DuPage County’s Citizen Reporter App

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DuPage County, Illinois
July 11th, 2017
DuPage County’s Citizen Reporter

Presentation Topics

1. Esri’s Crowdsourcing Reporter and Manager app templates

2. DuPage County’s Citizen Reporter App
   - App & Workflow Customizations
   - Landing Page/help site

3. DuPage County’s Citizen Reports Management
   - Citizen Reports Manager for Stormwater Management
   - Citizen Reports Manager for Department of Transportation
   - Customizing Field Reports
   - Automating Jurisdiction Assignments
   - Custom Notification System
Esri’s Crowdsourced Reporting Apps
ArcGIS for Local Government Solutions Configurable Templates

- **Crowdsourced Reporter & Crowdsourced Manager** app
- Public reports issues to your Organization
- Organization tracks and manages reports
- Templates work with ArcGIS Online Groups and web maps
- Services and Apps – hosted, local, mixed
- Functionality and support
  - Out-of-the-box features
  - Quarterly updates
  - Additional management tools
DuPage Co.’s Citizen Reporter Project Overview
http://gis.dupageco.org/CitizenReporter/info

- **DuPage County’s Citizen Reporter** app
  - Help Guide
  - “Waterway Reporter”
  - “Roadway Reporter”

- **Report Management App(s)**
  - **Citizen Reports Manager for Stormwater** – uses Esri’s Crowdsourcemanage template
  - **Citizen Reports Manager for DOT** – uses Web AppBuilder for custom report printing and querying functions

- **Custom Workflows**
  - Custom Report Printouts
  - Automated Report Jurisdiction Assignment and Unique Report ID’s
  - Automated Emails to County staff, participating agencies, and end users
  - Automated Public View Rotation
Reporter App Configuration

- Reporter app layout driven by County’s org structure
- Each County Department/Division given their own webmap
  - Separate Features used if more than one program participate within the Division
- “Roadway Reporter” – Division of Transportation
  - “Road and Trail Reports” – Maintenance Shop
  - “Signal and Signage Reports” – Sign Shop
- “Waterway Reporter” – Stormwater Management

Each webmap is a “theme” based on County org structure
Each webmap contains one or more feature classes based on functions/programs within the Division
Reporter App Configuration, cont.

- Apps and Map Services hosted locally
  - Hosting: Control over app templates colors and logos, URLs, language, additional content (help/landing pages)
  - Services: ETL against a database or a hosted service?
- Filters
  - Public View field = No (default) for Reports features and Comments table
  - Helps facilitate staff review
  - Monitor content appropriateness
- Views
  - Public only sees Report Type, Submitted Date, Details, and Status for existing, publicly viewable reports
- Out of bounds
  - Different “project” boundaries used for Roadway and Waterway reporter maps
Demo
DuPage County’s
Citizen Reporter App
Report Management Apps Overview

- Citizen Reports Manager for Stormwater Management
- Citizen Reports Manager for Division of Transportation
- Automated jurisdiction assignment for all incoming reports
- Automated Notification System
  - Report Status Updates to Users
  - Cross-jurisdiction emails to participating jurisdictions
  - Internal emails for new, incoming reports/new comments notifications
- Cross-Jurisdiction participation with municipal and township roadway authorities
- Promotes passive participation with outside entities
Citizen Reports Manager for Stormwater

- Uses Esri’s Crowdsourced Manager template, hosted app
- Field filters for *Public View (fc and table)*, *Impairment Types*, *Jurisdiction Type*, *Assigned To*
- Jurisdictional reference layer
- Report Life-Cycles are often Long-term
Citizen Reports Manager for DOT

- **Uses Web AppBuilder**
  - Custom Geoprocessing Widget for Printing Field Reports
  - Office staff can add reports (call-ins)
  - Basemap widgets
  - Toggle-able reference layers
- **Report Life-Cycles are Short-term**
- **Cross-Jurisdiction Participation**
- **Reports Tied to Automated Workflows**
  - Jurisdiction fields and Report ID’s are updated in the background
  - Updates to a Report’s *management-only* fields triggers different automated emails based on predefined business rules
Citizen Reports Manager for DOT

Custom Field Report Printouts

- Printed Reports used in the field
  - Most DuPage DOT crews do not have work-issued smart devices
  - Helps with managers with field assignments
- Geoprocessing script tool, GP Service
  - arcpy.mapping, Data Driven Pages
- Two inputs
  - Report Type (feature class)
  - Report ID
- PDF export
Citizen Reports Manager for DOT
Automated Jurisdiction Assignments and Report IDs

- **Module_Assignments_CitizenReporter.py**
- Scheduled task, runs every few minutes
- Quick check to see if new records added, if present, run:
  - CalculateField_management for Report IDs
  - SpatialJoin_analysis bw Jurisdiction fc to Report fc
  - AddJoin_management bw spatial join result to Report fc
  - CalculateField_management Report fc’s jurisdiction-related fields
Citizen Reports Manager for DOT
Automated Notification System

- Module_NotificationSystem_CitizenReporter.py
- Scheduled task runs hourly, checks for any “changes” within last hour, then sends emails if business rules are met
  - “Changes” = new reports and/or comments (implicit) and/or updates* to existing reports made by Managers (explicit)

- Automated Emails fall into four different categories:
  1) Notice of New Reports – sent to DuPage Managers Only
  2) Notice of New Comments – sent to DuPage Managers Only
  3) *DOT’s Notice(s) of Verified Reports
     a) Participating Authority Notifications – sent to DOT Crews, Participating Agencies, and the User
     b) No Participating Authority Notification – sent to the User, reminder notice sent to DOT
  4) *County Notice of a Completed Report – sent to the User
3) DOT Notice of Verified Reports

- Before any of “verified notices” are sent out, staff must verify and update the report’s management-only fields:
  - Public View (update) – e.g. from No, to Yes
  - Report Status (update) – subtype dependent
  - Notification Status (update) – e.g. from Hold for Review, to Send Notification
  - Jurisdiction subType (verify) – e.g. DuDOT, Municipality, Township, etc.
  - Jurisdiction Assigned (verify) – subtype dependent

- Emails are sent to the “Jurisdiction Assigned” and User
  a. If DuPage DOT is assigned, just DOT crews receive the notice of the report
  b. If participating agency is assigned, both the agency and the user are notified
  c. If no participating agency, the user is still notified, DOT sent an email too
Citizen Reports Manager for DOT
Custom Notification System – Examples

3) DOT Notices of Verified Reports: Participating Agencies

Assigned to DuDOT, Notice Sent to DOT Crews

Attention:
Citizens are Reporting Roadway Issues.

Roadway Issue 1: [Link]

Assigned to Participating Agency, Notice Sent to User

Attention: [Email]

The Roadway or Trail Report you submitted in DuPage County’s Citizen Reporter app was outside of the County’s Jurisdiction. We have contacted the correct jurisdiction on your behalf, and included the following information from your Report:

Issue: Tree Trimming
Details: Bad overhang of trees

Roadway Authority: Wheaton

Report Status: Located within Local Municipality. The Municipality has been notified. No further action can be taken by DuPage County DOT.

Location: [Link]

Thank you for being a Citizen Advocate! Click here to return to DuPage County’s Citizen Reporter app.

Click here to return to the Citizen Reporter App.

Reply to this email if you have any questions.

Thank you,
DuPage County GIS

Assigned to Participating Agency, Notice Sent to that Agency

Click here to log-in to the County’s Roadway Report.
3) DOT Notices of Verified Reports: Non-Participating Agencies

Assigned to a Non-participating Agency, Notice Sent to User

Thank you for using DuPage County's Citizen Reporter app. Unfortunately, the Report you submitted is outside of the County's jurisdiction. We are working with other Roadway Authorities to be included in our Citizen Reporting application. However, at this time, DuPage County cannot take any further action on the report you've submitted.

NOTE: Please contact your local roadway authority to address this issue.

Issue: Water Flooding
Details: Standing water under the roadway. Please address
Possible Roadway Authority: Roselle
Report Status: Please contact your local roadway authority. No action can be taken by DuPage DOT for issues submitted in this area.
Location: [Link to Google Maps location]

Thank you for being a Citizen Advocate! Click here.

Assigned to a Non-participating Specific Agency, Notice Sent to User

Thank you for using DuPage County's Citizen Reporter app. Unfortunately, the Report you submitted is located within the Illinois Department of Transportation right-of-way. DuPage County DOT cannot take any further action on the report you submitted at this location.

IDOT asks us that we direct anyone with concerns in IDOT's jurisdiction to the following website: [IDOT website link], or to call at (847) 295-4000.

Issue: Pothole
Details: Westbound Rt. 38 - Left Lanes: ~100-200 ft after intersection of Juliet St. and Rt. 38.
Roadway Authority: IDOT
Report Status: Please contact your local roadway authority. No actions can be taken by DuPage DOT for issues submitted in this area.
Location: [Link to Google Maps location]

Thank you for being a Citizen Advocate! Click here to return to DuPage County's Citizen Reporter app.

Assigned to a Non-participating Agency, reminder notice sent to County

Please contact this roadway authority about participating in the County's Citizen Reporter app. All we need from participating agencies is an Email address that will receive our automated notifications. If a report is determined to be within their jurisdiction, they'll receive an email that contains a weblink to a map that shows the location of the report, report details, and the Citizen's email address that reported the issue.

DuDOT Staff: Click the below link(s) to open report in the Citizen Reports Manager App:
Roadway Issue 1: [Link to report]

NOTE: An email has been also been sent to the User to contact their Roadway Authority directly with their report information, and that no further action can be taken by the County because the report is in a non-participating jurisdiction.
Summary of Workflow

Scheduled Scripts

- Assignments.py
  - Every 4 minutes
- NotificationSystem.py*
  - Every hour
- RotatePublicView.py
  - Every 24 hrs.

*Automated Email Notices

- New Report Notices
- New Comment Notices
- Verified Notices
- Completed Notices
• Think outside the box, but within the platform
• Setup the app according to your Org’s structure
• Hosted apps = less work = 😊
• Find a super-user in your Org
• Internal training for Management
• Outreach

Thank you!

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