Survey123 for ArcGIS: An Introduction
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Forms
a printed or typed document with blank spaces for insertion of required information

Many Industries
- Forestry
- Public Safety
- Government
- Utilities
- Health
- Transportation
- Emergency Management

Many Needs
- Incident Reports
- Inspections
- Damage Assessments
- Asset Inventories
- Interviews
Smart Forms for ArcGIS
Easily convert paper forms into Digital Smart ArcGIS Forms
Why Smart Forms in ArcGIS?

- **Reduce Errors**
  - During Data Capture
  - Transcribing data from paper to digital
- **Boost Field Data Capture productivity**
  - Precompute responses
  - Associate photos with alphanumeric data
- **Data: From the field to the office in Real Time**
- **All data captured is georeferenced**
Meeting NPDES Requirements with Survey123 for ArcGIS

Asgadere Mutual Water Company (AMWC) is located in San Luis Obispo County, California. It was incorporated on August 12, 1933, and is the oldest continuously operating company in Atascadero. AMWC serves the entire City of Atascadero and properties in adjacent unincorporated areas. It is one of the largest mutual water companies in the state and is responsible for supplying water to more than 30,000 people for domestic and fire suppression purposes. AMWC's water system comprises approximately 250 miles of pipeline, 9 storage tanks, 17 active wells, and around 10,500 service connections.

The Challenge
The National Pollutant Discharge Elimination System (NPDES) permit program is authorized by the Clean Water Act (CWA) to control water pollution by regulating sources that discharge pollutants into the waters of the United States. Beginning in 2016, the California State Water Resources Control Board required all water systems that were not covered by a municipal separate storm sewer system (MS4) permit to apply for a newly implemented, statewide NPDES permit for drinking water system discharges. To comply with the NPDES permit requirements, AMWC needed an efficient way to collect information about each discharge.
Apps Are the New Workflows
Gulfport Energy Saves Time and Money with ArcGIS® Apps for Field Data Collection

Gulfport Energy is an independent oil and natural gas exploration and production company headquartered in Oklahoma City, Oklahoma. To best serve its shareholders, the company is using technology to reduce costs while the market is tight and prepare for the inevitable rebound. Gulfport puts geographic information system (GIS) technology at the core of many critical activities and operations conducted in the office and the field.

Recently, Gulfport Energy deployed ArcGIS® apps for the field. The company’s existing ArcGIS implementation included access to Collector for ArcGIS and Survey123 for ArcGIS at no additional cost, and use of the apps required minimal staff training. Previously, Gulfport had relied on third-party data collection services and applications, which were costly. Also, those came in paper forms, which made them difficult to share and lead to inaccuracies.

Gulfport Energy used the Collector for ArcGIS app to identify suitable pad site locations as well as locating rights-of-way for above-ground water pipelines. Collector—chosen for its map-centric workflow and ease of use for existing field crews—enables Gulfport to view and edit possible pad site locations to select the most suitable location. Collector helped to eliminate costly return trips to verify office analysis. Collector was also used in the waterline route planning to help secure rights-of-way while in the field. They now have more accurate data, have gained efficiencies in field workflows and are providing up-to-date pad site and rights-of-way maps that can be easily viewed and shared across departments.
Disaster Assessment – As Easy As 1-2-3

"It will cut in half the time it takes us to complete the assessment."

Red Cross Disaster Assessment teams are part of the first step in the recovery process. They visit neighborhoods and homes immediately after a disaster to assess and verify the level of damage incurred. The Red Cross and its partners—like FEMA and the United Way—use this information to provide financial aid and other resources. It often takes one to two weeks to visit every home, gather and enter the information and distribute it to everyone who needs it to begin providing aid. It’s vital that this process is done to make sure families get the help they need and that donor and taxpayer dollars are used wisely.

After the record flooding that occurred in Louisiana, Disaster Assessment is being done in a new way—a way that will make it faster and easier. Disaster Assessment now has an application and Red Cross teams are using it to get help to clients in a matter of days, not weeks. Survey123 allows the teams to enter information on the spot—not fill out forms that then have to be entered into a system. And, in conjunction with the Red Cross’ RC VIEW Disaster Event Management System, real time mapping of areas affected allows service delivery to begin with days.

Sarah Perkins is a veteran Red Cross Disaster Assessment volunteer who's worked on 45

Poster September 11, 2016, Todd James, Baton Rouge, LA
Mobilizing Inspections Saves $40,000

Source: Field Technologies Magazine

By Brian Albright, Field Technologies

A new mobile application has reduced inspection reporting processing from 30 minutes down to 5 for a municipal utility.

San Francisco is a big, complex city that is getting bigger by the day — a challenging prospect for public utility agencies that have to juggle new construction projects and maintenance of aging infrastructure. The San Francisco Public Utilities Commission (SFPUC) is the third-largest municipal utility in the state and provides retail drinking water and wastewater services to San Francisco, wholesale water to three Bay Area counties, and green hydroelectric and solar power to San Francisco’s municipal departments, and now with CleanPowerSF, cleaner energy to residents and businesses in San Francisco.

The SFPUC’s Wastewater Enterprise (WWE) operates and maintains the city’s 1,000-mile-long combined sewer system and 17 pump stations that collect sewage from homes and businesses and stormwater in the same network of pipes, moving the wastewater to the three treatment plants for treatment and discharge to San Francisco Bay and the Pacific Ocean. With the city’s steeply pitched streets and proximity to the ocean, maintaining the combined sewer system is critical, particularly during heavy rains.

When there is new sewer construction, inspectors from the SFPUC’s Collection System Division are responsible for inspecting and documenting exactly what is underground and how it was built.

Field inspectors previously documented these sewer inspections using handwritten notes and digital cameras, and by redlining journal notes onto a digital map created by using Esri’s ArcGIS platform and a Latitude Geographics GeoCortex Essentials viewer. The digital photos had to be uploaded to the SFPUC’s network, and then all of the documents were printed and assembled for a report that had to be scanned for digital storing. The process took up to 30 minutes for each inspection.
1- Ask Questions
(Design & Publish)

2- Get Answers
(Capture Data)

3- Make Decisions
(View & Analyze)
1: Ask Questions  (Tools for authoring your surveys)

• Survey123 Web Designer:
  - Build smart forms graphically right from your web browser
  - Very easy to get started.
  - Ideal for simple forms

• Survey123 Connect:
  - A downloadable desktop tool. Works in combination with Microsoft Excel.
  - Requires learning and familiarity with XLSForms specification
  - Complete smart form capabilities
1: Ask Questions (Publishing and Sharing)

**Publishing**
- Survey123 Smart Forms are published into ArcGIS
- Forms are a new type of item
- Feature layers (new or existing) store captured data
- ArcGIS Online and ArcGIS Enterprise support

**Sharing**
- Survey123 leverages the ArcGIS security model: Named Users and Groups
- You can define distinct security rules to:
  - Field Users: Submit data to your survey
  - Stakeholders: View the results of your survey
1: Ask Questions (Considerations for survey authors)

- **What data must be captured?**
  - Decide what questions will be included in your survey instrument

- **User Input Validation rules**
  - Add data constraints, calculations and smart defaults

- **Optimized user experience**
  - Decide what user input controls to use (Question Types and Appearances)
  - Logically organize your survey (Groups, Relevancy rules)
  - Web and/or Native
  - Branding
  - Style questions and survey
Web-Based Designer

2017 UC Field Apps Preconference Survey

4. Do you have some experience creating and working with web maps?
   - Yes
   - No

5. Do you have some experience creating and using feature services?
   - Yes
   - No

6. Which ArcGIS Field Apps have used?
   - Collector
   - Explorer
   - Navigator
   - Operations Dashboard
   - Survey123
   - Workforce
   - Other

7. How would you evaluate your current expertise of the ArcGIS Field Apps?
1- Ask Questions
(Design & Publish)

2- Get Answers
(Capture Data)

3- Make Decisions
(View & Analyze)
2: Get Answers

- **Survey123 WebForms**
  - Capture data from a web browser. Can be embedded within a web site.
  - Nothing to install.
  - Online only. Add new data only.

- **Survey123 Field App**
  - Available for download (Google Play, iOS, Windows, Mac)
  - Leverage device sensors (external GPS, camera etc)
  - Can work Online and Offline
  - Can add new data and update existing features.
2: Get Answers

- **Private Surveys**
  - Shared with a well-known group of users (secured access).
  - Requires use of one ArcGIS accounts per every field user.
  - Enables Editor Tracking capabilities.
  - Ideal for sensitive data or when you want to understand who is doing what.

- **Public Surveys**
  - Shared with everyone.
  - No need for ArcGIS accounts. Anyone can submit data.
  - Ideal for crowd-sourcing initiatives.
Survey123 Field App
1. Ask Questions
   (Design & Publish)

2. Get Answers
   (Capture Data)

3. Make Decisions
   (View & Analyze)
3: Make Decisions

- Ready to use Reporting tools
  - Understand data submission patterns
  - Create detailed survey reports
  - Aggregate survey data
  - Selectively download data
3: Make Decisions

- Real-Time data collection
  - Survey123 submitted data is immediately available for visualization and analysis
- All data stored in ArcGIS Feature Services
- Multiple Uses of data
### Survey Data & Results

#### 2017 UC Field Apps Preconference Survey

<table>
<thead>
<tr>
<th>Question</th>
<th>Response Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did you have some experience creating and using feature services?</td>
<td>No, Yes, Other</td>
</tr>
<tr>
<td>Which ArcGIS Field Apps have you used?</td>
<td>Collector, Explorer, Navigator, Elements, Dashboard, Survey, U.S. Workforce, e</td>
</tr>
<tr>
<td>Other - Which ArcGIS Field Apps have you used?</td>
<td>Beginner, Intermediate, None</td>
</tr>
<tr>
<td>How would you evaluate your current expertise of the ArcGIS Field Apps?</td>
<td>None, Training and as much I can possible learn on the hand of someone else.</td>
</tr>
<tr>
<td>What do you want to get out of the seminar?</td>
<td>Train, None</td>
</tr>
</tbody>
</table>

## Map

Map showing locations in North America and South America with markers indicating various points of interest.
1- Ask Questions
(Design & Publish)

2- Get Answers
(Capture Data)

3- Make Decisions
(View & Analyze)
Survey 123 Demonstrations
Survey123 User Forum in GeoNet

https://geonet.esri.com/groups/survey123
Survey123 Blog in GeoNet

Understanding Barcode Questions in Survey123 for ArcGIS

A barcode scanning machine needs to be configured at the beginning. A lot of things can go wrong with barcodes. If you find them not working, you can try to check if the machine is correctly configured. If it still doesn't work, you can try to check if the machine is correctly configured. If it still doesn't work, you can try to check if the machine is correctly configured.

Types of barcodes

There are different types of barcodes, which were once considered to be the best option. Linear and 2D barcodes are being used in various applications. Linear barcodes are used in healthcare, transportation, and retail environments. 2D barcodes are used in manufacturing, supply chain management, and logistics. The choice of barcode depends on the specific requirements of the application.
YouTube Survey123 Playlist
ArcGIS Channel

https://survey123.arcgis.com/YouTubePlaylist