How to Setup and Manage Spatial Assets with ArcGIS Online for a Mobile Workforce

ESRI UC 2014
PIERCE COUNTY

ATTRIBUTES

- HOME TO 800,000 RESIDENTS
- 24 CITIES AND TOWNS
- 1,700 SQUARE MILES
- FROM MOUNTAIN TO SOUND
With the majority of our assets currently housed in the existing enterprise ArcGIS SDE ArcGIS Online allows any ArcGIS Desktop content to be discoverable in multiple lightweight mobile formats by publishing to ArcGIS Online.
AGO Web map and Application

- MAIN ATTRACTION
- PUBLISH AS FEATURED CONTENT
- MAKE AVAILABLE IN APP FORMAT
- COMMUNITY INFO OPTIONS
- CUSTOMER SERVICE
- WEB APPS
- GIS IS DELIVERED BY APPLICATIONS
### PUBLIC ACCOUNT
- Get Started with Public Account
- Load Data
- Style a Map
- Share It
- Make it Available on Mobile or Web

### ORGANIZATION ACCOUNT
- All the Above
- Publish
- Multi-Editors/Users
- Focused Groups
- Monitor Assignments
- Use Domains for Drop Downs
- Customize Organization
ARC GIS ONLINE PRICING

4 Levels of Service

TYPES OF AGO ACCOUNTS

1. Public Free (Many Benefits)
2. 5 Users
3. 50 Users
4. 100 Users
5. Pierce County uses 50 licenses with 10,000 credits

$200 Per Year Per Person
What are the costs to store Data vs Analysis?

**UNDERSTANDING CREDITS**

**ANALYSIS = CREDIT BURN**

**STORAGE COSTS ARE 2.4 CREDITS PER MEGABYTE = NOT BAD**

Feature Service Storage EXAMPLE  20,000 point feature dataset at  14 megabyte layer file

2.4 credits  x 14 mbs = 33 credits per month for storage

We have 10,000 and stand to lose 70% of credits this year  because we leverage desktop
ArcGIS Online Credits

What are the costs?

PERFORM PRE-ANALYSIS CREDIT CHECK

Credit Usage Report

Total records: 17
Credits required: 0.017
Pierce County ArcGIS Online

PC MOBILE & WEB APPLICATIONS

- LOCATION TRACKING SERVICE
- PWU DRAINAGE BASE LAYERS
- 2014 DRAINAGE VECTOR CLEANING PROGRAM
- 2014 DRAINAGE ASSESSMENT
- PWU UTILITY BASE LAYER MAP
- BIOSWALE INSPECTION MAP
- DRAINAGE ASSESSMENT VIEWER
- VECTOR CLEANING PROGRAM VIEWER
- SNOW AND ICE ROUTES
- PAVEMENT RESURFACING WEB MAP
Pierce County ArcGIS Online Applications

- UNIVERSAL ACCESS
- NON BROWSER SPECIFIC
- FEATURED CONTENT VIEW
- PUBLIC OUTREACH INFO MAPS
- EMBEDDED MOBILE VIEWERS
- GIS DATA VIEWERS
- ASSET PROGRAMS
- DOWNLOAD CENTER
- COMMUNITY REPORTING TOOLS
- CITIZEN ADDRESS VERIFICATION TOOLS
- AVL TOOLS
- EOC EMERGENCY MAPS
- UNIVERSAL ENVIRONMENT
- SUPPORTS DATA DRIVEN CONTENT
- DATA DISTRIBUTION SOLUTIONS ABUNDANT
Data Delivery

1. Source Data
2. ArcMap 10.x
3. ArcGIS Online
4. PIERCE COUNTY ArcGIS Online
Common ESRI Mobile Apps
PIERCE COUNTY USES AIR WATCH AS MDM CLIENT

- Works well for PC – to manage large number of devices when on VPN. Mail, messaging and ArcGIS server
- Air Watch is a framework
- Allow groups and lists for department level permissions
- Allow remote device in case of theft
- Allow special repurposing for staff on extended leave, extra hires, temp workers or special projects
Preparing your data

It's very easy setting up your data for publishing to ArcGIS online. A few things to take into consideration before you publish:

- Type of data being collected: point, line, polygon
- Shapefile, or feature class?
- How many editors?
- Attachment needs?
- Who is the audience?
Sharing your data is simple. Just sign into your ESRI global account and you will now be able to share your data as a service. The publishing wizard will then walk you through each step for getting your map published and checking it for any errors.
Coded Domains - Data driven forms and drop downs
Symbology – So Important to understand relationship between Desktop and Mobile

Unique Values - How to get the Editable Layer to change symbology on edit

Generate a New Template in Arcmap – Single Most important thing to remember
Publishing a feature service to ArcGIS Online – From Desktop to Web and Mobile

Create, Delete, Query, Update

Control early on by level of authority
Control Map Authoring Levels

Toggle editing on and off in the browser

Create, Edit, Update, Query
After Publishing Web Maps are Discovered in Mobile Applications
Get Geospatial Map Applications
Create a dynamic mobile mapping program for two assessments

Create One Table, One Feature Service, extend to multiple groups

Vactor MXD Drainage SD Layer

Assessment MXD Drainage SD Layer
Configuring Multiple forms from one Database

Control the user View

Configure Attributes

Check the fields you want to display. Select a field to change its alias.

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<th>Field Alias</th>
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Configure Attributes

Check the fields you want to display and edit. Select a field to change its format.

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**Location Tracking Service** – Uses mobile device GPS location updates 30 seconds

**Most recent position**
- Breadcrumb trails
- Timestamps
- Controlled by device not vehicle
  - When activity occurs in a mobile database location is gathered in background.

**Disconnected editing**
- Cache Maps and Features on device

**Adding Images to your Assets**
- View on mobile, web, and desktop

**Dashboards**
- Create dashboard to display important organizational KPI’s

**Creating a Web Application Map Viewer**
- Access data in Real-time from Mobile or Web

Requires ArcCollector on iPhone or iPad
Location Tracking

LAST KNOWN LOCATION – WITH TIME STAMPS

Location Tracking Runs in the Background in Arc Collector

Breadcrumb Trail

Crew Near and Far
Disconnected Editing – If you work outside of carrier networks

Pre-Cache the Arc Collector Data Driven Form Maps

417 Megabytes for All PC

Street Level Detail

73,648 Tiles

Look for Download Tiles Button
Images are geotagged to the asset as well as associated.
Real-Time Image Transfer

Associated Image available in Real-Time from Mobile Device
Web Template is not limited by the 1000 asset records in a hosted feature service
Create an Interactive Web Map Viewer

Tools for Printing, Viewing, Layers, Basemaps

No account or login required if made public

Directions and Routing

Standard GIS System Application tools
Asset Collection Process

Data collection is done annually and requests are generated from multiple sources. Data is collected using a Trimble GeoXH 6000 Data logger.

- **Assessments** – Assessment crews use comment codes to notify staff of missing features.
- **PALS (Planning and Land Services)** – Send notification of CRP projects or permitted construction projects via mail.
- **RFA requests** – Roads supervisors will notify collection staff of any additions discovered from site visits.
Using **ArcCatalog** a geodatabase is created containing a point feature class.

In **ArcGIS Desktop** a map is made using the point feature class to display collection locations.

Once the map is created it is then published to **ArcGIS Online** and shared with the collection team.
The data collection team uses the map to find the collection locations. Custom forms created using coded domain values allow collection teams to track any details about the collection site and track which locations have been collected.
• Work-order information is stored in SQL Server

• Stored Procedure allows extraction of data

• Python joins work-order data to assets posts data to enterprise GDB
• Two processes—One upgrades a digital process, one paper to digital process
• Examines time to host
• Tracks personal and material costs for assessment
• Examines data storage in cloud versus in-house enterprise geo-database
Pilot Program Process

• Data collected for 90 days with 30 day extension

• Security Analyzed

• On board GPS on devices compared to mapping grade devices

• Cell Coverage Analyzed
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