How the City of Hartford Used ArcGIS to Achieve Improvements for the Community

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City of Hartford

4th Largest City of Connecticut and State Capital

Population of 125,000 thousand

Daytime population - adds over 56,000 commuters

A little over 19,000 parcels

17 Neighborhoods and 14 Neighborhood Revitalization Zones (NRZ)
City of Hartford GIS

- GIS Services is located in Metro Hartford Innovation Services (MHIS)

- 2 employees (GIS Manager and GIS Analyst)

- DPW and Police have their own GIS personnel.

- GIS Data is served through an Enterprise GIS system using SDE

- Serve data on Open Data site for GIS and Socrata

- Currently have GIS Websites in FLEX and being converted to GeoCortex
Livable and Sustainable Neighborhoods Initiative

• 2011 Mayor Pedro Segarra started the Livable and Sustainable Neighborhoods Initiative (LSNI)

• Goals included:
  • Responding to Residents Complaints for trash and litter
  • Stake holder departments worked together to create a Standard Operating Procedure to remediate private properties.
  • “I’m pleased with the improved collaboration between stakeholder departments on this important initiative. We knew after our 6 month assessment that additional oversight and new protocols were necessary to increase efficiency and accountability, both of which remain principal tenets of my administration,” said Mayor Segarra. “The problem of blight and urban decay is complex but this program, which has a long way to go before being perfected, is proving to be a national model.” Press release Dec 20, 2012

By 2012, 69 properties have abated all Anti-Blight Violation Conditions to their property
Continue to improve program......

• LSNI group asked to collect inspection data using mobile technology

• Wish list:
  • Wanted to collect data in the field based off their paper form
  • 3 inspectors doing collection independently
    • Each had a different comfort level with technology
  • Take multiple pictures of property
  • Dump collected data into a report

• Request left little time to get app up and running
  • Turned to ArcGIS Collector
LSNI Collector App Goals:

My To Do List:

• GPS enabled so inspector can walk or drive to property
• Inspector can drop a point on property for inspection
• Fill out a form using drop downs
• Take multiple pictures of property
• Move on quickly to next property
• Allow edits to be made in field (disconnected) or desk
Setting Up LSNI Collector App - Data

Set up data in SDE

• Create a Feature Class from LSNI Blighted Inspection Form
  • Fields Include: Inspector, Data, District, Boarded Property, Utility Cut Off, Windows and Doors, Roof and Chimney, Foundation, Interior Wall Structures, Exterior Additions, Fences, Other Blight, Illegal Activity, Fire Hazard, Menace to Safety and Health, Extended Vacancy

• Different Feature Class for Each Inspector

• Set up domains and default values.
  • Inspector name and set as default value
  • Yes and No Domain and set No as default value

• Create Attachments for the layer (pictures)
Setting Up LSNI Collector App - Map

1. Set up data in ArcMap
   • Symbolize inspection points

2. Prepare Data for Offline
   • Enable archiving
   • Data is nonversioned
   • Create a GlobalID Field
   • Enable editor tracking - To track date of inspection

3. Publish Data
   • Create ArcGIS Server Feature Service
   • Feature access needs Create, Update, Delete and Sync
Steps in ArcGIS.com

1. Create map in ArcGIS Online
   - Set fields visible or not visible
   - Set Field Alias

2. In ArcGIS Online Map settings enable offline mode in Advanced Tab
1. First Round of Collector App we used iPads
   • Download and install Collector for ArcGIS from the iTunes Store (free)

2. Open Collector and Sign into Your Organization on ArcGIS Online

3. Download the Map that has been enabled for offline use.

4. We used a cached basemap that we use for our websites.
Blight Inspections In the Field

- Inspectors walked/drove around neighborhood
- Placed a point on properties inspected
- Collected Data in the field through the drop down attributes
- Took multiple pictures
- Went on to the next property
- When in office synched their edits to the SDE Data.
Screen Shots of Collector App
Screen Shots of Collector App
Screen Shots of Collector App
Screen Shots of Collector App
Screen Shots of Collector App
Back in the Office

ArcGIS Online Map with all inspectors feature layers

• Supervisor could see progress, pictures and data collection

• Inspectors could correct inspections and QA\QC work
When Inspections Were Over

LSNI Requested Report to show to the Committee

- Includes inspection data
- Multiple photos with date on photo
- Also wanted Excel Spreadsheet

Inspectors handed in IPads and I got to work.
GIS Prepping Data From Inspection: Challenges and Success

Challenges

• First tried to export the SDE points into feature dataset to work with but lost all attachments.

• Hard to get the pictures out of the iPad with a meaningful name
  • All a blob field
  • Had to use a blog post to export out photos and join to create a meaningful name
    • Joined Attachment ID to record in feature table

• Last minute request to burn date and address on photo
  • Used IRFANVIEW to burn on name and date

• Time constraint to produce report for Committee
  • Ran a report to excel and cut and pasted into PowerPoint
  • Time consuming - not a good way to do but met deadline.

Success - inspectors were happy, supervisor was happy, committee was happy
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<tr>
<td>District</td>
<td>West</td>
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156 BURNHAM ST
6 Months Later - Let’s do it all Again!

Inspectors are going out for re-inspection of selected properties from committee and want to use the same mobile app  

We ditched the iPads and Went to Samsung Galaxy Tablets
- I was worried about photos - getting lost, corrupt
- Inspectors more use to Samsung Galaxy tablets
- Cheaper......

Same methodology - due to snow did not have enough time to create report more efficiently.
2016 Luke Bronin Sworn in as Hartford’s Mayor

Blight has been a priority as part of his agenda for the City

Hired the City’s First Director of Blight Remediation

Has visited NRZ’s with Director of Blight Remediation to work with the community to combat blight.

LSNI has been renamed to the Blight Remediation Team

One program goal is to implement a Land Bank
Blight Remediation Team (BRT) Requests

- Still wanted to do a Mobile App!
- New ordinance and different values for inspection
- Want to capture pictures of properties
- Create maps for community engagement
- Very data forward and technology thinking; ie, Socrata
- Looking forward to future requests of GIS involvement
First Inspection for BRT

• Created new feature classes with the new field values
• Continued with the Samsung Galaxy Tablets
• Created website for viewing inspections and data
• Created a map of inspection locations
• Much faster to prep and get Collector App up and Running
• Created a point density map of flagged Blighted Property
  • Used to Communicate with Community and NRZ’s