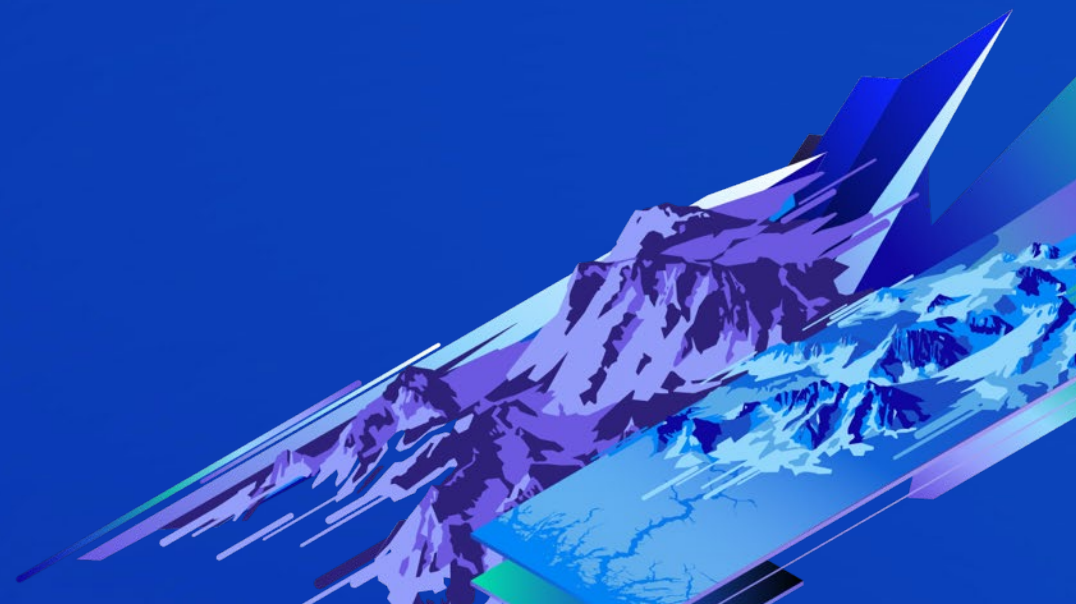
ArcGIS Survey123: An Introduction and What's New

Peter Erlenbach

Esri Southeast User Conference

Agenda

- About ArcGIS Survey123
  - Introduction
  - Smart Form Design vs Web Form Design
  - Reports
  - Automation
- What's New
- What's Coming



ArcGIS Survey123 - Smarter Forms for Smarter Decisions

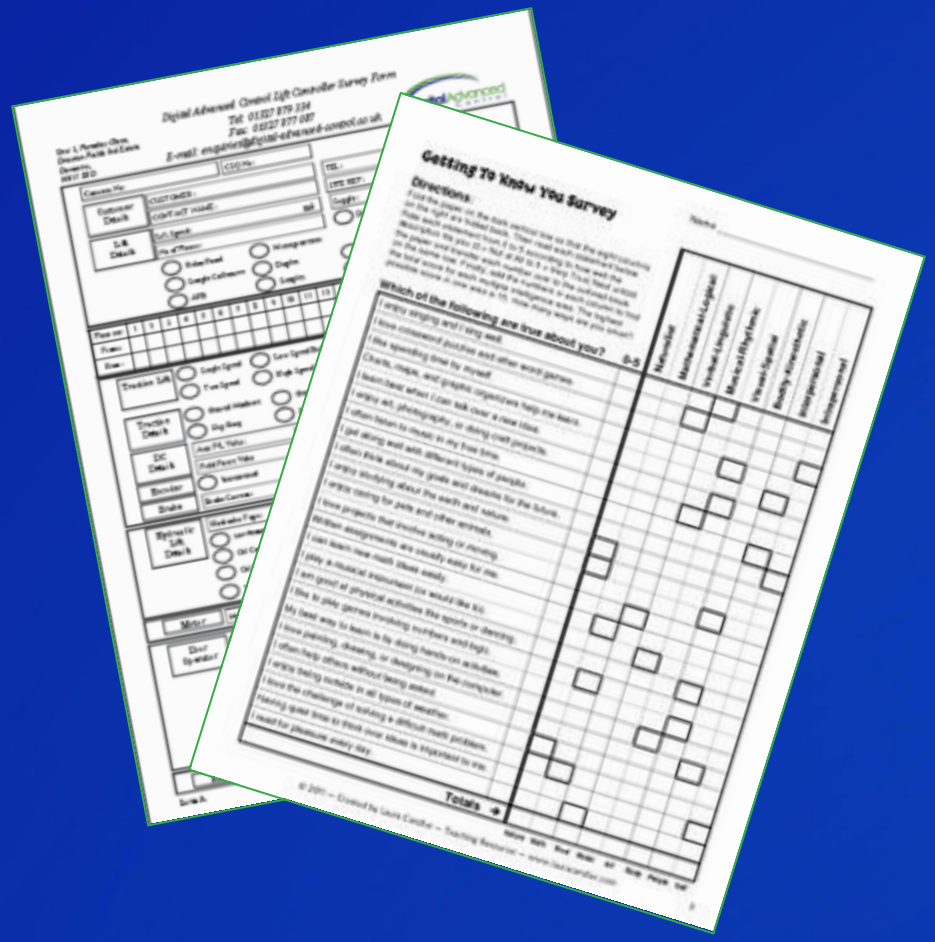
Organizations of all sizes and across all industries, use forms to support a variety of business workflows.

Survey123 delivers a complete form-centric data gathering solution, including:

- State of the art smart form design tools
- Data collection apps for web, desktop and mobile devices
- Built-in data visualization and reporting tools
- Out of the box workflow automation connectors

Forms

a typed document with blank
spaces for insertion of required information



Many uses

Forestry

Public Safety

Government

Utilities

Health

Transportation

Emergency Management

Many Needs

Incident Reports

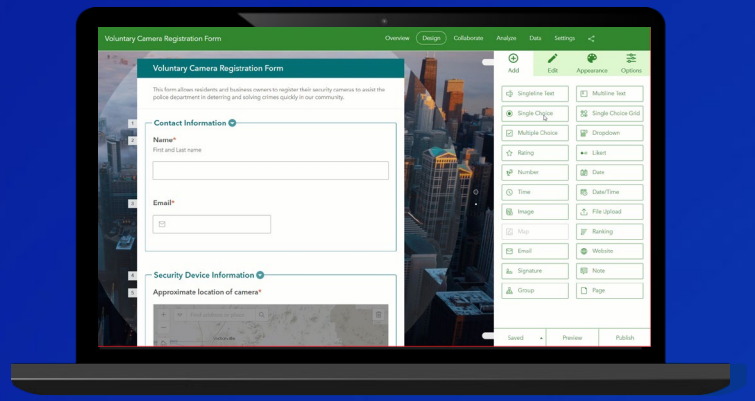
Inspections

Damage Assessments

Asset Inventories

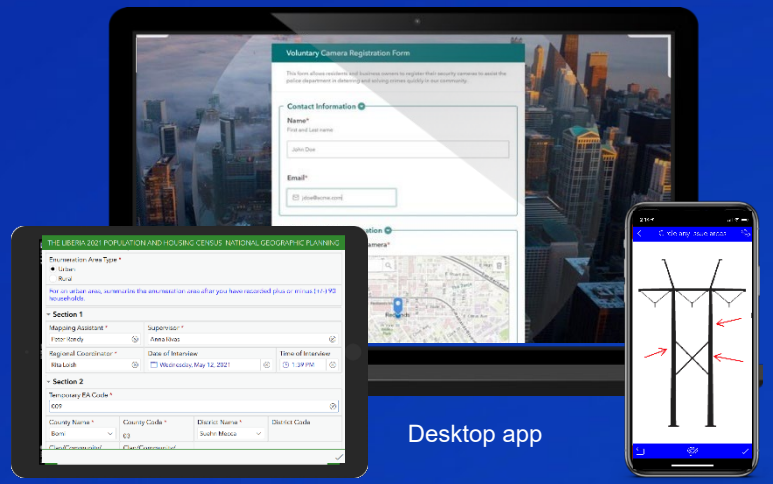
Interviews

ArcGIS Survey123 A complete form-centric data collection system



Survey123 designer

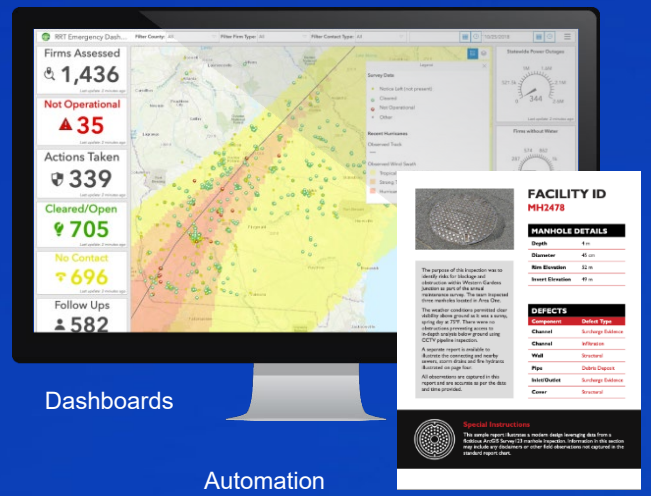
Survey123 Connect



Web app

Desktop app

Mobile app



Dashboards

Automation

Reports

1 Create Surveys

Create your own forms

- Drag-and-drop, no code required
- Industry-specific templates
- Sophisticated smart form logic with XLSForm

2 Get Answers

Collect accurate data

- Intuitive interface
- Web surveys and mobile forms
- Multimedia: signatures, photos, etc.

3 Share Results

Make data-driven decisions

- Real-time dashboards
- Enterprise workflow automation
- Create custom PDF reports

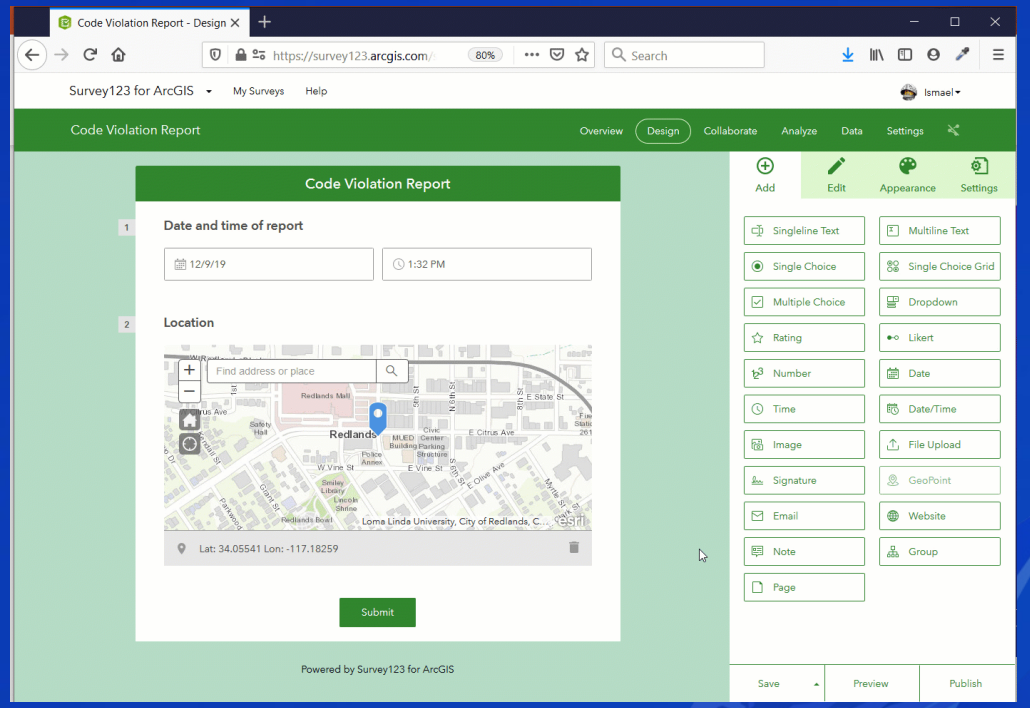
ArcGIS Survey123 – Smart Form Designer

Survey123 Web Designer

Survey123 designer helps you visually create your own smart forms.

It runs on your web browser and requires minimum training, allowing anyone in your organization to create forms quickly.

Survey123 designer is a great way to get started!

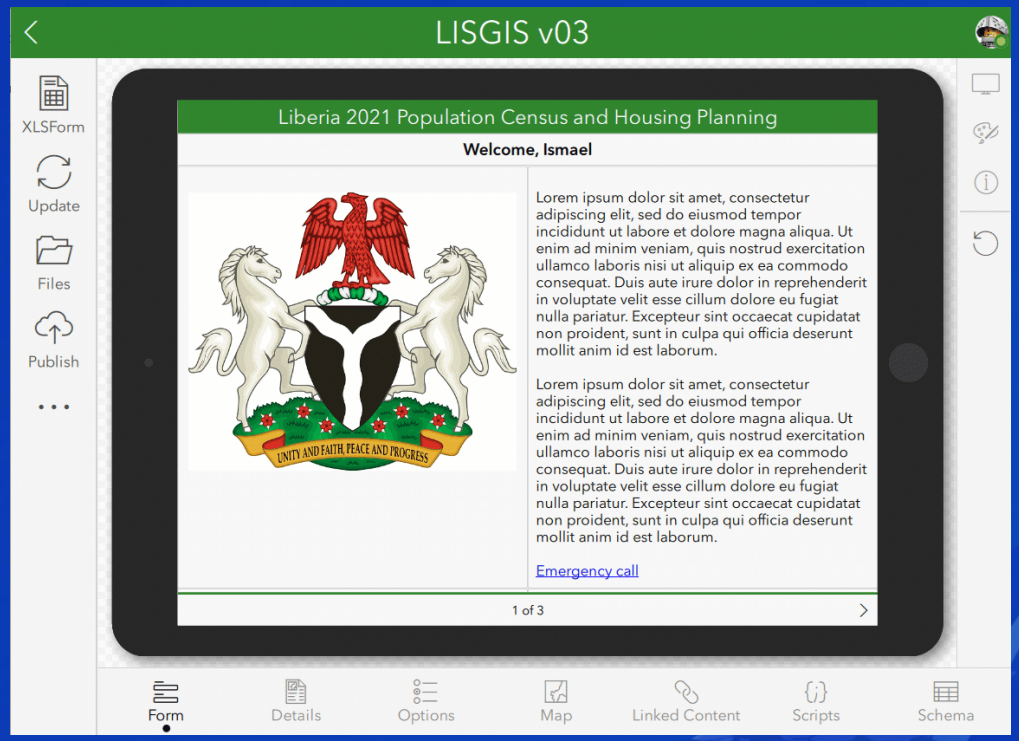


ArcGIS Survey123 – Connect (Desktop App)

Survey123 XLS Form Designer

Survey123 Connect and XLSForm provide the maximum level of control over your form design utilizing XLS Form Design.

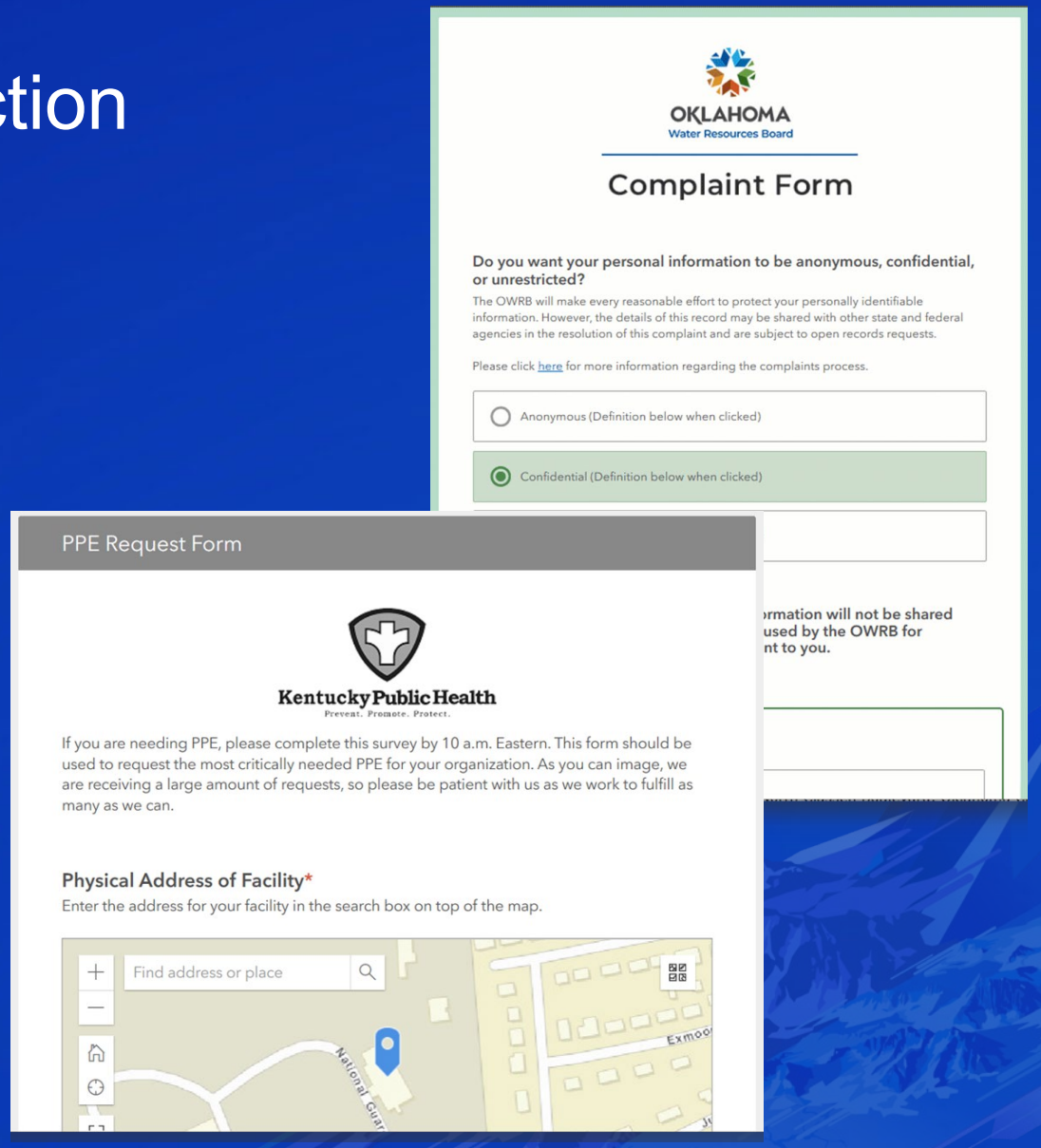
XLSForm lets you define the content, look and behavior of a smart form in a spreadsheet, which you can author in a familiar tool like Microsoft Excel.



ArcGIS Survey123 – Data Collection

Survey123 smart forms can be shared over the web, as online forms. You can embed your online surveys within existing web sites or share them as links in email and social campaigns.

Online surveys are often used to support public data collection, crowdsourcing a community engagement initiatives, but also to model business forms.

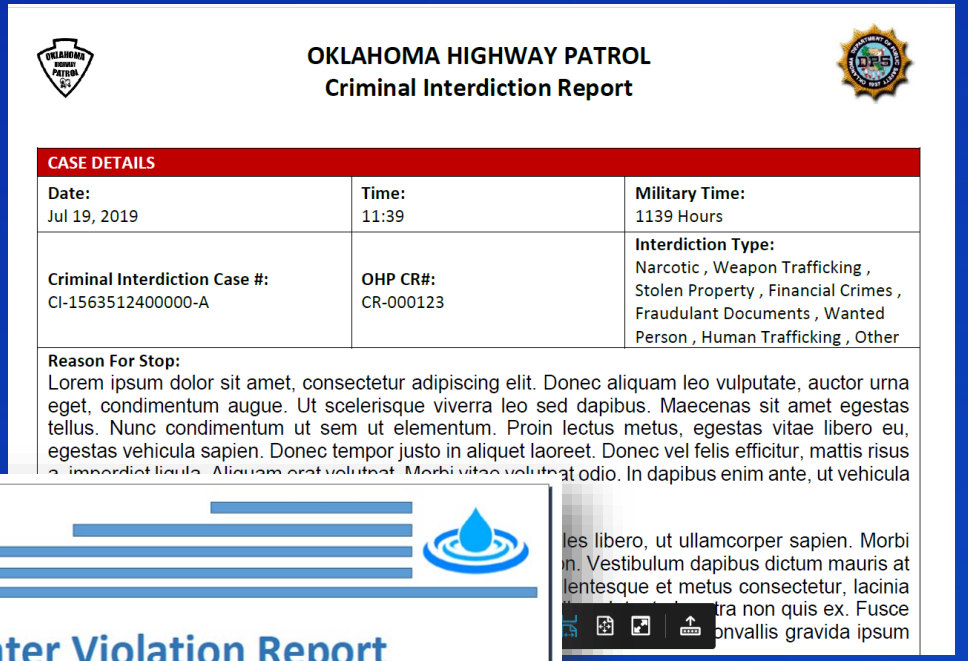


ArcGIS Survey123 – Reports

Survey123 includes out of the box reporting capabilities.

You can interactively explore survey results through the Survey123 website, using maps, tables, charts and other visuals.

High quality PDF reports can be created including maps, photos, signatures, tables and much more.

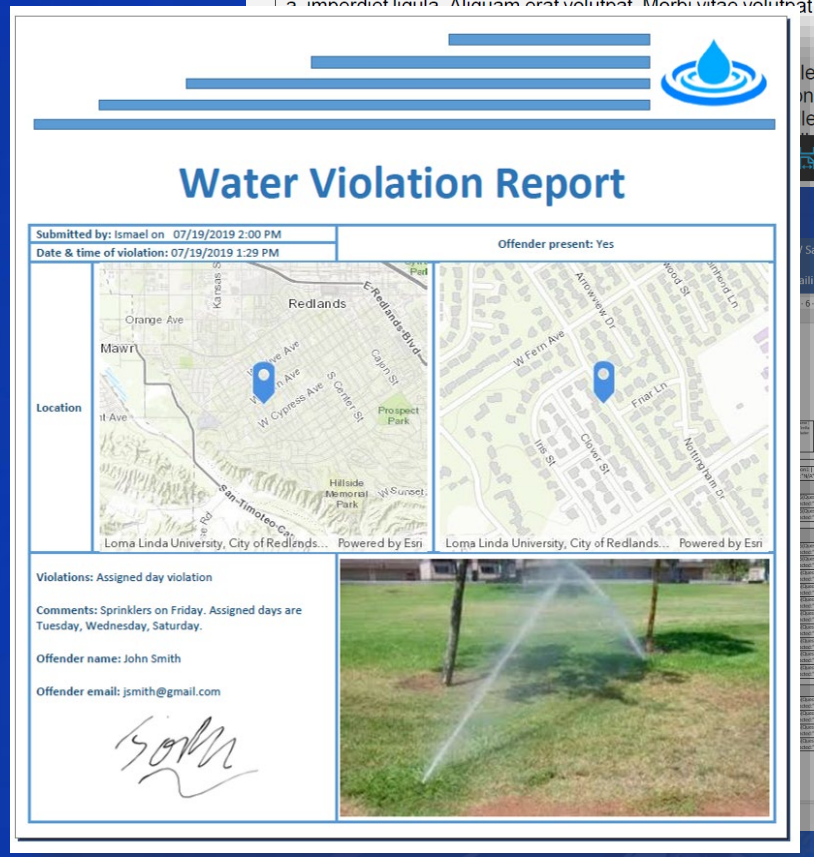


OKLAHOMA HIGHWAY PATROL
Criminal Interdiction Report

CASE DETAILS		
Date: Jul 19, 2019	**Time:** 11:39	**Military Time:** 1139 Hours
Criminal Interdiction Case #: CI-1563512400000-A	**OHP CR#:** CR-000123	**Interdiction Type:** Narcotic , Weapon Trafficking , Stolen Property , Financial Crimes , Fraudulent Documents , Wanted Person , Human Trafficking , Other

Reason For Stop:
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec aliquam leo vulputate, auctor urna eget, condimentum augue. Ut scelerisque viverra leo sed dapibus. Maecenas sit amet egestas tellus. Nunc condimentum ut sem ut elementum. Proin lectus metus, egestas vitae libero eu, egestas vehicula sapien. Donec tempor justo in aliquet laoreet. Donec vel felis efficitur, mattis risus a, imperdiet ligula. Aliquam erat volutpat. Morbi vitae volutpat odio. In dapibus enim ante, ut vehicula

les libero, ut ullamcorper sapien. Morbi
n. Vestibulum dapibus dictum mauris at
lentesque et metus consectetur, lacinia
ra non quis ex. Fusce
onvallis gravida ipsum



Water Violation Report

Submitted by: Ismael on 07/19/2019 2:00 PM
Date & time of violation: 07/19/2019 1:29 PM
Offender present: Yes

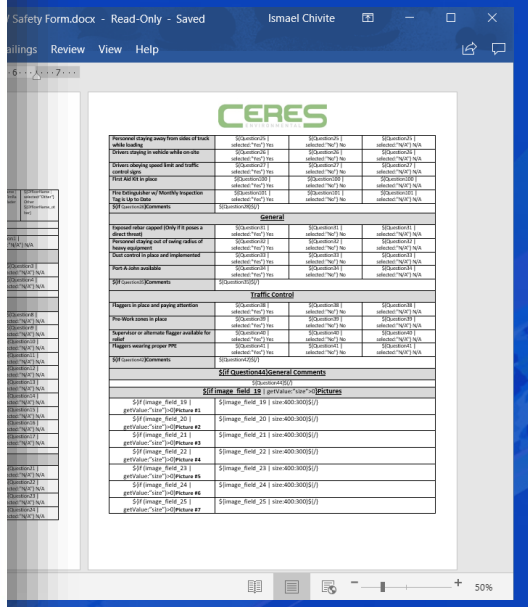
Location

Violations: Assigned day violation

Comments: Sprinklers on Friday. Assigned days are Tuesday, Wednesday, Saturday.

Offender name: John Smith

Offender email: jsmith@gmail.com



ArcGIS Survey123 – Automate

Survey123 includes built-in connectors for Microsoft Power Automate and Integromat.

Automate routine tasks when records from Survey123 are added or changed:

- Automatic notifications (Email, SMS…)
- Instant data transfer (Cloud storage, spreadsheets…)
- Data enrichment and validation

Microsoft Flow

integromat

SCAN ME

How To Configure A Webhook

ArcGIS Survey123

What's New? What have I missed?

Survey123 Connect | Calculation Mode

What's new

- When should a calculation be triggered?
  - **Auto**: If the question value is empty or has not been manually updated by the end user. Great to create 'smart default' values
  - **Always**: Always triggers! Particularly useful when you recalculate values in editing mode
  - **Manual**: Only if requested by the end user
- Calculation modes are set in the *bind::esri:parameters* XLSForm column

Survey123 Connect | Calculation Mode

What's new

Calculates the closest address to the asset location and accuracy (Auto)

type	name	label	appearance	calculation	bind::esri:parameters
text	asset_id	Asset ID			
geopoint	location	GPS Location			
decimal	horizontal_accuracy	Horizontal Accuracy (m)	hidden	pulldata("@geopoint", ${location},"accuracy")	
text	address	Nearest Address		pulldata("@geopoint",${location},"reversegeocode.address.ShortLabel")	
select_one hydrant_type	hydrant_type	Hydrant Type	minimal		
text	owner	Owner			
date	install_date	Installation Date			
date	last_inspection_date	Last Inspection Date		max(${inspection_date})	calculationMode=always
select_one condition	last_status	Last Reported Condition	minimal	indexed-repeat(${status},${inspections},count(${inspections}))	calculationMode=always
begin repeat	inspections	Inspection Log	minimal		query allowUpdates=false
date	inspection_date	Inspection Date			
select_multiple checklist	checklist	Condition Checklist			
select_one condition	asset_condition	Condition	minimal	if(count-selected(${checklist})=8,"good","needs_repair")	
text	comments	Comments			
text	inspector	Inspector	hidden	pulldata("@property","email")	calculationMode=always
end repeat					
hidden	assigned_to	Assigned To			

Calculates the email of the logged-in user adding a new inspection record (Always)

Calculates attributes in the parent hydrant layer using information from the related inspections table (Always}

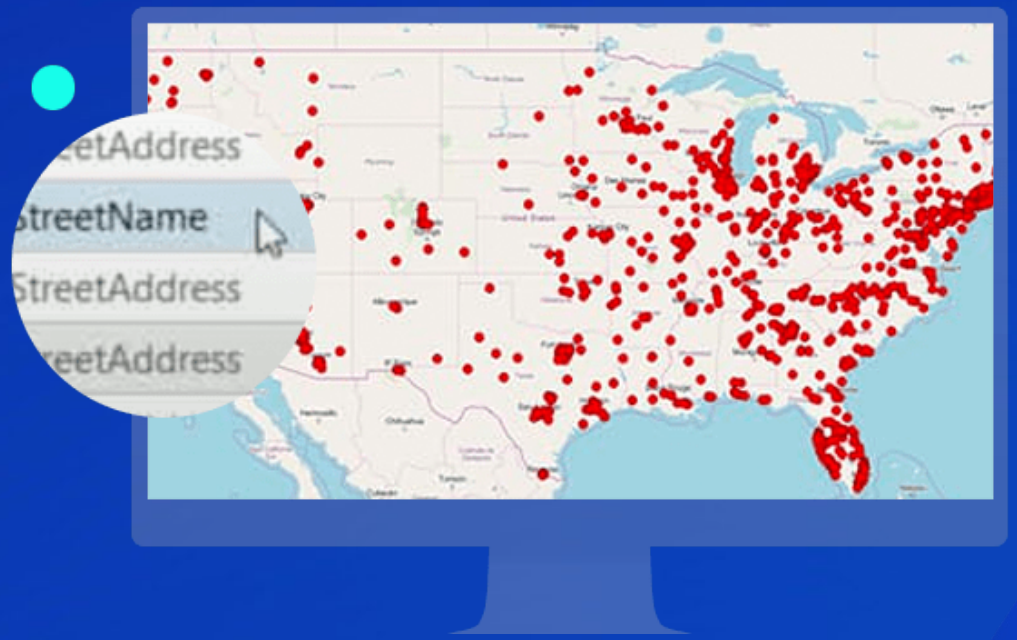
New in February 2022

Addressing

Addressing is the most common way to define a location or something

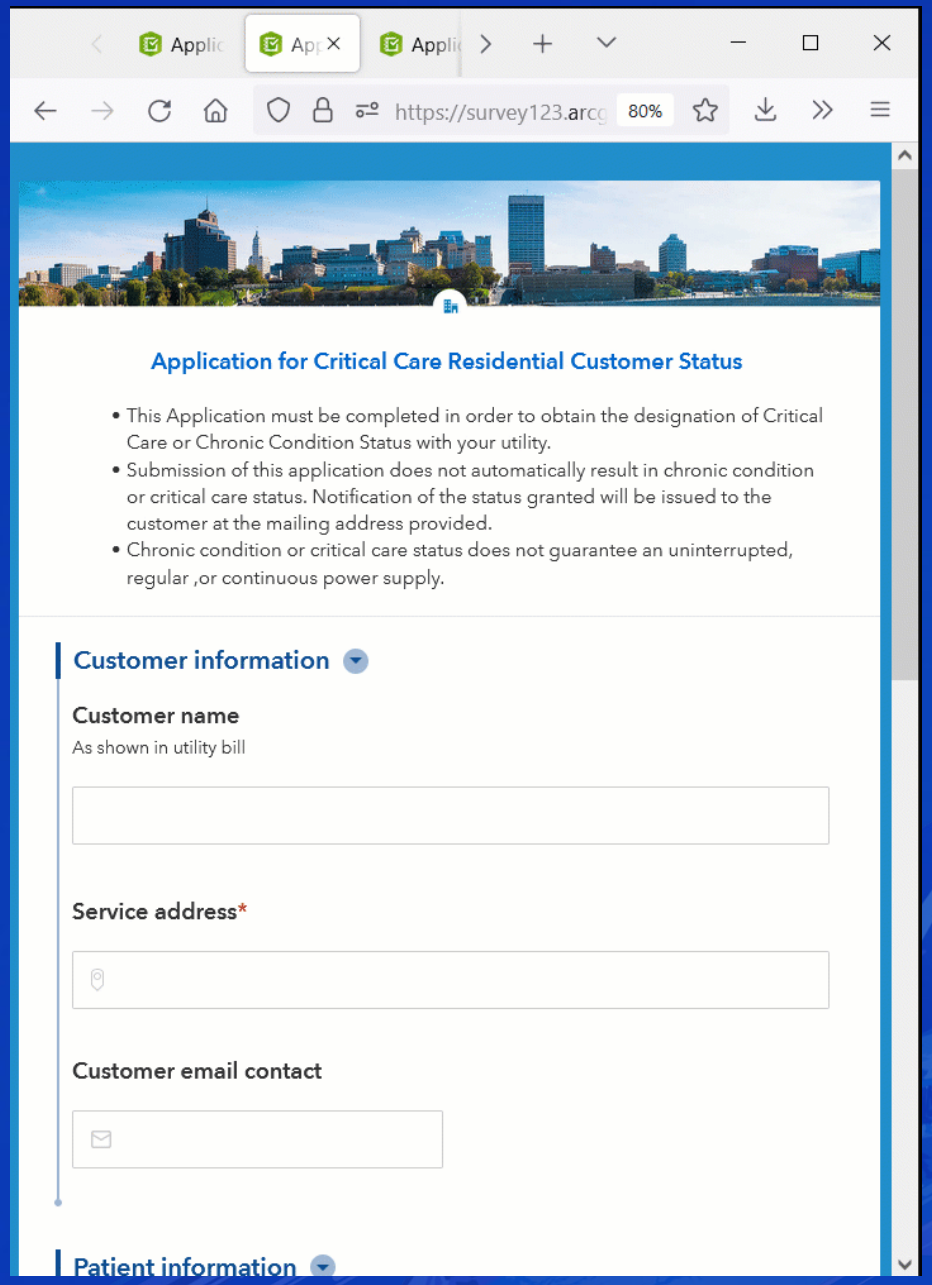
Challenges

- Typos
- Inconsistencies
- Mapping



The New Addressing Question

- Adds address predictive text, accelerating form completion
- Leverages ArcGIS locators to standardize collected data
- Leverage calculations to enrich data:
  - Extracting address properties such as City, Postal Code, etc. into dedicated fields
  - Storing the address location as a point geometry



Survey123 Field Application

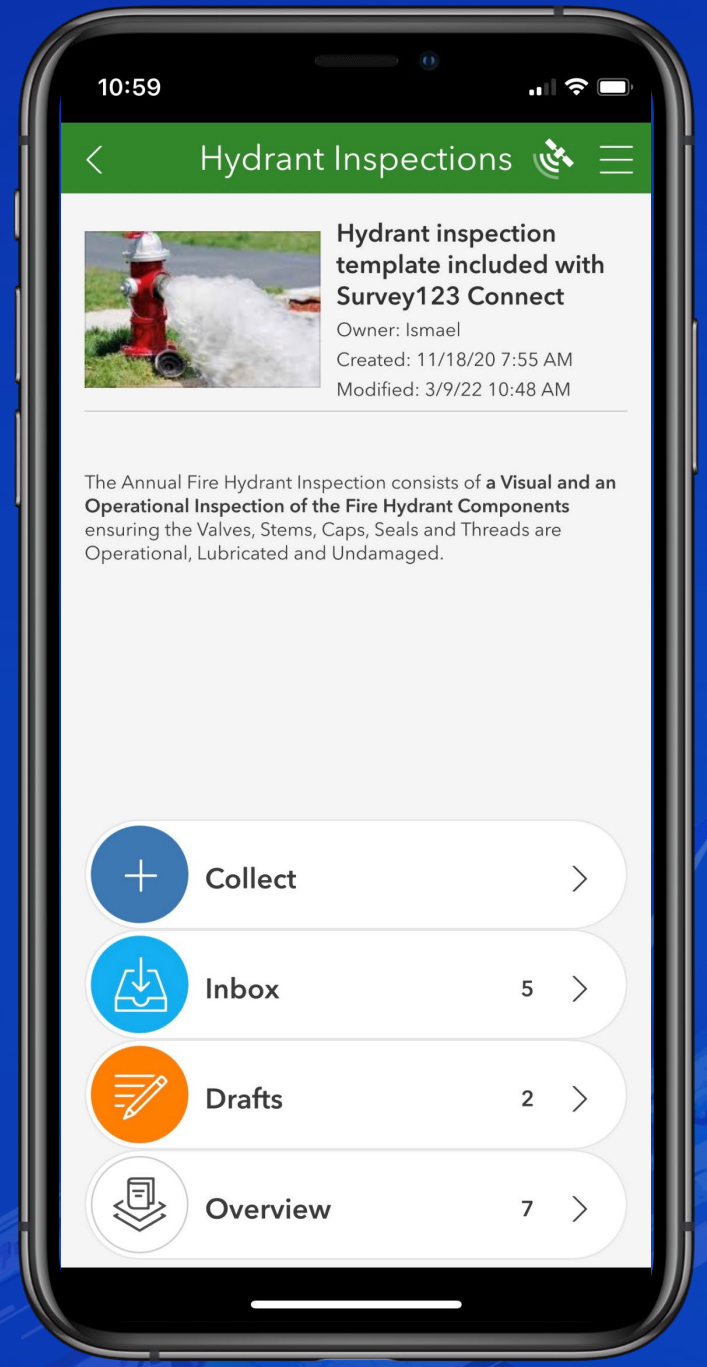
What's new

- Use your forms from the mobile app:
  - Works even if offline
  - Supports external sensors and additional data capture methods
  - Work with to-do lists
- What's new:
  - Inbox enhancements
  - Photos and photo markup
  - Overview folder

Survey123 Field Application Inbox

Use it to update existing records

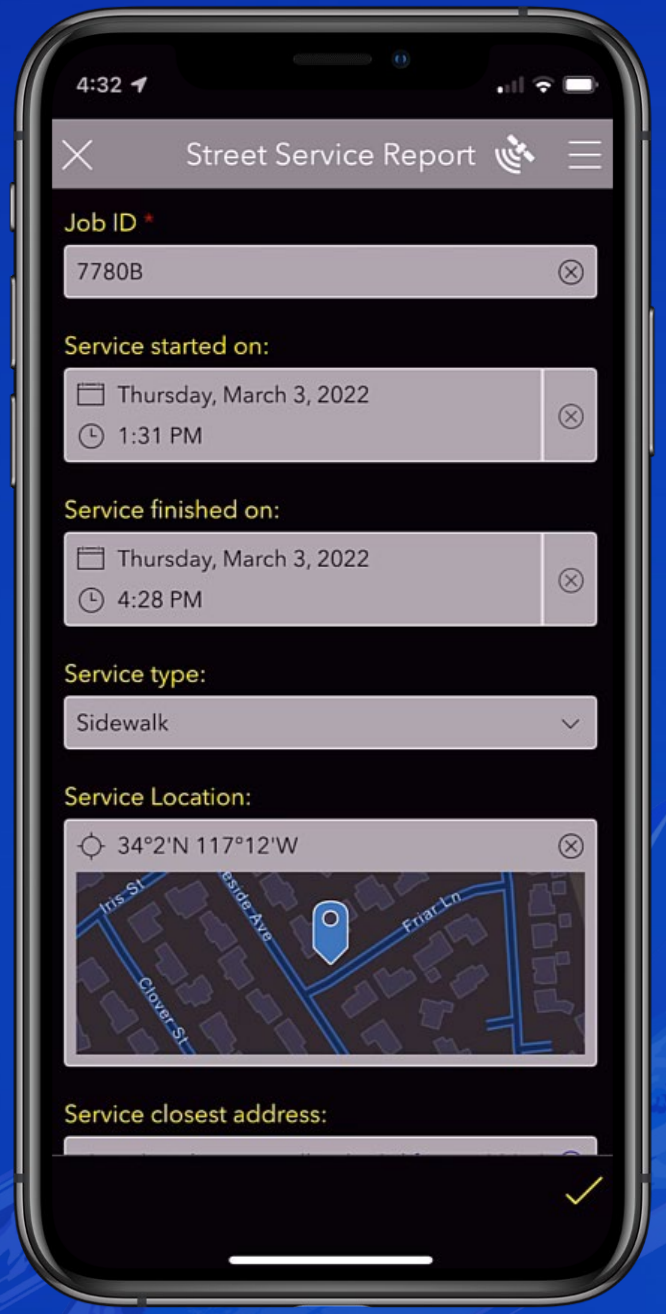
- It is available in the Survey123 mobile app
- Allows you to download existing records and update them
- The inbox can be optionally enabled in Survey123 Connect
- Very useful to:
  - Update records
  - Support inspection workflows and to-do lists
  - Model approval workflows
- The inbox now supports:
  - Display existing and add new photos to records from the inbox
  - Public surveys
  - Location indicators

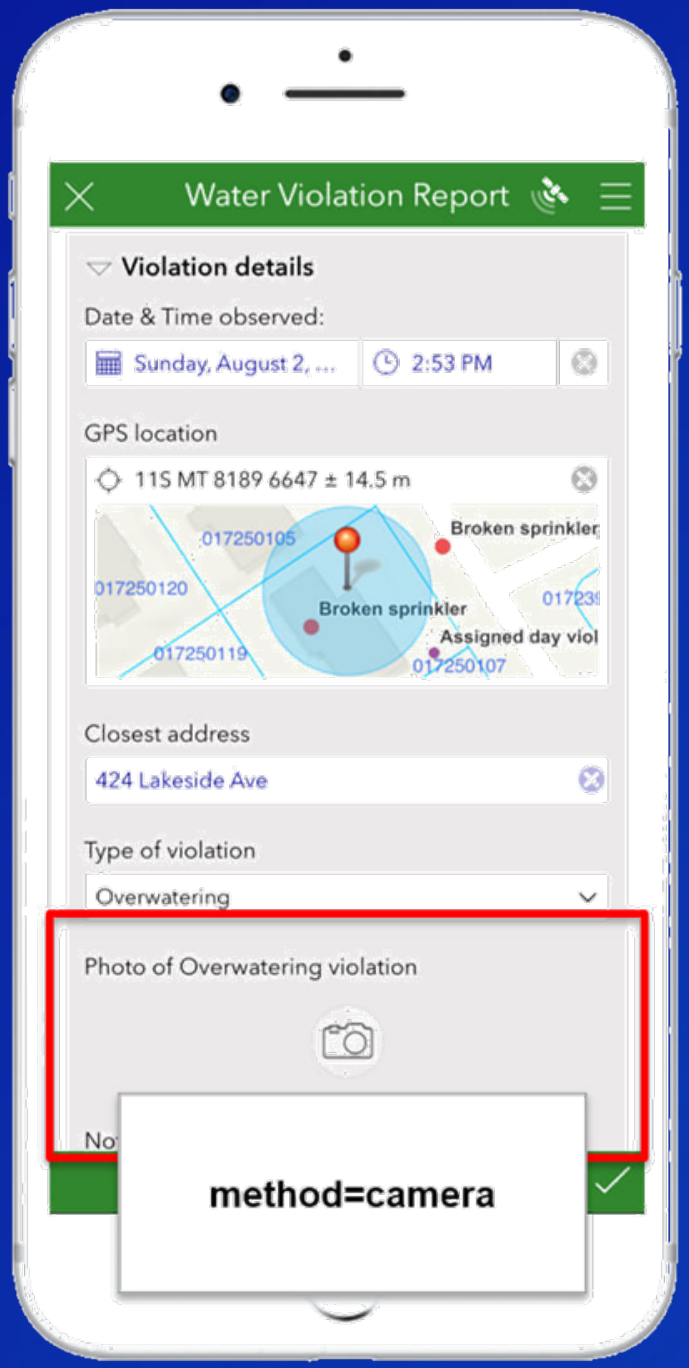


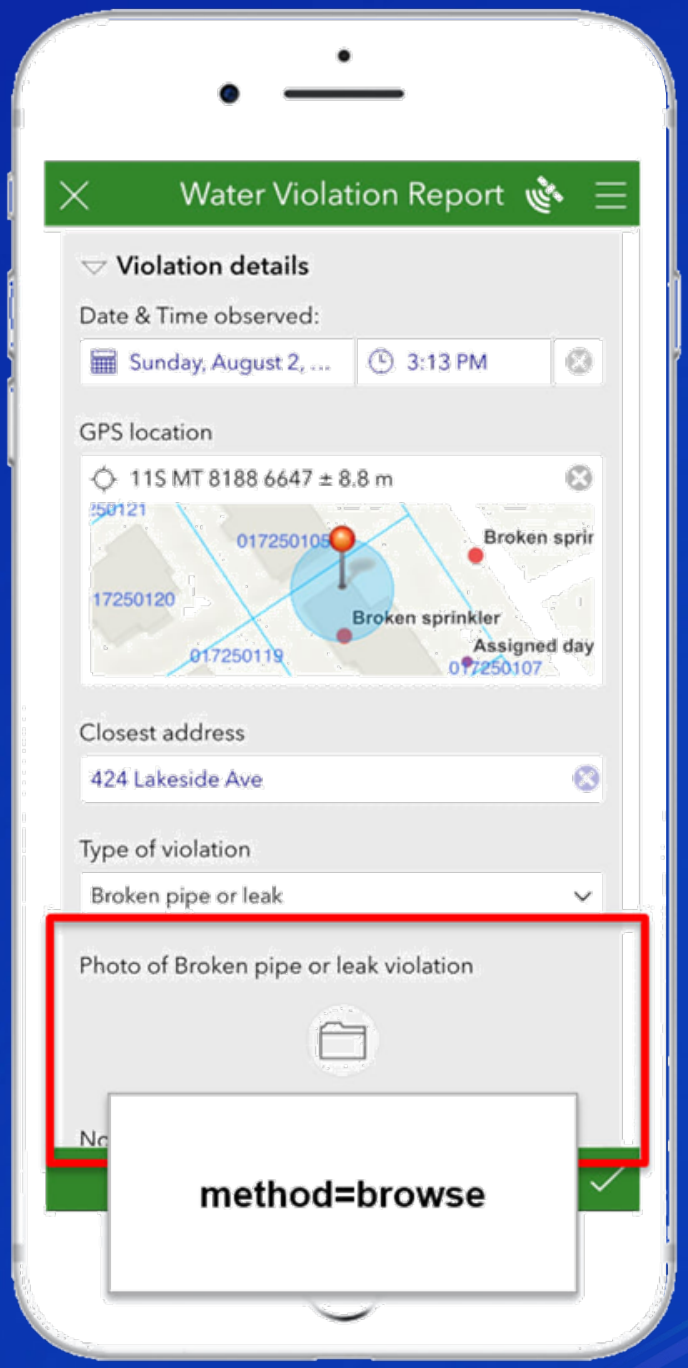
Survey123 Field Application

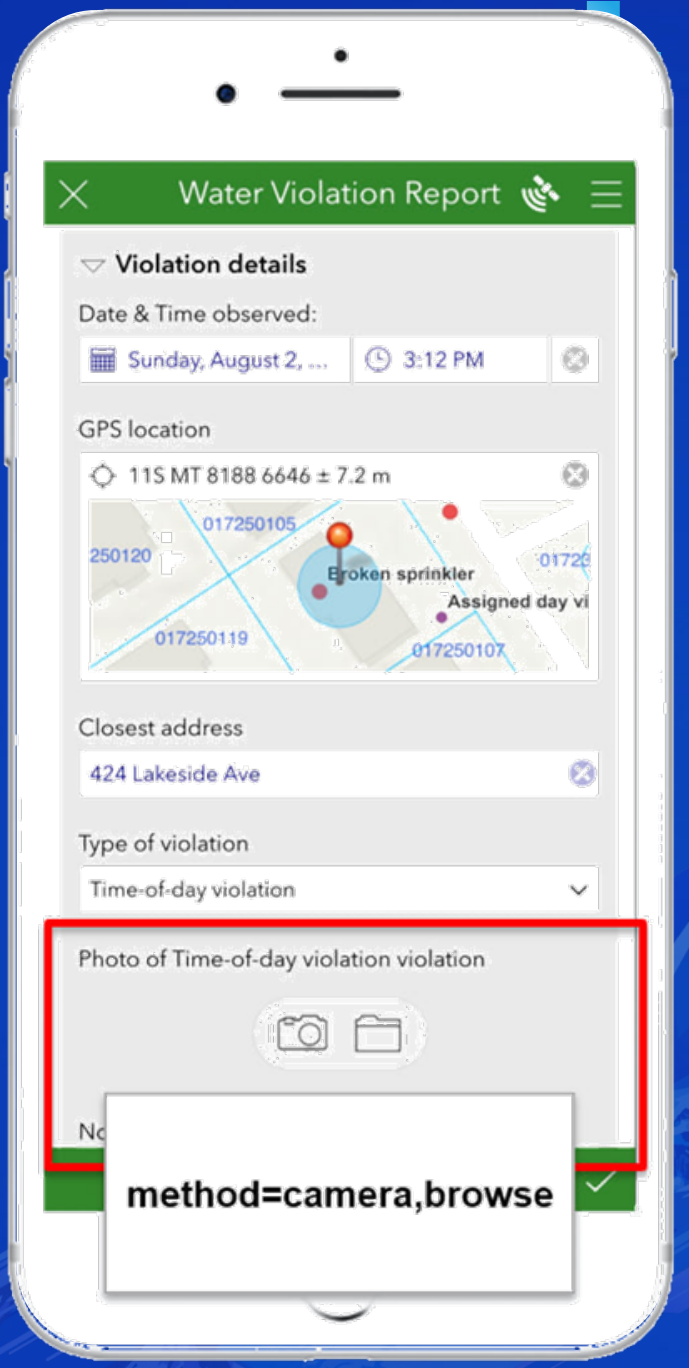
Multimedia, Photos, and Much More…

- You can now collect multiple photos with a single image question
  - Use the multiline appearance in XLSForm or setup in designer
- And also hide or show the camera roll option
  - This is useful if you want users to always take a new photo
  - Configure via web designer or XLForm (method in body::esri:style)
- Configurable in Survey123 Connect for the field app
  - Watermark photos with data from your form
  - Enhanced photo annotation tools
  - New in February 2022: Custom annotation tools




Water Violation Report
Violation details
Date & Time observed:
Sunday, August 2, ...
2:53 PM
GPS location
11S MT 8189 6647 ± 14.5 m
017250105
Broken sprinkler
017250120
Broken sprinkler
017250119
Assigned day viol
017250107
Closest address
424 Lakeside Ave
Type of violation
Overwatering
Photo of Overwatering violation
method=camera

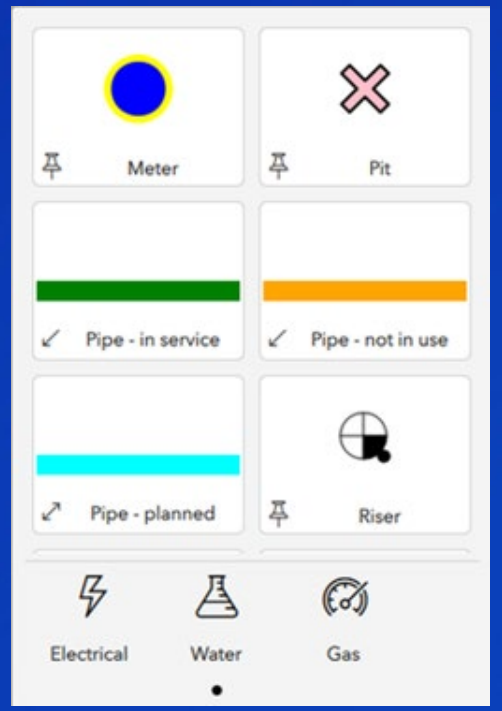

Water Violation Report
Violation details
Date & Time observed:
Sunday, August 2, ...
3:13 PM
GPS location
11S MT 8188 6647 ± 8.8 m
017250105
Broken sprir
17250120
Broken sprinkler
017250119
Assigned day
017250107
Closest address
424 Lakeside Ave
Type of violation
Broken pipe or leak
Photo of Broken pipe or leak violation
method=browse

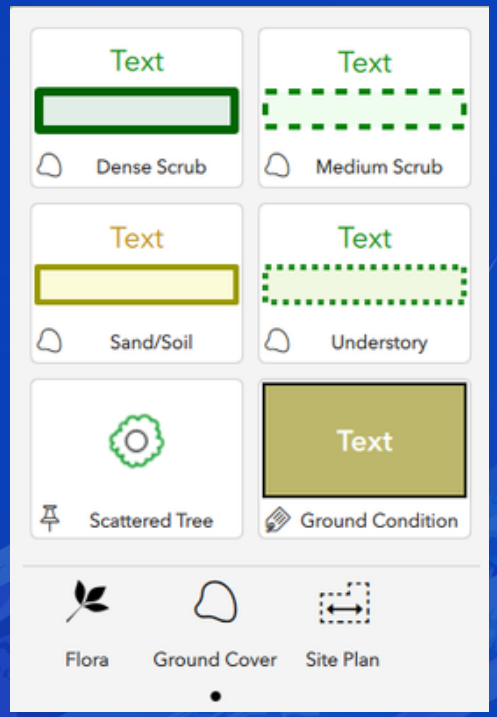

Water Violation Report
Violation details
Date & Time observed:
Sunday, August 2, ...
3:12 PM
GPS location
11S MT 8188 6646 ± 7.2 m
017250105
250120
Broken sprinkler
Assigned day vi
017250119
017250107
Closest address
424 Lakeside Ave
Type of violation
Time-of-day violation
Photo of Time-of-day violation violation
method=camera,browse

ArcGIS Survey123 | Custom annotation palettes

- **Create your own custom annotation palettes**
  - Give your markup tools a meaning
  - Tailor the markup experience to the workflow at hand
  - Get more consistent markups
  - Streamline the user experience

- Create your own palettes in Survey123 Connect and reuse them across multiple surveys





New as of February 2022

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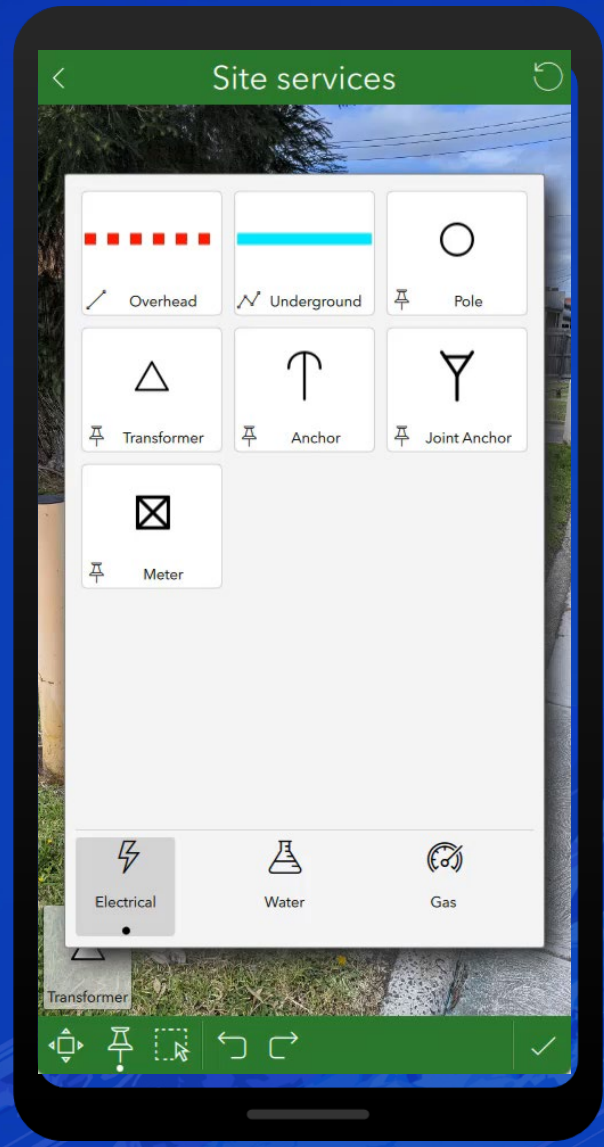

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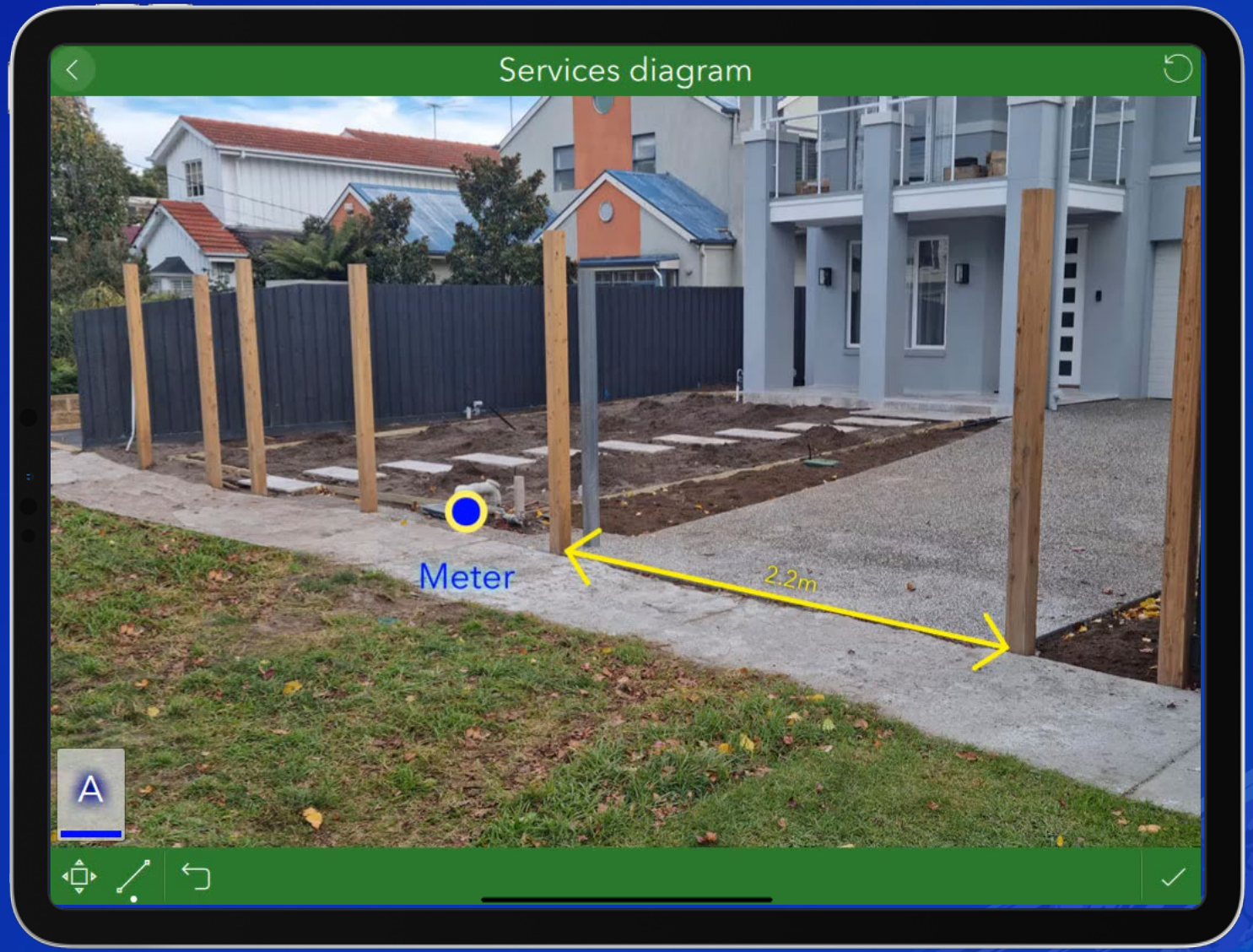
ArcGIS Survey123 | Annotation tools



ArcGIS Survey123 | Web Designer Demo

ArcGIS Survey123

What's Coming?

ArcGIS Survey123 Roadmap 2022

Q2-Q3 2022

- Web designer
  - Calculate values using other layers: Spatial inheritance
  - Better social media sharing
  - Captcha
- Location tracking in the field app
  - Last known location and location tracks
- Field Data Collection Capabilities:
  - Launch a form from a map (without leaving the Survey123 app)
  - Streaming mode for line and polygon data collection
- XLSForm/Connect enhancements
  - Calculate photo file names
  - pulldata('@layer'): Query layers and tables without the need for custom JS functions
  - Record longer audio files and adjust quality
  - Update geodatabase domains when a list in Connect changes

Q4 2022

- Indoors
  - Indoor Positioning support
  - Floor-aware forms
- Field Data Collection Capabilities:
  - Measure heights and offset data collection with laser range finders
  - Inspect and tag assets with external RFID
  - Oriented imagery
- XLSForm enhancements
  - Cache answers (alternative to favorites)
  - More pulldata awesomeness
- PII Removal Filter
  - Removal of PII through AI Model
- Background sync framework
  - Automatically upload collected features
  - Unattended update of surveys, lists and other resources

Beyond 2022

- Report service installer for ArcGIS Enterprise
- Grid layouts in the web app
- Smart camera read-to-use AI models
  - Redact PII
- Peer to peer sharing
  - Surveys
  - Maps
  - Collected data
  - Assignments
- Geotriggers
  - Alerts, Location sharing
- Offline mobile printing
  - Print a receipt using a mobile printer

All road map information is subject to change

ArcGIS Survey123 Roadmap 2022 – Personal Favorites

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Survey123 Connect | pulldata@ “layer”

What’s new

- **Query layers and tables without a custom JS function**
  - Calculation: What is the parcel id at the provided location?
  - Constraint: Is the user provided location within my city?

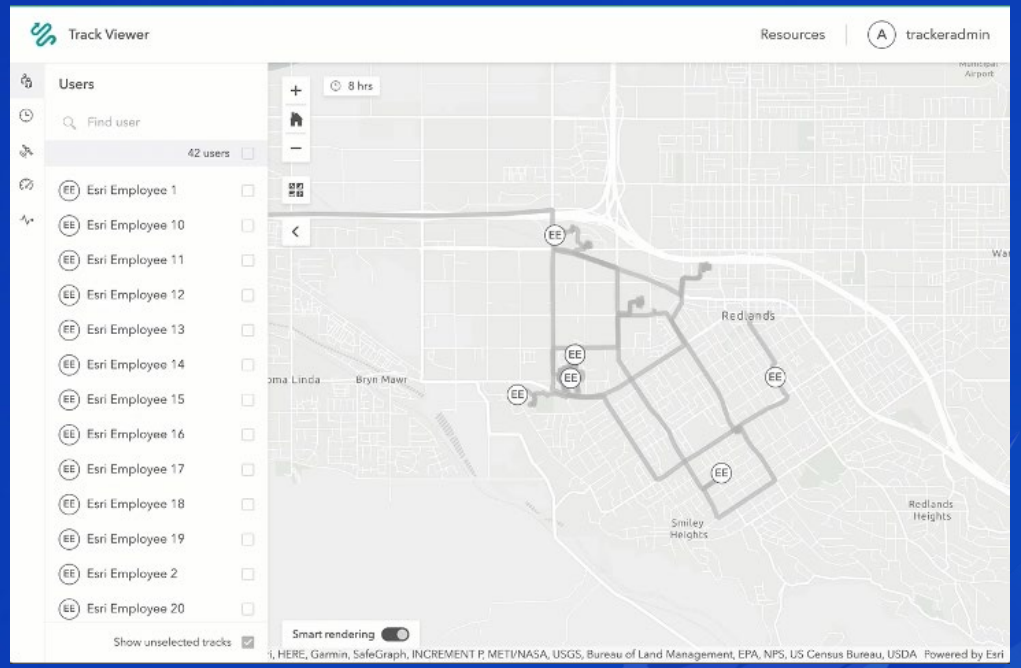
- Syntax:
  - pulldata(‘@layer’, ‘getRecordAt’,<targetLayer>,<location>,<whereFilter>)
  - pulldata(‘@layer’, ‘getRecord’,<targetLayer>,<whereFilter>)

- Available for Early Adopters in March 2022 (web app only)
- Planned to be released in July 2022 (field and web app, but online only)
- Offline support in the field app coming later

Survey123 Field Application

What's new

- Monitor the last known location of Survey123 users
- Understand where Survey123 users have been
- Leverages the location tracking capability of ArcGIS
- Requires a Tracker license
- Coming Q2-Q3 2022

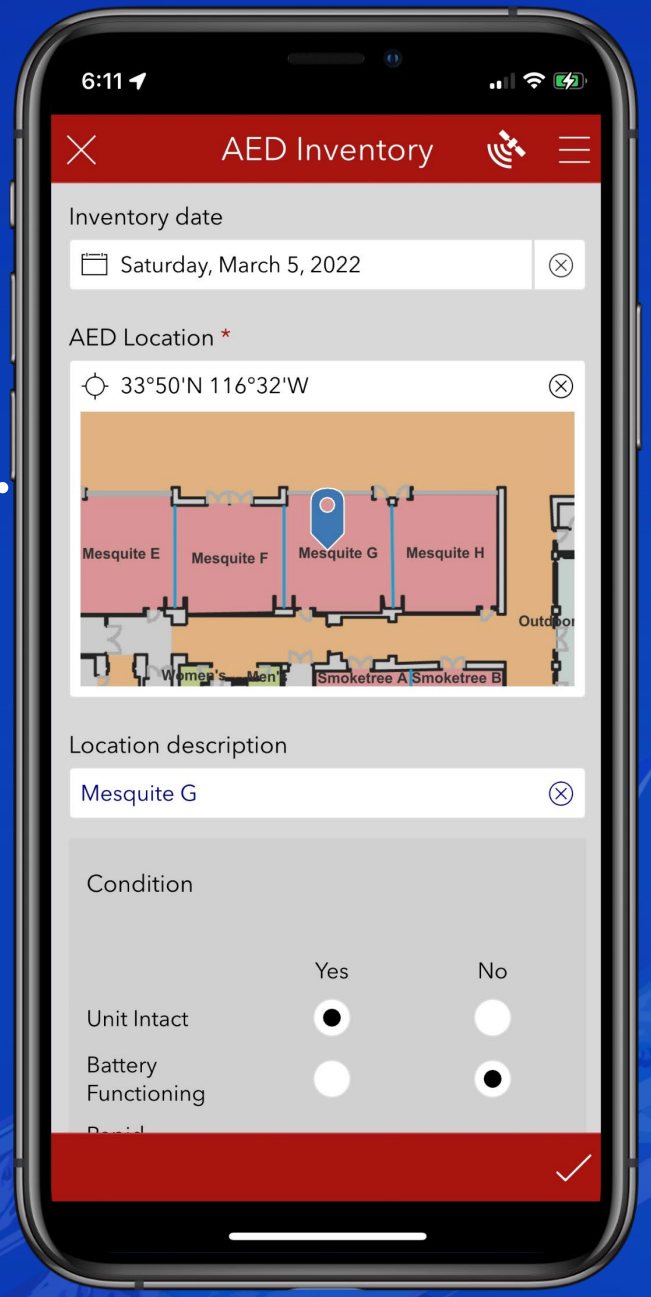


ArcGIS Survey123 | Indoors

- **Collect data indoors with Survey123**
  - More accurate locations with IPS support
  - Floor-aware forms

- Enrich collected data with room/building information
- Use room/floor information to create data validation rules or hide/show sections of your form

- Q4 2022



ArcGIS Survey123 | InfraMarker

- Use InfraMarker with Survey123 to streamline field data collection workflows

  - **Asset tagging:** Physically attach Inframarker RFID tags to your assets. Each tag carries a unique id (EPC). Use Survey123 to write data such as location, asset name and owner into your tags
  - **Asset inspection**: Use InfraMarker to scan and automatically open your asset inspection forms within Survey123

Asset tagging

Asset inspection

ArcGIS Survey123 | Laser range finder support

- Easily bring measurements from your laser range finder into Survey123
  - Measure heights: Poles, trees, buildings
  - Offset mapping
- Two workflows:
  - Launch Survey123 and auto-populate questions in your form after a measurement is made
  - Incorporate a laser range finder question within your form

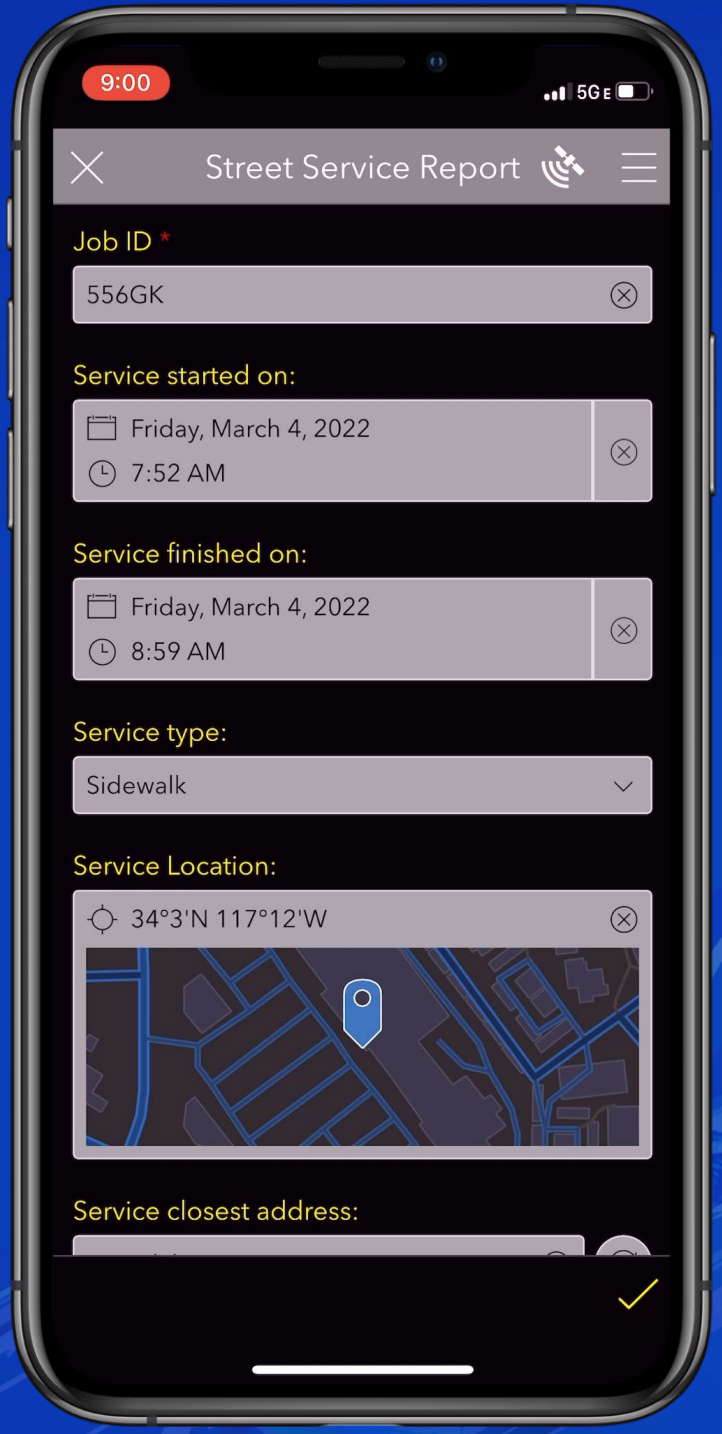
Measure heights

Calculate the exact location of an object

- Beta software available May 2022

ArcGIS Survey123 | PII Removal Filter

- Automatically remove Personal Identifiable Information such as faces and license plates from photos
- Leverages a ready to use AI model and the Survey123 smart camera
  - Distorts license plates and faces immediately after the photo is taken with Survey123 and before the photo is submitted to ArcGIS
- Planned Q4 2022



ArcGIS Survey123 | Peer to peer sharing

- **Bluetooth-based device to device sharing:**
  - Surveys
  - Maps
  - Collected data (Outbox)
  - Work assignments (Inbox folder)
- **No need to be connected**
- **Planned for 2023**

Collaborating with us

We are listening

- Voice of Customer
- Esri Communities
- Beta Program
- Technical Support & Your Esri Contacts

SCAN ME

Esri Communities URL

SCAN ME

Esri Beta Program URL

Please Share Your Feedback in the App

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