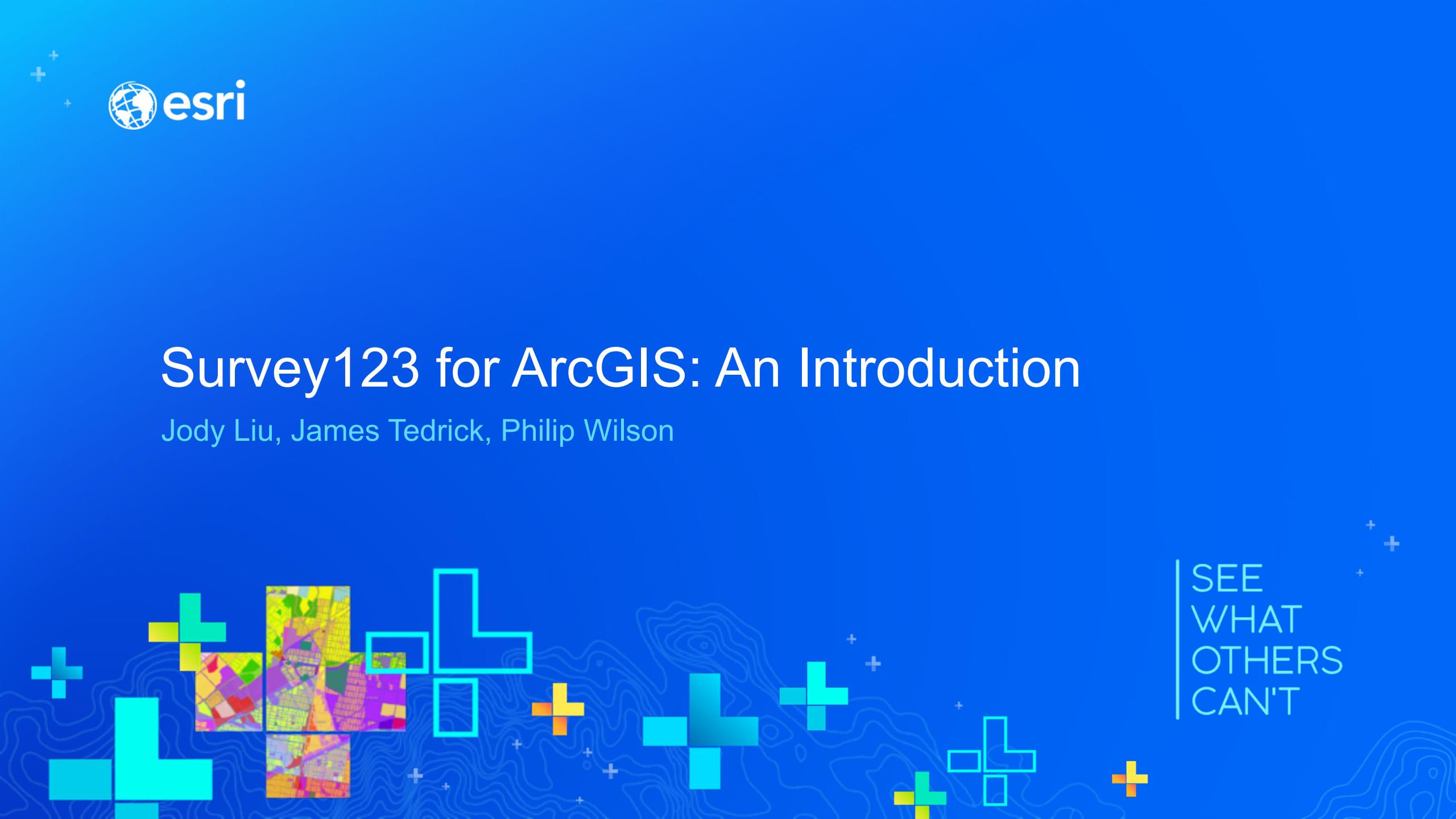




Survey123 for ArcGIS: An Introduction

Jody Liu, James Tedrick, Philip Wilson

A blue-toned background map with white contour lines. Overlaid on the map are several data layers: a map of a city with colored blocks (green, yellow, orange, red), a map of a field with colored blocks (green, yellow, orange, red), and several large, semi-transparent cyan L-shaped icons. There are also smaller cyan and orange plus signs and a few small yellow and orange L-shaped icons. The overall theme is data visualization and spatial analysis.

SEE
WHAT
OTHERS
CAN'T

Agenda

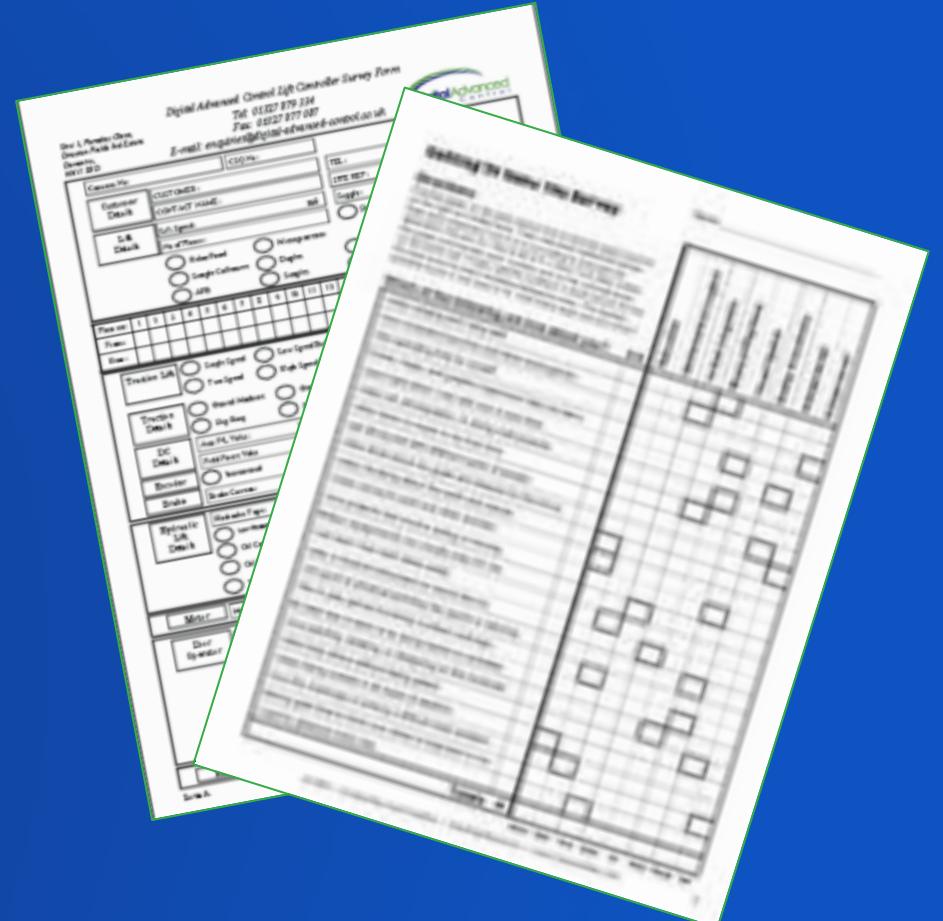
- Product overview
- Authoring surveys
- Collecting data
- Examine survey results
- Summary



Forms

A printed or typed document with blank spaces for insertion of required information

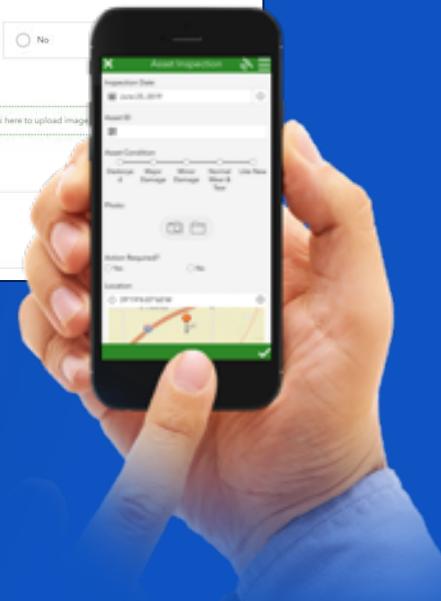
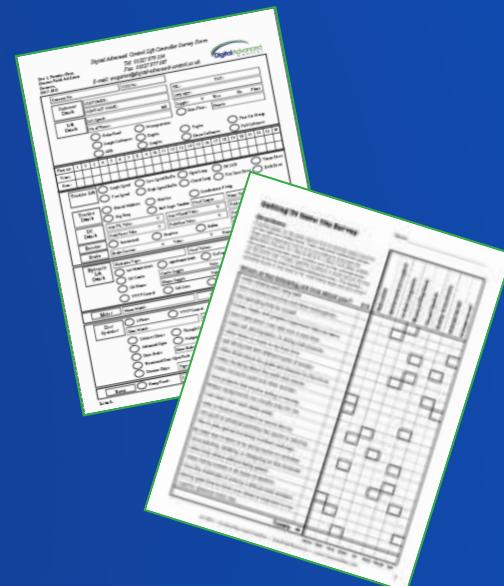
- **Universally used**
 - **Utilities (Water, Electric, Telco, Gas)**
 - **Transportation**
 - **Government**
 - **Humanitarian, Non-Profit, Conservation**
 - **Census**
 - **Health**
 - **Emergency Management**
 - **Agriculture...**



Survey123 for ArcGIS



- Form-centric data collection solution
- Leverages smart forms
- Web browser-based solution
 - Also supports mobile devices
- Integrated with ArcGIS Online
 - Available with ArcGIS Enterprise



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



Many Customers – Many Use Cases



World Health Organization



American
Red Cross



Direct Relief

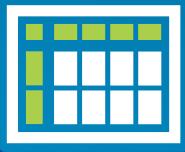


Services of the San Francisco Public Utilities Commission



1- Ask Questions

(Design & Publish)



2- Get Answers

(Capture Data)



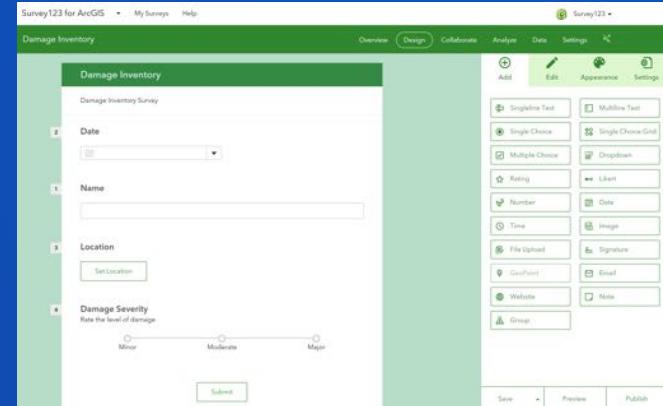
3- Make Decisions

(View & Analyze)

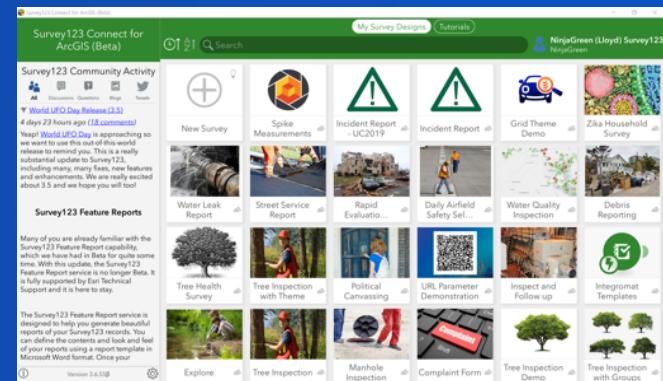


Authoring Surveys

- **Survey123 Web Designer**
 - Build smart forms graphically in a web browser
 - Very easy to get started
 - Ideal for simple forms



- **Survey123 Connect**
 - Desktop tool; works in combination with Microsoft Excel
 - Requires learning and familiarity with XLSForms specification
 - Complete smart form capabilities



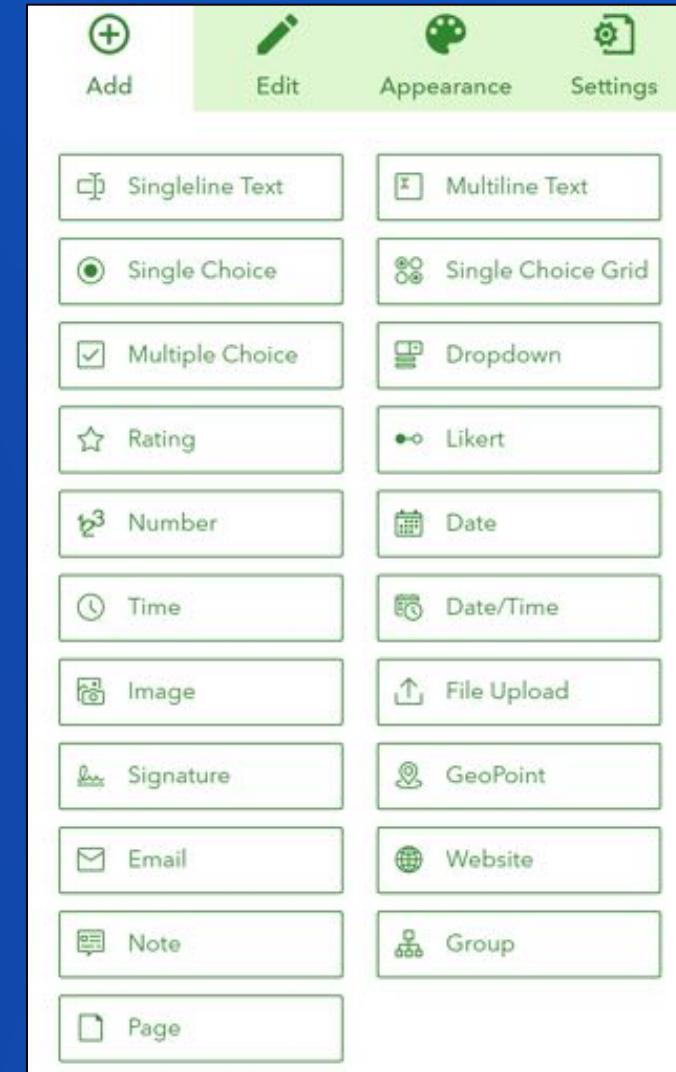
Survey123 Web Designer

- Preview in left panel, set parameters in right panel

The screenshot shows the Survey123 Web Designer interface. On the left, a preview panel displays a survey form titled "UC Survey" with fields for "Date", "Name", "Location", and a "Rating" scale from "Very satisfied" to "Very unsatisfied". On the right, a toolbar provides options for "Add", "Edit", "Appearance", and "Settings". Below these are buttons for various data types: Singleline Text, Multiple Text, Single Choice, Single Choice Grid, Multiple Choice, Dropdown, Rating, Likert, Number, Date, Time, DateTime, Image, Fileupload, Signature, Geofence, Email, Websize, Note, and Group. At the bottom, buttons for "Save", "Preview", and "Publish" are visible.

Survey Question Types in Web Designer

- Most common questions
- Addresses many workflows
- Simple forms



Setting Rules

- Simple conditional statements can control visibility of questions
- Applicable for *Single Choice, Dropdown, Likert, and Rating*

3 Is this your first time shopping with us?

Yes No

Set Rule

Show selected questions only if the answer to this question is a specific choice.

If: No

Show: -Please Select-
-Please Select-
4. How often do you shop with us?
5. What did you purchase?
6. Did you have a good shopping experience?
7. Which location did you shop at?

Tip: Currently, rules are only supported by Single Choice questions.

3 Is this your first time shopping with us?

Yes No

4 How often do you shop with us?

Once a week
 2-4x a week
 More than 5x a week

Style Your Form

Tree inspection

Tree name

Tree height
in feet

10-10

Where is the tree?*

Find address or place

Map data © OpenStreetMap contributors

Lat: 34.05405 Lon: -117.18045

Submit

Add Edit Appearance Settings

Layout Element

Survey header

Survey description

Survey footer

Theme

Light Green	Red	Cyan	Light Gray	Dark Gray
Dark Green	Blue	Brown	Gray	Red
Mountain	Cityscape	Aurora	Rock Arch	Forest
Light Gray	Light Gray	Map	Checkmark	Image

Header

Background color

Text color

Content

Background

Color

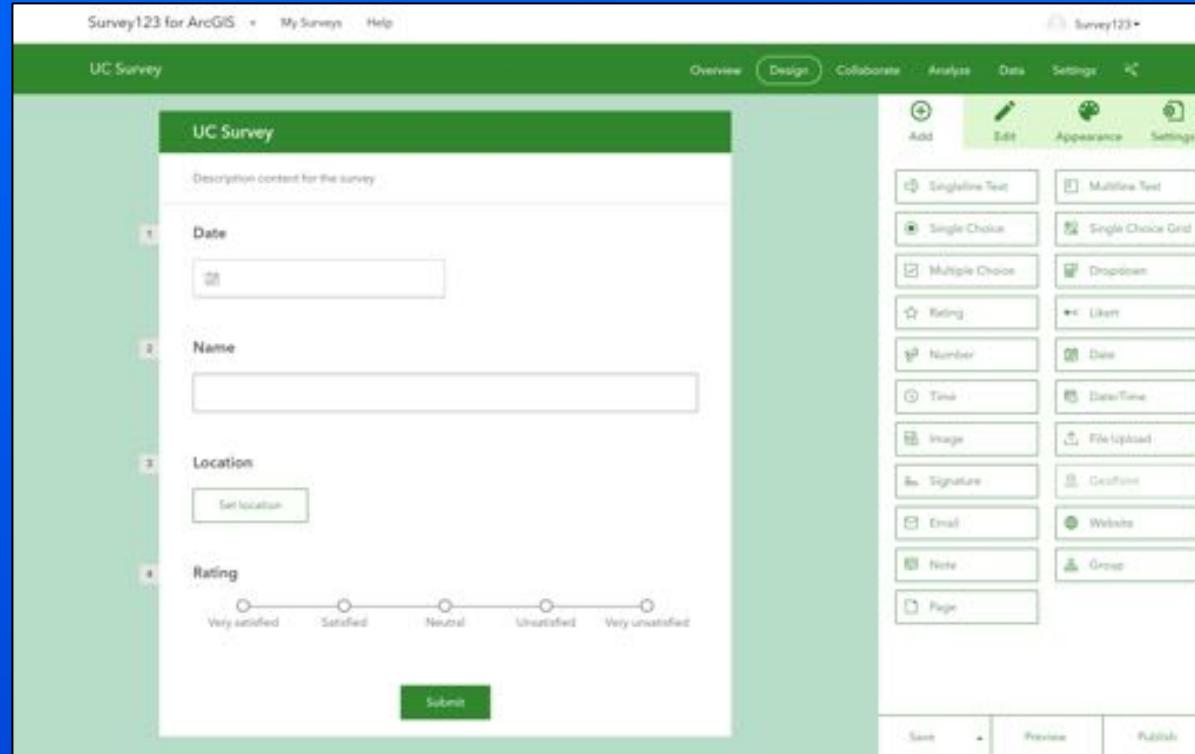
Image

Save Preview Publish

Updating Surveys

- Published surveys can be edited in Web Designer
- Supported changes
 - Add new questions
 - Reorder questions
 - Delete questions
 - Update labels in questions
 - Add, update, delete choices in lists
 - Update constraints, default values, hints, and required status

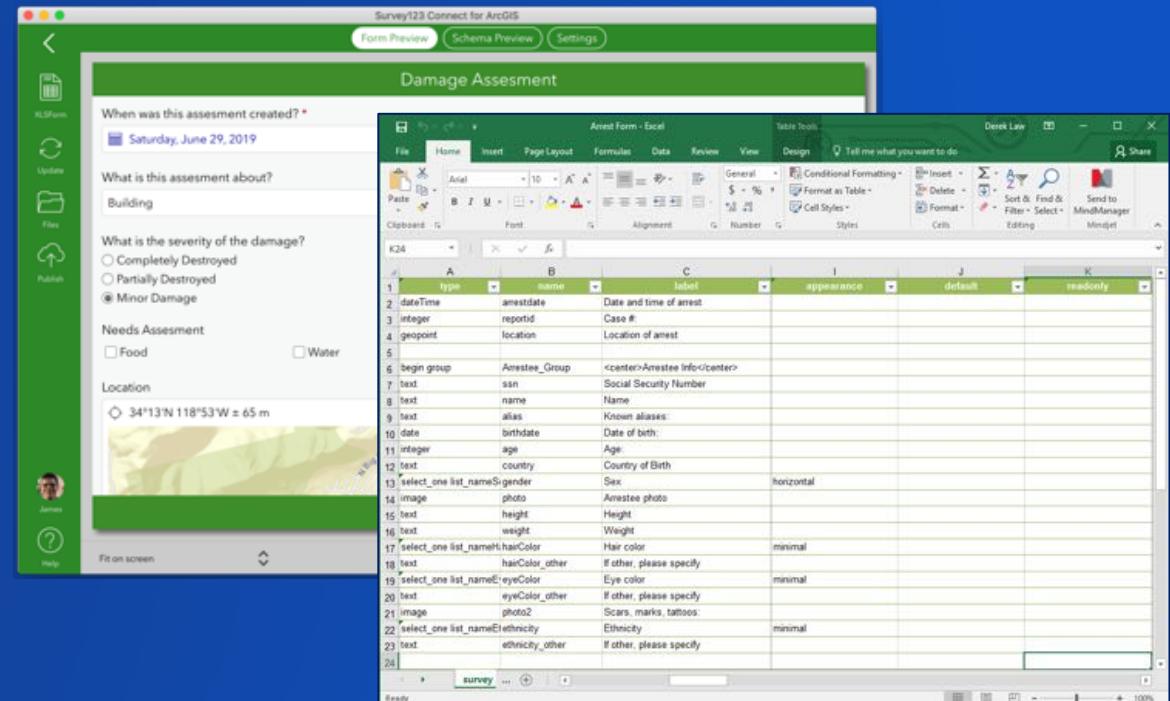




Author a Survey on the Web

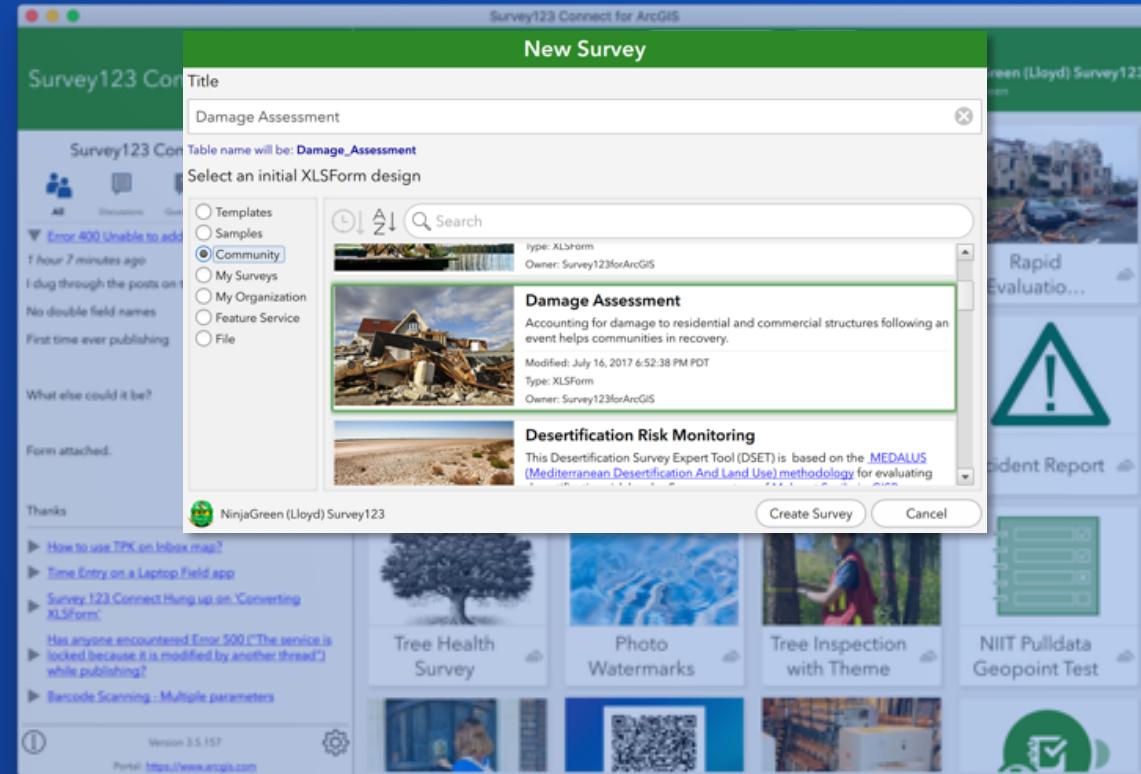
Survey123 Connect

- Desktop app → author and publish smart forms to ArcGIS
- Works in combination with a spreadsheet editor
- Available for download at survey123.arcgis.com
- Supported on:
 - Windows 7
 - Windows 10
 - MacOS X
 - Ubuntu Linux



Creating Surveys with Survey123 Connect

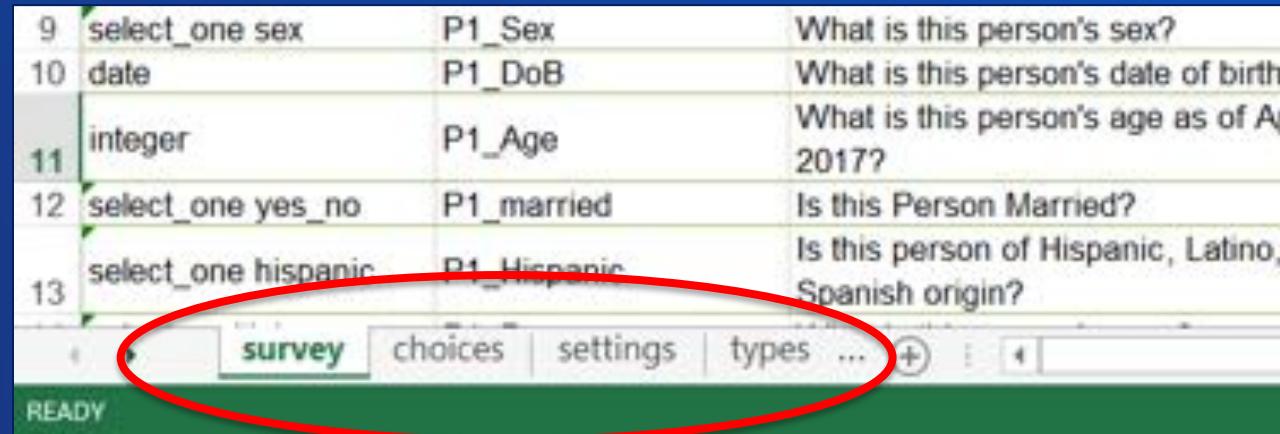
- **Templates**
- **Samples**
- **Community**
- **Copy a Form**
 - **Your own**
 - **Your organization's**
- **Existing Feature Service**
- **XLS File**



Survey123 uses XLSForms in MS Excel

- Worksheets

- Survey → Define the survey questions
- Choices → Support survey questions with choice options
- Settings → Define form title and specify optional properties
- Types → Supported field types and question parameters



9	select_one sex	P1_Sex	What is this person's sex?
10	date	P1_DoB	What is this person's date of birth?
11	integer	P1_Age	What is this person's age as of April 2017?
12	select_one yes_no	P1_married	Is this Person Married?
13	select_one hispanic	P1_Hispanic	Is this person of Hispanic, Latino, or Spanish origin?

Authoring Survey Questions

- Define in Survey worksheet
- 2 sections:
- Left side: define survey questions
 - Type → question type
 - Name → field name in feature class
 - Label → the survey question

Right side: parameters (optional)

survey

	A	B	C	D	E	F	G
1	type	name	label	hint	constraint	constraint_message	required
2							

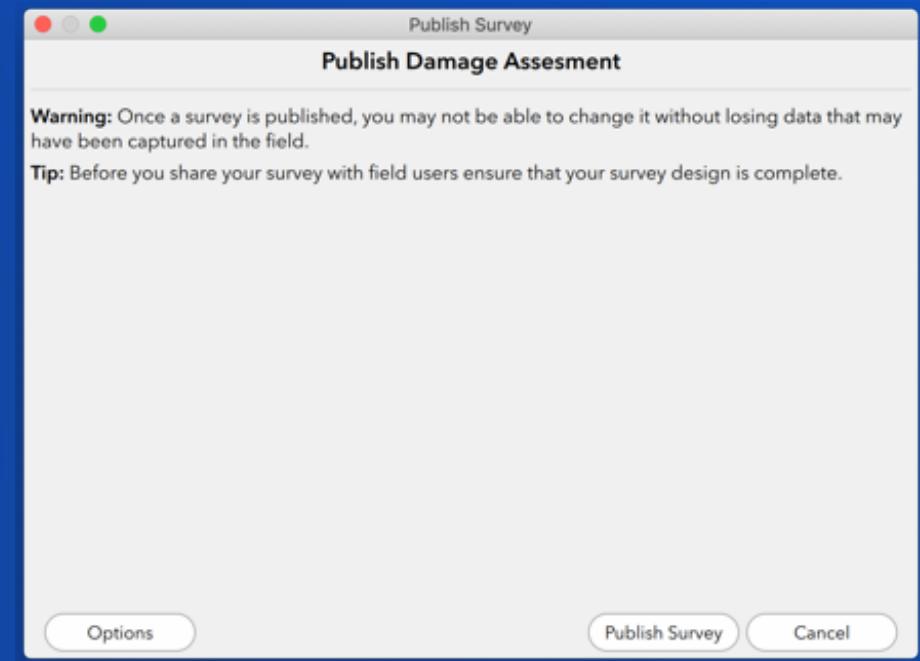
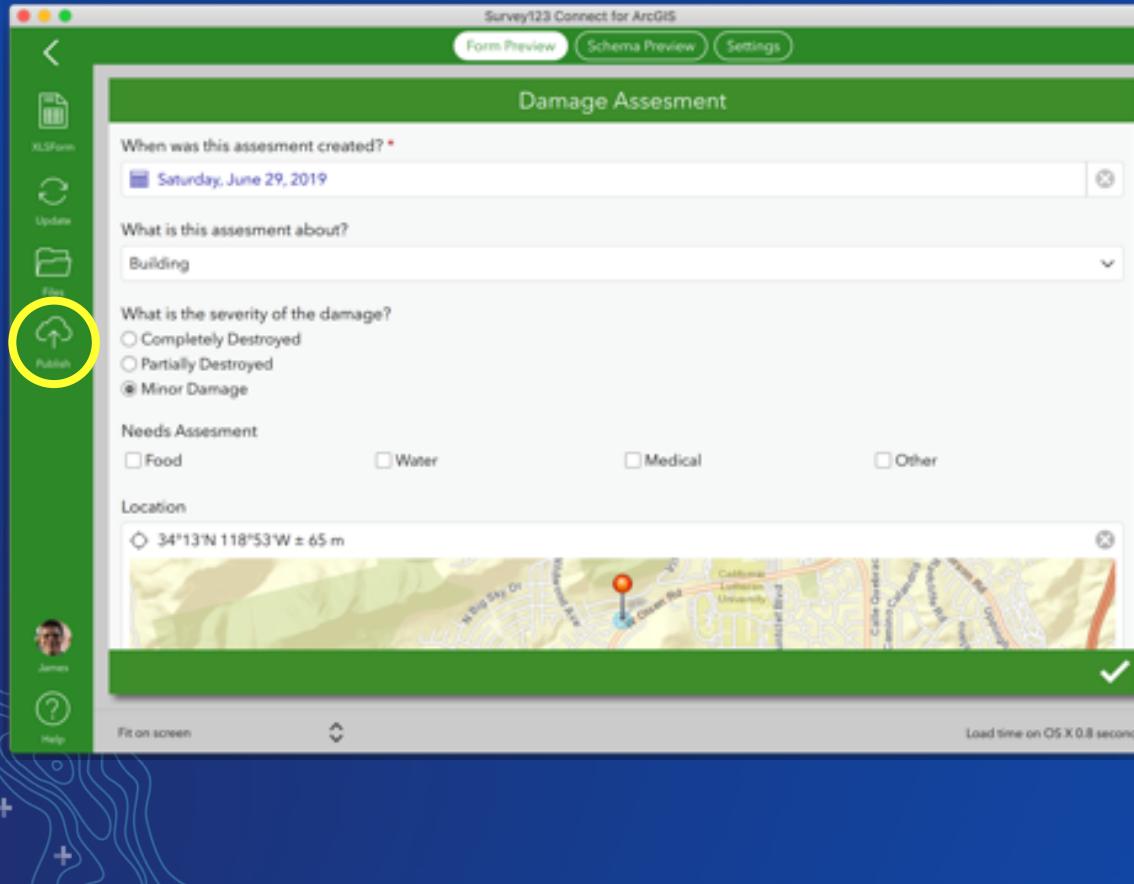
Creating forms in Survey123 Connect

- **Types of questions:**
 - Date, time, numeric, text, lookup choices, spatial location, barcodes, signatures
- **Logic and validation rules:**
 - Default values, calculations, cascading questions, grouping, relevant associations, and repeats
- **Media**
 - Images, audio and signatures
- **Connect includes many samples and templates**

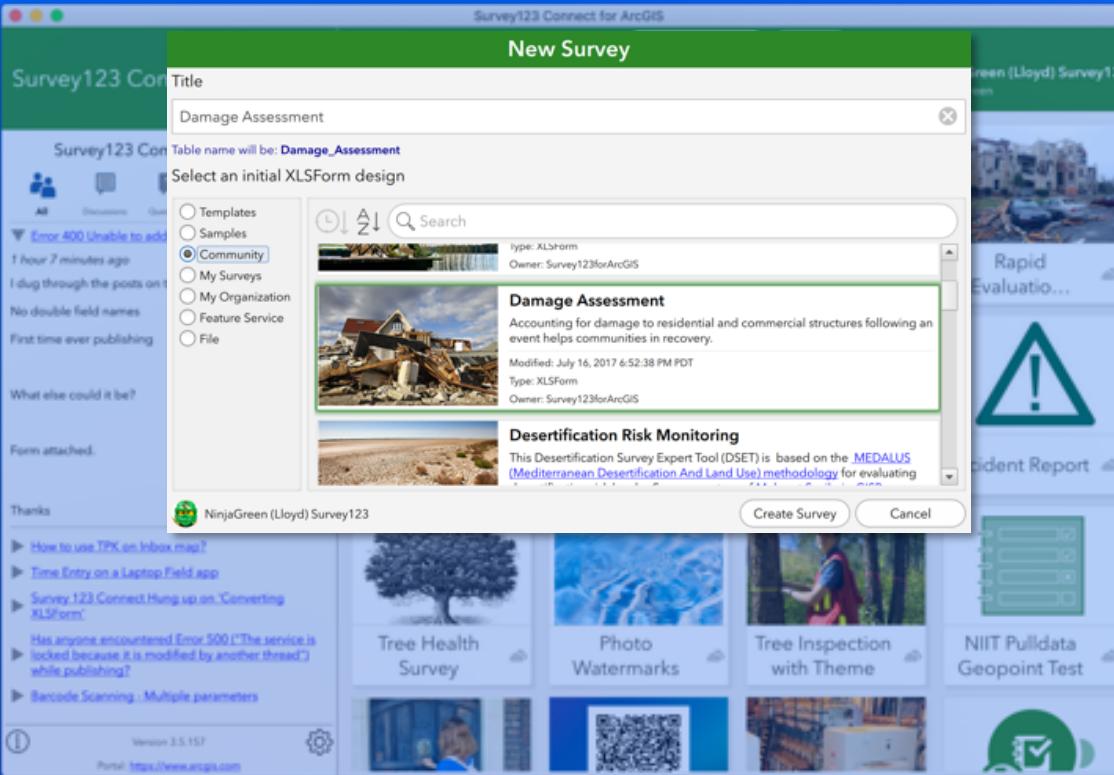


Publish surveys

- Publish to ArcGIS Online or ArcGIS Enterprise (Portal for ArcGIS)



Authoring with Survey123 Connect



Sharing Surveys

- **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



Collaborate Tab

- After publishing survey, you control access
 - Data submission → Submitter
 - Review results → Viewer

The screenshot shows two views of the Survey123 'Collaborate' tab for a survey titled 'tree inspection'.

Top View: The 'Share this survey' section. It shows a sharing link: <https://arcg.is/0ea18r>. There are three options for opening the survey:

- Open the survey in browser directly
- Ask the user how to open the survey, in browser or in the Survey123 field app
- Open the survey in the Survey123 field app directly. (Learn more about this option)

Bottom View: The 'Share survey results' section. It shows the sharing link will be available after clicking the 'Save' button for the first time. It lists the 'Who can view results of this survey?' options:

- Everyone (Public)
- Members of my organization (Earl R&D Center Beijing)
- Following groups:
 - 2020 Survey123 group that only survey and manage can contribute content. [Details](#)
 - 2020 Survey123 group with regular content contribution capability. [Details](#)
 - Environment [Details](#)
 - EITI Engineering [Details](#)

At the bottom, it shows 'What data can viewers see?' with two options:

- All records in this survey
- Only their own submitted records

A 'Save' button is at the bottom right.

Control Submission

Collaborate Tab

tree inspection

Overview Design **Collaborate** Analyze Data Settings

Submitter

Viewer

Group Settings

Multiple submissions

Allow multiple submissions
 Only one submission is allowed per submitter

Survey status

This survey is currently open.

Open: accepting responses
 Closed: not accepting responses
 Schedule the open/close date and time (based on -07:00 time zone)

Open: 7/8/2019 8:00 AM

Close: 7/12/2019 6:00 PM

Set the content for when the survey is not available to accept responses:

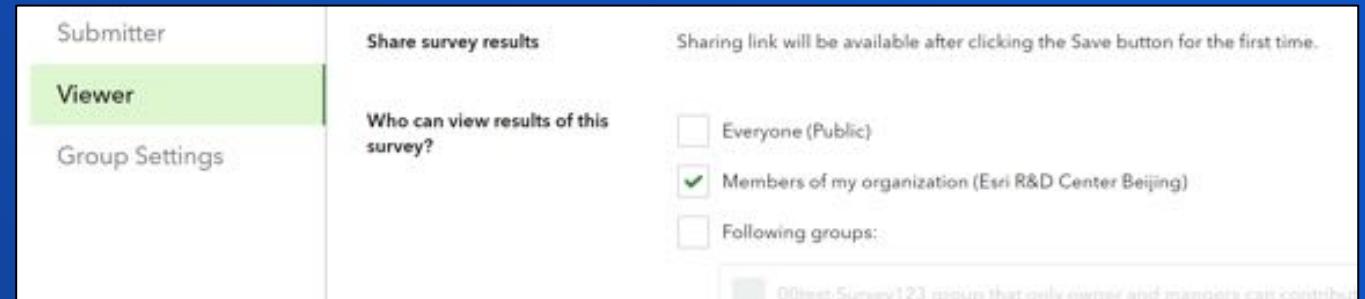
Rich Text Editor

This survey is currently closed. Thanks!

Save

Surveys in ArcGIS Online

- A survey is stored as a folder
- May have 4 components
 - Form
 - Feature layer
 - Feature layer view (fieldworker)
 - Feature layer view (stakeholder)



The screenshot shows the 'Content' page in ArcGIS Online. The 'My Content' tab is selected. On the left, there's a 'Folders' sidebar with 'Survey-Damage Assessment' and 'Survey-Damage Inventory' (which is selected). The main area shows a search bar for 'Survey-Damage Inventory' and a list of four items. The first item, 'Damage Inventory_stakeholder', is highlighted with a red box. The list includes:

Title	Type	Modified
Damage Inventory_stakeholder	Feature Layer (hosted, view)	Apr 23, 2018
Damage Inventory	Form	Jun 19, 2017
Damage Inventory_fieldworker	Feature Layer (hosted, view)	May 25, 2017
Damage Inventory	Feature Layer (hosted)	May 25, 2017

Accessing the Survey

Control how the survey is accessed

Link to share the survey

Link Embed

Link to this survey

<https://arcg.is/GPe8O>

Open the survey in browser directly

Ask the user how to open the survey, in browser or in the Survey123 field app

Open the survey in the Survey123 field app directly. [\(Learn more about this option\)](#)



web



devices

Embed in a web page

Link Embed

Copy and paste HTML to embed in website. [Copy](#)

```
<style>.embed-container {position: relative; height: 0; padding-bottom:80%; max-width: 100%;}.embed-container iframe, .embed-container object, .embed-container iframe{position: absolute; top: 0; left: 0; width: 100%; height: 100%;} small{position: absolute; z-index: 40; bottom: 0; margin-bottom: -15px;}</style><div class="embed-container"><iframe name="survey123webform" width="500" height="400" frameborder="0" marginheight="0" marginwidth="0" title="Tree Health Survey" src="//survey123.arcgis.com/share/1cb28b212b5542acbbdbaa35feba0765?></div>
```

Embed options

Hide options bar (sign in info, multiple language options, etc.)

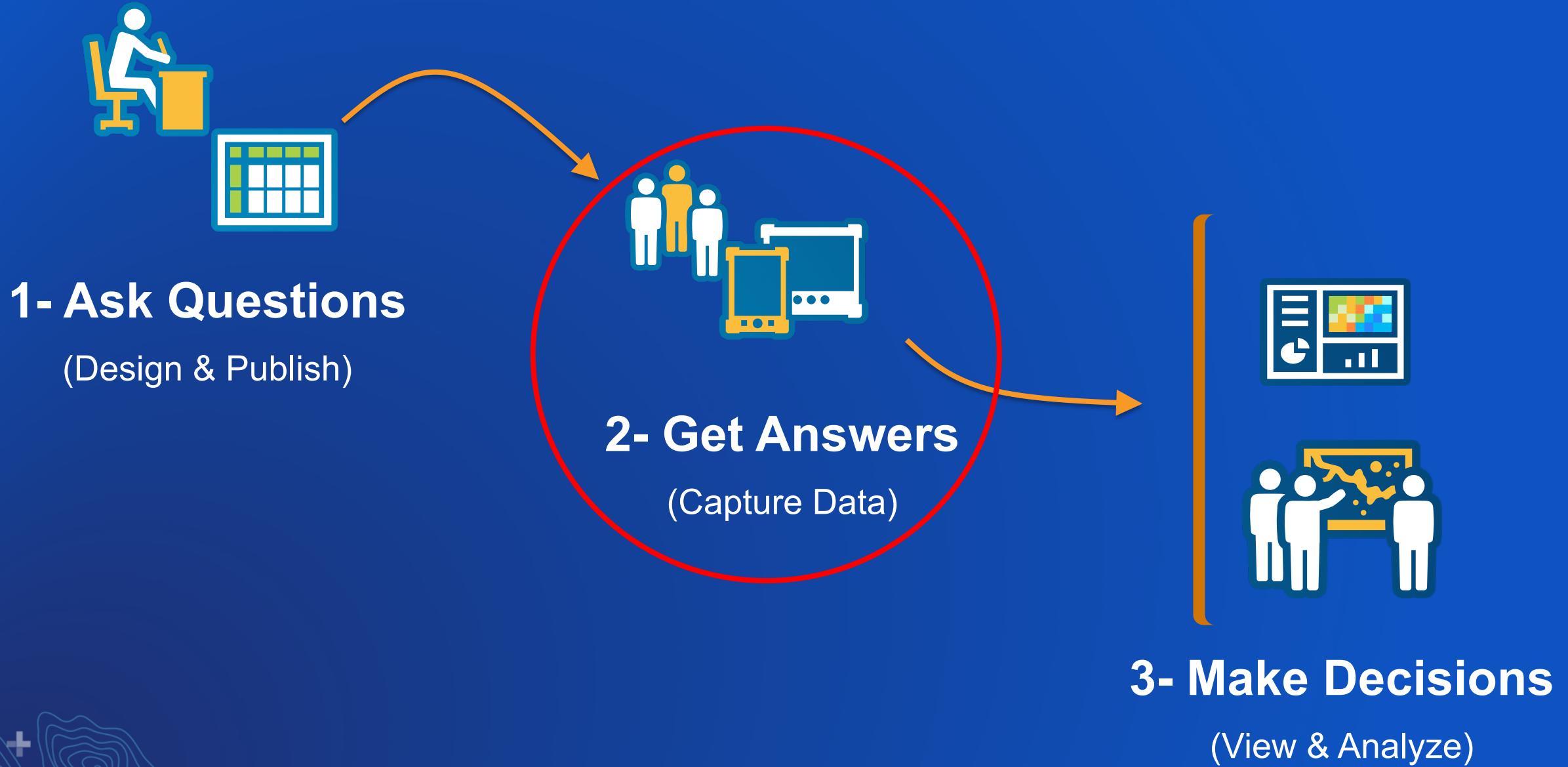
Hide survey header

Hide survey description

Hide survey footer

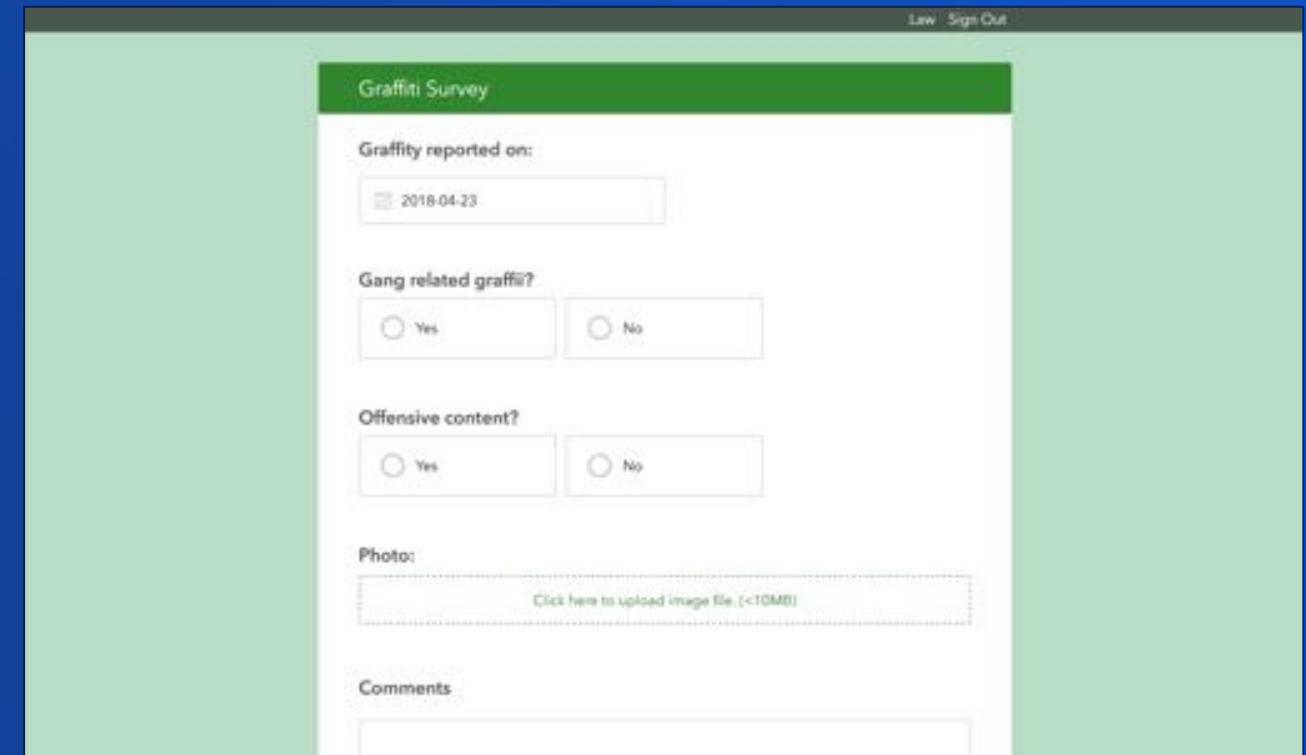
Ignore theme





Web forms

- Capture data from a web browser
- Can be embedded within a website
- Add and edit data



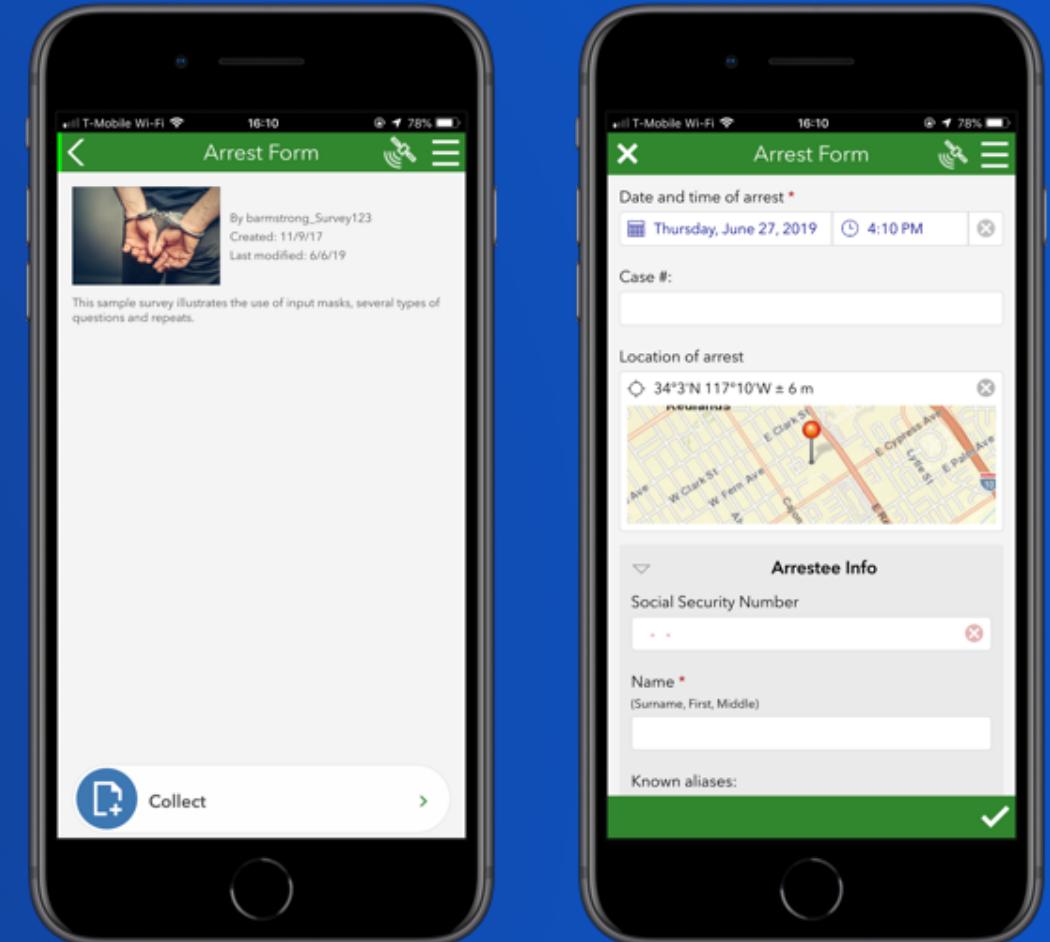
The screenshot shows a web-based survey form titled "Graffiti Survey". The form is divided into several sections:

- Graffiti reported on:** A text input field containing the date "2018-04-23".
- Gang related graffiti?** A radio button group with two options: "Yes" and "No".
- Offensive content?** A radio button group with two options: "Yes" and "No".
- Photo:** A file input field with the placeholder text "Click here to upload image file. (<10MB)".
- Comments:** A large text input field for additional notes.

At the top right of the form, there are "Log In" and "Sign Out" links. The entire form is set against a light green background.

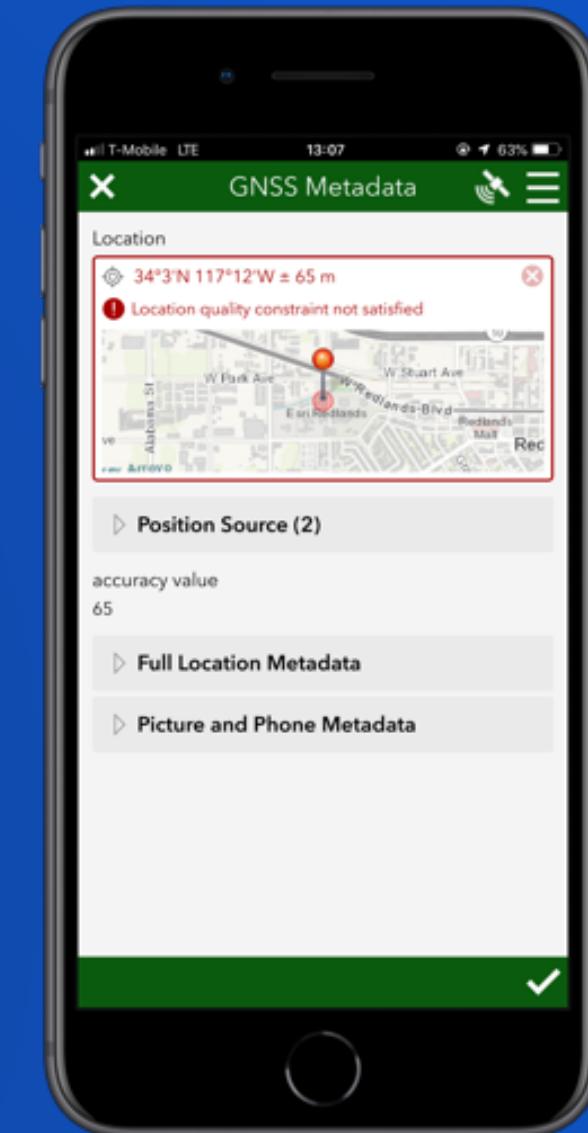
Survey123 Mobile App

- Use for data collection in the field
- Can capture new data, edit existing data
- Supports offline workflows
- Cross platform



GNSS Device Direct Connection

- Support for high accuracy collection
- Store metadata to understand quality
- Build validation rules for execution in the field



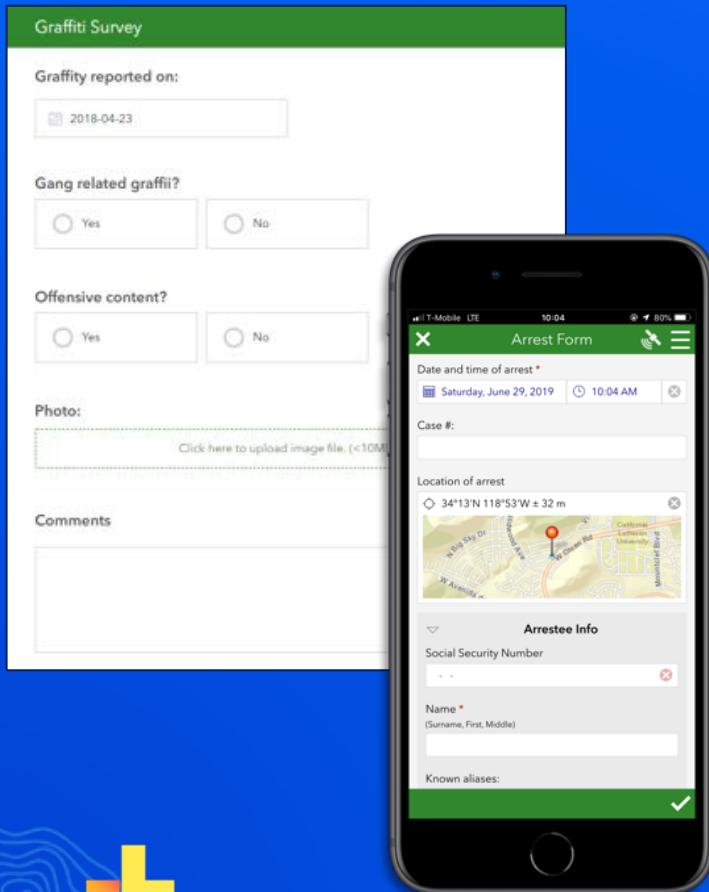
External Devices: Spike

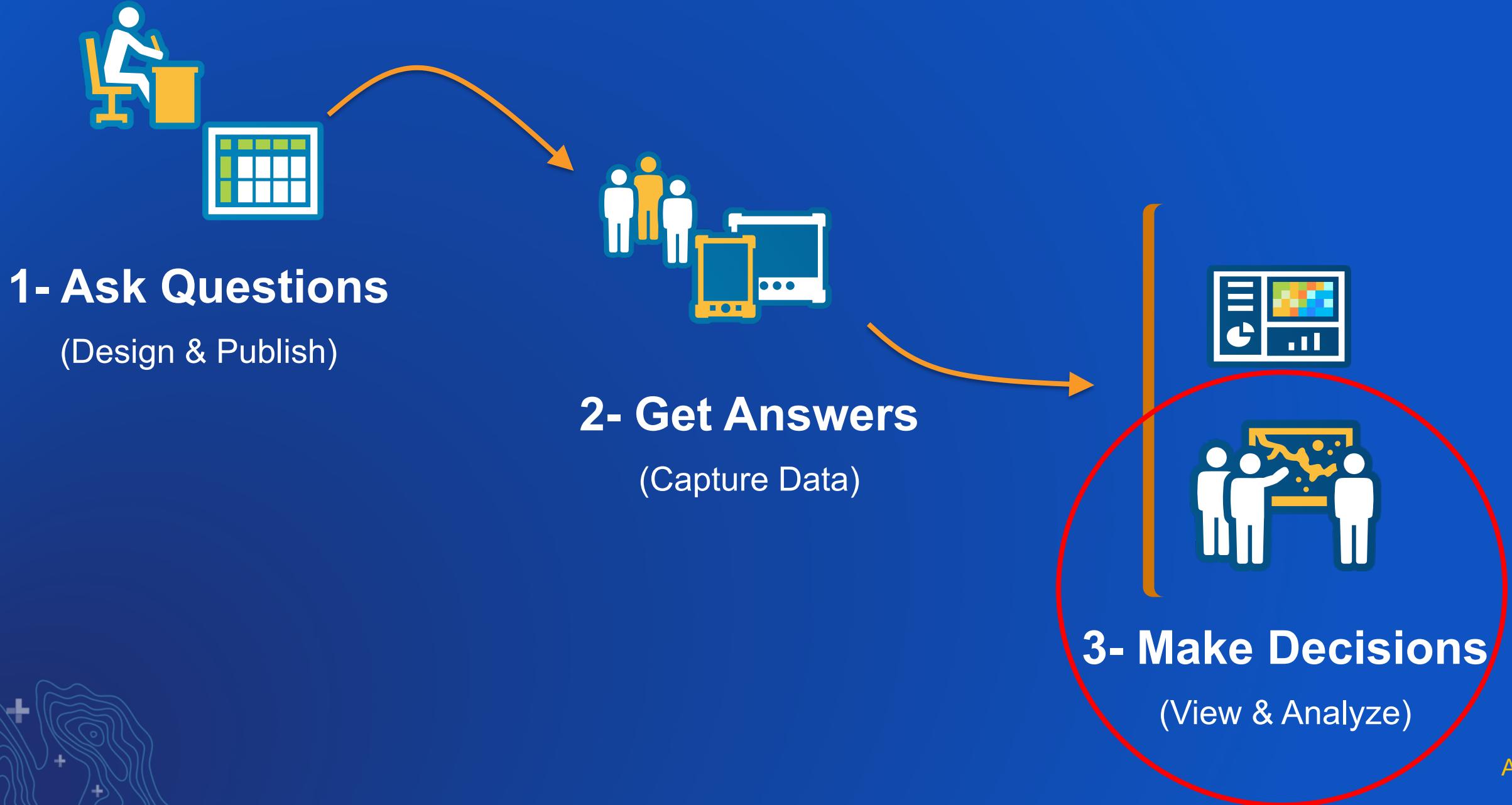


- Rangefinder + Device's Camera
- Measure objects:
 - Distance
 - Location
 - Length / Area



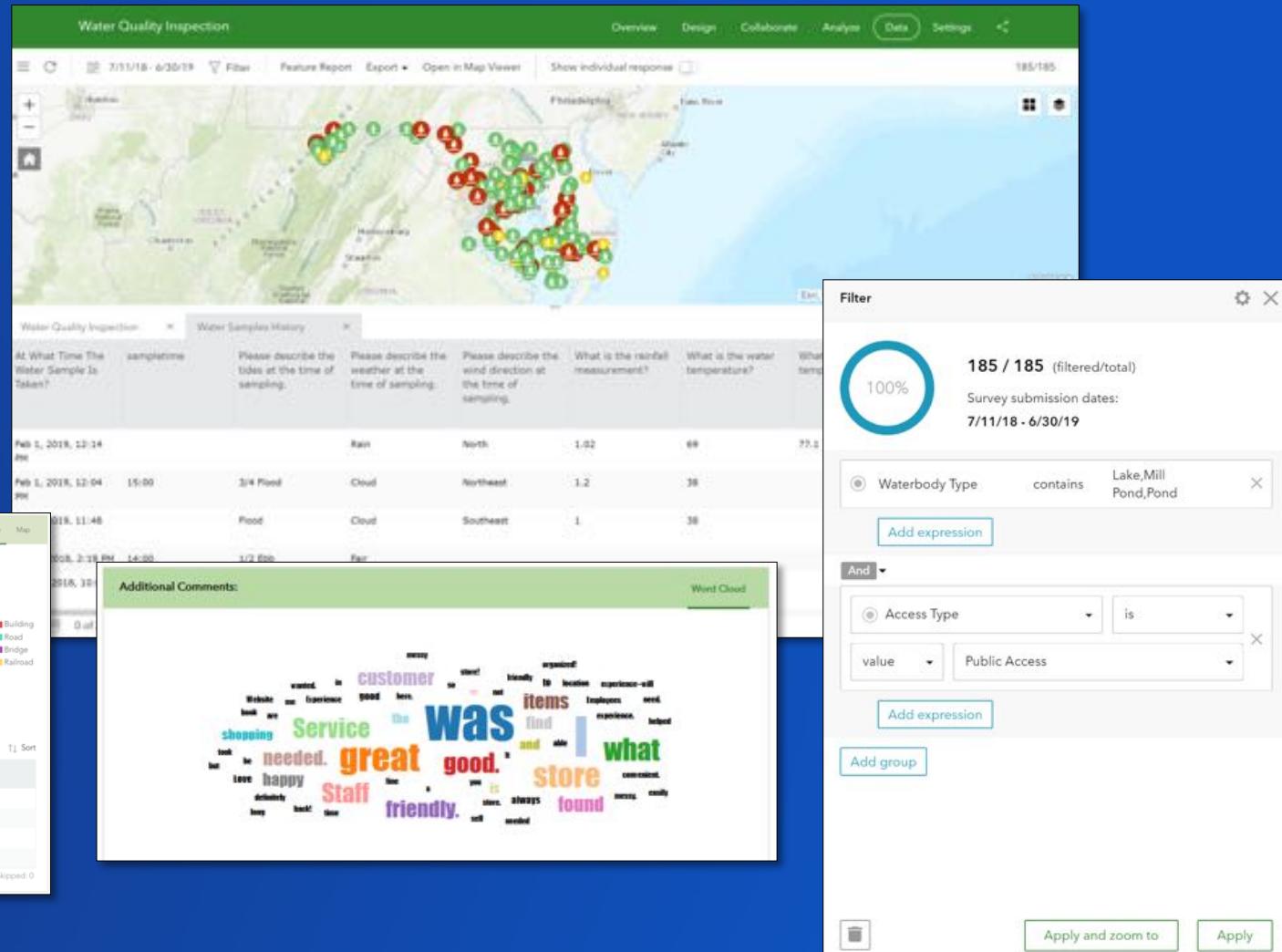
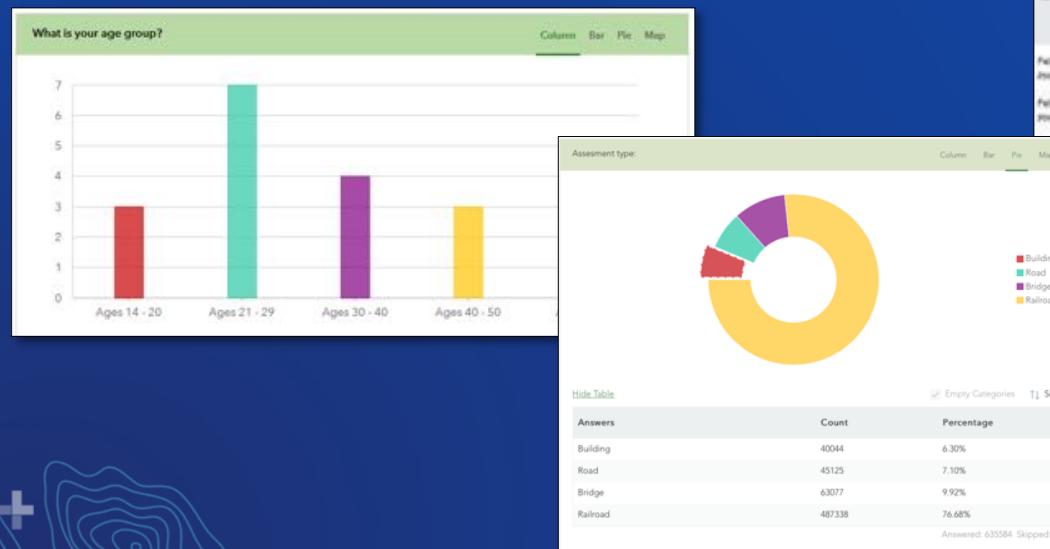
Sharing Forms & Collecting data with Survey123





Survey123 Website – Make Decisions

- Ready to use reporting tools
 - Understand data submission patterns
 - Create detailed reports
 - Aggregate survey data
 - Download data



Feature Reports

- Create printable documents with your survey data

HOUSEHOLD MEMBER SURVEY FORM

Household ID (assigned by Health Department)	Address	City	Zip Code	County	
\$[hh_id]	\$[address]	\$[city]	\$[zip]	\$[county]	
Structure accessible for survey? \$[structure_accessible]					
Primary Household Contact Name: \$[hh_primary_name] Phone number(s): \$[hh_primary_phone] # in Household: \$[hh_total]					
Investigator Name(s): \$[username]					
Survey Conducted in: \$[survey_language] \$[survey_language_other]					
No.	Household Member Demographics	Date/Time of Interview	Symptoms during Period of Interest (see above) and Onset Dates (if known)	Travel (within 2 weeks before symptom onset, if household member symptomatic, or within past 3 months if asymptomatic)	Date/Time of Specimen Collection
\$[hm_id]	Last Name: \$[hhm_lastname] First Name: \$[hhm_name] Sex: \$[hhm_sex] DOB: \$[hhm_dob] format: "DD/MM/YY" \$[if hhm_sex == "Female"]Pregnant: \$[hhm_pregnant] \$[if hhm_pregnant == "Yes"] Due date: \$[hhm_pregnant_duedate] format: "DD/MM/YY" \$[else] hhm_pregnant_duedate format: "DD/MM/YY"]	Date: \$[hhm_interview_date] format: "DD/MM/YY" Time: \$[hhm_interview_time] format: "HH:mm"	Fever \$[hhm_fever selected:"yes"] Yes \$[hhm_fever] selected:"no" No Onset date: \$[hhm_fever_onset] format: "DD/MM/YY" Rash \$[hhm_rash selected:"yes"] Yes \$[hhm_rash] selected:"no" No Onset date: \$[hhm_rash_onset] format: "DD/MM/YY" Red Eyes \$[hhm_red_eye selected:"yes"] Yes \$[hhm_red_eye] selected:"no" No Onset date: \$[hhm_red_eye_onset] format: "DD/MM/YY" Joint Pain \$[hhm_joint selected:"yes"] Yes \$[hhm_joint] selected:"no" No Onset date: \$[hhm_joint_onset] format: "DD/MM/YY"] Seen at a hospital or clinic for symptoms?	\$[hhm_travel selected:"yes"] Yes \$[hhm_travel] selected:"no" No Onset date: \$[hhm_travel_onset] format: "DD/MM/YY" \$[hhm_travels] Locations: \$[hhm_travel_locations] Dates of travel: From: \$[hhm_travel_start] format: "DD/MM/YY" To: \$[hhm_travel_end] format: "DD/MM/YY" \$[hhm_travels] Serum \$[hhm_serum] format: "DD/MM/YY" \$[hhm_serums]	Urine \$[hhm_urine] format: "DD/MM/YY" \$[hhm_urines] \$[hhm_urine] format: "HH:mm" Serum \$[hhm_serum] format: "DD/MM/YY" \$[hhm_serums] \$[hhm_serum] format: "HH:mm"



HOUSEHOLD MEMBER SURVEY FORM

Household ID (assigned by Health Department)	Address	City	Zip Code	County	
666701	1230 Friar Ln	Redlands	92373	San Bernardino County	
Structure accessible for survey? No					
Primary Household Contact Name: John Smith Phone number(s): (909) 334-0000 # in Household: 2					
Investigator Name(s): NinjaGreen					
Survey Conducted in: English					
No.	Household Member Demographics	Date/Time of Interview	Symptoms during Period of Interest (see above) and Onset Dates (if known)	Travel (within 2 weeks before symptom onset, if household member symptomatic, or within past 3 months if asymptomatic)	Date/Time of Specimen Collection
	Last Name: Smith First Name: John Sex: Male DOB: 14/06/85	Date: 25/06/192019 Time: 15:54	Fever <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Onset date: Rash <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Onset date: Red Eyes <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Onset date: Joint Pain <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Onset date: 18/06/19 Seen at a hospital or clinic for symptoms? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Urine 25/06/19 15:56 Location: England Dates of travel: From: 27/05/19 To: 05/06/19 Serum 25/06/19 15:03 Location: Paris Dates of travel: From: 20/06/19 To: 22/06/19	

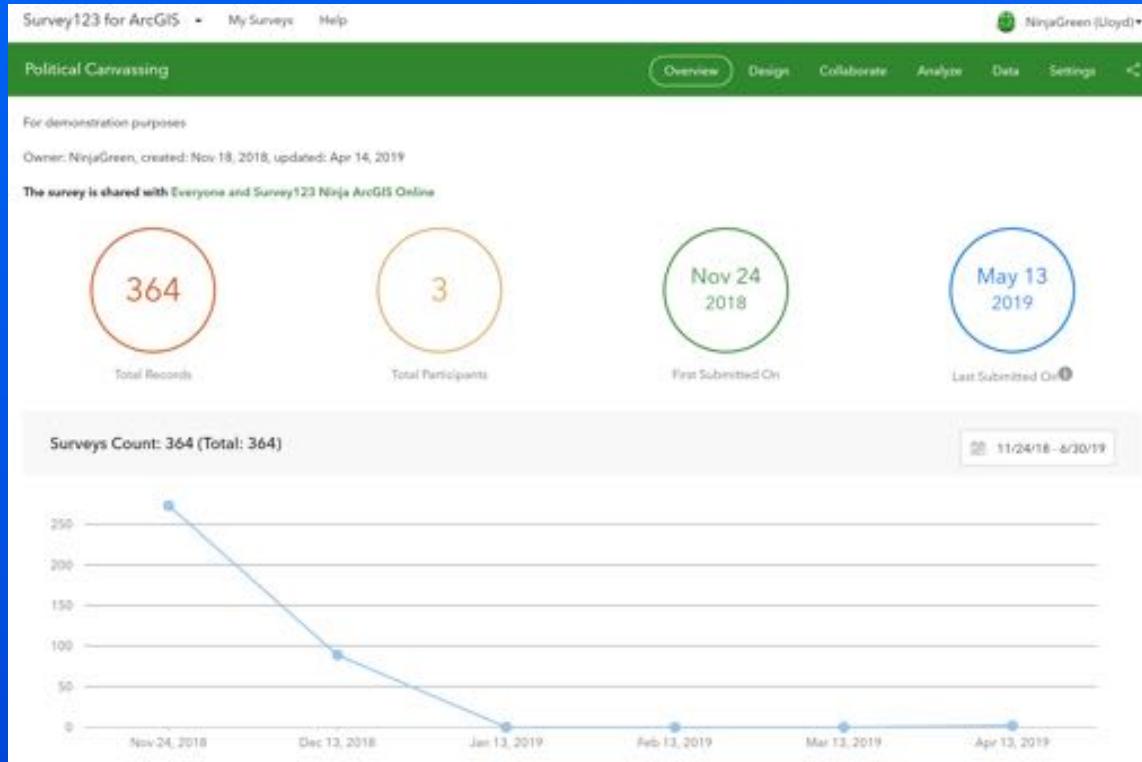
Bring your data into ArcGIS

- **Real-Time data collection**
 - Survey123 submitted data is immediately available for visualization and analysis
 - All data stored in ArcGIS Feature Services

- **Use with other ArcGIS Apps**

- **Multiple Uses of data**





Explore the
Survey123 website

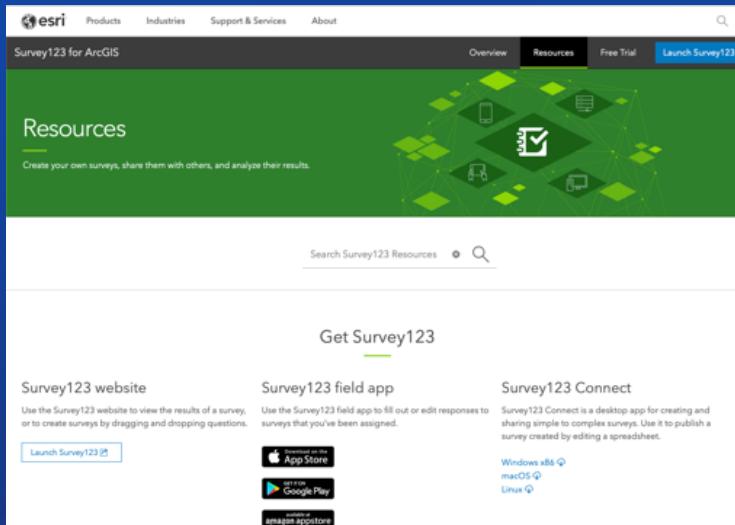
Summary

- Product overview
- Authoring surveys
- Collecting data
- Examine survey results
- Questions



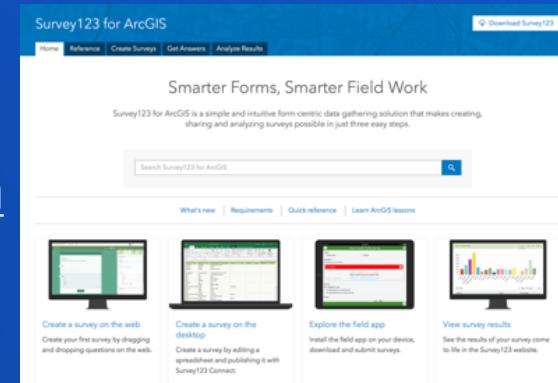
Survey123 Documentation

Survey123 Resource Center



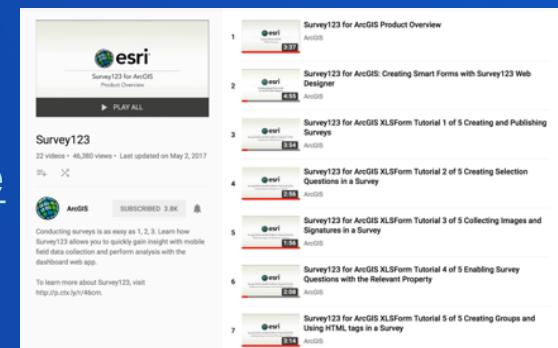
The Survey123 Resource Center website features a main navigation bar with links to Products, Industries, Support & Services, and About. The main content area is divided into several sections: 'Resources' (with a green background and a network of icons), 'Get Survey123' (with links to the Survey123 website, Survey123 field app, and Survey123 Connect), and detailed sections for each of these three components.

Help Documentation



The Survey123 for ArcGIS Help Documentation page is titled 'Smarter Forms, Smarter Field Work'. It features a search bar and links for 'What's new', 'Requirements', 'Quick reference', and 'Learn ArcGIS lessons'. Below these are four sections: 'Create a survey on the web', 'Create a survey on the desktop', 'Explore the field app', and 'View survey results'.

Tutorial Videos @ YouTube



The YouTube channel page for 'Survey123 for ArcGIS' shows a list of 7 videos. The channel has 46,380 views and was last updated on May 2, 2017. The videos are titled: 'Survey123 for ArcGIS Product Overview', 'Survey123 for ArcGIS: Creating Smart Forms with Survey123 Web Designer', 'Survey123 for ArcGIS XLSForm Tutorial 1 of 5 Creating and Publishing Surveys', 'Survey123 for ArcGIS XLSForm Tutorial 2 of 5 Creating Selection Questions in a Survey', 'Survey123 for ArcGIS XLSForm Tutorial 3 of 5 Collecting Images and Signatures in a Survey', 'Survey123 for ArcGIS XLSForm Tutorial 4 of 5 Enabling Survey Questions with the Relevant Property', and 'Survey123 for ArcGIS XLSForm Tutorial 5 of 5 Creating Groups and Using HTML Tags in a Survey'.

Blog @ GeoNet



The blog post 'Star Wars Day Release' was created by [Matthew McNamee](#) on May 15, 2017. It features a large image of the Star Wars logo. The post discusses the release of a new feature in Survey123 for ArcGIS that allows users to create surveys with a Star Wars theme. It includes a screenshot of a survey form with a Star Wars theme and a link to the Survey123 website.