



# National Trails Office (NTIR) OCTA Mapping Workshop Survey123

OCTA Mapping Workshop

September 9-11, 2021

National Park Service – National Trails

Brian Deaton – GIS Specialist



# Survey123

- Form-Centric Mobile Data Gathering Application(similar to a fillable PDF)
- User-Friendly
- Dynamic-Displayed Questions Change Depending on the User Input
- Automatically Collects User Location Using Built In Tablet/Smart phone Global Positioning System (GPS)
- No Cellular Coverage/Internet Connectivity Required





# Survey123 and ArcGIS Online

- Survey123 is Integrated into ArcGIS Online.
- Survey123 Data can be viewed and edited within ArcGIS Online

Home Gallery Map Scene Groups Content Organization

NTIR Survey123 MET Mapping

Overview Data Visualization Usage Settings

Edit thumbnail

National Trails Survey123 MET Mapping

Feature Layer (hosted by ntirres\_nps)

Created: Sep 8, 2021 Updated: Sep 8, 2021 View Count: 12

Add to Favorites

Description

Add an in-depth description of the item.

Layers

Open in Map Viewer Classic

Open in Scene Viewer

Open in ArcGIS Desktop

Publish

Create View Layer

Export Data

Update Data

Share

Metadata

Item Information

Low High

Top Improvement: Add a longer summary

Details

Source: Feature Service

Home NTIR OCTA Example CALI NHT

Open in new Map Viewer New Map RIM

Details Add Edit Basemap Analysis Save Share Print Directions Measure Bookmarks Find address or place

About Content Legend

Contents

NTIR OCTA Example CALI NHT

Topographic

(1 of 22)

NTIR OCTA Example CALI NHT: Fort Hall Road

|            |   |
|------------|---|
| COUNTY     | ELKO                                    |
| LAND_PLAN  | NST/NHT - COMPREHENSIVE MANAGEMENT PLAN |
| NAT_TR_DES | NHT - CALIFORNIA                        |
| STATE      | NV                                      |
| TR_LENGTH  | 1.57                                    |
| TR_NAME    | CALIFORNIA NATIONAL HISTORIC TRAIL      |
| ROUTE_NAME | Fort Hall Road                          |
| ROUTE_NA_1 |   |
| QUAD_250K  | WELLS                                   |

Zoom to Edit Get Directions

0 150 300mi

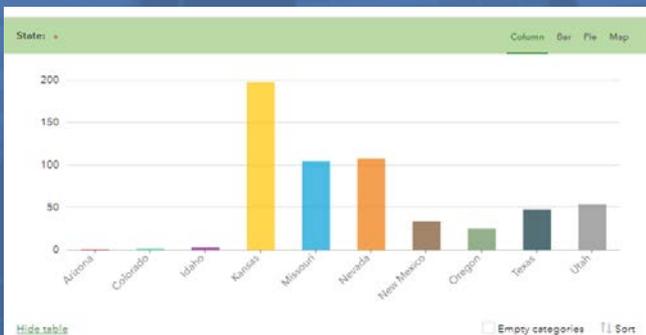
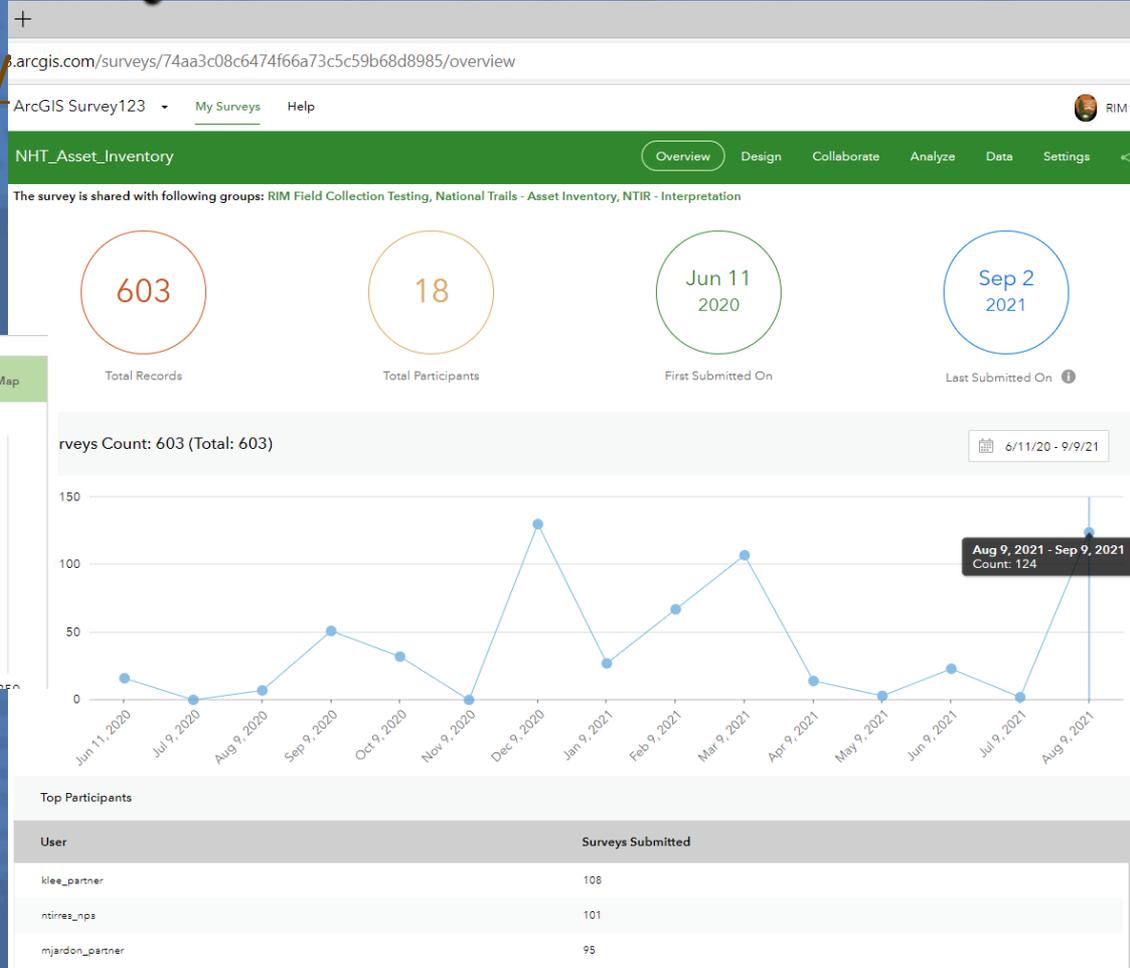
esri



# Survey123 Data Analysis

<https://survey123.arcgis.com/>

- Query and Filter by Form Question





# Survey123 Data Analysis

<https://survey123.arcgis.com/>

- Query and Filter by Form Question
- Display in Web Map

The screenshot shows the ArcGIS Survey123 web interface. At the top, there are navigation tabs: "Overview", "Design", "Collaborate", "Analyze", "Data" (selected), and "Settings". Below the tabs, there are options for "Report", "Export", "Open in Map Viewer", and "Form view" (which is toggled on). The main area is a map of the western United States, showing red data points clustered in Oregon, Idaho, Nevada, and Utah. Below the map is a data table for "NHT\_Asset\_Inventory".

| Interpretation or Sign Type: | Topic, Title or Description: | Wayside Type: | Other Asset Type: | Sign Category: | Sign Type: | Sign Type Other: | Panel/Marker Material: |
|------------------------------|------------------------------|---------------|-------------------|----------------|------------|------------------|------------------------|
| NPS Road or Pedestrian Sign  |                              |               |                   | Road           |            |                  |                        |
| NPS Road or Pedestrian Sign  |                              |               |                   |                |            |                  |                        |
| NPS Road or Pedestrian Sign  |                              |               |                   | Road           |            |                  |                        |
| NPS Road or Pedestrian Sign  |                              |               |                   | Road           |            |                  |                        |
| NPS Road or Pedestrian Sign  |                              |               |                   | Road           |            |                  |                        |

At the bottom of the interface, it shows "0 of 270 selected".



# Survey123 Data Types

- Record Field Data
  - Points
  - Lines
  - Polygons
- Attach Photos to your Data



# Application to MET Mapping

- Ability to create standardized data simply using OCTA/NPS/FTGS fields and have the data centralized within one dataset (hosted feature) on ArcGIS Online.

ArcGIS Survey123

NTIR Survey123 MET Mapping

Polyline

National Historic Trail: \*

What trail(s) is the historic trail trace associated with?

California  Mormon Pioneer  Oregon

Pony Express  Santa Fe

QUAD 24K

24K (7.5) Quad Map Name

FEATURE ID

Sequential numbering of features within Quad

Landscape Setting

Trail Alternative Name

Route Name



# Creation of the Form

- Survey123 Form is created by using an existing dataset or creating a new one using a spreadsheet to define the fields for the data.

|    | A               | B                              | C                        | D  | E             | F          | G        | H                |
|----|-----------------|--------------------------------|--------------------------|--|---------------|------------|----------|------------------|
|    | type            | name                           | label                    | hint   | guidance_hint | appearance | required | required_message |
| 3  | geotrace        | Survey123_MET_Mapping_polyline | Polyline                 |  |               |            |          |                  |
| 4  | select_multiple | UNITCODES                      | National Historic Trail: | What trail(s) is the historic trail trace associated with? | horizontal    |            | yes      | Required: Nation |
| 5  | text            | QUAD_24K                       | QUAD 24K                 | 24K (7.5) Quad Map Name                                    |               |            |          |                  |
| 6  | integer         | FEAT_ID                        | FEATURE ID               | Sequential numbering of features within Quad               |               |            |          |                  |
| 7  | select_one      | LANDSCAPE_SETTING_DOM          | LANDSCAPE_SETTING        | Landscape Setting  |               | minimal    |          |                  |
| 8  | hidden          | TRNAME                         | Trail Name               |  |               |            |          |                  |
| 9  | text            | TRALNAME                       | Trail Alternative Name   | Route Name   |               |            |          |                  |
| 10 | select_one      | TRAILSURFACE_NTDS2020          | TRSURFACE                | Trail Surface  |               | minimal    |          |                  |
| 11 | select_one      | TYPEOFROUTE_NTDS2020           | TYPEROUTE                | Type of Route  |               | minimal    |          |                  |
| 12 | decimal         | TRAIL_WIDTH                    | TRAIL_WIDTH              | Trail Width  |               |            |          |                  |
| 13 | decimal         | TRAIL_DEPTH                    | TRAIL_DEPTH              | Trail Depth  |               |            |          |                  |
| 14 | hidden          | NATRDESIGNATION                | NATRDESIGNATION          | National Trail Designation                                 |               |            |          |                  |
| 15 | select_one      | NHTCONDITIONCATEGORY           | NHTCONDACATEGORY         | NHT Condition Category                                     |               | minimal    |          |                  |
| 16 | select_one      | SHAREDSYSTEM_NTDS2020          | SHAREDSYSTEM             | Shared System  |               | minimal    |          |                  |
| 17 | select_one      | ROADSYSTEM_NTDS2020            | ROADSYSTEM               | Road System  |               | minimal    |          |                  |
| 18 | select_one      | ASSET_STATE_DOM                | STATE                    | State  |               | minimal    |          |                  |
| 19 | hidden          | MAPMETHOD                      | MAPMETHOD                | Map Method   |               |            |          |                  |
| 20 | text            | XYACCURACY                     | XYACCURACY               | XY Accuracy  |               |            |          |                  |
| 21 | text            | NOTES                          | NOTES                    | Notes  |               |            |          |                  |
| 22 | select_one      | DOM_PUBLICDISPLAY_NPS20        | PUBLICIDISPLAY           | PUBLICIDISPLAY   |               |            |          |                  |
| 23 | select_one      | DOM_DATAACCESS_NPS2016         | DATAACCESS               | DATAACCESS   |               |            |          |                  |
| 24 | text            | UNITCODE                       | UNITCODE                 | UNITCODE   |               |            |          |                  |
| 25 | text            | UNITNAME                       | UNITNAME                 | UNITNAME   |               |            |          |                  |
| 26 | text            | GROUPCODE                      | GROUPCODE                | GROUPCODE  |               |            |          |                  |
| 27 | select_one      | DOM_REGIONCODE_NPS201          | REGIONCODE               | REGIONCODE   |               |            |          |                  |
| 28 | text            | MAPSOURCE                      | MAPSOURCE                | Recording Device   |               |            |          |                  |
| 29 | dateTime        | SOURCEDATE                     | SOURCEDATE               | Record Date  |               |            |          |                  |



# Publishing the Survey

- The Survey is published to ArcGIS Online:

Home Gallery Map Scene Groups Content Organization



RIM NTIR  
ntirres\_nps

NTIR - Wayside Inventory

Overview

Content

Members

Settings

+ Add items to group

NTIR MET

Grid Title Filter

Filters

1 - 4 of 4

Filters

Modified: Yesterday

Clear filters

Group categories

No group categories yet

Categories allow group members to organize items consistently and provide a simple way to browse content in the group.

Set up group categories

Item type

- Maps
- Layers
- Scenes
- Apps
- Tools
- Files

NTIR MET Mapping  
by ntirres\_nps  
Created: Sep 8, 2021  
Updated: Sep 8, 2021  
View Count: 2

NTIR MET Mapping  
by ntirres\_nps  
Created: Sep 8, 2021  
Updated: Sep 8, 2021  
View Count: 3

NTIR Survey123 MET Mapping  
by ntirres\_nps  
Created: Sep 8, 2021  
Updated: Sep 8, 2021  
Number of Downloads: 1

NTIR Survey123 MET Mapping  
by ntirres\_nps  
Created: Sep 8, 2021  
Updated: Sep 8, 2021  
View Count: 14



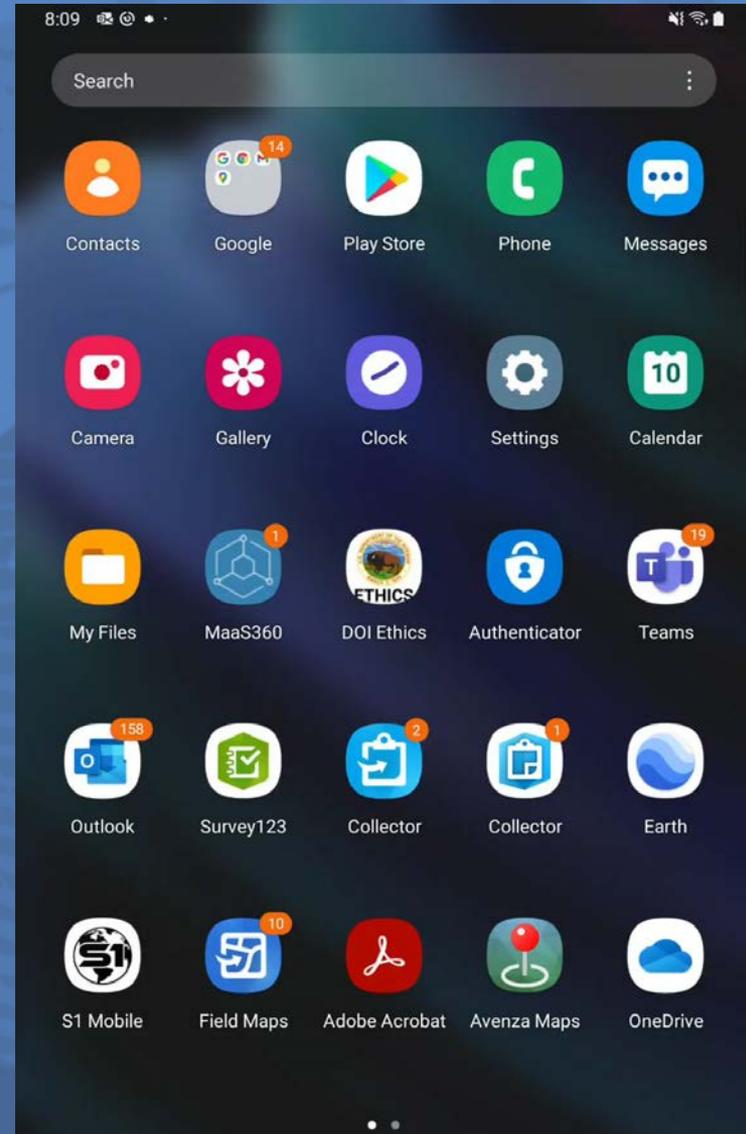
# Downloading the Survey

- ArcGIS Online users access the survey through Survey123 by downloading the survey.
- They must be a member of the group that has access to the survey.

The image shows two overlapping screenshots of the ArcGIS Survey123 mobile application. The top screenshot displays the user profile for Brian Deaton, with contact information and a "Sign out" button. Below the profile is a menu with options: "Download Surveys", "Settings", and "About". The bottom screenshot shows the "Download Surveys" screen with a search bar containing "NTIR". It lists three surveys: "NTIR MET Mapping" (modified 9/8/21 11:56 AM), "NTIR\_HistoricBuilding\_Survey" (modified 6/23/21 3:03 PM), and "NTIR\_Wayside\_Update" (modified 8/11/19 12:05 AM). Each survey entry includes a refresh icon and a download icon.



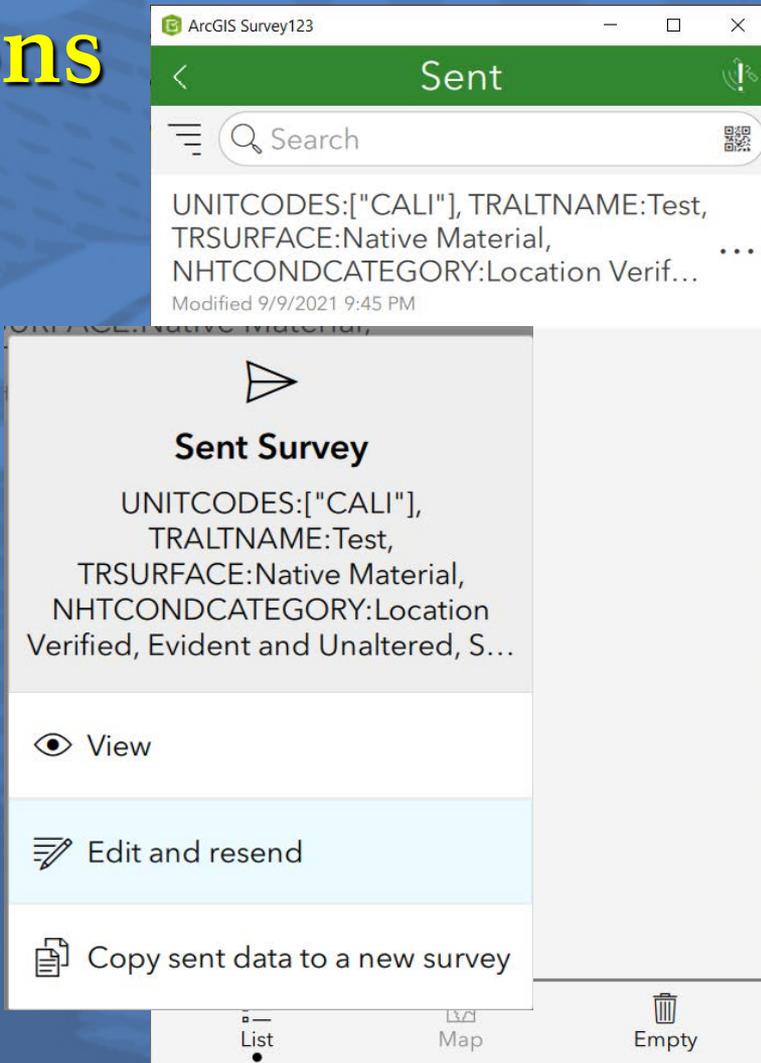
# Using the Survey Demo and Survey Submission





# Editing Submissions

- A user can edit their survey submissions through the Survey123 app, but only on the device they submitted them on.
- Submissions can also be edited directly from within ArcGIS Online. This includes the line, point, or polygon and the attributes (field) data.





# Viewing on ArcGIS Online

Home ▾ NTIR MET Mapping ✎

Open in new Map Viewer New Map ▾ Create Presentation RIM ▾

Details Add Edit Basemap Analysis Save Share Print Directions Measure Bookmarks Find address or place

About Content Legend

Contents

- NTIR MET Mapping
- Imagery Hybrid

NTIR MET Mapping (Features: 4, Selected: 1)

| Edit Date          | CREATEDATE         | CREATEUSER          | EDITUSER            | GlobalID  | Shape__Length             | OBJECTID | Photos and Files |
|--------------------|--------------------|---------------------|---------------------|---|---------------------------|----------|------------------|
| 9/9/2021, 9:45 PM  | 9/9/2021, 9:45 PM  | bdeaton@nps.gov_nps | bdeaton@nps.gov_nps | 979a-f8439c447da9<br>7577e908-030a-49f3-9810-e69035024cd6 | 521<br>0.0140690507977793 | 3        | (0) Add          |
| 9/10/2021, 8:15 AM | 9/10/2021, 8:15 AM | bdeaton@nps.gov_nps | bdeaton@nps.gov_nps | 95264fbb-d40f-4173-90a6-8bee4172c658                      | 0.0004993648135361<br>89  | 4        | (1) Show         |

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# Editing Data on ArcGIS Online

The screenshot shows the ArcGIS Online web interface for editing a trail. The browser address bar shows the URL: <https://nps.maps.arcgis.com/home/webmap/viewer.html?webmap=ae7edf54a60b4531bffa71d805849271>. The map displays an aerial view of a residential street with a trail being edited. The trail is highlighted in purple. A property editor window is open, showing the following fields:

| NTIR MET Mapping           |   |
|----------------------------|---|
| Name                       | test  |
| Trail Surface              | Asphalt   |
| Type of Route              | Trail   |
| Trail Width                |   |
| Trail Depth                |   |
| National Trail Designation |   |
| NHT Condition Category     | Location Verified, Evident and Unaltered            |
| Shared System              | Location Verified, Evident and Unaltered            |
| Road System                | Location Verified and Evident with Minor Alteration |
| State                      | Location Verified with Little Remaining Evidence    |
| Map Method                 | Location Verified and Permanently Altered           |
| XY Accuracy                | Location Verified or Not Verified                   |
| Notes                      | Location Verified with Historic Reconstruction      |
| PUBLICDISPLAY              |   |

At the bottom of the interface, there are navigation buttons for UNDO, REDO, and MANAGE, and a footer with the text: "National Park Service, US Forest Service, US Geological Survey, (BLM, USFW???) | MRCOG-NM, Atlantic Group, MR...". The Esri logo is also present in the bottom right corner.



# Pros/Cons of the App

## Pros

- Easy to Use
- PDF Fillable Format
- Simple to Collect Data
- Centralized Data Collection for Users
- Analysis through the Survey123 Site is very Useful

## Cons

- Need to have cellular data to see a map or create an offline map
- Does not have all the capabilities of other field data collection apps
- Cannot Access All Data through App



# What is needed to set this up?

- ArcGIS Online
- Individual Accounts
- Group for Data Collection
- Create the Survey Form (utilizing fields decided upon by OCTA)
- Publish the Survey and let users collect data



# Can the National Trails Office Host This?

- The NPS ArcGIS Online Organizational Account does not allow for sensitive cultural resource data to be stored on ArcGIS Online.
- We have a separate ArcGIS Online Portal that is more secure and used for sensitive data, but only NPS employees can access.



# Questions/Demos



References to non-U.S. Department of the Interior (DOI) products do not constitute an endorsement by the DOI.