1 – Introduction to ArcGIS Dashboards
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Workshop Objectives

• Learn about ArcGIS Dashboards
  - How to get started
  - Configuration options and design strategies
• Data sources
  - Where to get data?

• How to visualize COVID-19 data effectively and responsibly
• Communicate and share health info appropriately
• COVID-19 use cases and examples
Topics

• ArcGIS Dashboards overview
• COVID-19 use cases
• ArcGIS Solution Templates
• Getting started with ArcGIS Online
• Mapping tips for COVID-19
ArcGIS
A Comprehensive Geospatial Platform

Supporting Individuals, Teams and Organizations
ArcGIS Dashboards in the ArcGIS Platform

Simple
Integrated
Open

Available in the Cloud . . .
. . . and On-Premises
ArcGIS Dashboards | Product overview

- Monitor assets, events, or activities for ‘at-a-glance’ decision making
  - Provides key insights to your data on a single screen
  - Includes many data visualization elements

- Configurable user experience, no programming

- Web browser-based app
  - Works on desktops and mobile devices
COVID-19 use cases

- Monitor and track data
  - Show spread and current state of the outbreak
  - Reported cases, deaths, and recoveries
  - Status of health care workers, first responders

- Show status of businesses during “stay at home” policies
  - Availability of stores, restaurants
COVID-19 use cases

- Help with crowdsourcing efforts
  - Grocery store survey data

- Integration with ArcGIS Hub
  - Community outreach, share information
ArcGIS Dashboards | COVID-19 Solution Templates

• Esri offers 2 easy deployment solutions
• Deploy pre-configured dashboard with your data; Instructional videos available

Overview

Coronavirus Response is a collection of maps and apps that can be used by Public Health and other emergency response agencies to understand the impact of the coronavirus (COVID-19) and share authoritative information about the pandemic with your community.

When you deploy Coronavirus Response in your ArcGIS Organization, you will get a series of ArcGIS applications used to monitor coronavirus cases and response activities, communicate the impact on public places (for example, schools, government buildings, common places), inventory testing and meal sites, monitor meal programs, and share information with the public.

Emergency response agencies can configure and share the entire collection of coronavirus response maps and applications or configure and share an individual map or application that meets their specific needs.

Coronavirus Business Continuity

Overview

Coronavirus Business Continuity is a collection of maps and apps that can be used by businesses, utilities, and government agencies to maintain business operations and share authoritative information with customers and stakeholders during the coronavirus (COVID-19) pandemic.

When you deploy Coronavirus Business Continuity in your ArcGIS Organization, you will get a series of ArcGIS applications used to understand the operational capacity of your workforce, monitor the status of your facilities, and communicate disruptions to customers and stakeholders.

Businesses, utilities, and government agencies can configure and share the entire collection of coronavirus business continuity maps and applications or configure and share only the maps or applications that meet their specific needs.
ArcGIS Dashboards | Getting the App

• **ArcGIS Online**
  - App is included with your ArcGIS organization
  - Will update when ArcGIS Online updates
  - Software as a Service (SaaS)

• **ArcGIS Enterprise**
  - Available at 10.6 release and later
  - Included in the Portal for ArcGIS component
  - On-premise (software)
High level workflow

1. data
2. web layer
3. web map

ArcGIS Online or ArcGIS Enterprise

ArcGIS Dashboards
Data sources

• **Use existing web layers from other organizations**
  - Ready to use in dashboards
  - E.g., Johns Hopkins COVID-19 county level data

• **Use your own health data**
  - May require some data preprocessing
    - CSV, MS Excel, Google Sheets, shapefiles, etc …
  - Upload into ArcGIS
    - Create web layer (hosted feature layer)
  - Survey123 for ArcGIS data (web layers)
    - Form collection app
Getting COVID-19 data

• Some possible resources
  - ArcGIS Disaster Response – COVID-19 Data Site
  - COVID-19 GIS layers for the US
  - USA Facts COVID-19 site
  - Government agencies – Hub and data sites
ArcGIS Online fundamentals

Similar user experience in ArcGIS Enterprise

• Sign into your organization
  - Ensure you have permissions

• Every user has their own **Content** page
  - You create and own *items*
    - E.g., web layer, web map, dashboard
  - Items are private (default)
    - You control access
  - Items can be organized into Groups
Using your own data in ArcGIS Online

Similar user experience in ArcGIS Enterprise

• 2 methods
  - **Upload into ArcGIS Online → create web layers**
    - CSV, MS Excel, Google Sheets, shapefiles, etc …
    - Becomes a hosted feature layer
    - Content → Add item
  
  • **Use ArcGIS Pro (aka. ArcGIS Desktop) export to ArcGIS Online**
    - Define cartography
    - Data processing (if needed)
    - Share and publish to ArcGIS Online
      1. Create web layer(s)
      2. Create web map containing web layers
ArcGIS Online fundamentals

Similar user experience in ArcGIS Enterprise

- Add your data to ArcGIS
  - Create web layers

- Map Viewer
  - Author web maps
  - Add data to map

Legend, Table, Style (cartography), Filter, Analysis
Start with web map in Map Viewer

Similar user experience in ArcGIS Enterprise

- Which data are most important?
  - Exclude irrelevant data
- Style your layers to convey meaning
  - Symbology and pop-ups
- Set appropriate refresh interval(s) on layers
- Select basemap that helps highlight data

Optional:
- Scale dependent renderers
- Spatial bookmarks
Strategies for making Key Maps for your dashboards

• Map the **counts** of things
  - total cases
  - new cases
  - active cases
  - recoveries
  - deaths
  - hospital beds available
  - staff available

"Counts & Amounts (Size)" style is effective for counts
Strategies for making Key Maps for your dashboards

- Map the **rates** of things:
  - total cases per 100,000 people
  - active cases per 100,000 people
  - new cases per 100,000 people
  - recoveries per 100,000 people
  - deaths cases per 100,000 people
  - new cases as % of total or active
  - active cases as % of total cases
  - % of hospital beds utilized / available
  - % of staff available

"Counts & Amounts (Color)" style is effective for rates
Map the **counts** of things

- In a dashboard, show one topic at a time
  - Use different colors to distinguish each topic:
    - Total cases, active cases, recoveries, deaths*
  - The symbol is sized based on the count*

- Only use classification if there are specific numbers to call out
  - E.g. 1 case, 5 cases, 10 cases, 50 cases etc.
  - If not, choose Unclassed and that will allow the map to be easily updated once a day

- Put a label on it. Set the scale at which labels should turn off due to clutter.*

*It’s a judgment call, you can easily change it based on feedback
Map **two or three related counts** of cases and outcomes

- For counts, overlapping symbols can work:
  - Set the legends to be consistent across topics
  - Deaths will hopefully remain a low percent of total cases
  - Use a different symbol, whose maximum size is smaller than total cases’ maximum size
Map the rates of things

- Rates help draw attention to unusual or unexpected patterns
- E.g.: cases per 100,000 people reveals notable patterns in Louisiana, southern Georgia, & New York among others
- The key: what’s a rate that is significant? Set that as the top of the unclassed legend. Discuss, iterate.*
- *It’s a judgment call, you can easily change it based on feedback.
Ready to use maps

• Your dashboard may benefit from other web maps shared on the COVID-19 Data site

• Map collections like this shared from the Esri Maps for Public Policy site
  - www.esri.com/policymaps
Resources

• ArcGIS Solutions – COVID-19 Solution Templates
  - Tutorial video: Discuss the New Coronavirus Response Solution
  - Blog: Updated Coronavirus Response Solution Available Now

• ArcGIS Online help documentation
Learn more at Esri Academy

https://www.esri.com/training/catalog/

• ArcGIS Online
  - ArcGIS Online Basics
    - This course provides a foundation for working with ArcGIS Online
  - Creating and Sharing GIS Content Using ArcGIS Online
    - This course shows how to publish data to ArcGIS Online as services

• ArcGIS Pro
  - ArcGIS Pro Basics
    - This course provides a foundation for working with ArcGIS Pro
  - Sharing Maps and Layers with ArcGIS Pro
    - This course provides an overview of ArcGIS Pro sharing options