Esri Southeast User Conference

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esri.com/serug

A GIS Survival Guide for the 21st Century

Adam Carnow

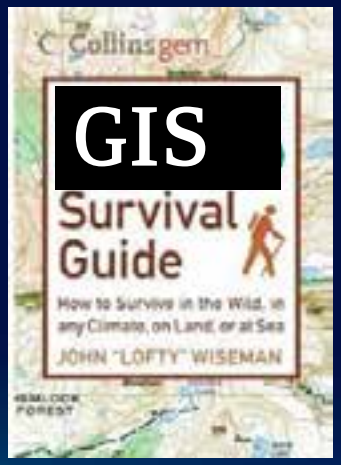
Goals

In this session about strategies for making your GIS more relevant/valuable/beneficial to your organization & ready for the twenty-first century, topics will include the following:

- How to get the most out of the technology you already own
- How to expand the influence of your GIS
- How to keep your GIS current & adapt it to the latest trends
- How to make your GIS an enabling technology
- How to communicate the value of GIS to your organization

Agenda

- Why do we need a GIS Survival Guide?
  - Challenges/Threats
  - Use Case
  - Trends
- Survival Techniques
  - Make Your GIS a Mission-Critical Enterprise IT System
  - Implement Five Pattern Solutions
  - Sell GIS to Your Organization
- Summary
  - A GIS Self-Examination



Why do we Need a GIS Survival Guide?

Current Challenges (Threats?!?):

- **Resource Limitations**
- **Maintaining Legacy Applications**
- **Delivering Products that Meet Market Expectations**
- **Supporting a Broad Spectrum of Users (Customers)**
- **Changing IT Trends**

BE PREPARED!!!

GIS Survival Techniques for the 21st Century

- COTS over Custom
- Configurable Applications
- Platform Standardization
- Support Current Devices
- Flexible Deployment Options

GIS Survival Techniques for the 21st Century

- Reduce Lifecycle Costs
- Mitigate Risk
- Improve Flexibility
- Relevant & Practical Applications
- Easy-to-use Applications

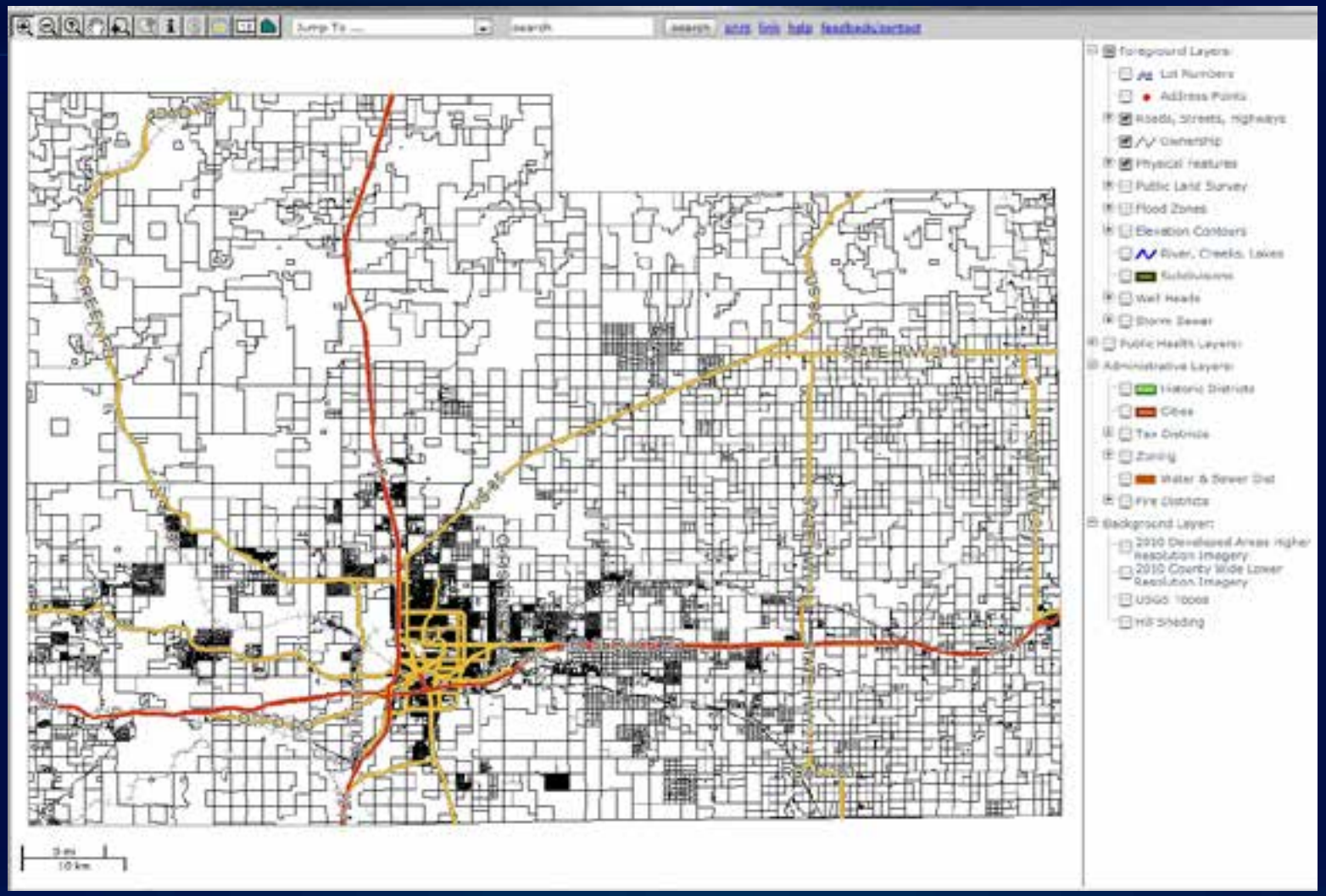
Let’s Play Pretend…

- I have a new job & need to relocate to a major city in another state.
- I am NOT a GIS professional.
- I need to quickly & easily find key information about my new hometown & I want to share this information with my family & friends…

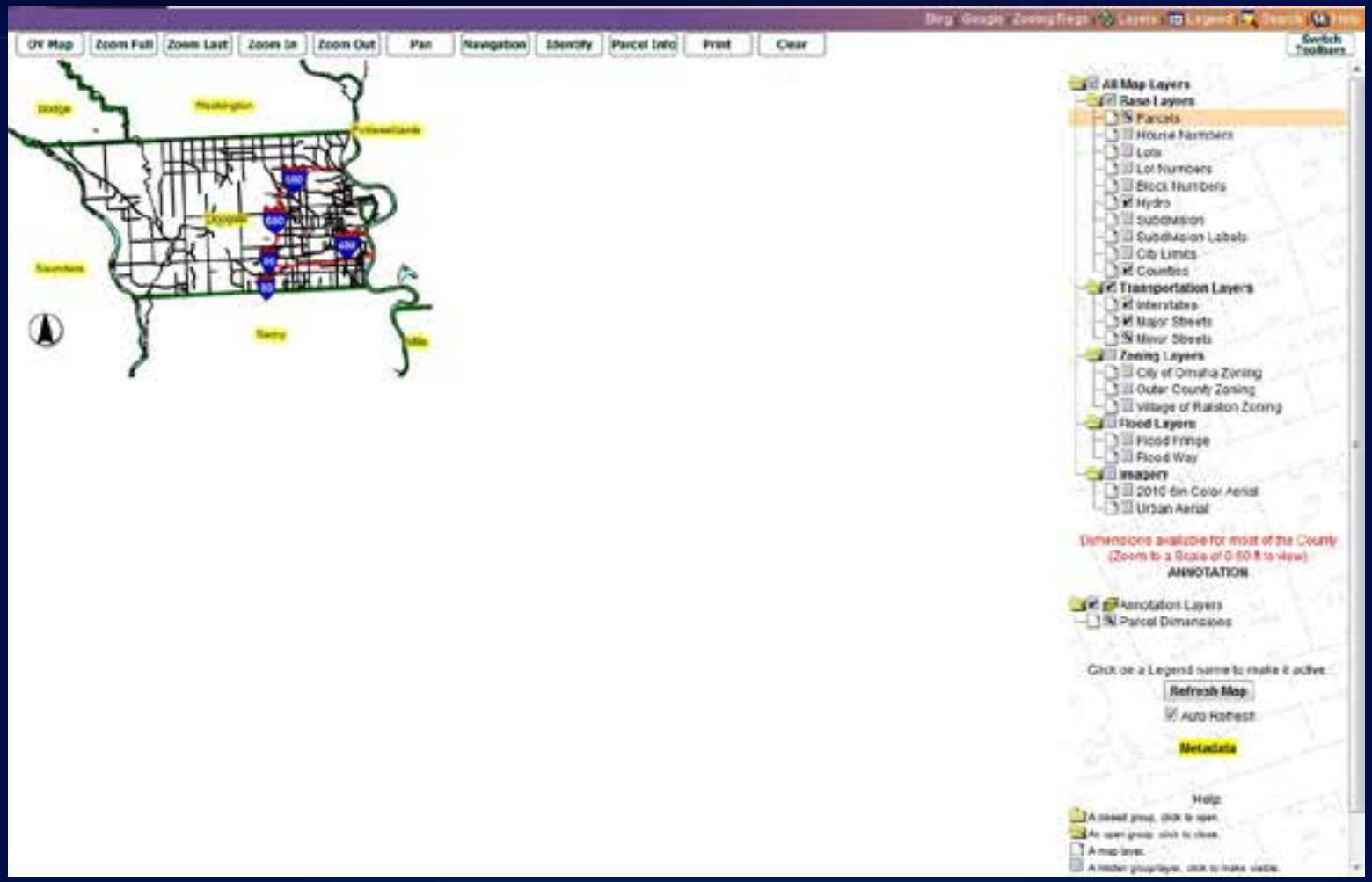
Let’s Play Pretend…

Browser Statistics Month by Month

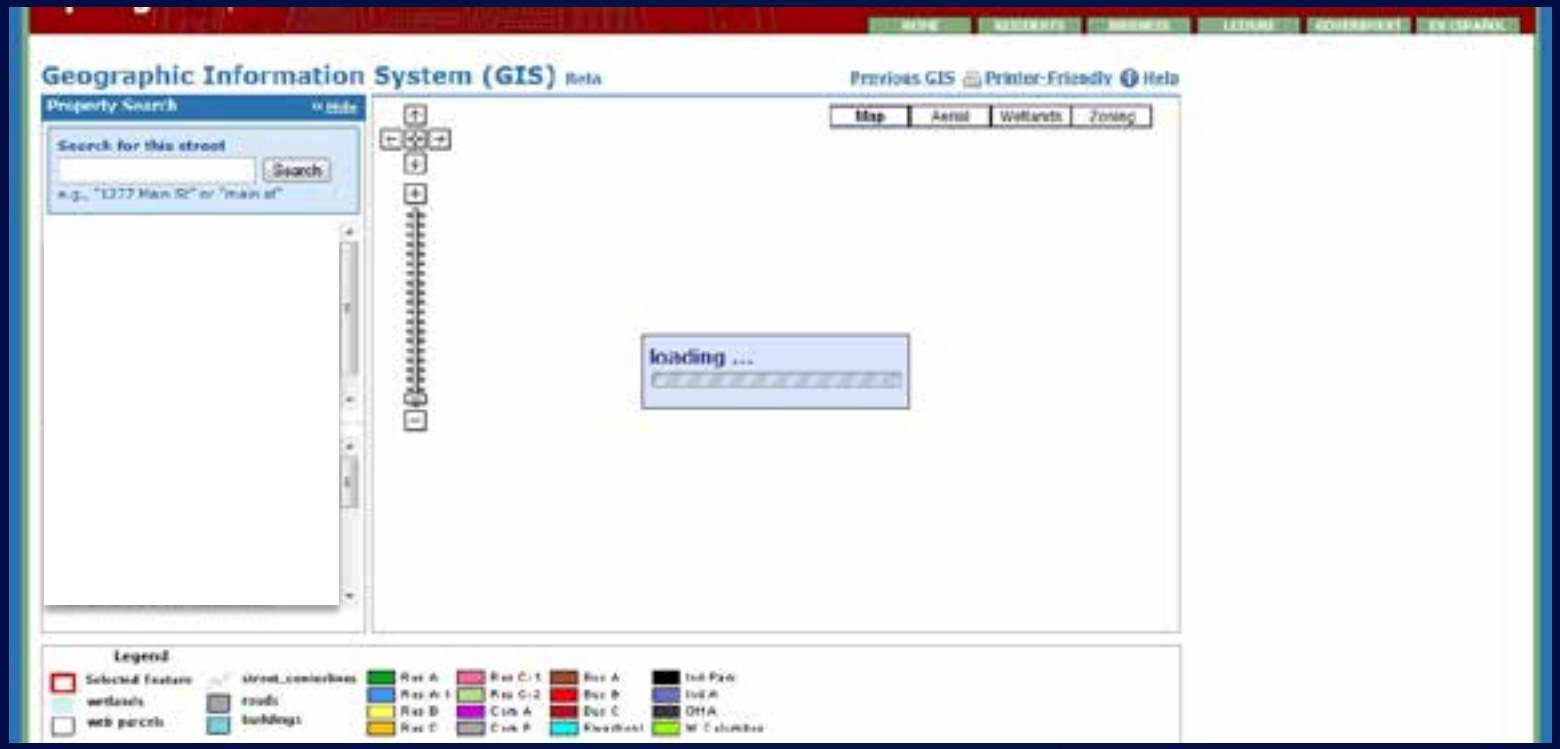
2012	Internet Explorer	Firefox	Chrome	Safari	Opera
March	18.9 %	36.3 %	37.3 %	4.4 %	2.3 %
February	19.5 %	36.6 %	36.3 %	4.5 %	2.3 %
January	20.1 %	37.1 %	35.3 %	4.3 %	2.4 %


Jump To ...
search
Foreground Layers:
Lot Numbers
Address Points
Roads, Streets, Highways
Ownership
Physical Features
Public Land Survey
Flood Zones
Elevation Contours
River, Creeks, Lakes
Subdivisions
Well Heads
Storm Sewer
Public Health Layers:
Administrative Layers:
Historic Districts
Cities
Tax Districts
Zoning
Water & Sewer Dist
Fire Districts
Background Layer:
2010 Developed Areas Higher Resolution Imagery
2010 County Wide Lower Resolution Imagery
USGS Topos
Hill Shading
STATE HWY 216
10 km

CITY HOME
Monday February 6, 2012
SERVICE CATEGORY
Elected Officials
Health
Public Safety
Recreation
Local Services
Zoning
Capital Improvement Projects (CIP)
New Search
DYNAMIC LAYERS
State House
State Senate
US House
US Senate
Apply
Address
Owner
REPORT OPTIONS
Within Map
Within Distance
Nearest
Get Report
MAP LEGEND
Elected Officials
Selected Parcel
Highways
Street Centerlines
Counties
Railroads
Parcels
US Senate
Zoom In
Zoom Out
MAP TOOLS
Center on Click
Select Parcel
Zoom to Selection



Dirg Google Zoning Regs Layers Legend Search Help
OV Map
Zoom Full
Zoom Last
Zoom In
Zoom Out
Pan
Navigation
Identify
Parcel Info
Print
Clear
Switch Toolbars
Dodge
Washington
Pottawattamie
Douglas
Saunders
Sarpy
Mills
All Map Layers
Base Layers
Parcels
House Numbers
Lots
Lot Numbers
Block Numbers
Hydro
Subdivision
Subdivision Labels
City Limits
Counties
Transportation Layers
Interstates
Major Streets
Minor Streets
Zoning Layers
City of Omaha Zoning
Outer County Zoning
Village of Ralston Zoning
Flood Layers
Flood Fringe
Flood Way
Imagery
2010 6in Color Aerial
Urban Aerial
Dimensions available for most of the County
(Zoom to a Scale of 0.50 ft to view)
ANNOTATION
Annotation Layers
Parcel Dimensions
Click on a Legend name to make it active.
Refresh Map
Auto Refresh
Metadata
Help:
A closed group, click to open.
An open group, click to close.
A map layer.
A master group/layer, click to make visible.


Geographic Information System (GIS) Beta
Previous GIS
Printer-Friendly
Help
Property Search
hide
Search for this street
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Wetlands
Zoning
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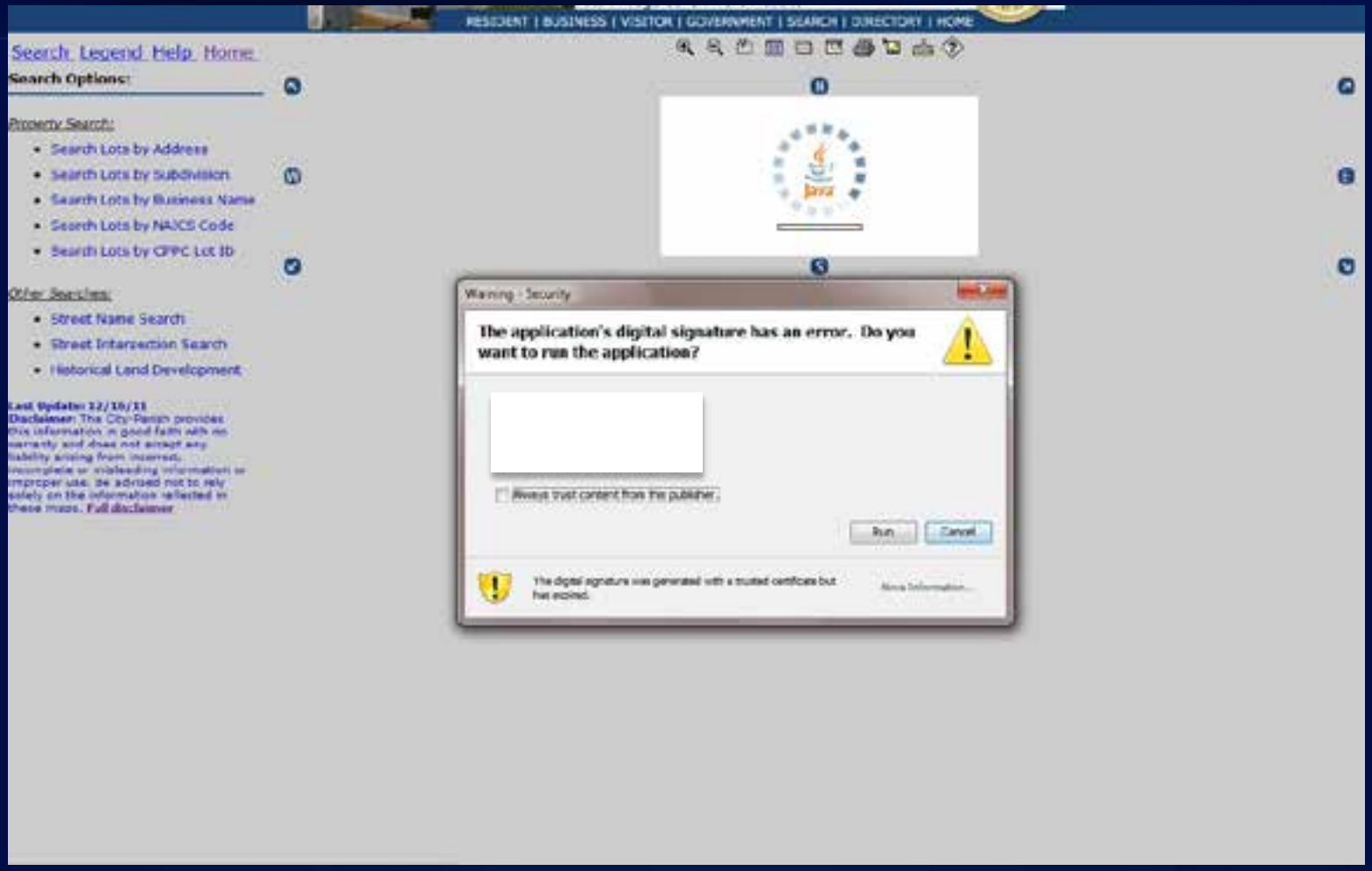
Legend
Selected Feature
wetlands
web parcels
street_centerlines
roads
buildings

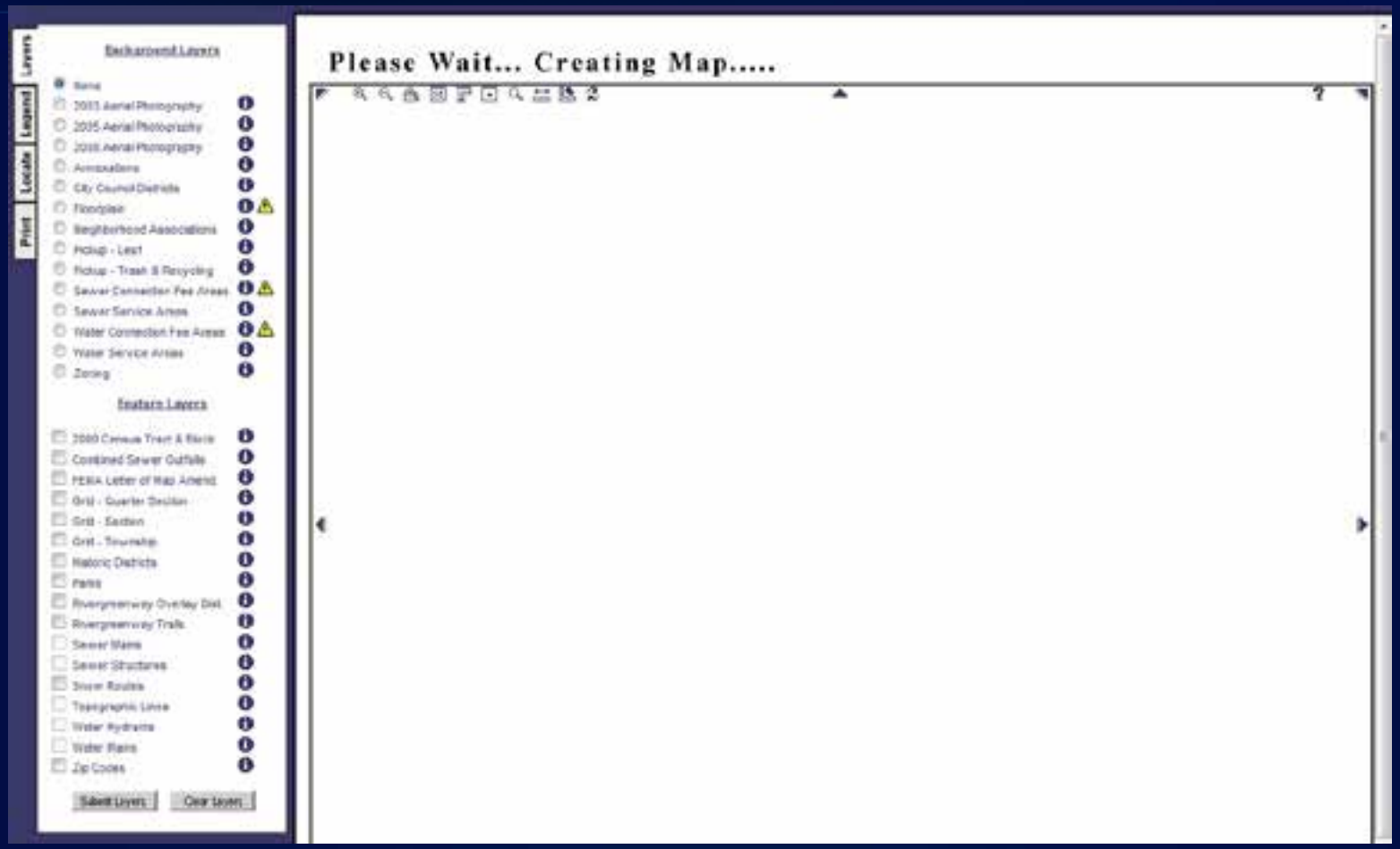

RESIDENT | BUSINESS | VISITOR | GOVERNMENT | SEARCH | DIRECTORY | HOME
Search Legend Help Home
Search Options:
Property Search:
Search Lots by Address
Search Lots by Subdivision
Search Lots by Business Name
Search Lots by NAICS Code
Search Lots by CPPC Lot ID
Other Searches:
Street Name Search
Street Intersection Search
Historical Land Development
Warning - Security
The application's digital signature has an error. Do you want to run the application?
Always trust content from this publisher.
Run
Cancel
The digital signature was generated with a trusted certificate but has expired.
More Information...

Zoning | Council | Schools | Parks | Streets | Crime | Flood Zone | Custom

Your browser isn't supported

We apologize for the inconvenience. Support fo
browsers:

- Internet Explorer 5.5 or higher (Windows)
- Firefox 0.8 or higher (Windows, Mac and Linux)
- Mozilla 1.4 or higher (Windows, Mac and Linux)
- Safari 1.2.4 or higher (Mac)
- Netscape 7.8 or higher (Windows and Mac)
- Opera 7.5 or higher (Windows and Mac)


Layers
Legend
Locate
Print
Background Layers
None
2003 Aerial Photography
2005 Aerial Photography
2008 Aerial Photography
Annexations
City Council Districts
Floodplain
Neighborhood Associations
Pickup - Leaf
Pickup - Trash & Recycling
Sewer Connection Fee Areas
Sewer Service Areas
Water Connection Fee Areas
Water Service Areas
Zoning
Feature Layers
2000 Census Tract & Block
Combined Sewer Outfalls
FEMA Letter of Map Amend
Grid - Quarter Section
Grid - Section
Grid - Township
Historic Districts
Parks
Rivergreenway Overlay Dist.
Rivergreenway Trails
Sewer Mains
Sewer Structures
Sewer Routes
Topographic Lines
Water Hydrants
Water Mains
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Submit Layers
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MMP Map

Map Center | MG Viewer | Find WO

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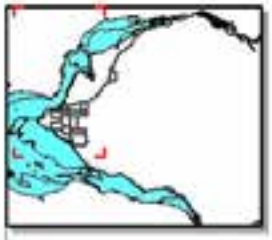
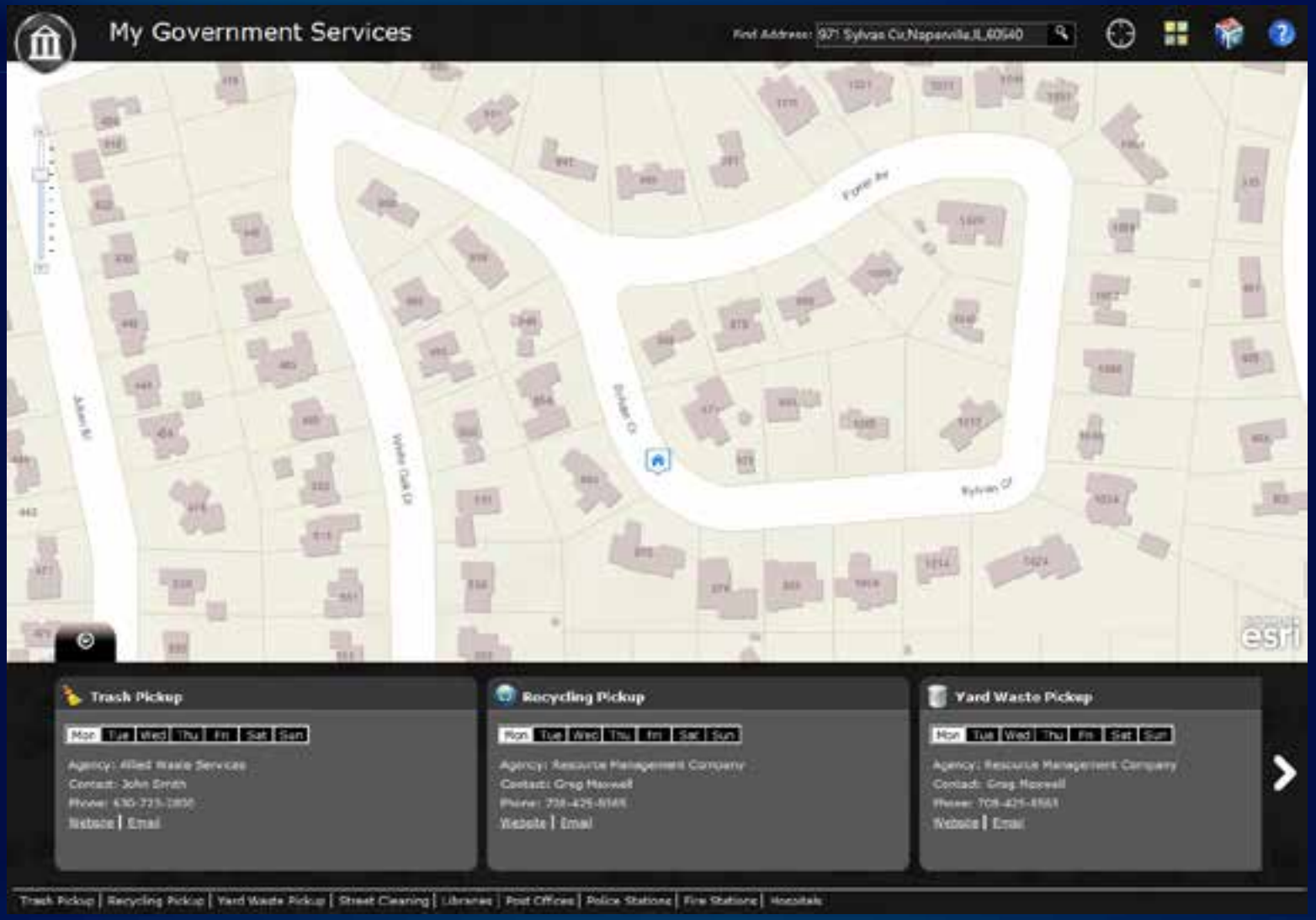


Please Have Patience

This application may take as long as 1 to 2 minutes to load when being accessed through a 56k dial-up modem.

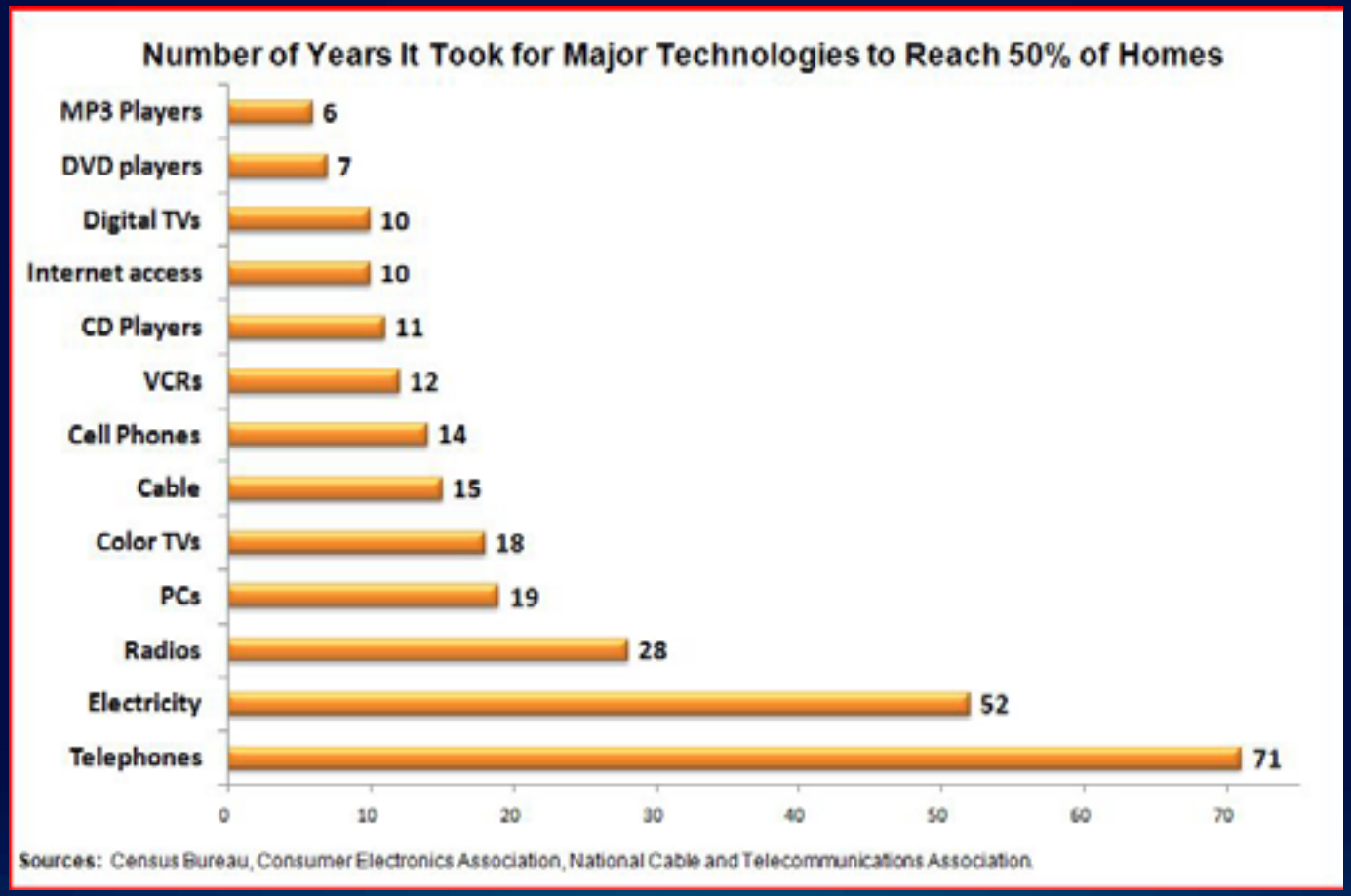
This application is best viewed with Internet Explorer 5.0 or better. Persons using Netscape browser versions and/or using an Apple or Mac PC may experience unsatisfactory results.

.....LOADING APPLICATION.....


My Government Services
Find Address: 971 Sylvan Cir,Naperville,IL,60540
Trash Pickup
Mon Tue Wed Thu Fri Sat Sun
Agency: Allied Waste Services
Contact: John Smith
Website | Email
Recycling Pickup
Mon Tue Wed Thu Fri Sat Sun
Agency: Resource Management Company
Contact: Greg Maxwell
Website | Email
Yard Waste Pickup
Mon Tue Wed Thu Fri Sat Sun
Agency: Resource Management Company
Contact: Greg Maxwell
Website | Email
Trash Pickup | Recycling Pickup | Yard Waste Pickup | Street Cleaning | Libraries | Post Offices | Police Stations | Fire Stations | Hospitals

Change

"Nothing endures but change." – Heraclitus of Ephesus (c.535 BC - 475 BC) Greek philosopher



Jack Welch on Change

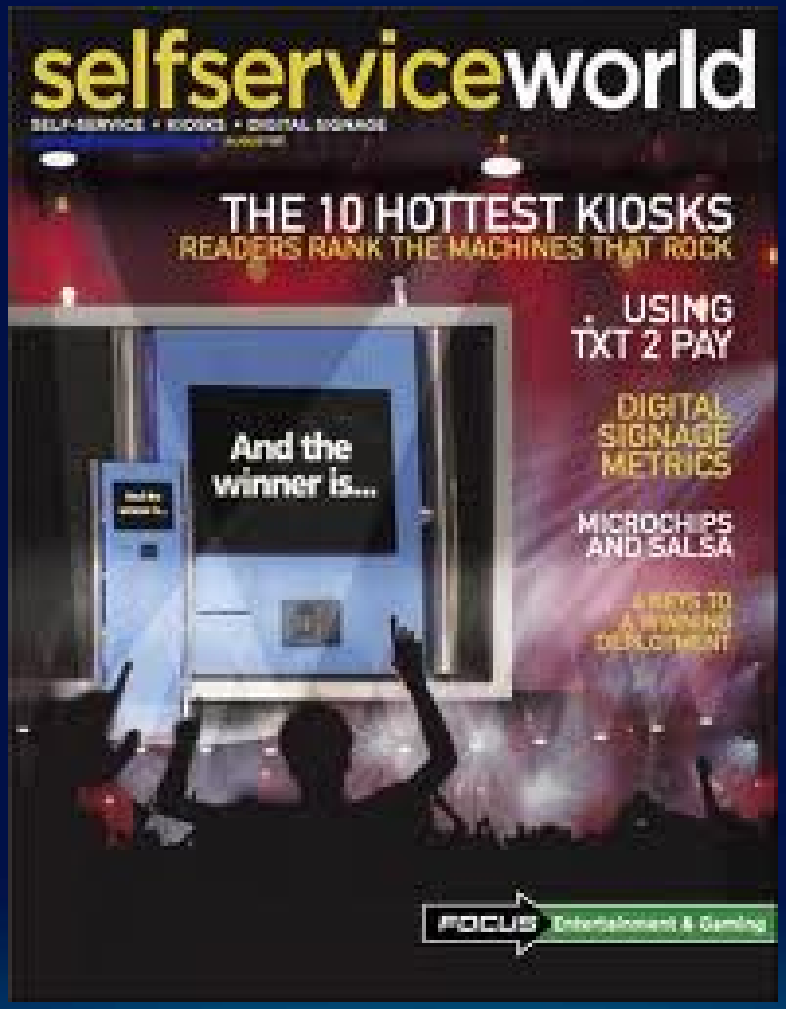
- Chairman & CEO of GE 1981-2001
- GE Market Value = $12 billion to $280 billion
- Named “Manager of the Century” by Fortune in 1999
- “When the rate of change outside exceeds the rate of change inside, the end is in sight.”
- “Change before you have to.”
- “Willingness to change is a strength, even if it means plunging part of the company into total confusion for a while.”

New Rules for Enterprise Applications

1. **Make it appealing.**
   - Irresistible
   - User-friendly
   - Works on all current browsers & mobile devices
2. **Make it transparent.**
   - Answer questions, don’t overload with data
   - Provide analysis, not just data
   - Deploy multiple, focused apps, not one do-it-all app
3. **Update it often.**
   - Keep it fresh, not stale (apps & content)

from Computerworld magazine

It is a Self-Service World



It is a Self-Service World

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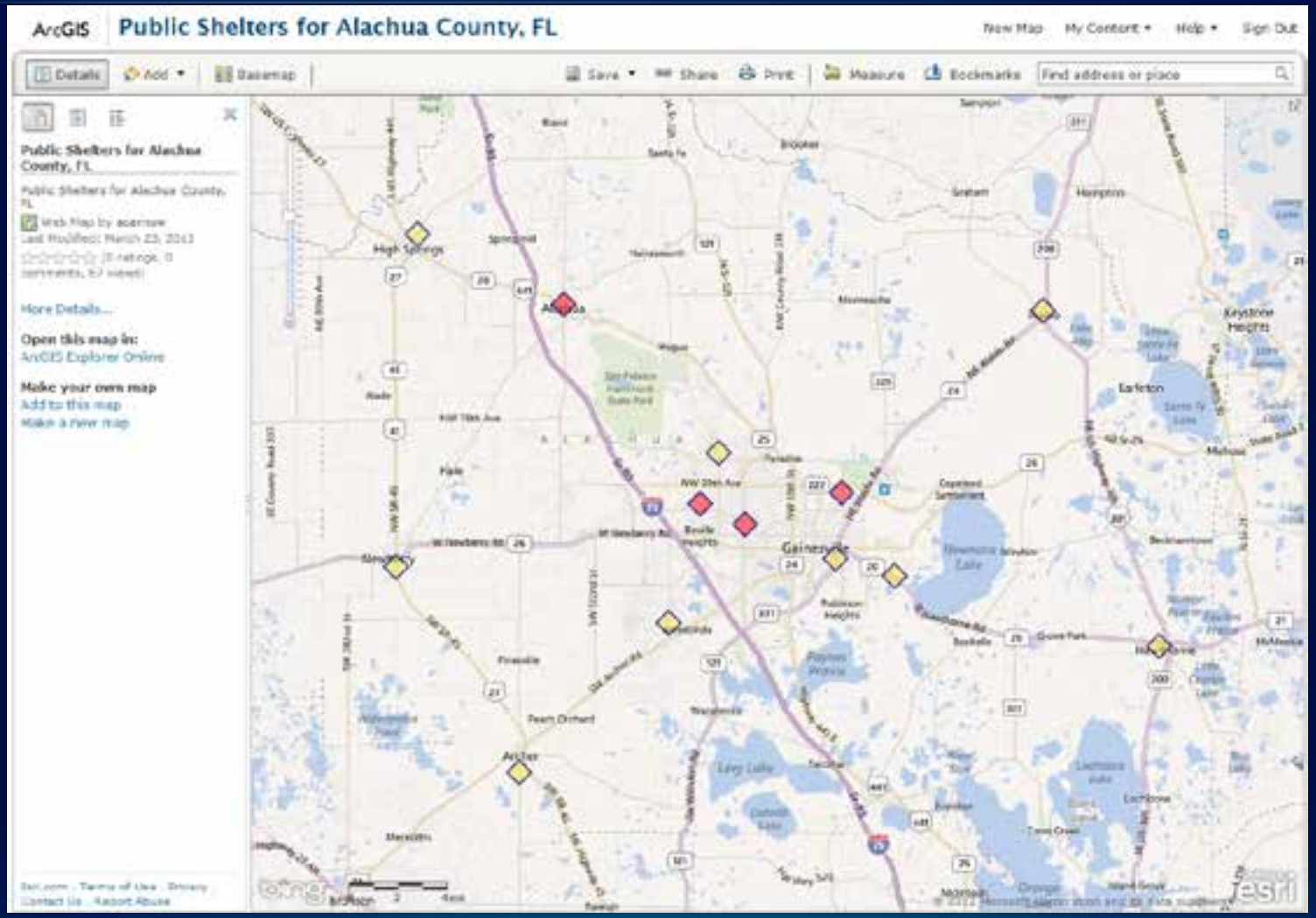
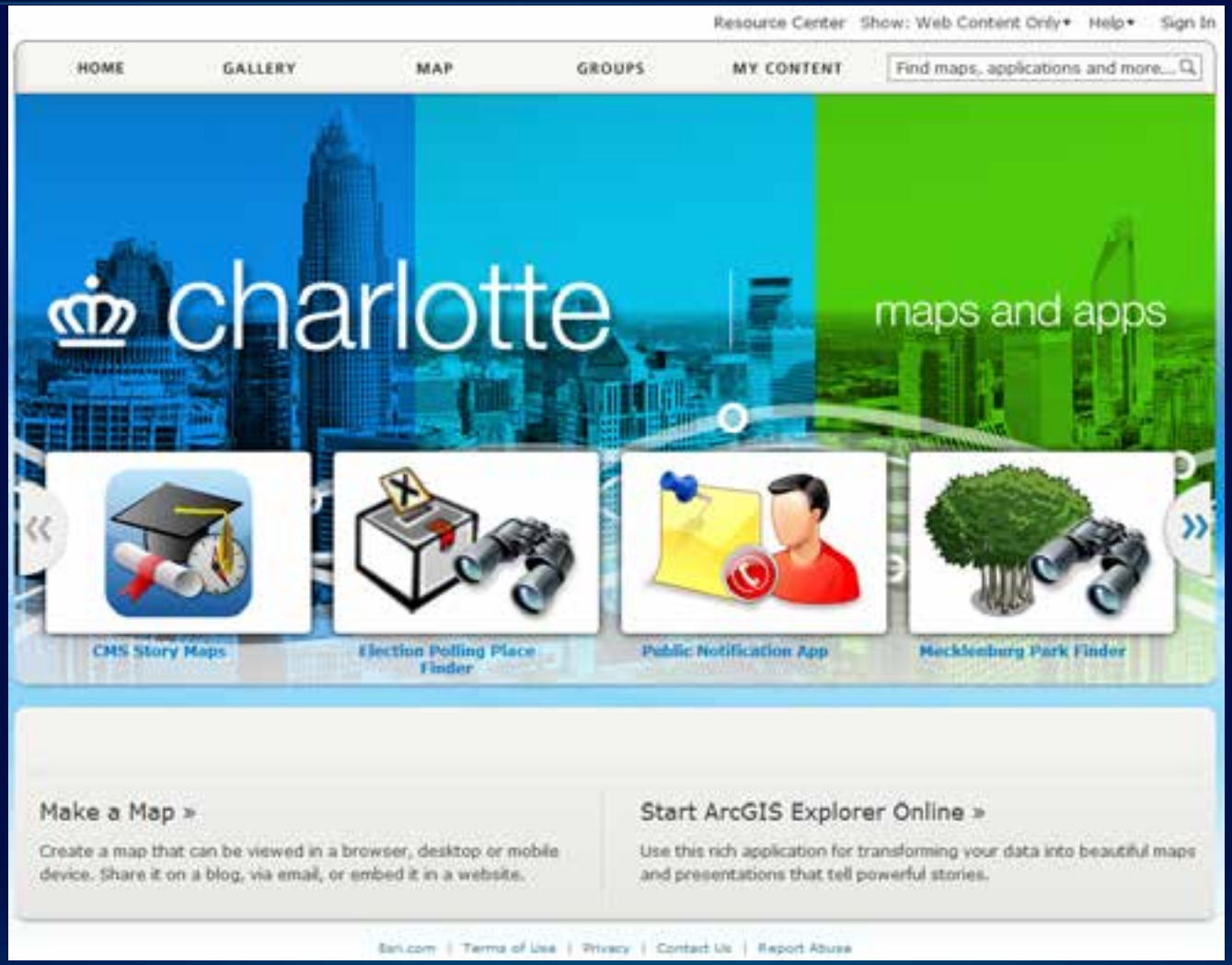
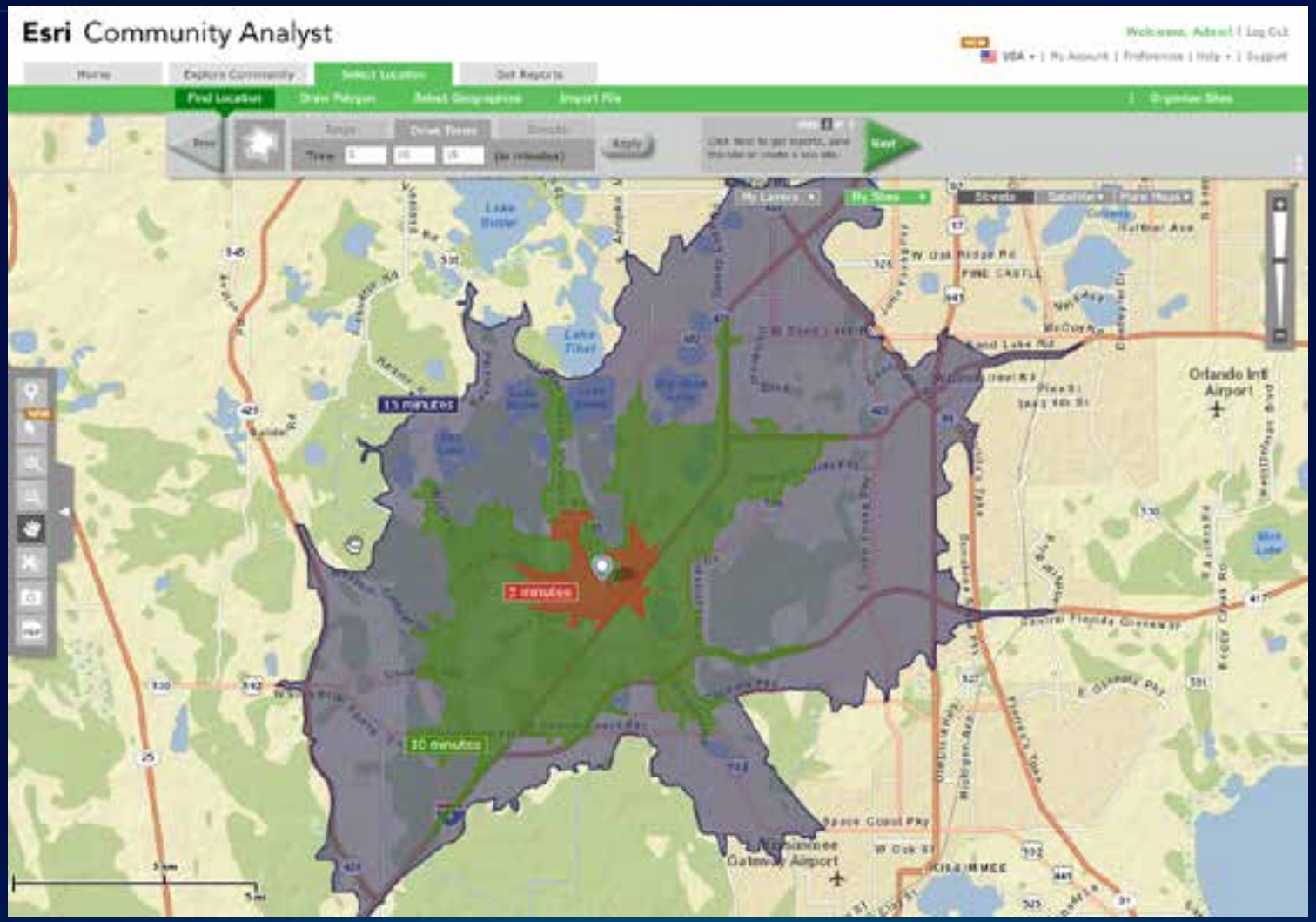


It is a Self-Service World



It is a Self-Service World



Make your GIS a Mission-Critical Enterprise IT System

Follow Best Practices

- IT Best Practices
- GIS Best Practices
- Esri Best Practices

IT Best Practices

- Development/Staging/Production/Publication Environments
- Service Level Agreements
- Business Continuity/Risk Mitigation
- System Architecture Design
- Environment Isolation
- Living Strategic Plan

GIS Best Practices

- Establish a Geospatial Program
- Develop & Maintain Data as an Asset
- Take an Enterprise Systems Approach
- Share with the Public

March 2011
National Geospatial Advisory Committee (NGAC)
http://www.fgdc.gov/ngac

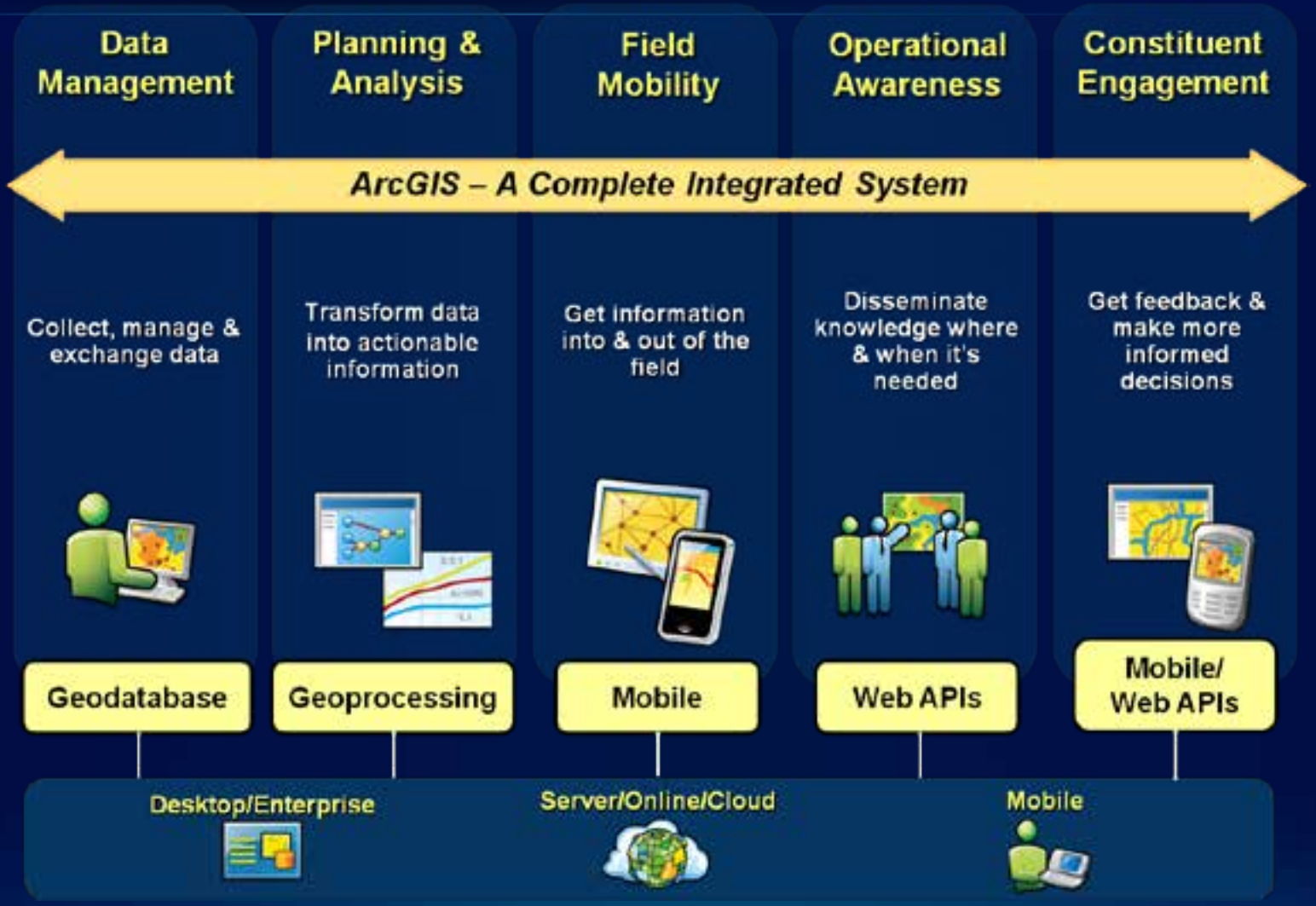
Esri Best Practices

- Follow Recommendations
  - System Requirements
  - System Architecture Design Strategies
  - Training Pathways
- ArcGIS for Local Government
- ArcGIS Online
- Community Maps Program
- Technical Support
- Professional Services
- Educational Services
- Partners
- Implement Five Pattern Solutions

Implement Five Pattern Solutions

Five Patterns of Business

Five Patterns Mapped to the ArcGIS Platform



Why Implement GIS?

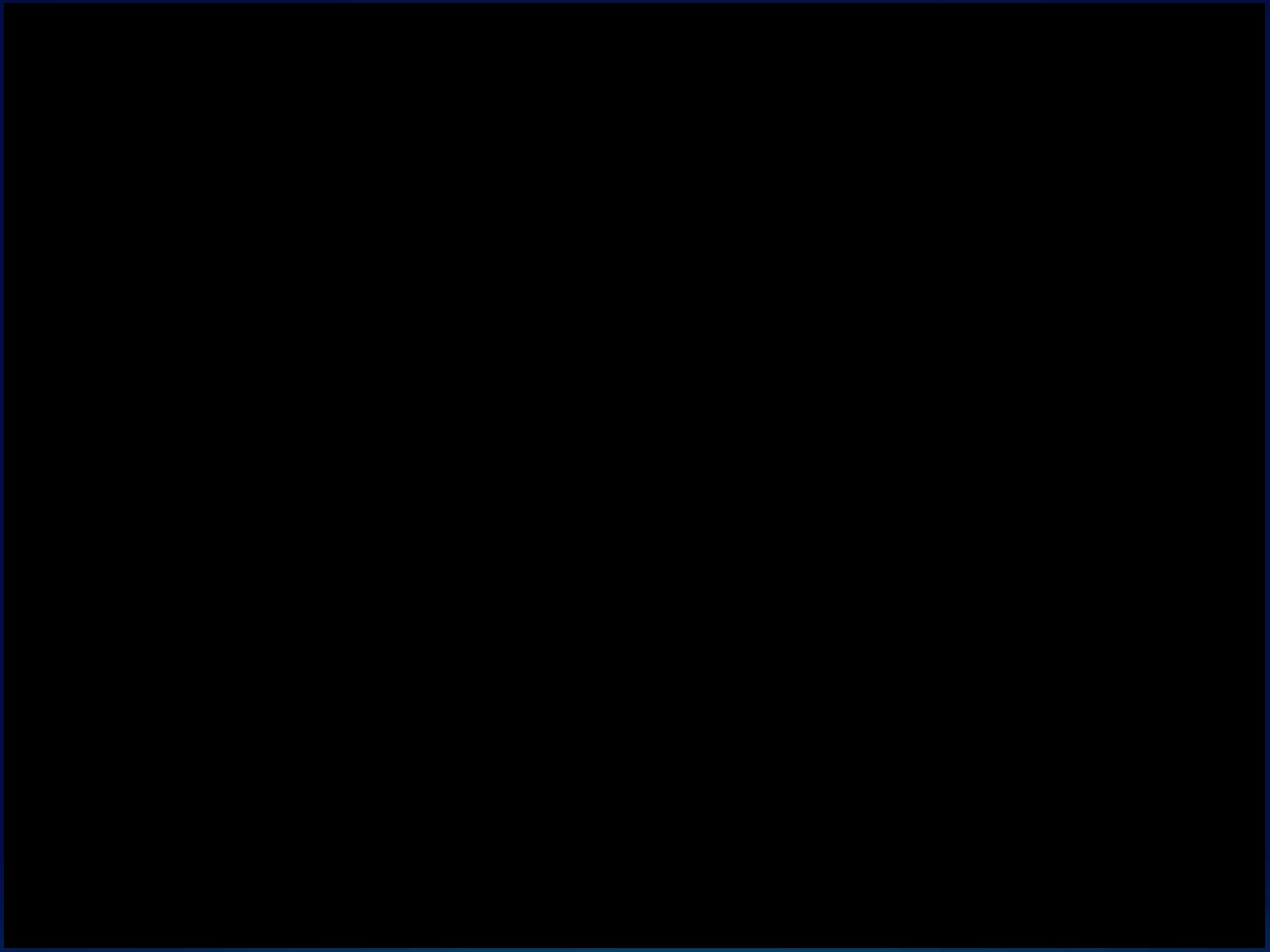
Data Management	Planning & Analysis	Field Mobility	Operational Awareness	Constituent Engagement
Collect, manage & exchange data	Transform data into actionable information	Get information into & out of the field	Disseminate knowledge where & when it's needed	Get feedback & make more informed decisions
Increase Efficiencies	Support Better Decisions	Improve Customer Service	Accountability/ Transparency	Gov 2.0 - Citizens as Sensors

ArcGIS – A Complete Integrated System

GIS Vision/Roadmap for a Water Utility

Sell GIS to Your Organization

How do I communicate the value of GIS?



Jack's Message

- GIS saves money, delivers value – usually 3 to 5 times
- Logistics can be a big value proposition
- SELL the POWER & the VALUE of GIS to management
- Get buy-in from management by aligning solutions to meet their PAIN &/or VISION
- Be effective in communicating to management
- Be passionate
- Deliver on-time & in-budget
- Keep management engaged

Are You Meeting the Needs of Your Customers?

- Who are your customers?
- Do they know about the POWER & VALUE you can bring?
- Have you asked them what their PAIN & VISION are?
- Create focused, complete solutions that meet their needs

How Do You Meet the Needs of Your Customers?

- Prioritize Solutions
- COTS, not Custom
- Sustainable Solutions
- Reliable Solutions
- Create a Solution Map

Taking a COTS-Based Approach to Implementing Enterprise GIS

An Esri White Paper

Solution Map Example

Problem	Problem Statement	Jan. 22, 2008 FHWA Mandate – Public agencies must establish & implement a method to maintain traffic sign retroreflectivity
	Cause of Problem	Nighttime crash rate is three times the daytime crash rate – improving sign visibility helps everyone
	Negative Business Impact	Failure to adhere to federal mandate & standards, reduced sign visibility, increase in crashes, increased liability
Solution	How We Solve The Problem	Implement a GIS-based Sign Inventory & Management System using Best Practices & all five of the business patterns
	Positive Business Outcome	Full compliance with FHWA mandate, improve sign visibility, reduce crashes, limit liability, increased efficiencies, support better decisions, etc…

Sign Management/Retroreflectivity Solution

What is the Killer GIS App?

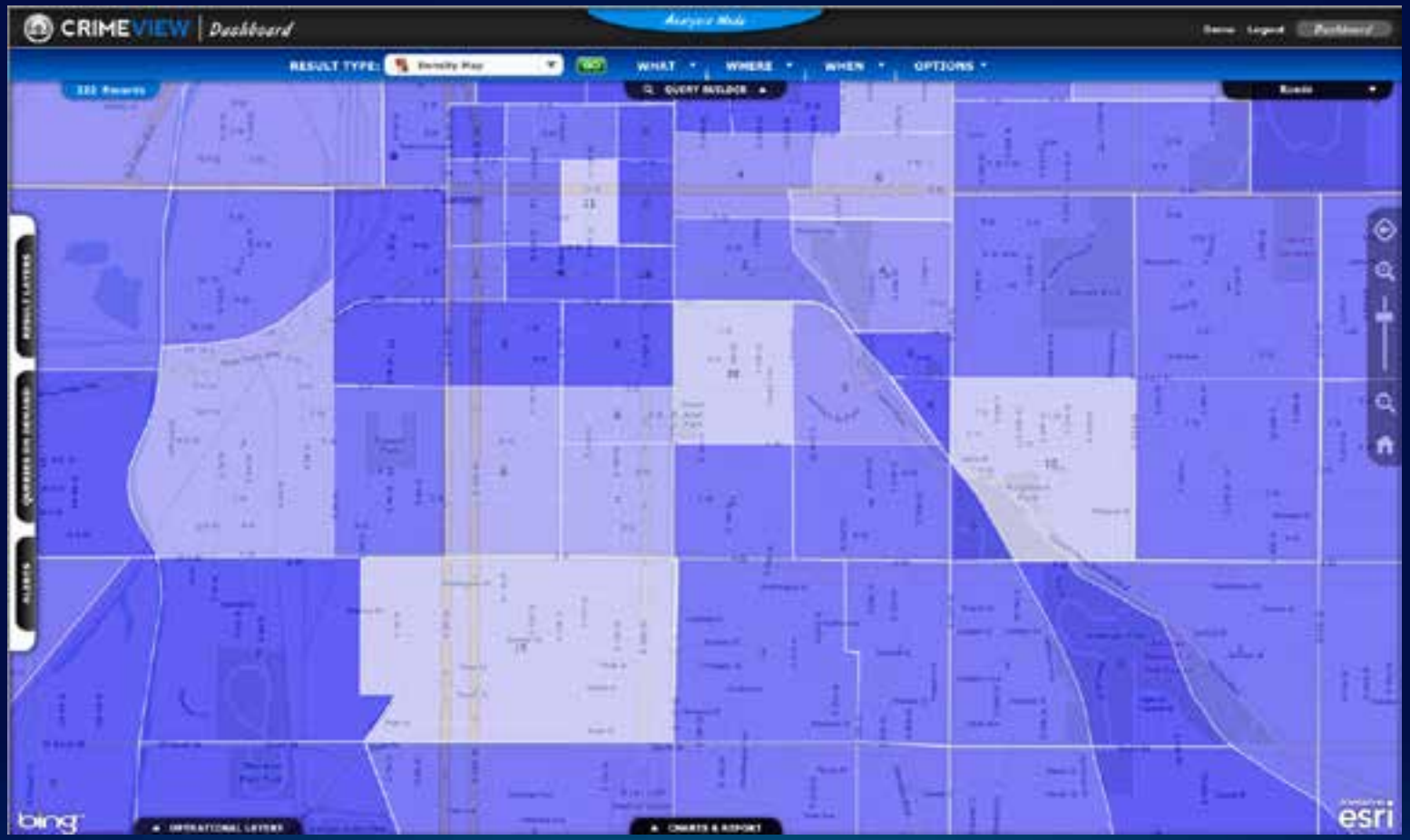
- One that turns management into daily GIS users
- Executive Dashboard
- Up-to-date Analytics
- Use daily to run their department/city/county/state/country
- Must be easy-to-use
- Must be reliable
- Make it a necessity for them to do their job

Executive Dashboard Example

Executive Dashboard Example

Executive Dashboard Example

Executive Dashboard Example



Summary

A GIS Self-Examination

- Is there a bottleneck for access to GIS?
- Are you proud of your GIS?
- How do you measure success?
- What are your plans for your GIS?

A GIS Self-Examination

- Are you on version 10? If not, when?
- Do you have any IMS or Web ADF applications in production? If so, when will they be replaced?
- Are you using ArcReader in production?
- Are you using shapefiles?
- Are you participating in our beta programs?

A GIS Self-Examination

- Does your annual GIS budget include funding for:
  - Software?
  - Hardware?
  - Training?
  - Services?
  - Data?

- Can you justify your GIS budget?

A GIS Self-Examination

- Do you have management support?
- Are you prepared for change?
- Are you proactive vs. reactive?
- Are you innovative?

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In this session about strategies for making your GIS more relevant/valuable/beneficial to your organization & ready for the twenty-first century, topics will include the following:

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- How to make your GIS an enabling technology
- How to communicate the value of GIS to your organization

Last Thought

“Good business leaders create a vision, articulate the vision, passionately own the vision, & relentlessly drive it to completion.”

– Jack Welch

Thanks for your time…

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esri