating a citizen can be the difference between life and death.

EFFECTIVE MANAGEMENT OF ASSETS AND RESOURCES

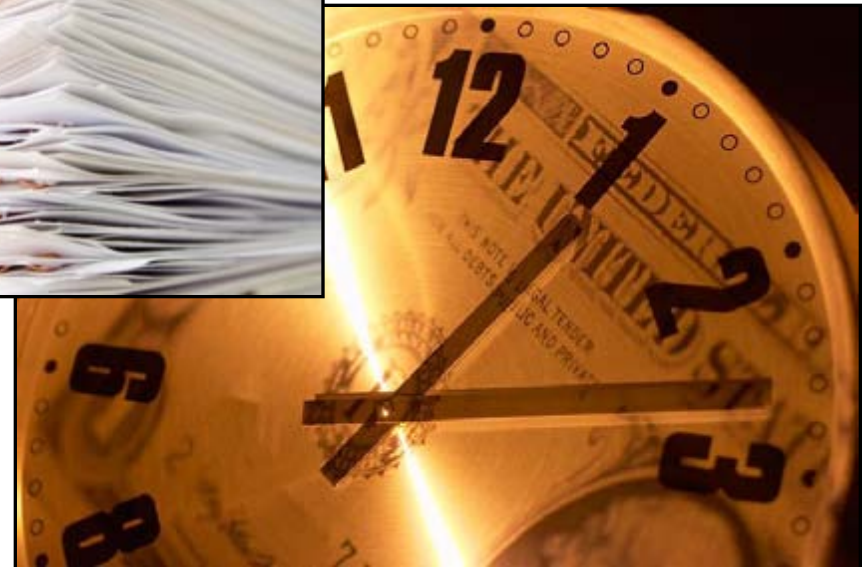
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Return on Investment

PROBLEM

- The County was spending over 53 hours per month manually counting and recording mandated reports for Field Inspections for Pesticide Use Enforcement, Pest Exclusion and Land Use Planning
- The process was time consuming and required too much staff commitment



Return on Investment

SOLUTION

- The County purchased PC Tablets with geodatabase links to electronically transfer data to the monthly reports
- This allowed for better analysis tools that can quickly display relationships of crops to water areas, schools, and sensitive site locations



Return on Investment

RETURN ON INVESTMENT

Improve Efficiency

- Implementing the new PCs reduced staff time by 45%
- The County was able to save \$23,922.24 annually, and reduced the possibility of human error



GIS RETURN ON INVESTMENT



IMPROVE EFFICIENCY

GIS helps organizations reduce and eliminate redundant steps in workflow processes. By implementing GIS programs you can reduce work loads for your staff and you can develop new procedures, resulting in increased productivity and ultimately efficiency.



INCREASE PRODUCTIVITY

GIS puts accurate, current information at your staff's fingertips when they need it, eliminating the need to waste time searching for lost data or trying to correct inaccurate data. Accurate digital and electronic GIS mapping can be easily accessed by and shared among all departments. And because information can be accessed so quickly and accurately, productivity will improve in all departments.



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GIS helps automate that expedite work enhance your ability efficiently during a day. You can automate routine map production, data and maintenance, and statistical analysis.



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Return on Investment

PROBLEM

- Call came into E911 at 11:00 AM
- 18 year-old male had flipped his ATV over and was now unconscious, bleeding
- The other male did not see any familiar landmarks around

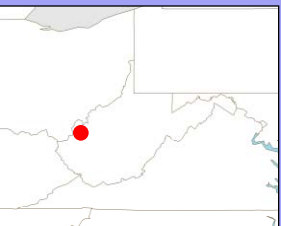


Dispatcher- "911 what is your emergency?"

Caller- "My friend, he's really hurt; his head is bleeding and I think he is going into shock!"

Dispatcher- "OK, where are you located?"

Caller- "I don't know, we were riding our 4-wheelers all day and Tom tried to cross a rocky spot near a creek and he flipped over the 4-wheeler, it's on top of him now and I can't get it off of him! We need help right away!"



Return on Investment

SOLUTION

- The caller had his GPS unit with him to find their way back at the end of the day
- The dispatcher then asked for the coordinates of their location, entered them into the system, and found the location instantly
- FlightCare was sent to the ATV accident location immediately

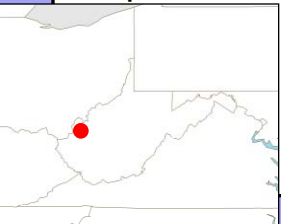


Dispatcher- “Can you tell me about a reference point or some sort of land mark near you?”

Caller- “I think we are near Clear Creek Mountain, but I can’t really tell. We have our GPS units so we can find our way back though.”

Dispatcher- “Can you give me your GPS coordinates so we can get an EMS team to you?”

Caller- “Yes, hang on one second....OK we are at...
32 degrees 51 minutes 55.2 seconds North
89 degrees 14 minutes 30.78 seconds West.



Return on Investment

RETURN ON INVESTMENT

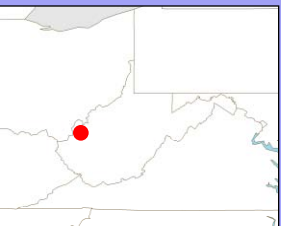
Save Lives

- Saved an 18 year-old man from bleeding to death
- Provides reassurance to people that they are much safer with GIS



Dispatcher- "I have located you on our map and have passed the coordinates to Care Flight; they are 4 minutes away and will be able to get Tom out. I need you to keep him calm and tell him we are on the way."

Caller- "I hear the helicopter now, they are landing in the opening up the hill. Tom is in bad shape, but I think you just saved his life!"



Department Specific Issues and ROI/ Savings

Department	Return on Investment	Possible Savings
Administrative Office/Board of Supervisors	<ul style="list-style-type: none"> • Improve Emergency Response Planning and Communication • Respond better to Citizen Requests • Eliminate reliance on the Planning and Building Department for producing maps and performing analysis • Eliminate the manual look-up process by integrating SAP with GIS 	Increased efficiency and 1000s of hours saved due to easy-to-use geo-spatial tools. \$25,000 – 50,000 savings
Agriculture Commissioner	<ul style="list-style-type: none"> • Eliminate paper mapping, printing costs, and duplication of effort by making GIS available in the field • Save lives using GIS for Emergency Notification • Save lives by using GIS to enhance Hazard Mitigation – Preparedness, Response and Recovery • Improve Communication at Public Forums • Comply with State and Federal mandates 	Estimated 870 Hours Saved / \$52,200
Assessor's Office	<ul style="list-style-type: none"> • Eliminate duplication of effort by integrating legacy Systems (SAP – Hummingbird – Kofax) • Eliminate annual Consulting (\$25,000) costs by managing all Tax parcel management tasks • Automate traditional manual mapping tasks • Improve accuracy and save lives by creating building footprint layer • Save time and money by enable field crews with data, and routing tools • Improve Public Access and reduce calls to the County by deploying internet solutions • Identify lost revenue from nonpayment of Building Permits • Generate revenue by improving the accuracy of the Tax Rate Area (TRA) • Better customer service by improving data accuracy. 	1000 + hours saved / \$250,000 +

Department Specific Issues and ROI/ Savings

Department	Return on Investment	Possible Savings
CAL FIRE	<ul style="list-style-type: none"> • Save Lives by supplying accurate, up-to-date digital centerlines, parcels, address points and photography • Improve the ISO rating • Save lives using the Emergency Notification tool • Save time, money, and automate the manual process by integrating pre-plans and hazardous materials data • Improve Public access to critical data • Save money and time by using GIS for Optimum facility location, drive time analysis, and creating of response zones, and fire districts 	<p>Improve ISO Rating = \$100,000 + in savings to citizens Hours saved 500+ / \$45,000</p>
Clerk Recorder's Office	<ul style="list-style-type: none"> • Reduce Redundancy by integrating existing systems – DIMS-Net, Exigent AS 400) • Improve efficiency by managing and maintaining critical data layers, including Precinct Boundaries, Polling Locations, Registered Voters, • Improve Public Access to Voter Information 	<p>1000 hours saved for citizens / 400 staff hours saved / \$42,000</p>
Office of the District Attorney	<ul style="list-style-type: none"> • Save time and Money and reduce research time by making all County data available • Improve Accuracy by producing court case exhibits in-house using accurate, and up-to-date information 	<p>Hours saved = 300+ / \$18,000</p>
Farm Advisor	<ul style="list-style-type: none"> • Reduce the need for outside consultants and improve communication by deploying GIS software that produces quality mapping products • Eliminate redundant processes, and improve accuracy by using industry standard GIS • Eliminate duplication of effort and redundancy by automate field access to GIS 	<p>Save \$25,000 in Consulting fees Hours saved 200 / \$18,000 (travel costs)</p>

Department Specific Issues and ROI/ Savings

Department	Return on Investment	Possible Savings
General Services	<ul style="list-style-type: none"> • Save time, and money, and improve service, planning, and communication by integrating existing software (RecTrac and MainTrac) with GIS • Improve Public Access to data • Automate traditionally manual tasks including property owner searches, creating of mailing labels. • Improve Communication and Management by creating digital data layers • Improve public safety, policing, and patrolling by mapping the incidents of crime and vandalism • Improve efficiency and management by integrating GIS with SAP and viewing data geographically • Save time and money, and reduce redundancy by enabling field crews with data 	\$50,000 - \$100,000 savings
Health Department	<ul style="list-style-type: none"> • Save time and money, and reduce redundancy by enabling field crews with data • Improve Public Access to Data • Improve accuracy and management by creating digital layers of water well locates, and hazardous materials 	Time will be saved since staff will be able to make better informed decisions.
Human Resources/Risk Management	<ul style="list-style-type: none"> • Improve efficiency and management by integrating GIS with SAP and viewing data geographically • Improve Communication by producing high quality maps • Save time and money, and reduce redundancy by enabling field crews with data 	Time saved in research.
Information Technology	<ul style="list-style-type: none"> • Enterprise coordination will eliminate redundancy, save time, and money and allow Fire, Public Works, Planning and Building, and other departments to be custodian of specific data layers, and share data layers with the enterprise. • Money will be saved through licensing centralization and optimization 	Savings of 30 – 50 hours per week in replicated work; \$600 - \$1,000 per week in staff costs \$50,000 annually in maintenance fees and \$100,000 in direct licensing fees overall

Department Specific Issues and ROI/ Savings







Department	Return on Investment	Possible Savings
Library	<ul style="list-style-type: none"> • Plotting patron location to optimize branch locations and mobile services, and outreach programs (mailings) • Easy access to County data improves services to citizens and saves staff time 	Saves both staff and citizens time. There is more time to focus on other tasks. Creates better efficiency.
Office of Emergency Services	<ul style="list-style-type: none"> • Ability to notify residents in a targeted area post disaster. • Quickly determine losses and value. • Quick reporting to federal agencies. • Use GIS to determine tsunami inundation lines for optimal creation of evacuation plan. 	Saves time since more residents are notified in a shorter period of time. Creates better efficiency. \$100,000+ savings
Planning and Building	<ul style="list-style-type: none"> • Allow Customers to access pertinent data themselves though public kiosks • Permitting, zoning, and inspection application projects can be tracked via the internet. • More and better data will save time and money 	6000 hours saved / \$400,000
Probation	<ul style="list-style-type: none"> • Reduce crime by mapping the locations of parolees • View the location of offenders wearing GPS bracelets • Offense types mapped and cross referenced with recurring crime. • Map all offender locations for optimized site visits 	780 hours saved / \$60,000
Public Works	<ul style="list-style-type: none"> • Improve efficiency by cross referencing all work orders and various construction projects to insure optimal work flow. • Reduce redundancy by quickly viewing work requests and identify repetitive problem areas. • Map infrastructure to comply with State and Federal mandates 	780 hours saved / \$300,000
Sheriff-Coroner	<ul style="list-style-type: none"> • Save time and money and save live by quickly viewing patterns in crimes, emergency calls and viewing critical data such as hazardous materials and critical facilities. 	400 hours saved / \$24,000

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Social Services	<ul style="list-style-type: none"> • Welfare to Work Initiatives, viewing open jobs, daycares, transit, para-transit and training centers. 40% reduction in time and 10% to 20% reduction in welfare rolls will Save Money and Assist Citizens. • Optimize site visits will Increase Productivity and Save Money in fuel and staff time. 	1000+ hours saved / \$100,000+ (40% reduction in the time it takes to gather information.
Treasurer/Tax Collector/Public Administrator	<ul style="list-style-type: none"> • Identify Noncompliance with Business Licensing laws, lost license fees, sales tax and uncollected penalties will increase revenue. • Quickly identify transient occupancy tax (TOT) areas, and cross reference these with rental properties and violators will Increase Revue and Make for better decisions. 	Revenue increased by \$100,000s








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Case Study Findings - County of San Luis Obispo

San Luis Obispo Departments	Existing GIS	Return on Investment	Explanation and Value	Possible Savings
Administrative Office/Board of Supervisors		1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16	<ul style="list-style-type: none"> • Improve Emergency Response Planning and Communication • Respond better to Citizen Requests • Eliminate reliance on the Planning and Building Department for producing maps and performing analysis • Eliminate the manual look-up process by integrating SAP with GIS 	Increased efficiency and 1000s of hours saved due to easy-to-use geo-spatial tools. \$25,000 – 50,000 savings
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CAL FIRE		3, 4, 8, 10, 11, 12, 14, 15, 16,	<ul style="list-style-type: none"> • Save Lives by supplying accurate, up-to-date digital centerlines, parcels, address points and photography • Improve the ISO rating • Save lives using the Emergency Notification tool • Save time, money, and automate the manual process by integrating pre-plans and hazardous materials data • Improve Public access to critical data • Save money and time by using GIS for Optimum facility location, drive time analysis, and creating of response zones, and fire districts 	Improve ISO Rating = \$100,000 + in savings to citizens Hours saved 500+ / \$45,000
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RECAP

SEVEN KEYS TO GIS SUCCESS



PLAN FOR RESULTS

Strategic GIS planning should focus on the keys to success; it should be detailed, organized and comprehensive.

- We're all about your return on investment.
- We're focused on your success.
- We focus on your organization's vision, goals, and objectives.
- We achieve measurable success quickly for your organization.
- We build and foster commitment in your organization.
- We show you how your organization can make better decisions.
- We demonstrate how your organization can respond more quickly to citizen requests.

GEOGRAPHIC TECHNOLOGIES GROUP

Thank you!

Proprietary Rights and Copyright: Attendees acknowledge that the GIS Manager's Workshop is proprietary and confidential of Geographic Technologies Group (GTG) and is protected by the United States copyright laws and applicable international copyright treaties and/or conventions.



UNDERSTANDING LOCAL GOVERNMENT