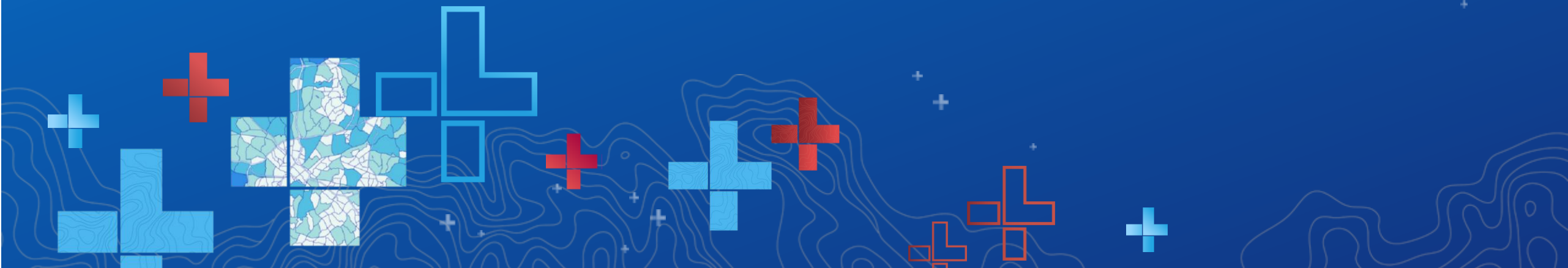
Sharing Open Data in the ArcGIS Platform

Deane Kensok, Steven Moore

2020 ESRI FEDERAL GIS CONFERENCE | WASHINGTON, D.C.



Workshop Agenda

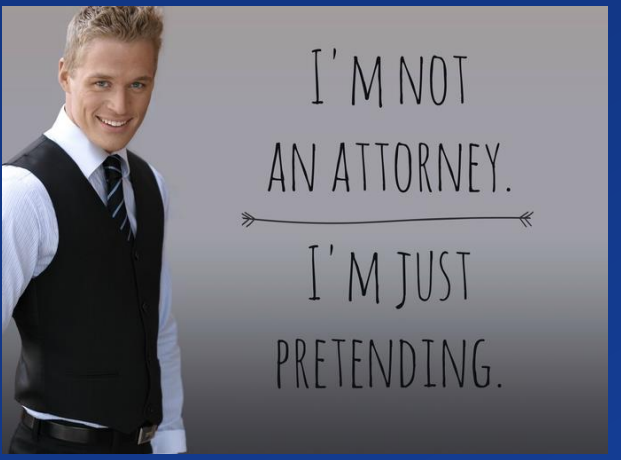
- Open Data in ArcGIS Platform
  - What is Open Data?
- ArcGIS Online and Hub Open Data
  - Discover and Share Data
- ArcGIS Living Atlas
  - How to Contribute
  - Open Data Available
- Questions & Answers

Open Knowledge Foundation

Open Data in ArcGIS Platform

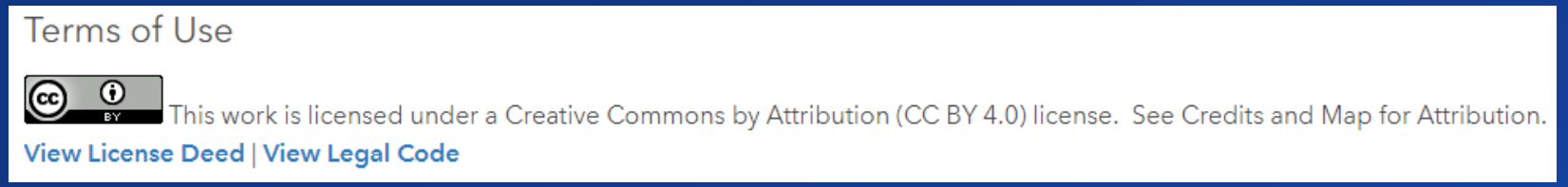
- What is Open Data?
  - “Open data is data that’s available to everyone to access, use, or share.”
  - “But open data should be easy to access.” - Open Data Institute
- ArcGIS includes Tools to Easily Access, Use, and Share Open Data
- ArcGIS Users can:
  - Share their data as Open Data using ArcGIS Online and ArcGIS Hub
  - Access Open Data that has been shared by Esri and other ArcGIS Users
  - Use Open Data in their Maps and Apps and Share with Everyone

Open Data Licenses



- Open Data is Shared using a Variety of Open Licenses
  - Public Domain: often used by U.S. Federal, State, and Local Agencies
  - Creative Commons (CC): CC0, CC BY Attribution, CC BY Share Alike
  - Open Database License (ODbL): used by OpenStreetMap and others
  - Custom Licenses: often used by orgs when there are some restrictions on use or sharing

- ArcGIS enables Item Owners to specify the "Terms of Use" for each item



- Important to Define the Appropriate License for your Work to Clarify the Intended Use
  - Please don't leave the Terms of Use blank in items that you share or intend to be open data!

ArcGIS Online and Hub

Share and Access Open Data

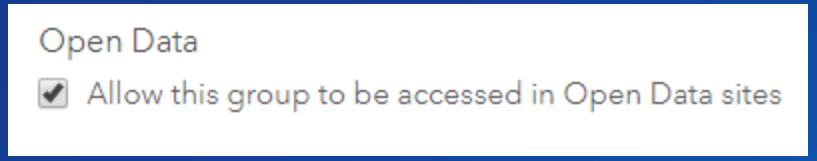
ArcGIS Online: Open Data Capability

- "ArcGIS Online allows your organization to use the ArcGIS platform to provide the public with open access to your authoritative data." – ArcGIS Online Help

1. Org Admin. can Enable Open Data in Organization Settings
2. Group Owner/Mgr. can Allow Group to be Accessed in Open Data Sites in Group Settings
3. Group Owner/Mgr. or Members can Share Open Data with the Group

1. Open Data in Org Settings

2. Open Data in Group Settings



ArcGIS Hub is a cloud-based engagement platform that lets organizations work more effectively with their communities.

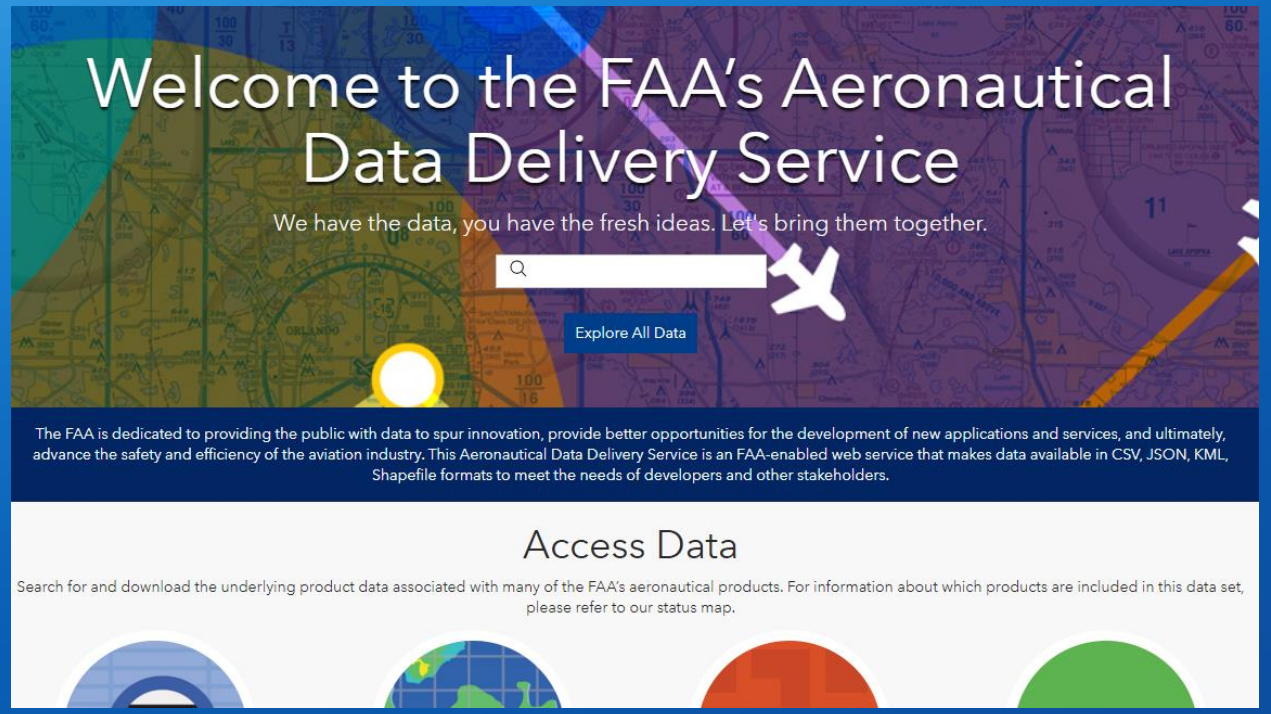
How do organizations need to engage their communities?

ArcGIS Hub: Open Data Capabilities

- Use to Discover Open Data Shared by Others, or Create an Open Data Site of Your Own

- Search for Open Data (**https://hub.arcgis.com/search**)
  - **Data**: Feature Layer, Raster Layer, Table, Shapefile
  - **Apps & Maps**: Web App, Web Map, Map Service, Tile Service, …
  - **Sites**: Hub Sites
  - **Documents**: PDF, Document Link, Image, Hub Page

- Create Hub Sites (**https://hub.arcgis.com/admin/**)
  - Create a Custom Website to Share Open Data with the Community
  - Configure the site to Feature Your Open Data

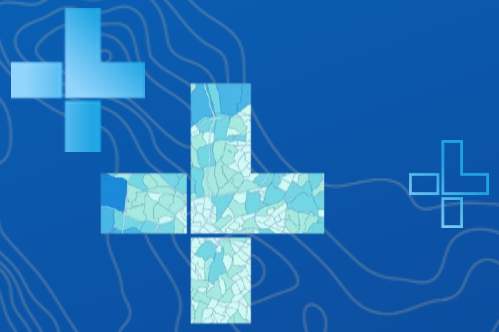


ArcGIS Online/Hub

Steven Moore

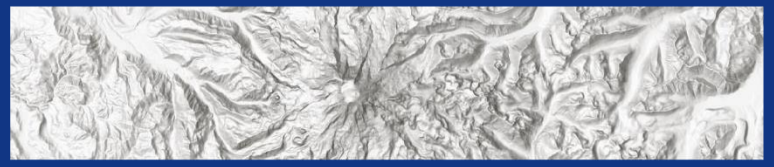
ArcGIS Living Atlas

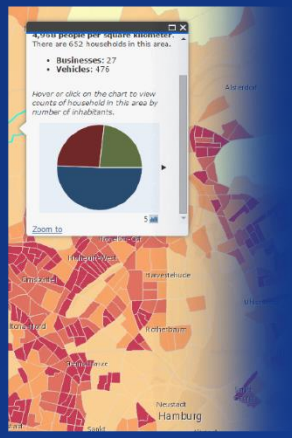
Share and Access Open Data

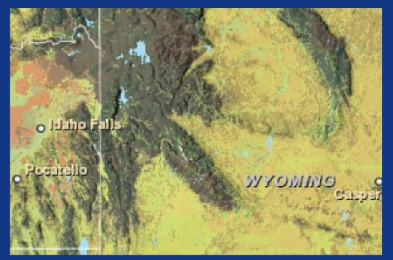


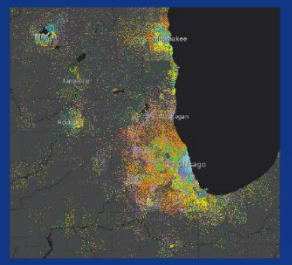
ArcGIS Living Atlas of the World

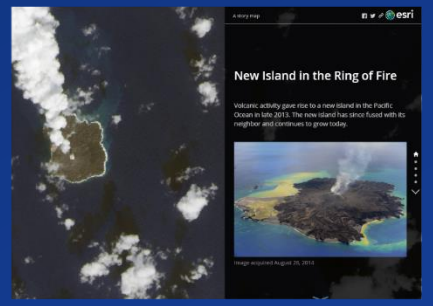
Maps and Layers from Esri and Thousands of Contributors

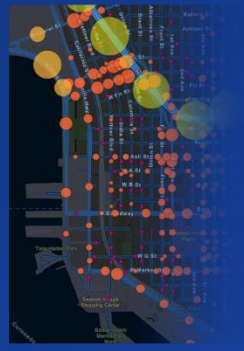








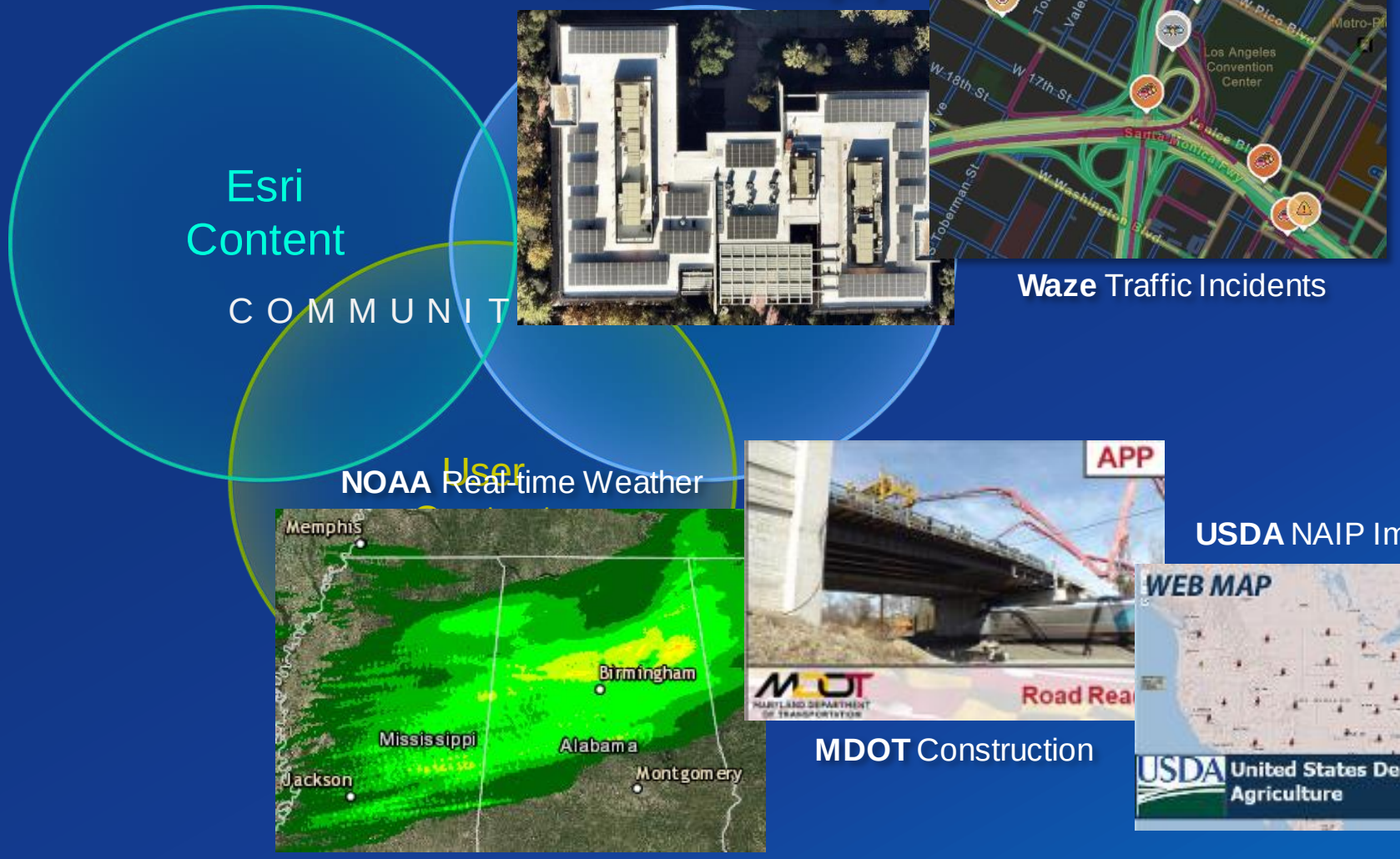




… with Curated Content on Many Topics

Content is Published by Esri, Partners, and Users

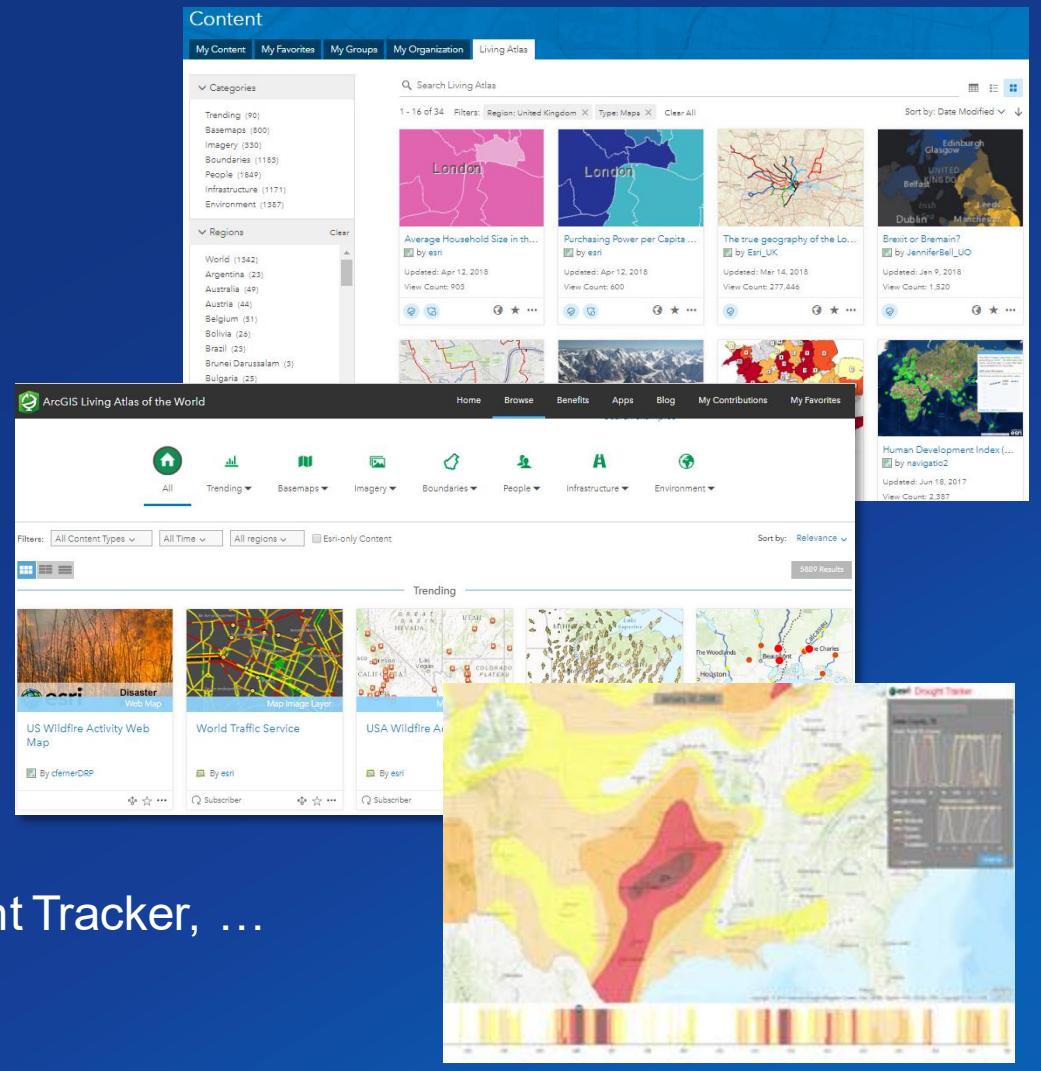
Built by the ArcGIS Community and Curated by Esri



Accessing Living Atlas through ArcGIS

Multiple ways to Experience Living Atlas through ArcGIS Apps

- ArcGIS Online & ArcGIS Enterprise (Portal)
  - Content: Living Atlas Content
  - Add Data: Browse Living Atlas Layers
  - Analysis: Choose Living Atlas Layers
- ArcGIS Living Atlas of the World Website
  - Browse and Contribute @ livingatlas.arcgis.com
- ArcGIS Pro
  - Open Maps, Add Layers, Perform Analysis
- Many Custom Apps by Esri and Users
  - Wayback, Water Balance, Green Infrastructure, Drought Tracker, …



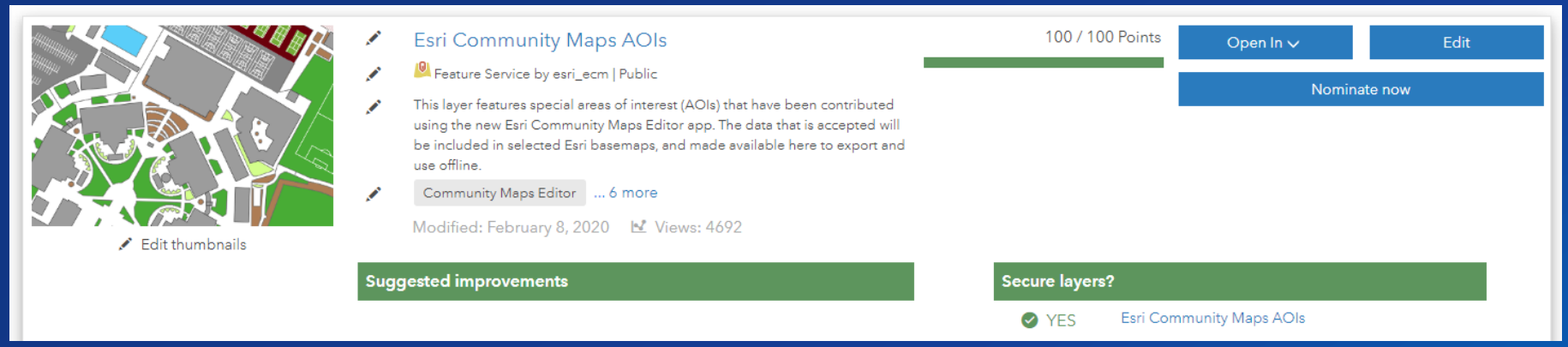
How to Participate in the Living Atlas Community

- Living Atlas Community includes:
  - Contributors: people and orgs who publish or share content that is included in the Living Atlas
  - Curators: Esri staff who review, approve, and organize content that is included in the Living Atlas
- Living Atlas Contributors can participate by:
  1. Publishing content through ArcGIS Online
  2. Sharing content through Esri Community Maps
- Why Participate?
  1. Improve the visibility and accessibility of your ArcGIS Online content for use by others.
  2. Have your authoritative content hosted by Esri so it is available to you and your end users.
- Go to livingatlas.arcgis.com or communitymaps.arcgis.com to Get Started!

Living Atlas Contributor: Publish Content through ArcGIS Online

Publish and Share Your Maps and Apps through ArcGIS.com to Enrich the Living Atlas

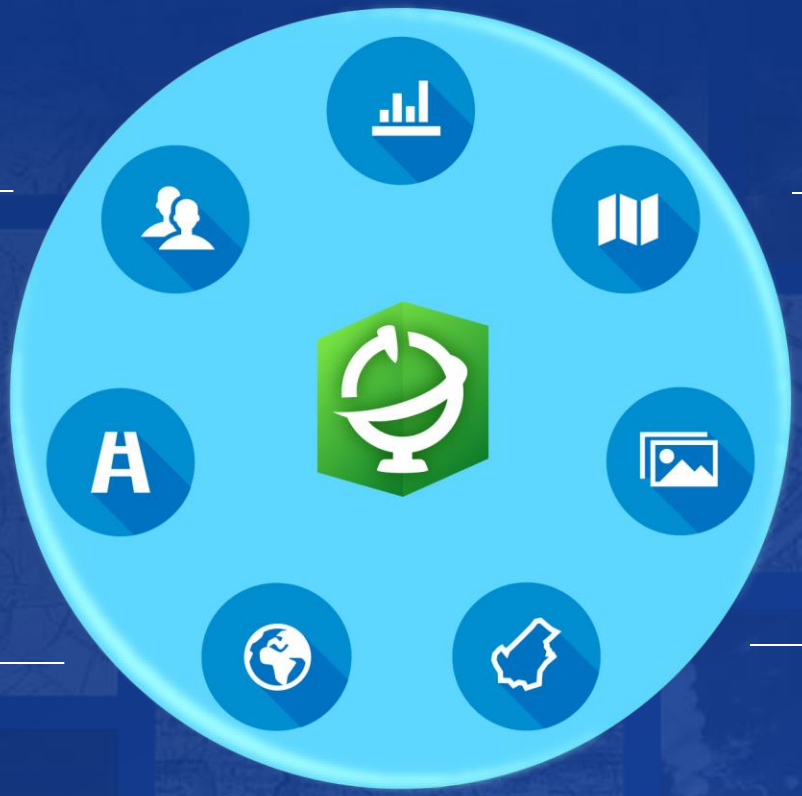
1. Create Item in ArcGIS.com using your ArcGIS Online Account / Organization
   - Layers can reference ArcGIS Online hosted services, ArcGIS Server services, WMS, etc.
     - Create new items for ArcGIS Server services and layers if you host them
   - Web maps can reference these layers or other feature collections that you publish
2. Follow Best Practices for Sharing and Share Items with “Everyone (public)”
3. Nominate your Items using the new Living Atlas Contributor app



livingatlas.arcgis.com/contribute

Esri Content Portfolio within Living Atlas

Esri Content Portfolio within Living Atlas



Live Feeds Layers (New!)

Esri hosted feature layers of live weather, hazard, and other data

- Live Feed Feature Layers
  - Featuring Data from NOAA, USGS, NASA, …
  - Designed to be Highly Scalable during Events
    - Leverages ArcGIS Online capabilities
- Use in Your Maps and Apps
  - Add Esri hosted layers to your web maps
  - Browse Live Feeds Group and Living Atlas
- Freely Accessible in ArcGIS Online
  - Now Public Content, No Sign In Required!

Earthquakes

Storm Reports

Active Hurricanes

Weather Observations

Weather Forecasts

Weather Warnings

Sea Ice Extents

Coral Reef Conditions

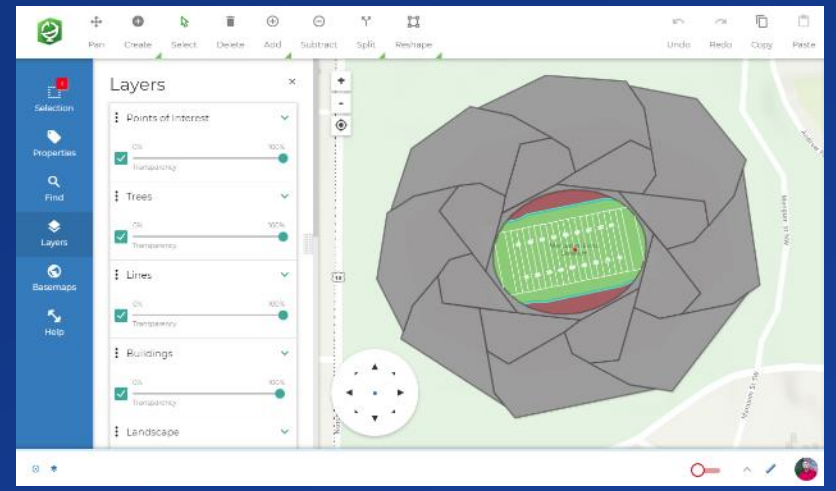
Live Feeds
Hosted Features

Community Maps Editor (New!)

New Web Editing App to Create and Edit Data for Esri Basemaps

- Enables Users to Contribute to Esri Basemaps
  - Enhance detail for high-priority AOIs (e.g. parks, schools, …)
- Users Create and Edit Features in Web Browser
  - Buildings, parking lots, paths, recreation areas, trees, …
  - Compiled from Esri World Imagery basemap
- Advanced Editing Tools for High-Quality Data
  - Snap to features, curves & angles, pre-built stencils, copy / paste
- New Data Created is Available to Export (once accepted)
  - Creative Commons by Attribution (CC BY 4.0) Open License
  - May be integrated into OpenStreetMap or other Map Platforms

Mercedes-Benz Stadium: Site of Super Bowl LIII

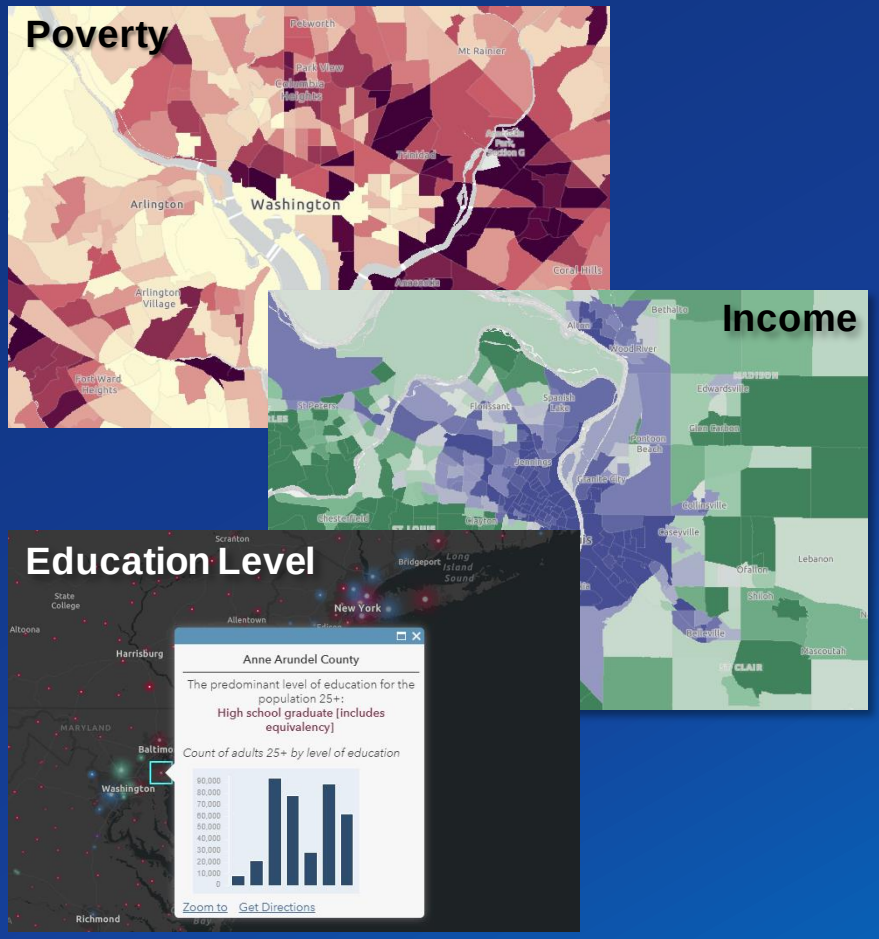


From the App …
… to the Map

American Community Survey (ACS) Data

Helping Local Officials and Leaders Understand Changes in their Communities

- Nationwide Population and Housing Data
  - 5-Year Estimates provided by U.S. Census Bureau
  - Data hosted by Esri as ArcGIS Online feature layers
- Latest 2014-2018 ACS Estimates Released Dec 2019
  - Esri offers 78 feature layers that cover 89 ACS tables
    - Housing, Population, Employment, Income, Race, Age, ...
  - Data published by Esri within a couple days of release
  - Learn more at Living Atlas Blog
- Freely Accessible in ArcGIS Online
  - Shared as “Public Content” and “Open Data”

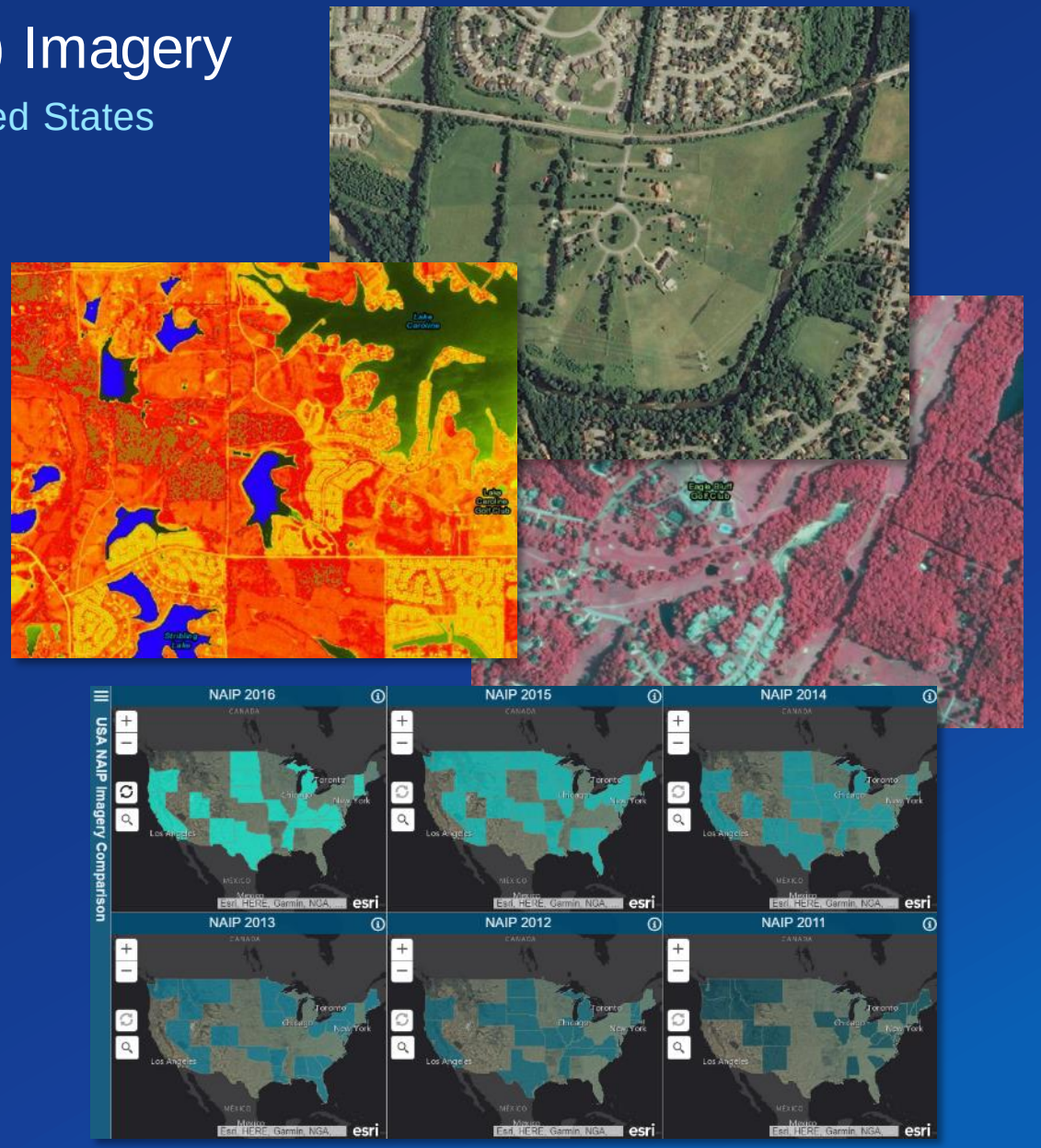


National Agriculture Imagery Program (NAIP) Imagery

Nationwide 1m or better resolution imagery for the Continental United States

- Nationwide Image Service
  - Imagery provided courtesy of USDA FSA
- Multi-band (4-band) Imagery
  - Supports Natural Color, Color Infrared, NDVI
- Imagery available for the Past 8 Years
  - Starting with NAIP 2010 through 2017
  - NAIP 2018 and 2019 Imagery is Coming Soon
- Available with ArcGIS Online Subscription

- What's New: NAIP Tile Layer
  - New Tile Layer Optimized for Display & Performance
  - To be Expanded to include New and Older Versions



NAIP Imagery

Steven Moore

OpenStreetMap

OpenStreetMap Data in the ArcGIS Platform

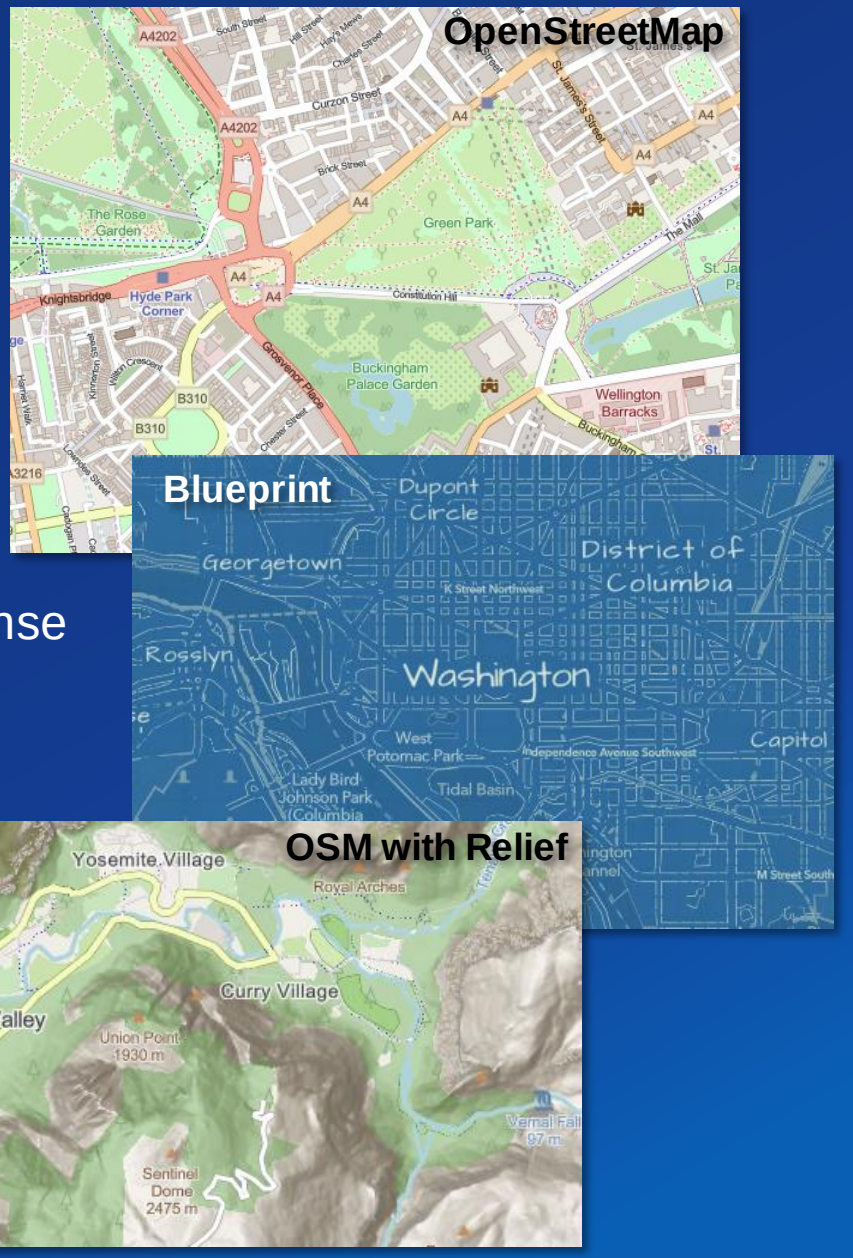
1. OSM Vector Basemap (Available)
2. OSM Feature Layers (Now in Beta!)
3. Enhancing OSM Data (Active Edits)
4. OSM Geocoding and Routing (Active R&D)

+

OpenStreetMap Vector Basemap

Esri hosted basemap featuring recent OpenStreetMap data

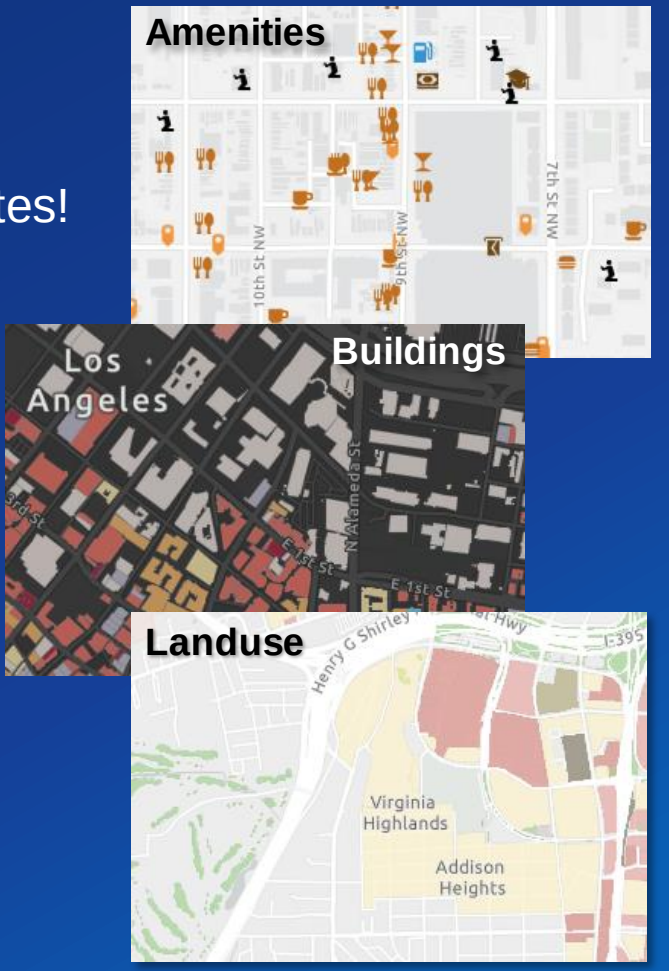
- Basemap built using OSM data and cartography
  - Map is hosted by Esri in ArcGIS Online
  - Map is updated every 3 weeks with the latest OSM data
- Online Map is freely available to all users and developers!
  - Provided under Creative Commons by Attribution (CC BY 4.0) license
- Multiple Map Styles Available (basemap gallery)
  - OpenStreetMap, OpenStreetMap with Relief
  - Esri Streets, Streets with Relief
  - Imagery Hybrid, Blueprint, …
- Now Available for On-Premise Deployment!
  - New product option for ArcGIS Data Appliance



OpenStreetMap Feature Layers (New!)

Esri hosted feature layers of live OpenStreetMap data

- Esri providing OSM data for Visualization, Analysis, and Extract
  - Layers include Buildings, POIs, Streets, etc.
  - Layers are updated with minutely diffs from OSM to present the latest updates!
  - Layers can be easily re-styled in ArcGIS Online, with custom popups
- Initial Set of Feature Layers for North America Now Available!
  - OpenStreetMap Layers (Beta) group in ArcGIS Online
  - Additional regions to be added in the coming weeks
- Benefits of ArcGIS Online Hosted Feature Layers
  - Designed to be more scalable and performant with high levels of usage
  - Support additional capabilities for spatial analysis and extract of features
    - Use analysis tools to extract OSM data for your local AOI



OpenStreetMap

Steven Moore

Next Steps … with Recommendations

1. Share Open Data
   - Share as Feature Layer Views using ArcGIS Online Subscription (Performance & Scalability)
     - Set cache control of 5 minutes or more on layer if layer is not updated continuously
   - Specify Terms of Use for Data, such as “Public Domain” (Ease of Use)
     - Specify Credits for Data to enable Proper Attribution
   - Create Open Data Site with Your Data for Your Community (Ease of Use)
     - Include open data from other providers if applicable to your community
2. Share with Living Atlas
   - Nominate Feature Layers to Living Atlas (Raise Awareness)
     - Update items to have High item completeness score before nominating
   - Register Feature Layers with Community Maps if Applicable (Expand Reach)
     - See list of layers accepted on Community Maps site
3. Explore Living Atlas Layers (Discover, Use, and Share)

Print Your Certificate of Attendance

Print Stations Located in 150 Concourse Lobby

Tuesday

12:30 pm – 6:30 pm
Expo
Hall B

5:15 pm – 6:30 pm
Expo Social
Hall B

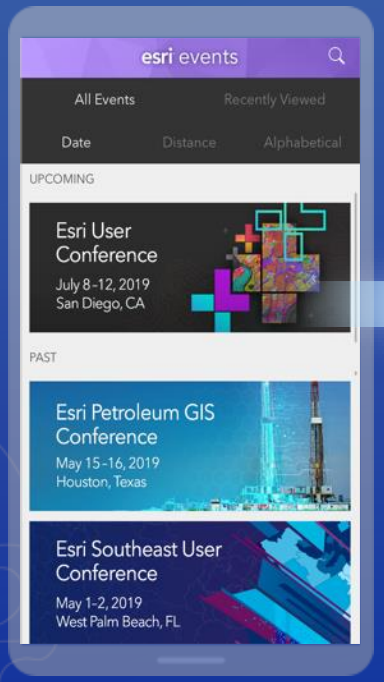
Wednesday

10:45 am – 5:15 pm
Expo
Hall B

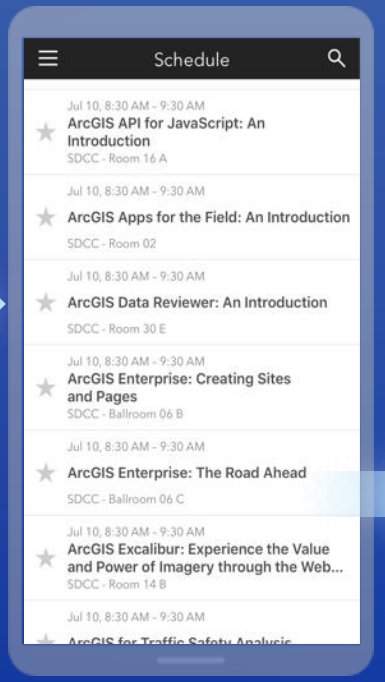
6:30 pm – 9:30 pm
Networking Reception
Smithsonian National Museum of Natural History

Please Share Your Feedback in the App

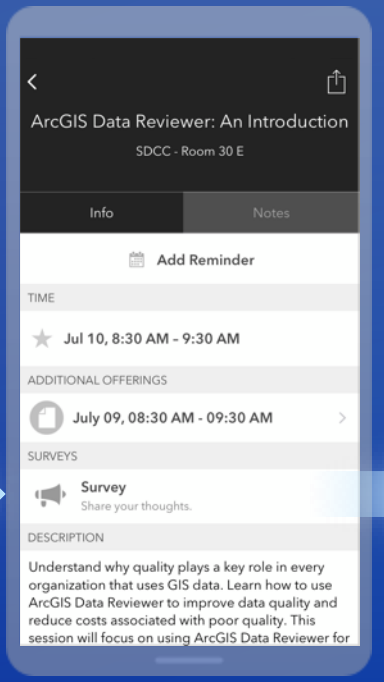
Download the Esri Events app and find your event



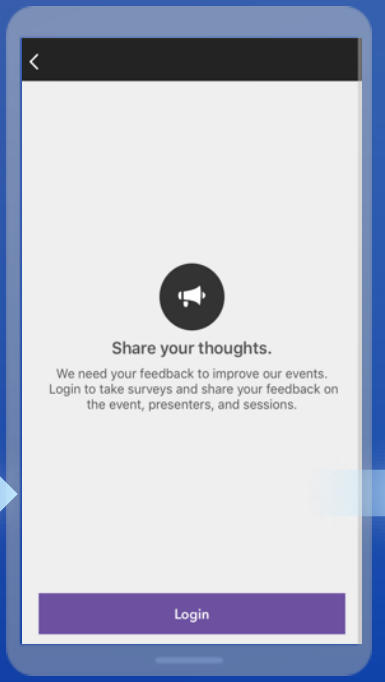
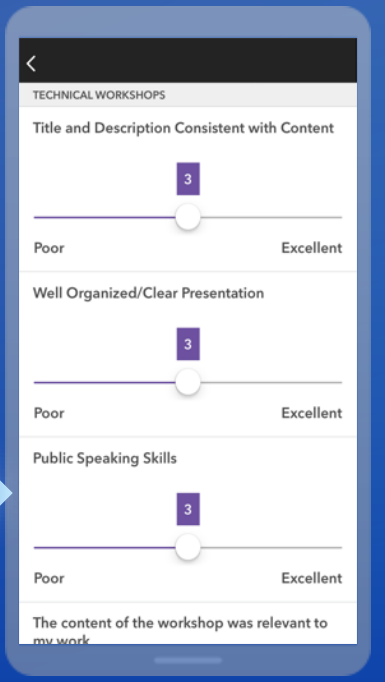
Select the session you attended



Scroll down to "Survey"



Log in to access the survey



Complete the survey and select "Submit"