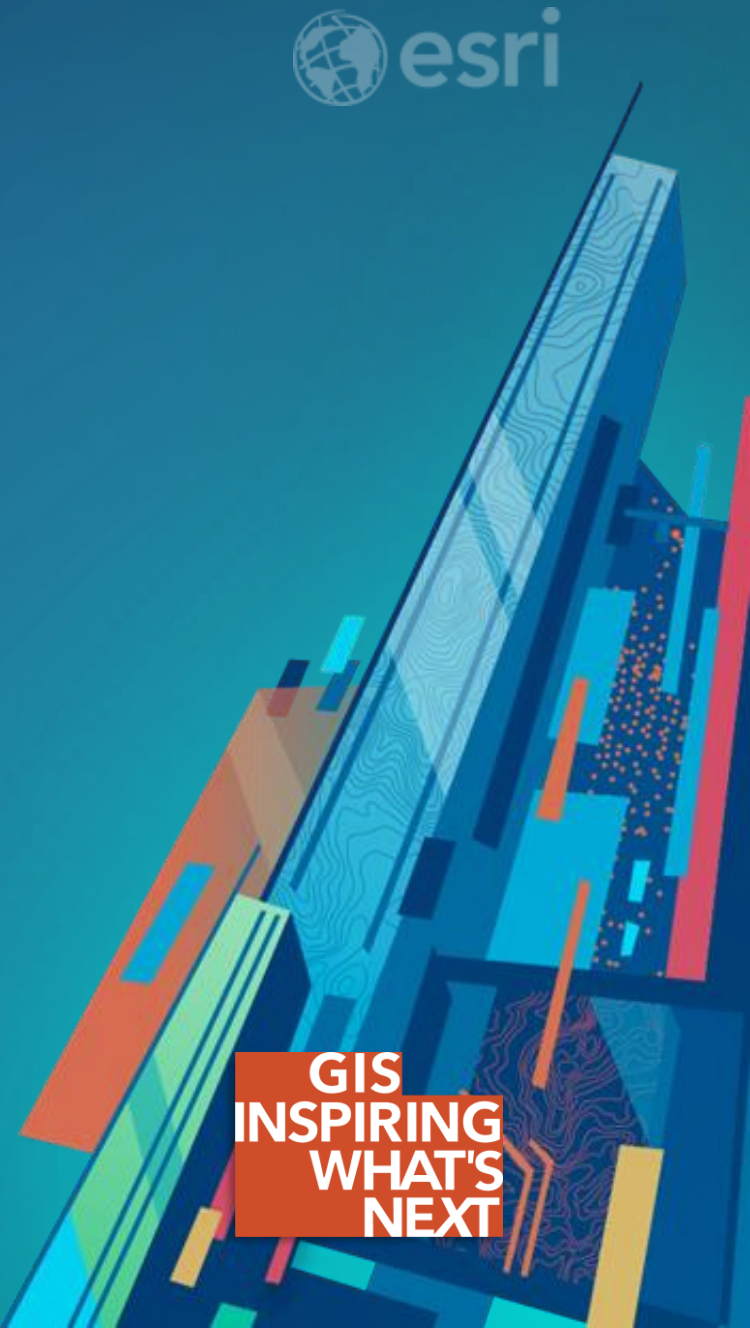
ArcGIS Best Practices

Central Oregon GIS User Group, July 16, 2019

By

John Sharrard, Esri Solutions Engineer, jsharrard@esri.com

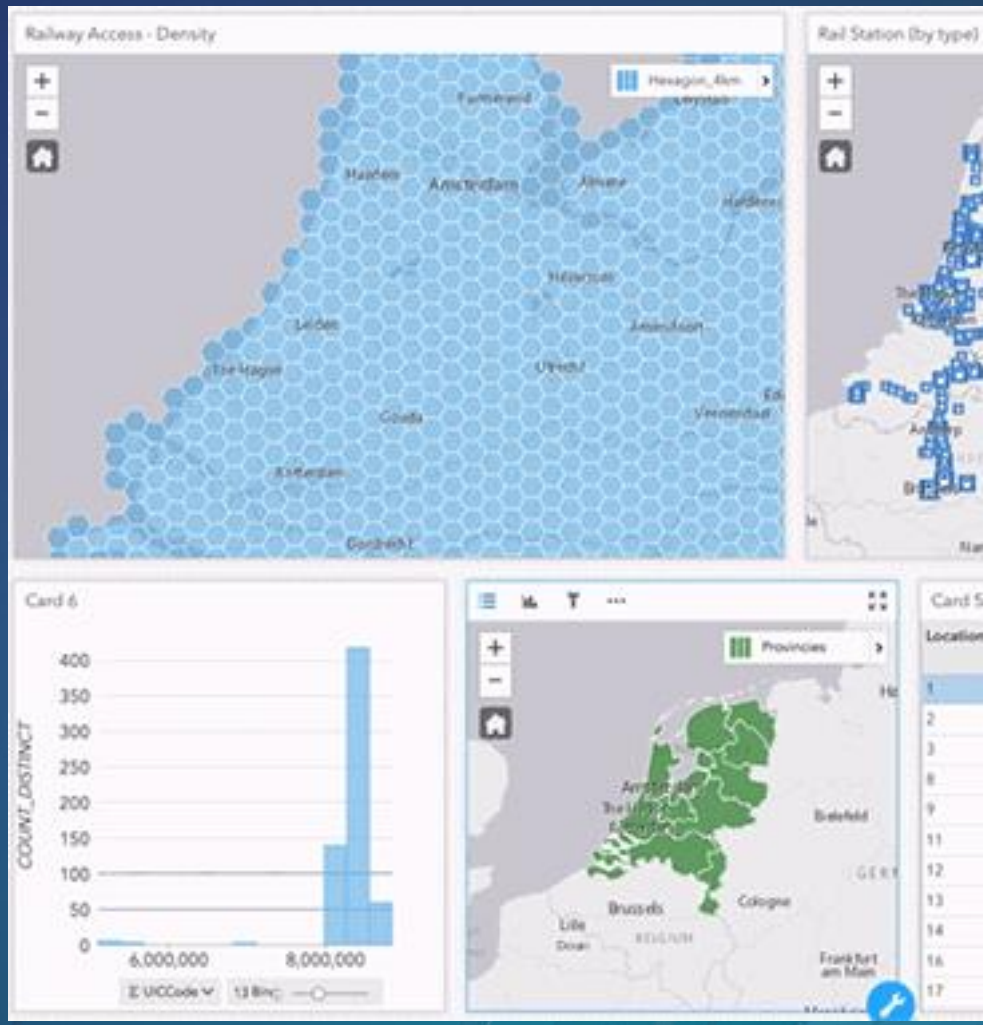


“…You wouldn’t build a house without a blueprint…”

- Warren Peterson

“…So don’t build your ~~life~~ GIS without one either!”

- Warren Peterson



People

Best Practice: Patterns of Use

Common geospatial functions that re-occur across business models and environments

Mapping & Visualization

Understand locations and relationships with maps and visual representations

Data Management

Collect, organize, and maintain accurate locations and details about assets and resources

Field Mobility

Manage and enable a mobile workforce to collect and access information in the field

Monitoring

Track, manage, and monitor assets and resources in real-time

Analytics

Discover, quantify, and predict trends and patterns to improve outcomes

Design & Planning

Evaluate alternative solutions and create optimal designs

Decision Support

Gain situational awareness, and enable information-driven decision making

Constituent Engagement

Communicate and collaborate with citizens and external communities of interest

Sharing & Collaboration

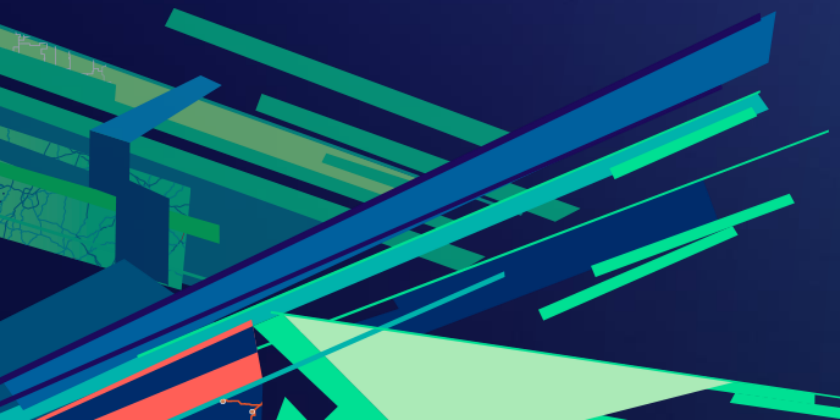
Empower everyone to easily discover, use, make, and share geographic information

The patterns are a framework for driving value

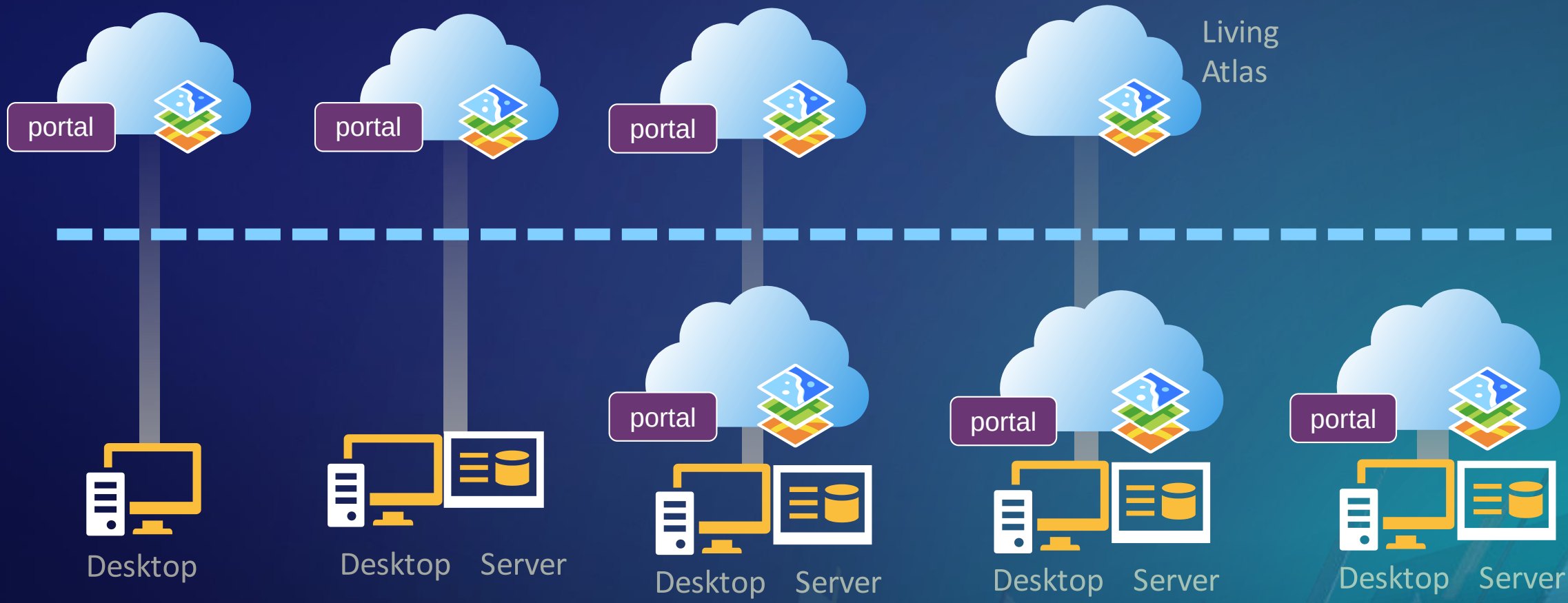
ArcGIS Hub
Esri Story Maps
Operations Dashboard for ArcGIS
Workforce for ArcGIS
ArcGIS Pro
Apps
Desktop
APIs
Online
Enterprise

Best Practice: Determine your implementation pattern

ESTABLISH THE FOUNDATION OF YOUR GIS



Consider your implementation pattern



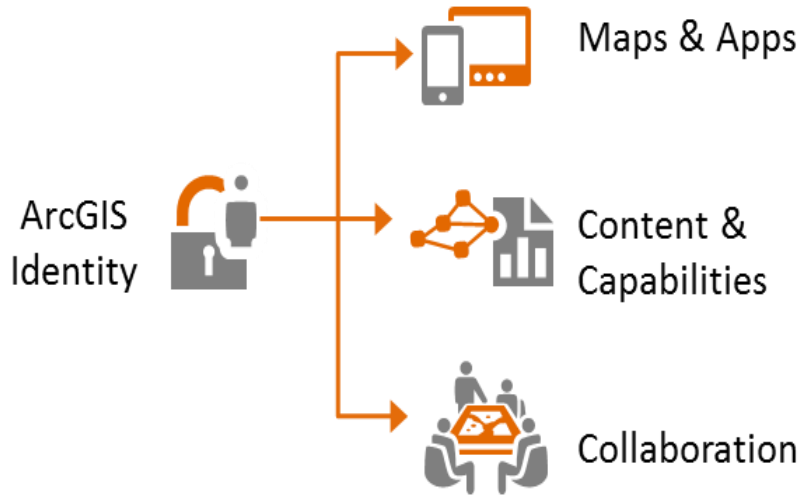
Let your needs guide you

People

Best Practice: Manage Identities

Uniquely and securely describe user access to maps, apps, data, and analysis

- **Configure in the portal**
  - **Users**
  - **Roles**
  - **Privileges**
- **Incorporate in your apps**



Built-in Security -OR- Third Party Identity Management

Identity enables participation!

ArcGIS User Types

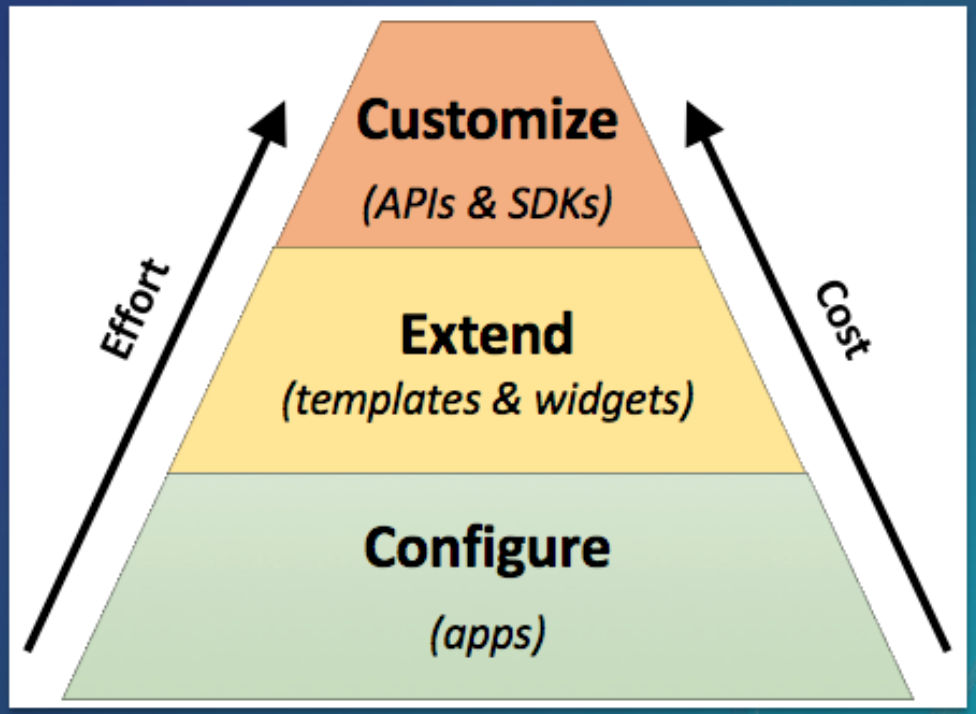
Now Part of ArcGIS Online and Enterprise

Process

Best Practice: Application Implementation Strategies

Minimize cost and maximize development resources

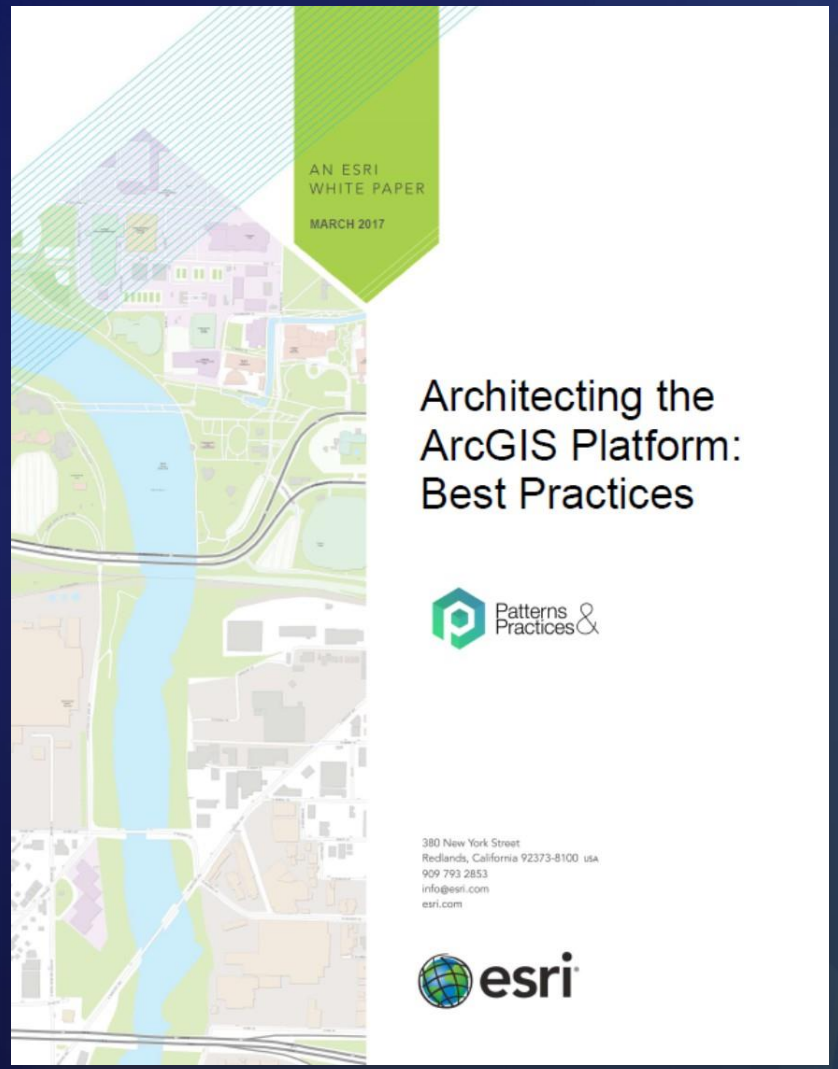
- *Configure **First***
- *Extend **Existing** Apps & Templates*
- *Use the ArcGIS Web **APIs** and **SDKs***

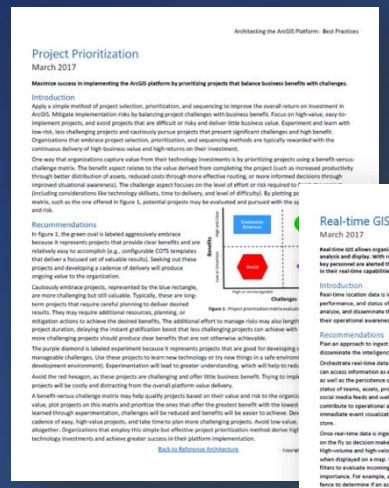


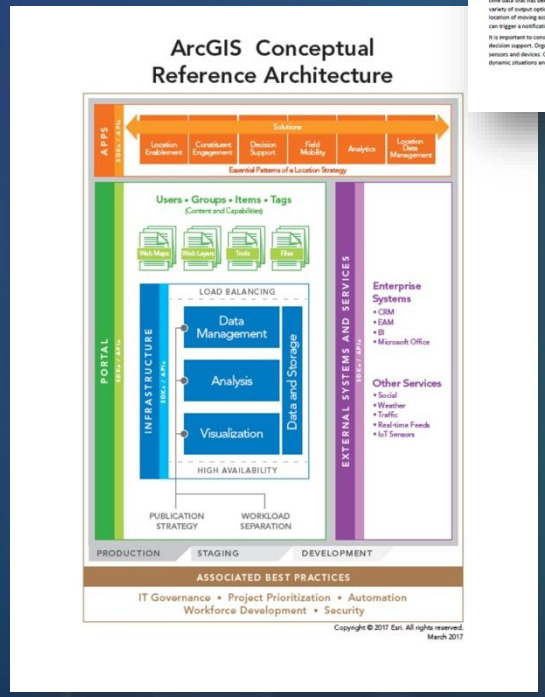
Configure first for the lowest cost and least effort

Deviations from "core" increase risk!

Best Practices Documented





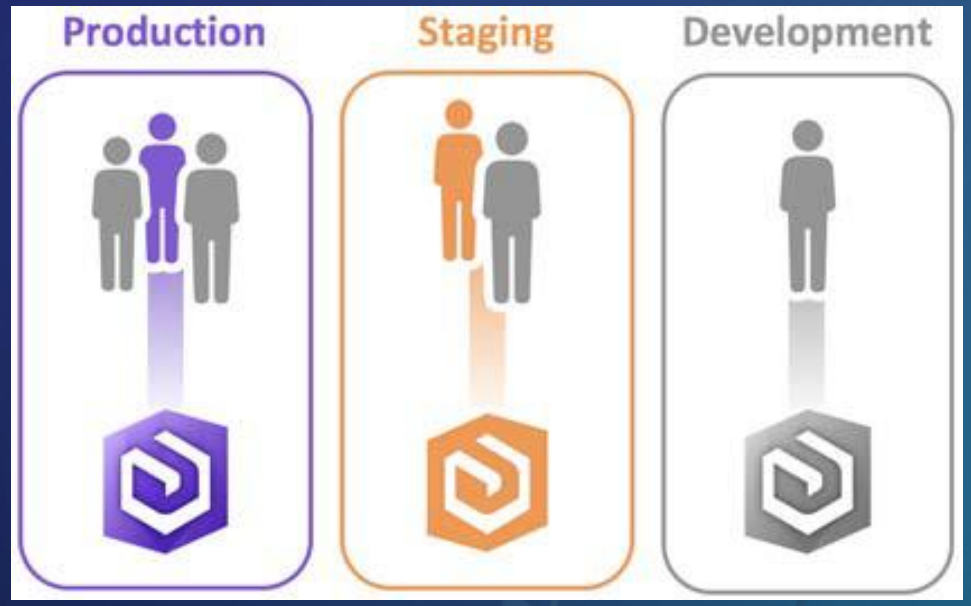


Technology

Best Practice: Environment Isolation

Separate and distinct compute environments

- **Production:** ***an operational, real-time compute environment***
- **Staging:** ***a separate, mirrored, pre-production environment***
- **Development:** ***a limited scale environment sufficient for primary code and data modeling***



Reduce risk and protect operational systems from unintentional changes and negative business impacts

Steps for Success for Your ArcGIS Organization Portal(s): A Best Practices Approach

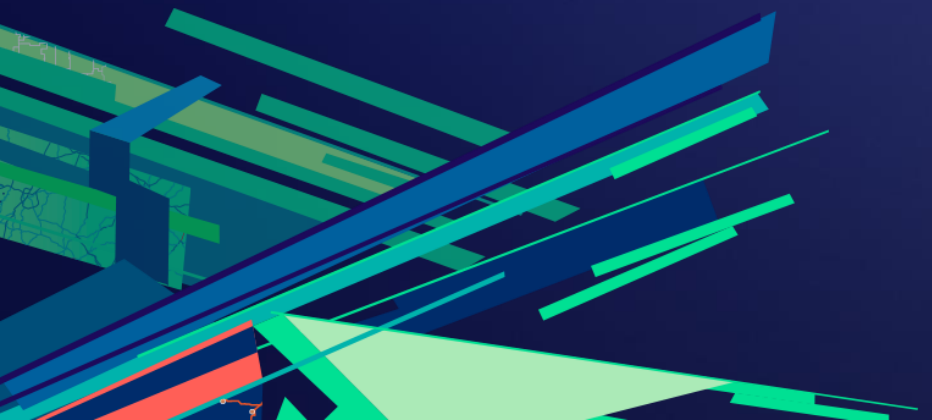
Presented by John Sharrard, Esri Solutions Engineer, jsharrard@esri.com

but…

Derived from Bern Szukalski's annual presentation at User Conference (see link below for Bern's wonderful blog)

Best Practice: Establish the vision and governance

UNDERSTAND YOUR ROADMAP TO SUCCESS
AND WHAT SUCCESS MEANS



Vision and Governance

Find the right people

- Who are the champions?
- Who are the stakeholders?
- Who is the audience?

Discover what they need

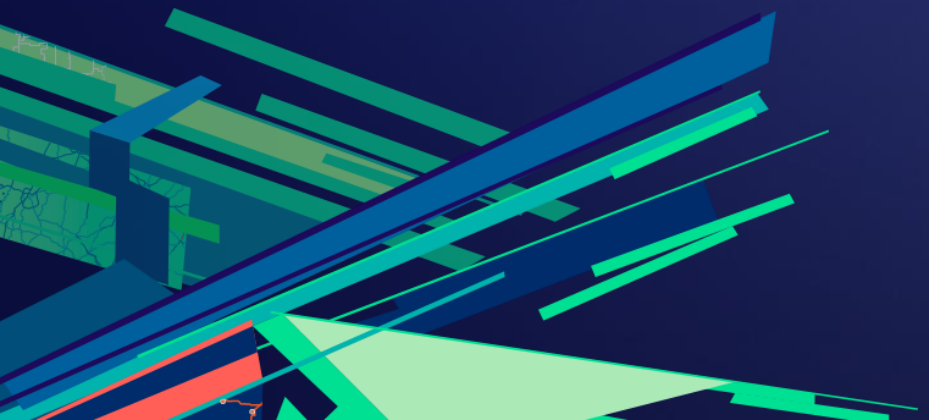
- What is the mission and vision?
- What workflows will it support?
- What are the deliverables?

Consider the following

- Establish a curator, or group of curators
- Form a governance committee
- Meet early and often

Best Practice: Create a great destination

BUILD YOUR DREAM HOME



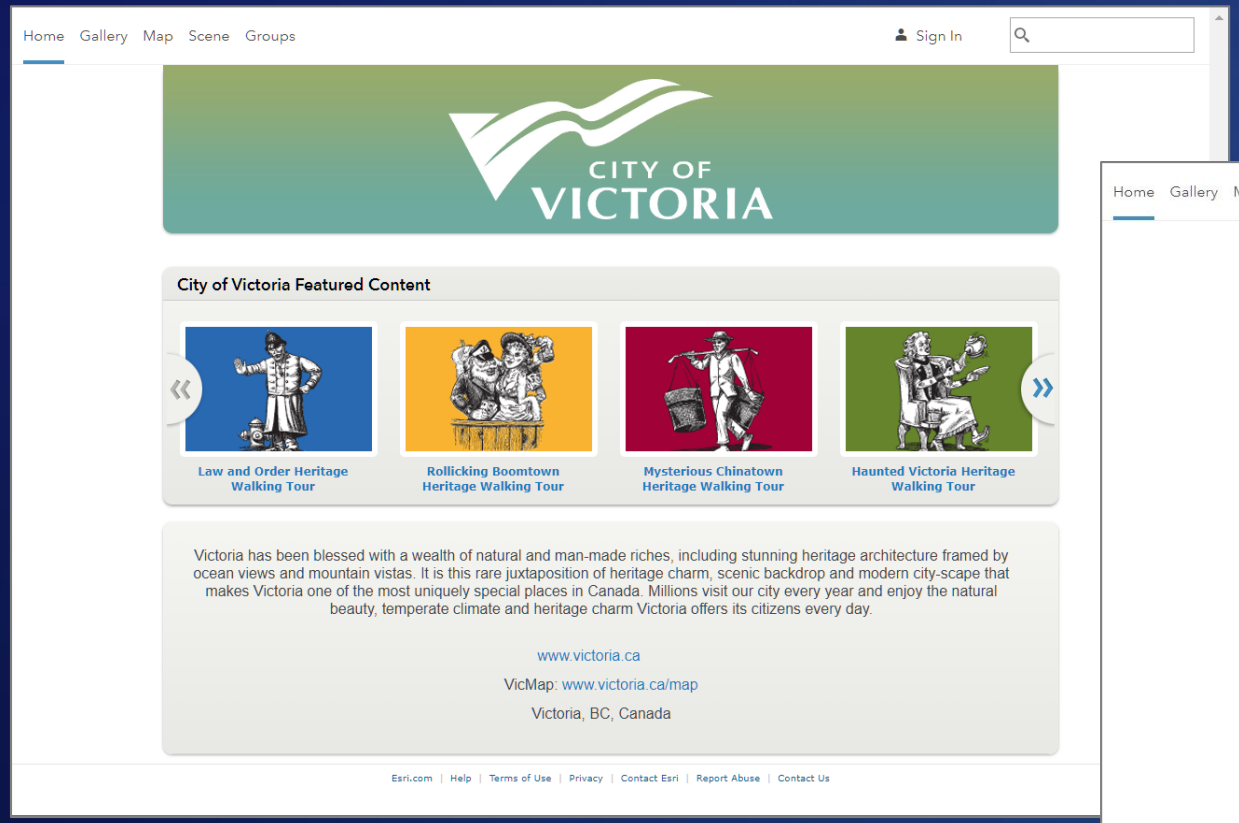
The first impression

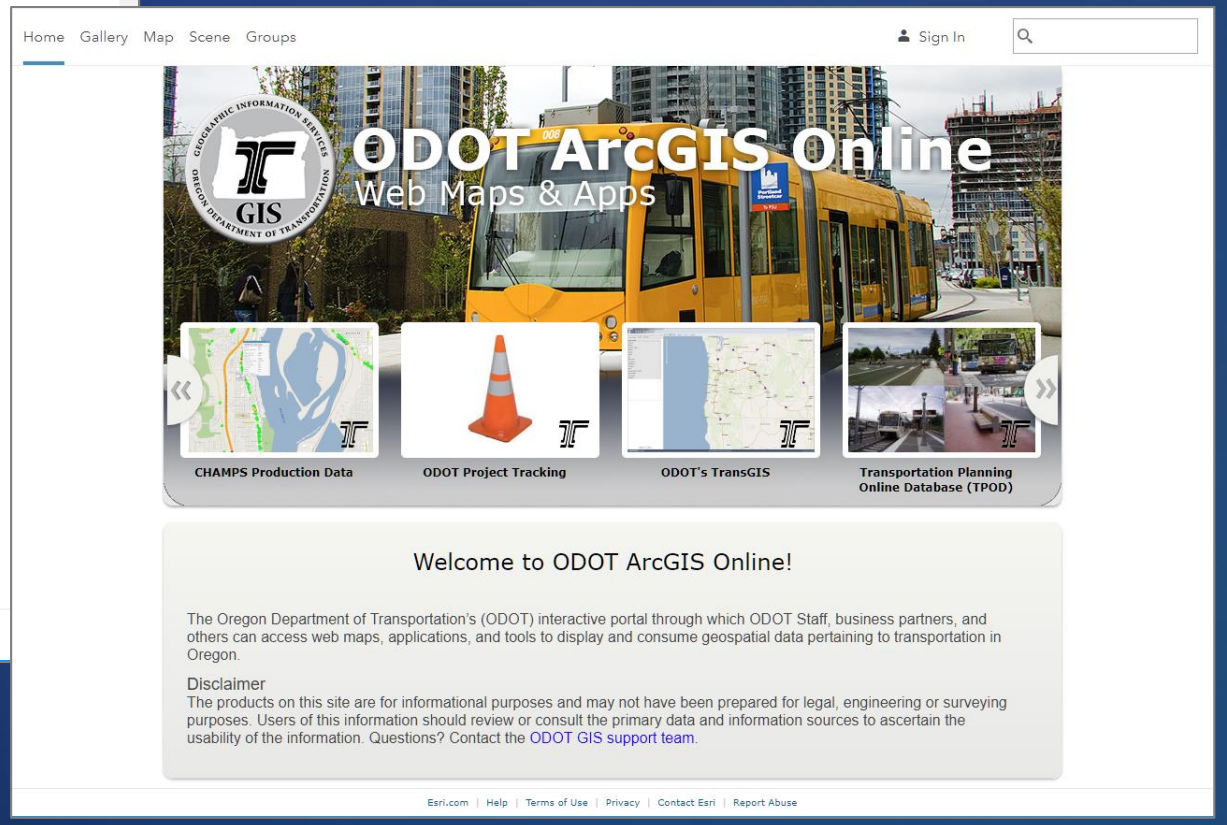
- Appealing design
- Featured gallery, with branding
- Featured links and resources
- Links to city website and Open Data
- Gallery and Group tabs

Consider all page elements

Add home page as item

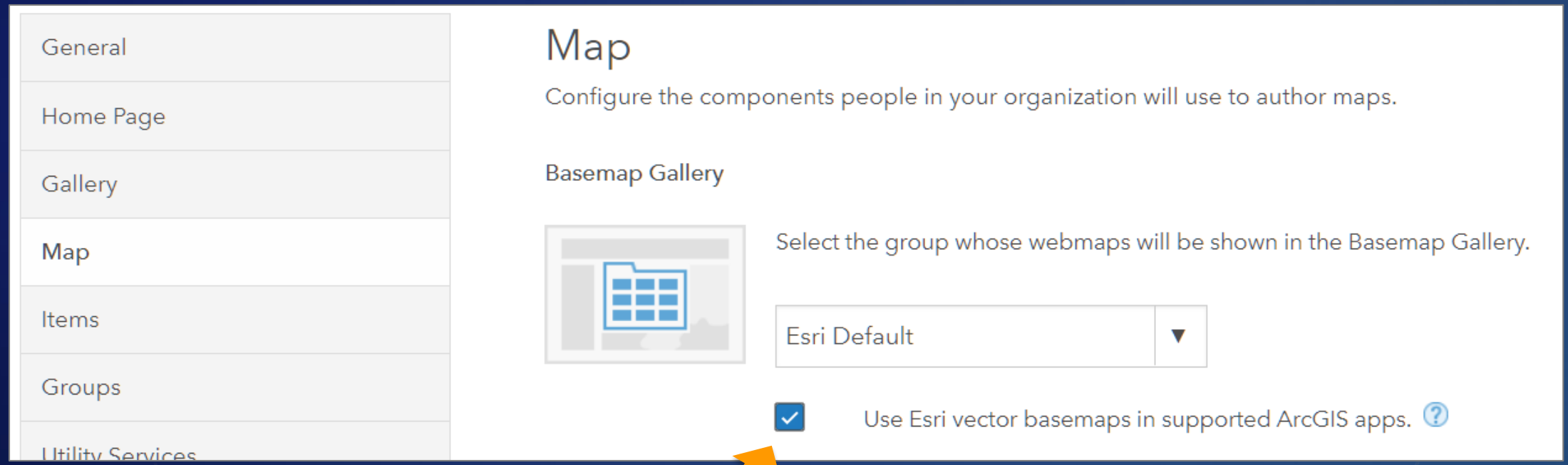
Organization home





Organization home

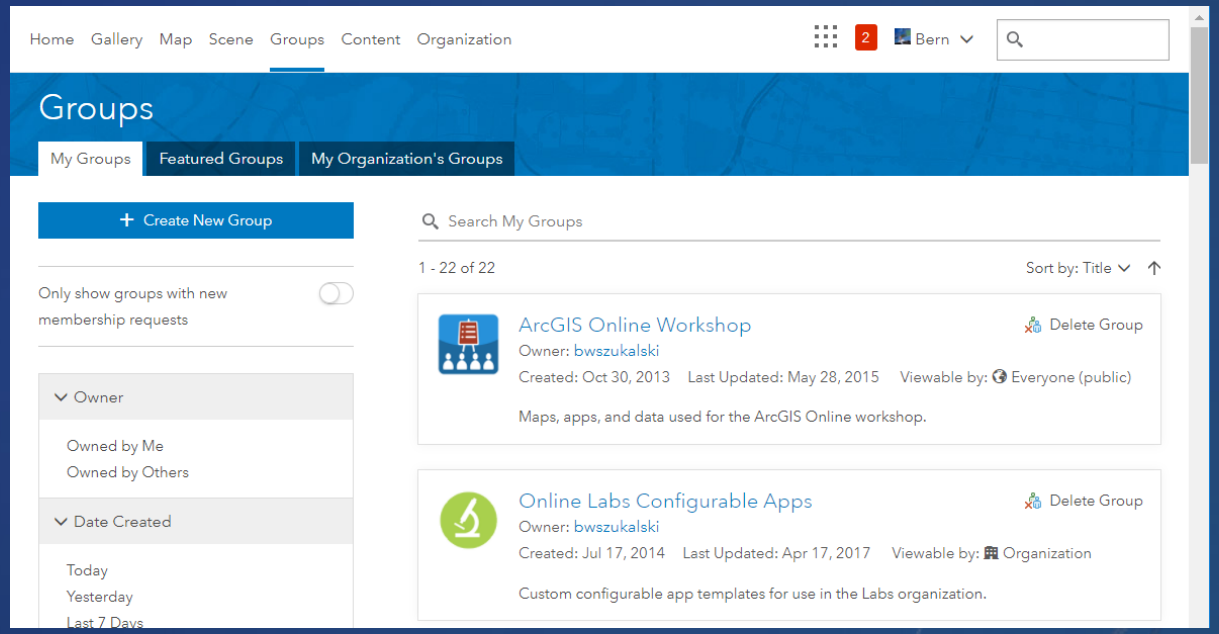
Organization settings – Esri vector basemaps



Create a custom basemap gallery that includes both

Groups are building blocks

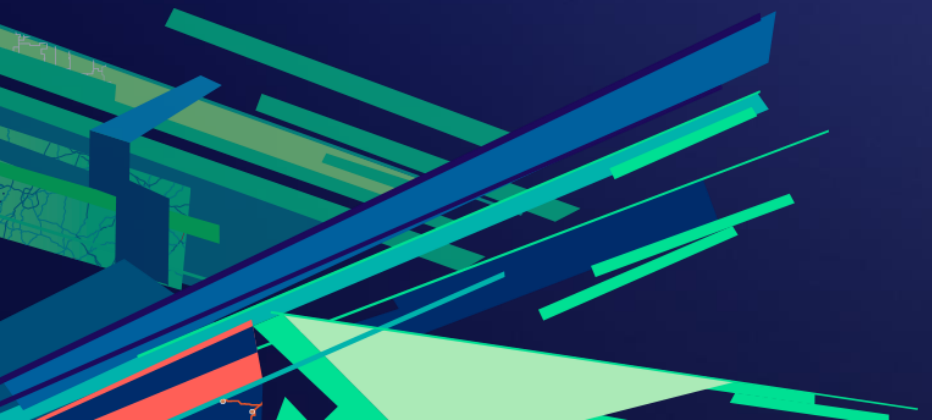
- For your organization
  - Basemaps, configurable apps
  - Galleries, featured content
  - Public galleries
- For members and their work
  - Mirror organization structure
  - Support organization projects, workflows, and initiatives



More details on groups later…

Best Practice: Establish a brand

AN EASILY RECOGNIZED VISUAL IDENTITY

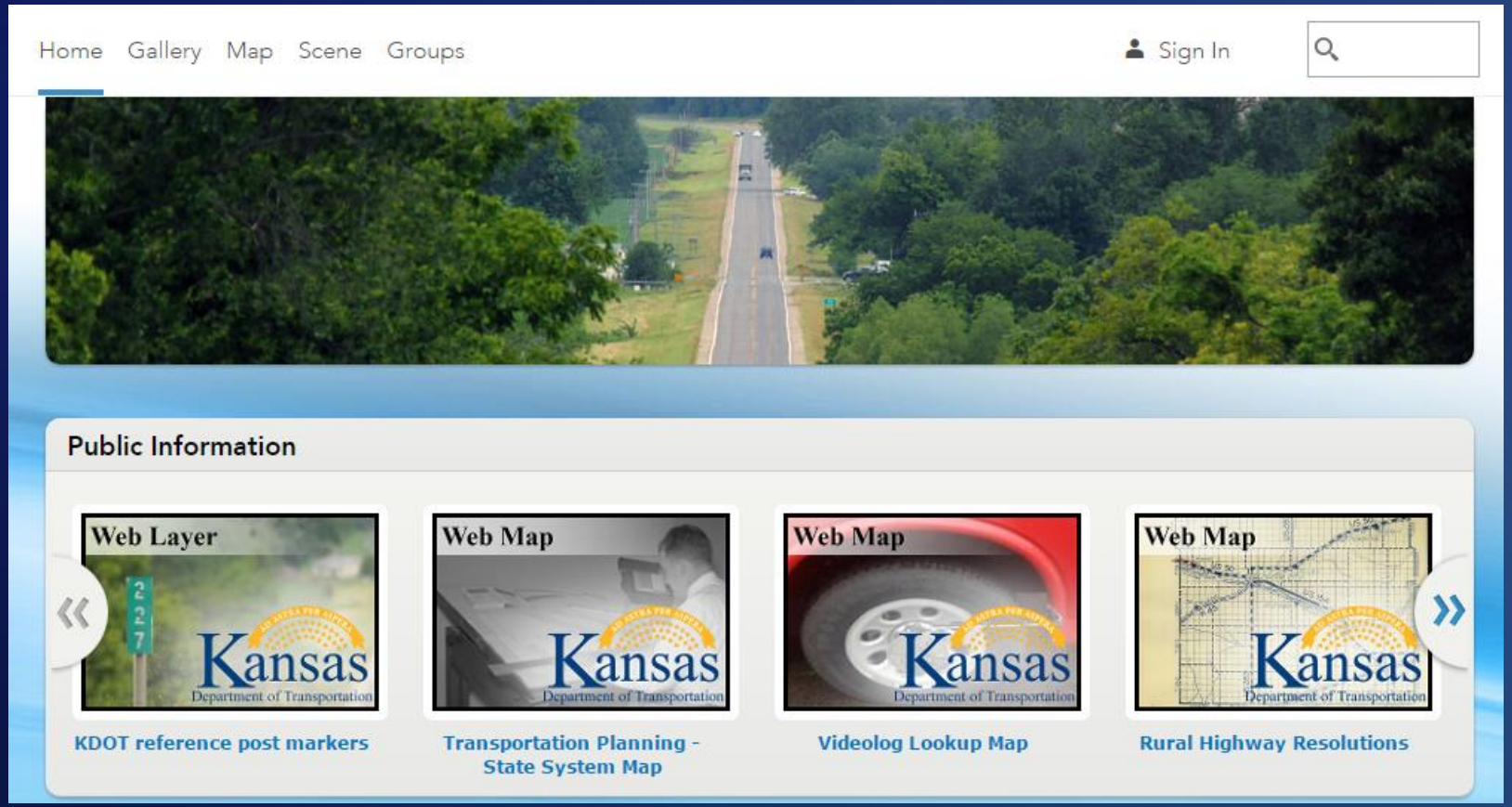


What is a brand?

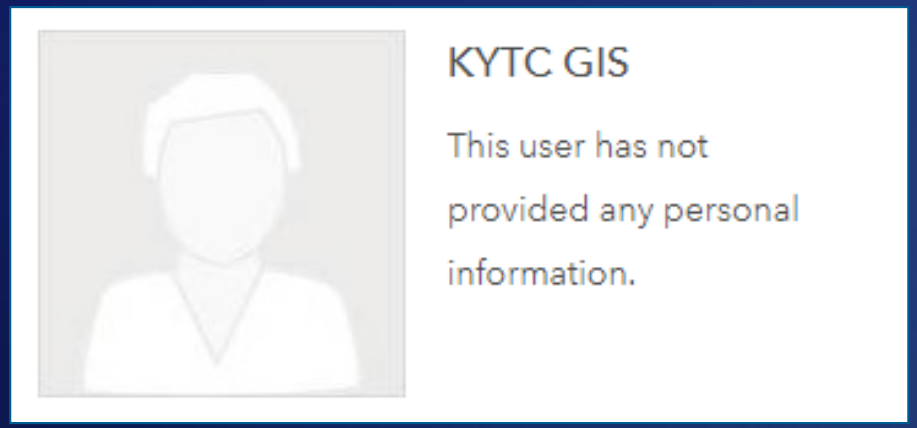
brand
/brand/
noun

- Unique design, sign, symbol, words, or a combination.
- Creates an image that identifies a product and differentiates it.
- The image becomes associated with a level of credibility, quality, and satisfaction in the consumer's mind.

Organization branding



Organization profile



or

?

Organization profile

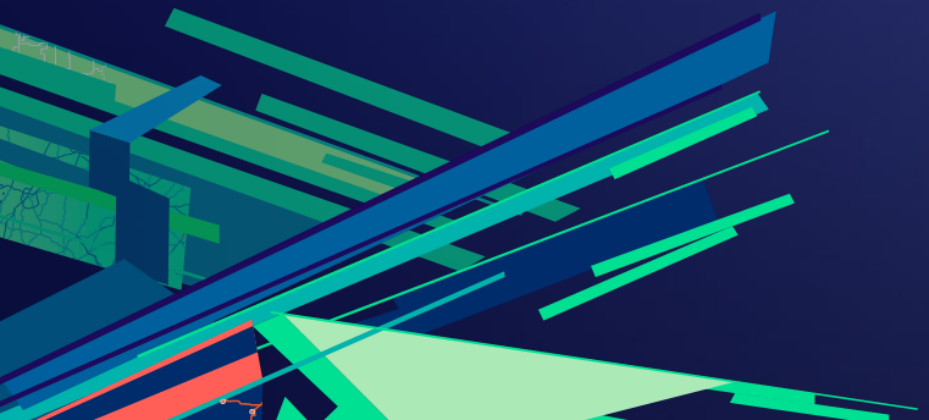
Use for best public content

More on public authoritative content later…

Best Practice: Turn content into information building blocks

THE FUEL FOR YOUR ORGANIZATION,

THE KEY TO SELF-SERVICE MAPPING

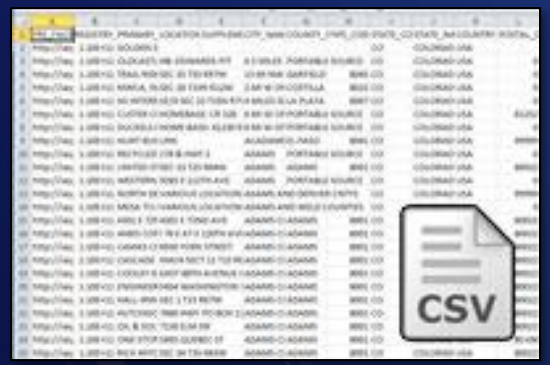


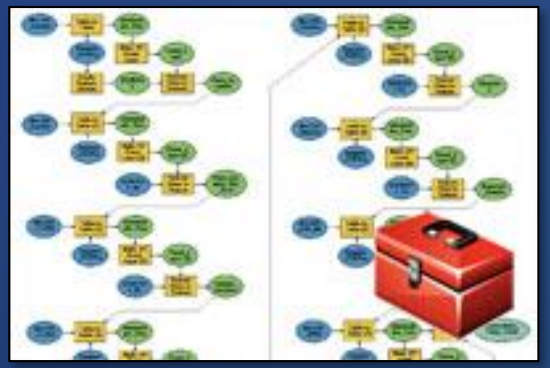
Information building block taxonomy

- Apps
- Maps
- Layers
- Files and Services

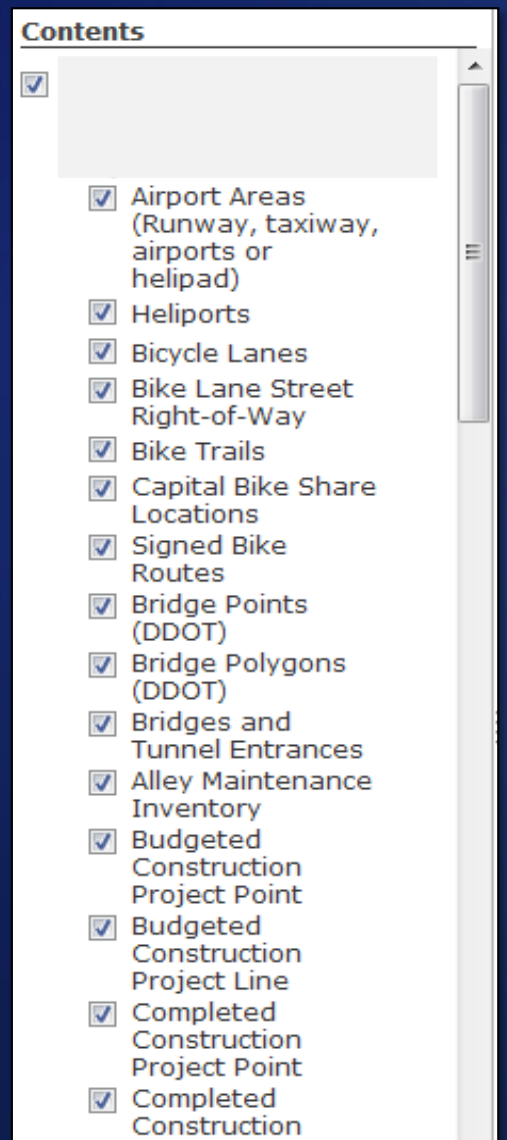
Add existing content

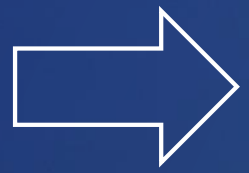
- ArcGIS services
- Shapefiles, spreadsheets, map templates, and more…
- Publish new hosted layers as needed

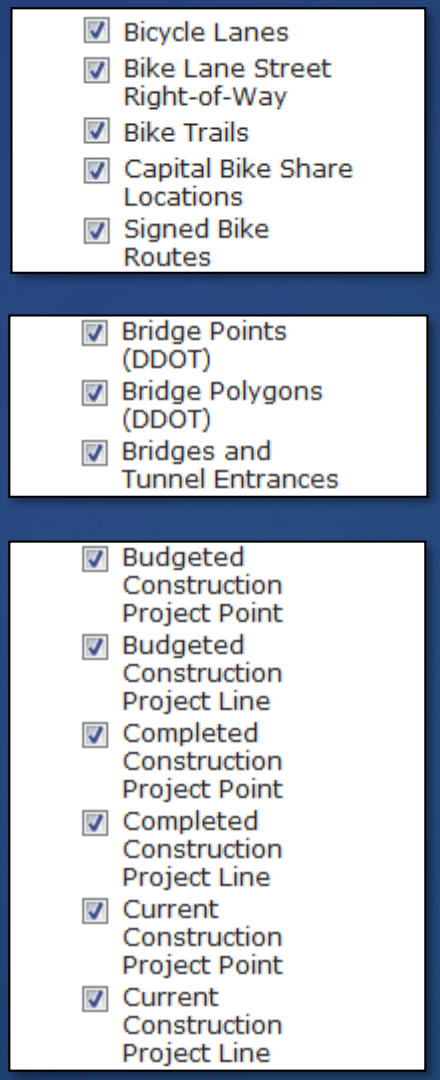




Optimize for reuse





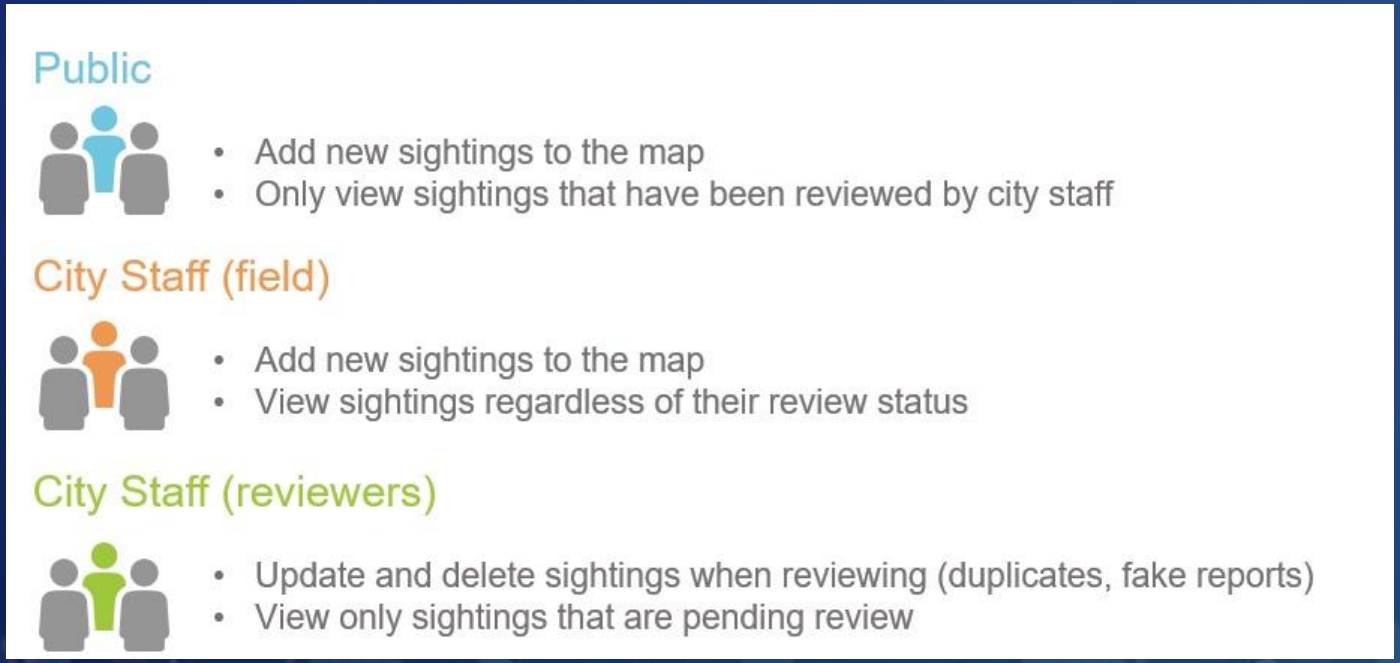


Consider service type

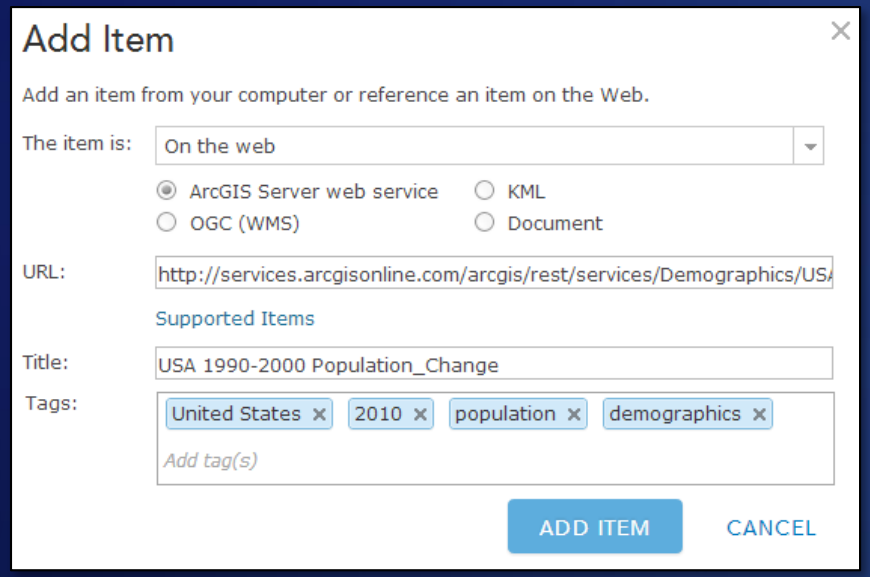
- Hosted map service
- Hosted feature service
- Enterprise map service
- Enterprise feature service
- Image service
- Vector tile
- Raster tile
- Scene service
- Elevation service
- WMS / WFS

Views

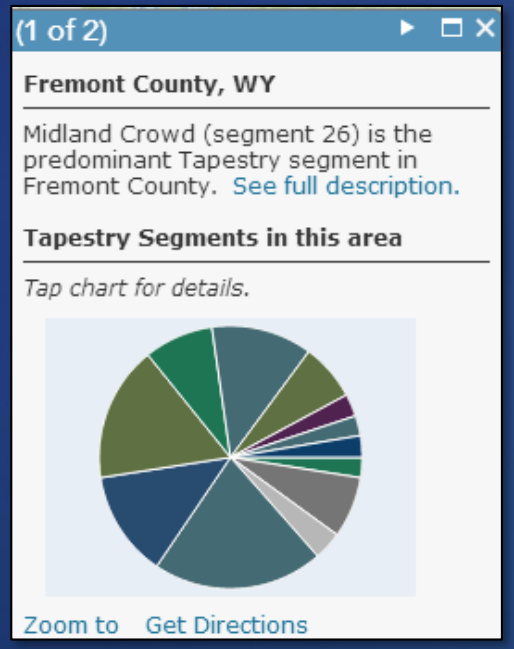
- Common feature layer with multiple user *views* onto the layer
- A view is a live-linked feature layer defined by an expression
- Different privileges and access can be set



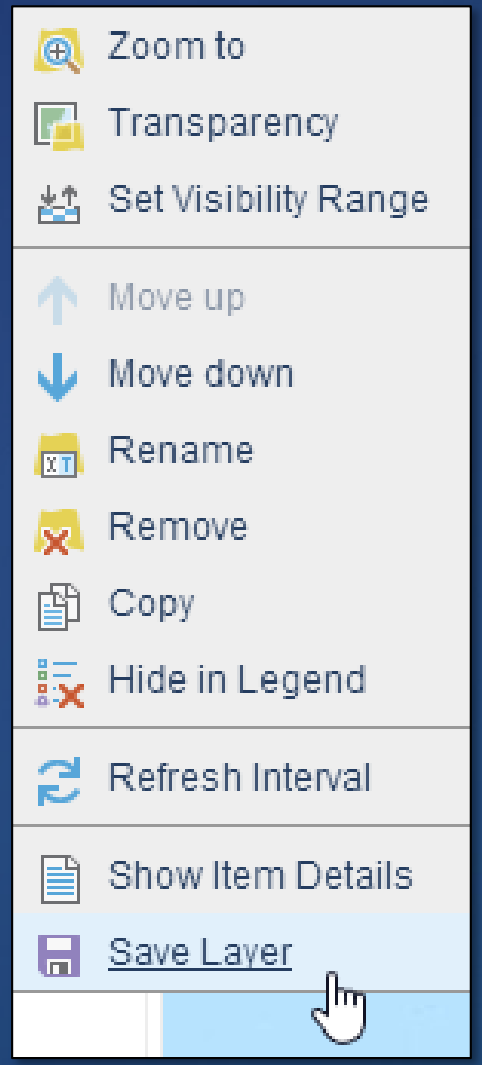
Registering your ArcGIS services



(1) Add service



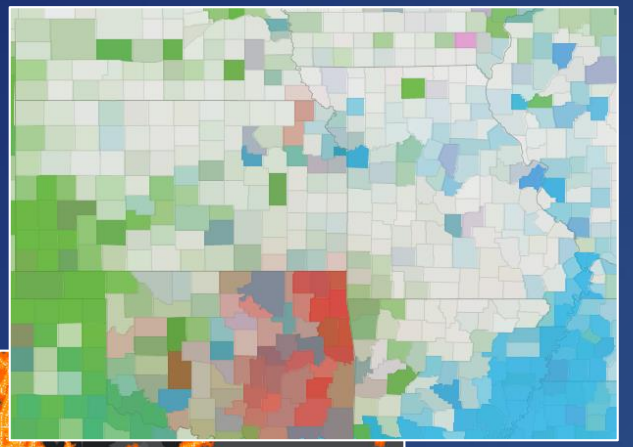
(2) Configure

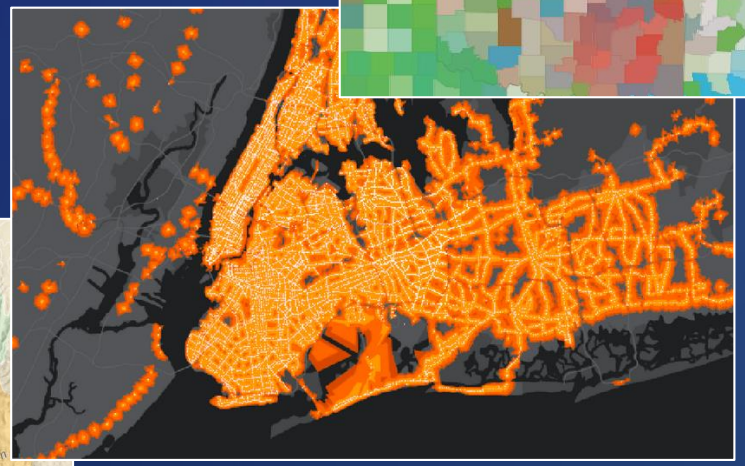


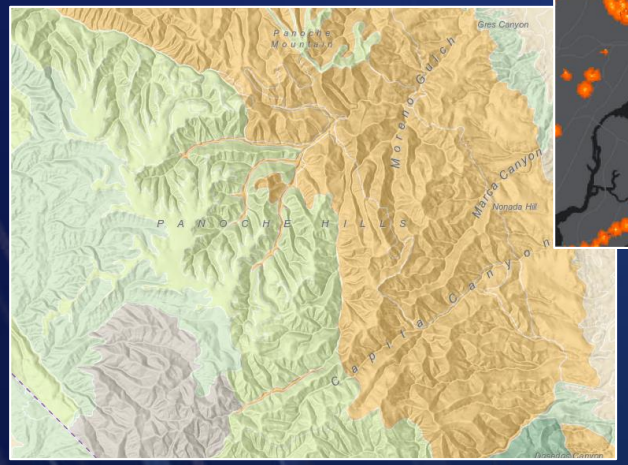
(3) Save layer

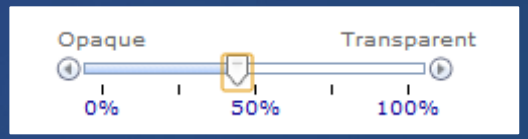
Refining your layers

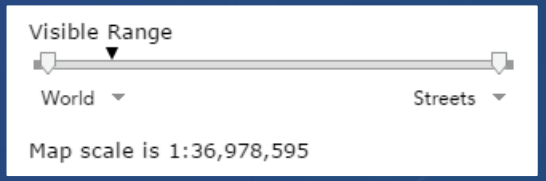
- Transparency
- Scale dependencies
- Labels







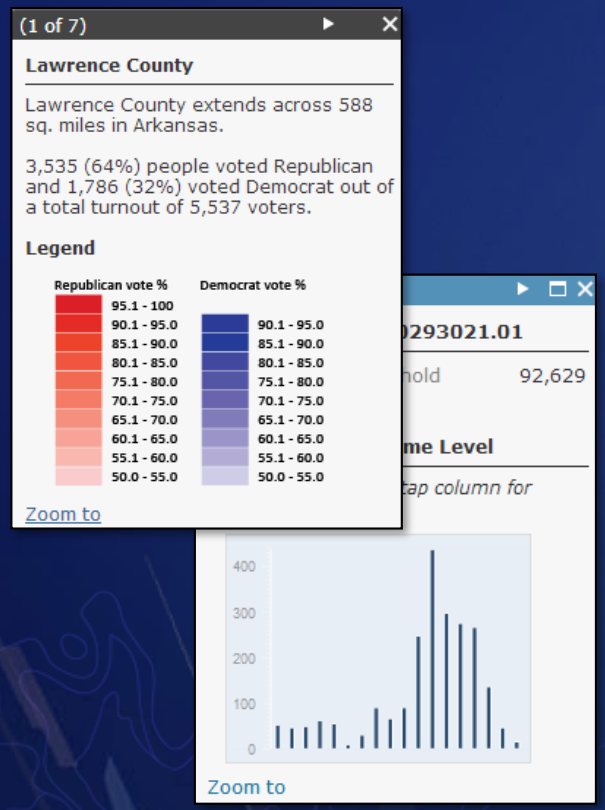




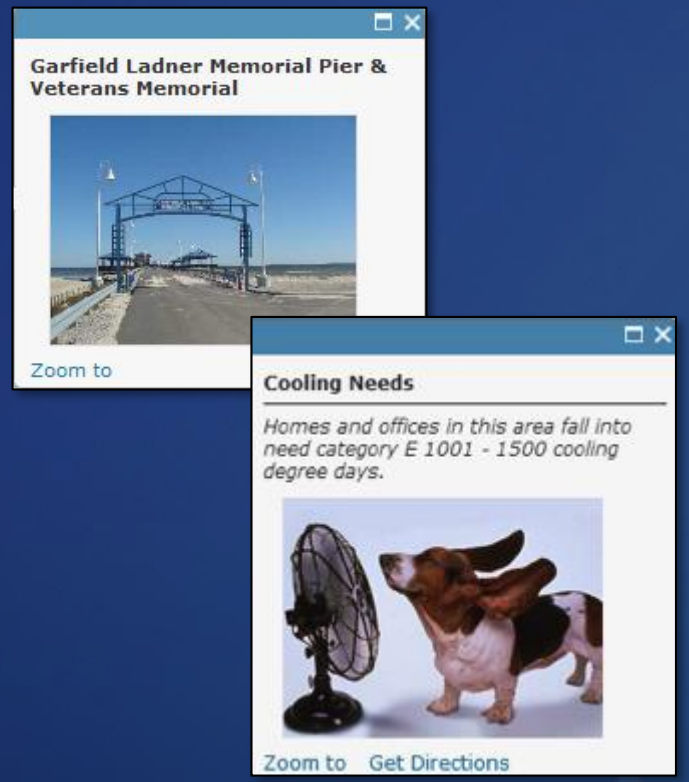
Pop-ups

Consider the entire information experience

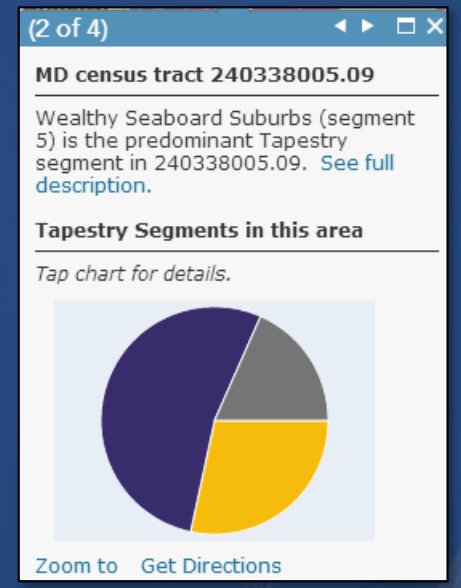
Charts



Images and Links



Formatted text and Charts

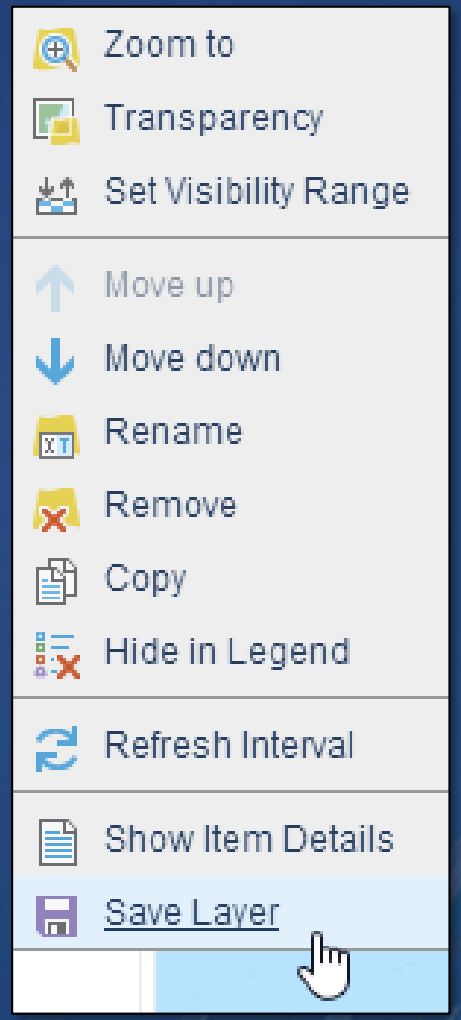


Use Save Layer

- Enabled for layer item owner
- Preserves style, pop-ups, scale, transparency, etc.
- Makes layers ready-to-use
- Can be overridden in maps

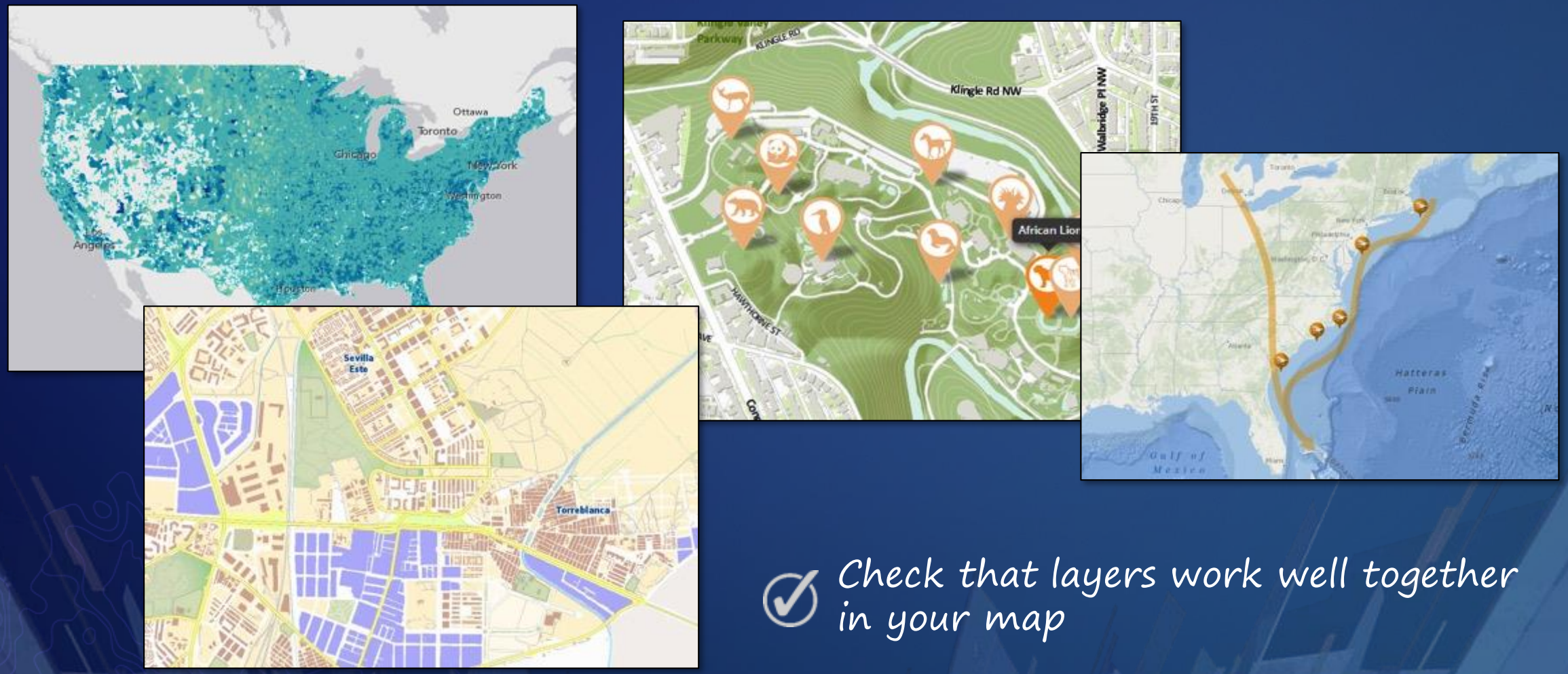
Don't share unconfigured layers

Think of layers as building blocks, and craft accordingly



Maps

Reflect the complete experience from the basemap on through layers

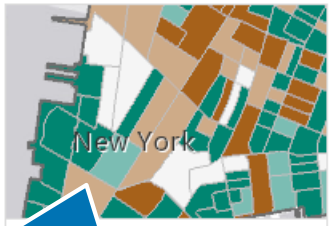


Check that layers work well together in your map

Item details

2015 Clothing/Accessory Store Market Opportunity in the United States

Overview



Favorites

This map shows opportunity within the clothing/accessory market in the U.S. in 2015, by state, county, ZIP Code, tract and block group. ArcGIS Online subscription required.

Premium Content

by esri

Last Modified: April 30, 2015

Web Map

Open in Map Viewer

cGIS for Desktop

Web App

Share

Good thumbnail

Concise summary

Description

Great description

This map shows the market opportunity for clothing and acce tores in the U.S. in 2015 in a multiscale map (by stat county, ZIP Code, tract and block group). The map uses the Lea /Surplus Factor, an indexed value that represents opp (leakage), saturation (surplus), or balance within a market. This m p focuses on the opportunity for clothing/accessories st (NAICS 448)

The pop-up is configured to include the following information for each geography level:

- Count of clothing/accessory stores - NAICS 448
- Total annual NAICS 448 sales (supply)

Details

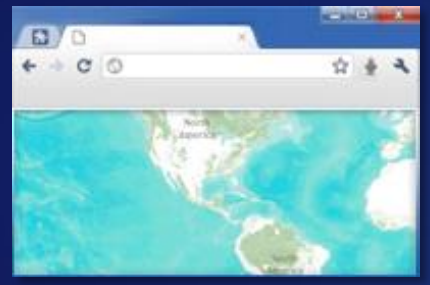
★★★★★ 0 ratings, 150 views

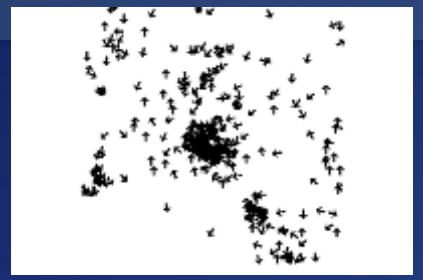
Good tags, Usage notes Etc...

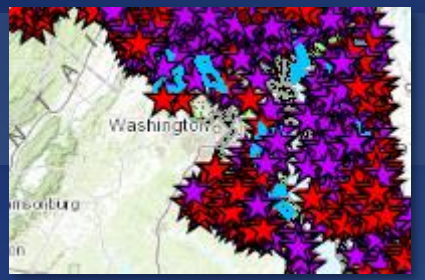
wner

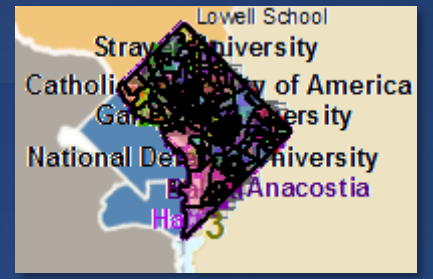
esri

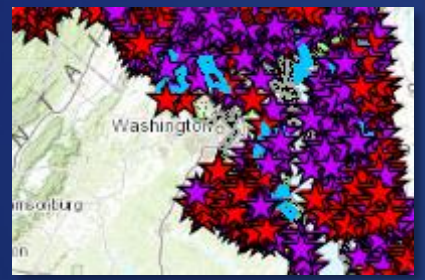
Thumbnails



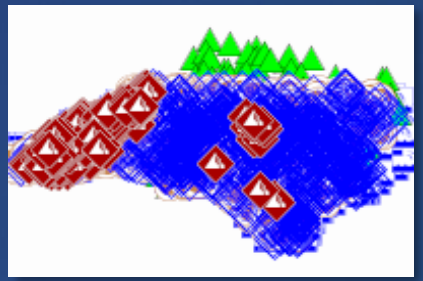


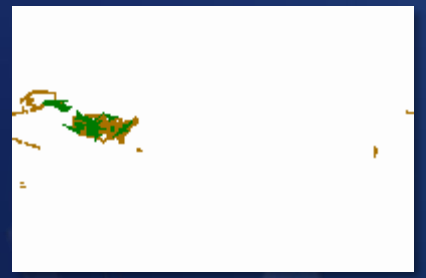


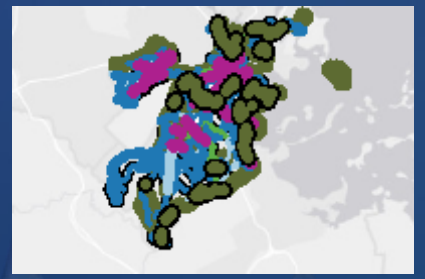

Lowell School
Catholic
National
Anacostia


Washington

IDAHO

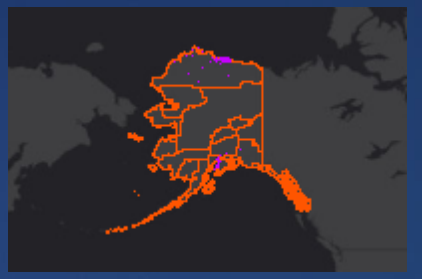




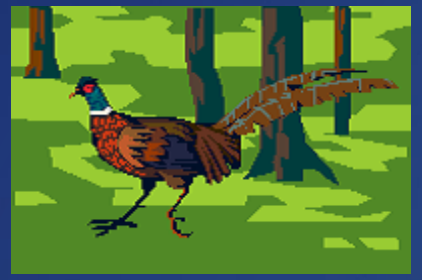


Woof!

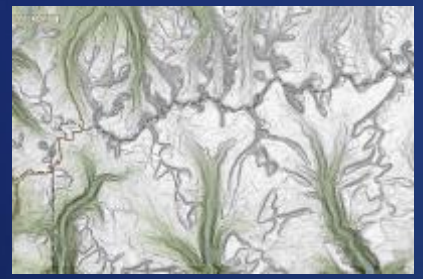
Location hints

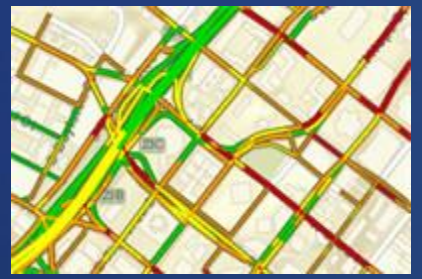


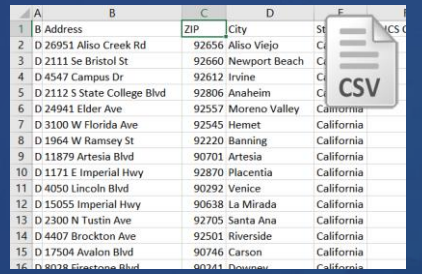
Graphic hints



Content hints



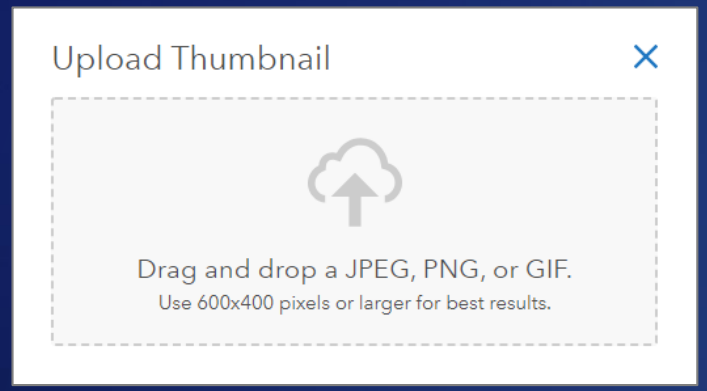


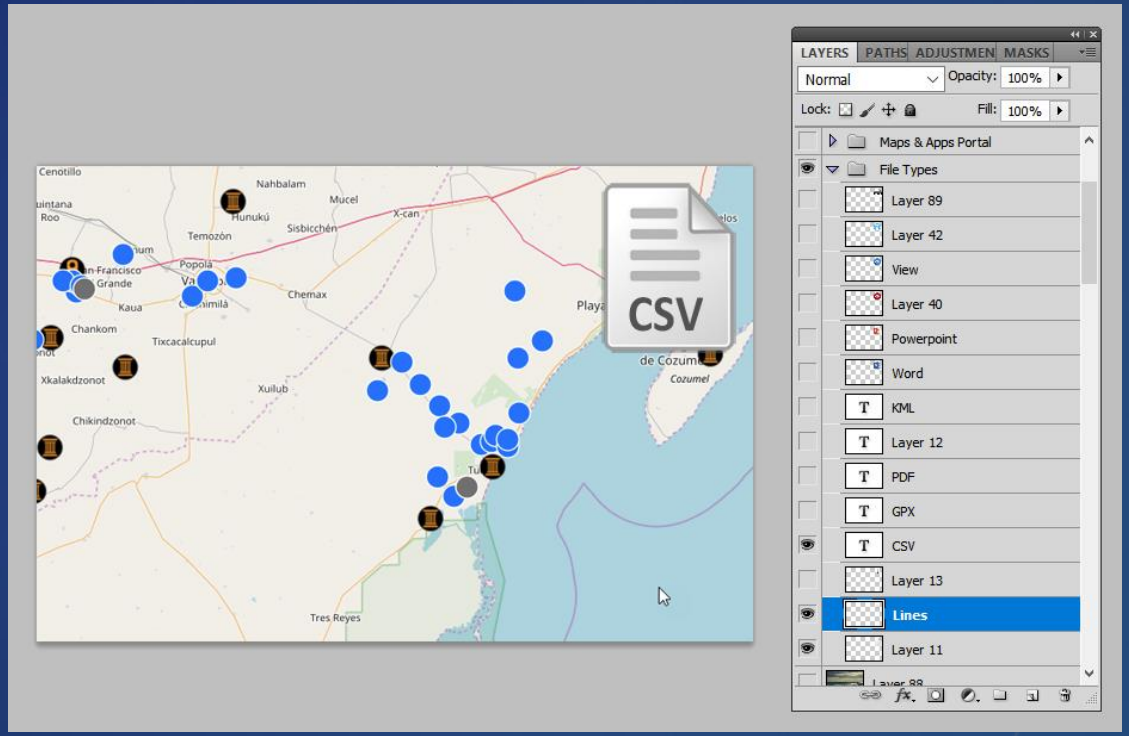


	A	B	C	D	E
1		B Address	ZIP	City	St
2		D 26951 Aliso Creek Rd	92656	Aliso Viejo	C
3		D 2111 Se Bristol St	92660	Newport Beach	C
4		D 4547 Campus Dr	92612	Irvine	C
5		D 2112 S State College Blvd	92806	Anaheim	C
6		D 24941 Elder Ave	92557	Moreno Valley	California
7		D 3100 W Florida Ave	92545	Hemet	California
8		D 1964 W Ramsey St	92220	Banning	California
9		D 11879 Artesia Blvd	90701	Artesia	California
10		D 1171 E Imperial Hwy	92870	Placentia	California
11		D 4050 Lincoln Blvd	90292	Venice	California
12		D 15055 Imperial Hwy	90638	La Mirada	California
13		D 2300 N Tustin Ave	92705	Santa Ana	California
14		D 4407 Brockton Ave	92501	Riverside	California
15		D 17504 Avalon Blvd	90746	Carson	California
16		D 8028 Firestone Blvd	90241	Downey	California

Hybrid

Editing thumbnails





Free tools available on GitHub
Third-party tools are available

Item description boiler plate text

Description

A group containing a collection of resources supporting research in community and physiological ecology.

Forest trees cover over 1/3 of the land surface, and they are prominent determ
cycling and the climate. Given their importance for the wellbeing of humans a
critical that we understand the patterns in forest structure at a global scale, an
functioning of terrestrial ecosystems. We use global datasets of forest invento
data to understand the functional biogeography of forests, and its relationship
functioning at broad spatial scales. This research will also help us to understan
and restore forests in the fight against biodiversity loss, poverty and climate ch

---

The Crowther Lab is a research group based at ETH Zürich. We are a collection of researchers, scientists and technical staff with a range of expertise from microbiology to digital marketing, all working with one thing in mind – the climate. We study the ecological processes that influence the climate to help us predict and combat anthropogenic climate change.

Terms of Use

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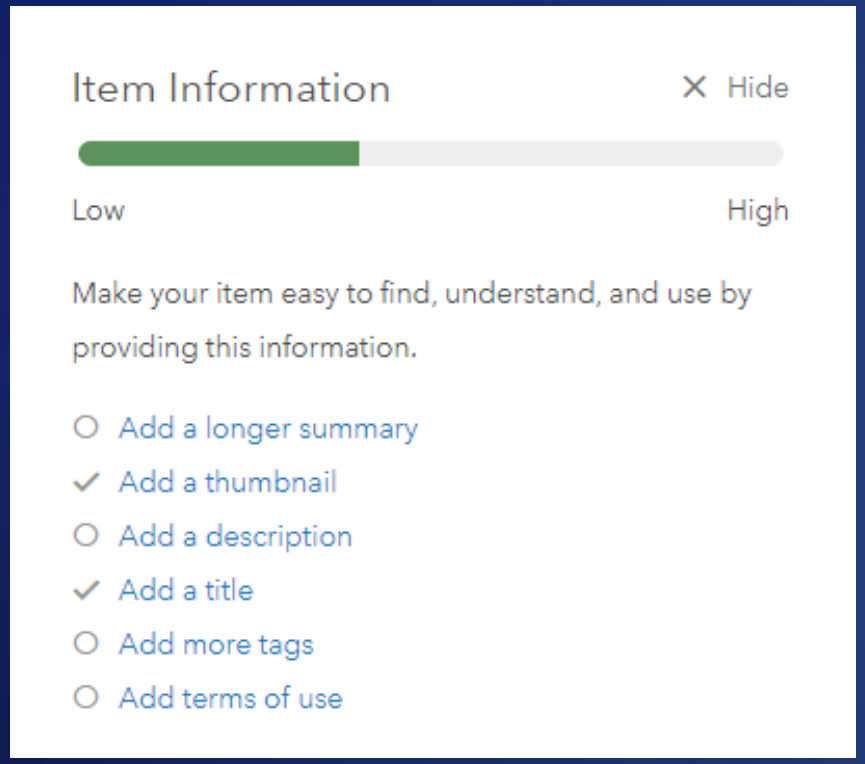
Can be automated using Python
Third-party tools are available

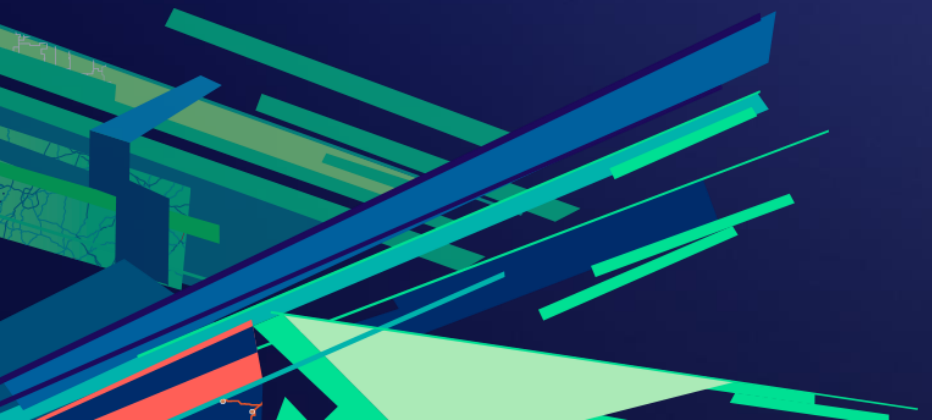
Item completeness guide



A measure of item completeness

Best Practice: Organize your organization

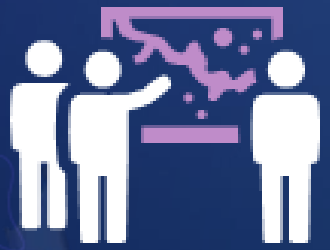
ESTABLISH A FRAMEWORK FOR SUCCESS

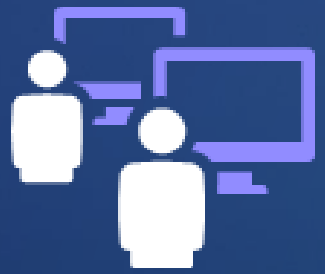


Groups are a framework for your organization

Supporting departments, projects, workflows, collaboration

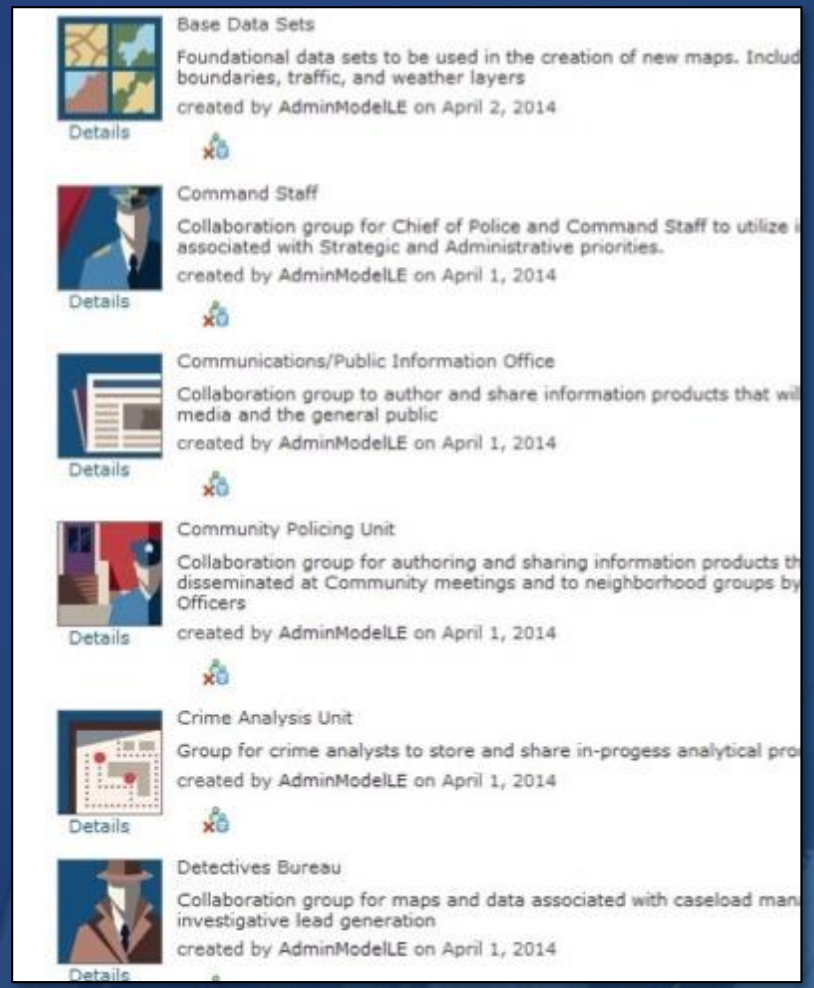
- Access to resources
- Collaboration within the organization
- Collaboration between organizations





What groups do you need?

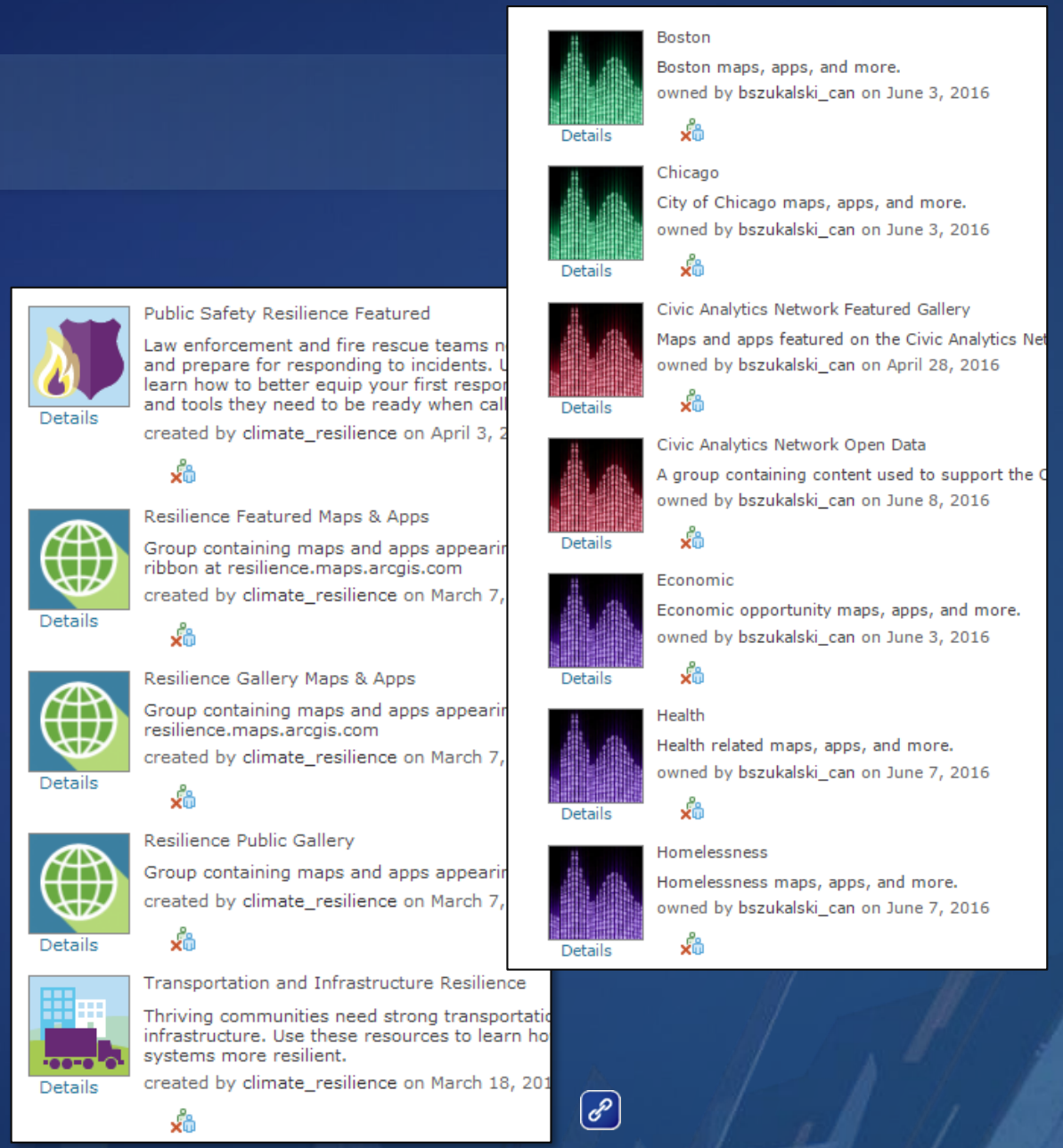
- Departments in your organization
- Org chart
- Current projects
- Solution templates



Group best practices

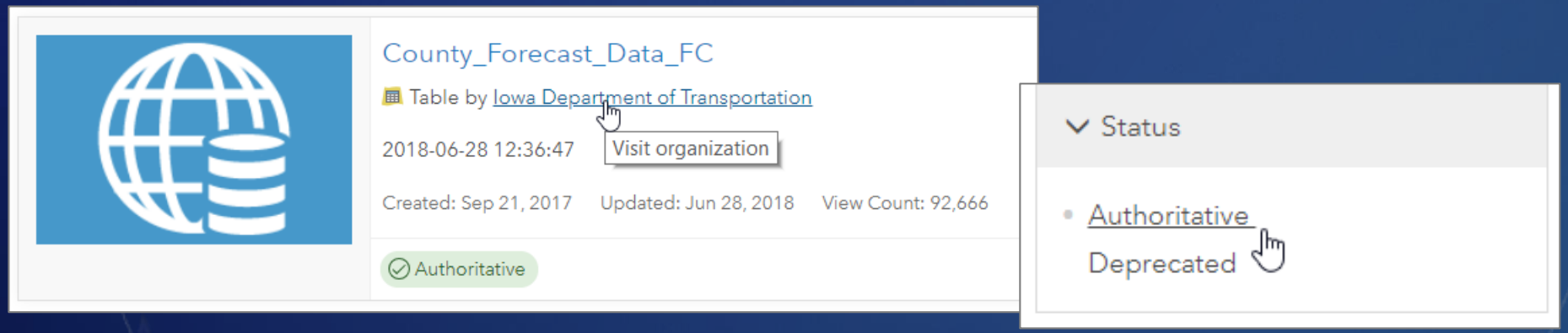
- Use consistent visual cues
- Intuitive naming conventions
- Add useful descriptions
- Pre-populate with content
- Auto-assign members

Create a destination



Content Status

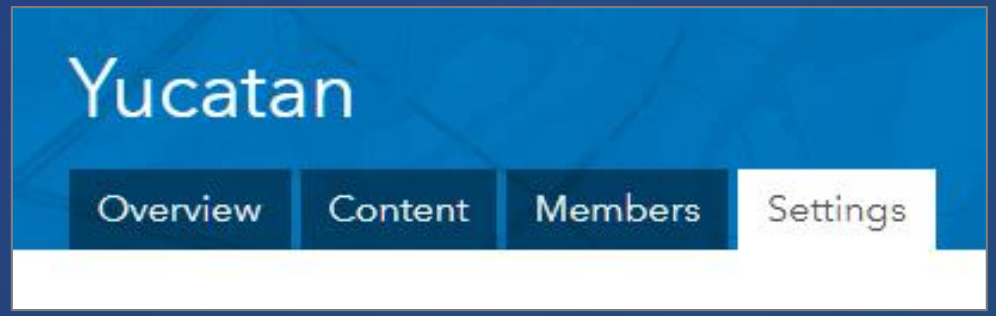
- Items can be designated authoritative or deprecated
- Members can search by Status
- Only searchable within your organization*



*More on publicly discoverable authoritative content later…

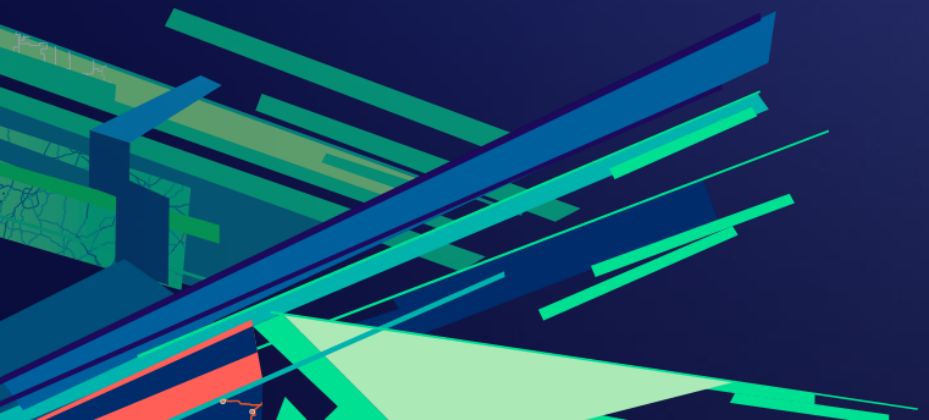
Group settings

- Groups can be:
  - Private (only owner and members can find)
  - Organization only
  - Public
- Membership:
  - Users can request membership
  - Admission by invite only
  - Anyone
- Contributors:
  - Only group owner
  - All members of the group

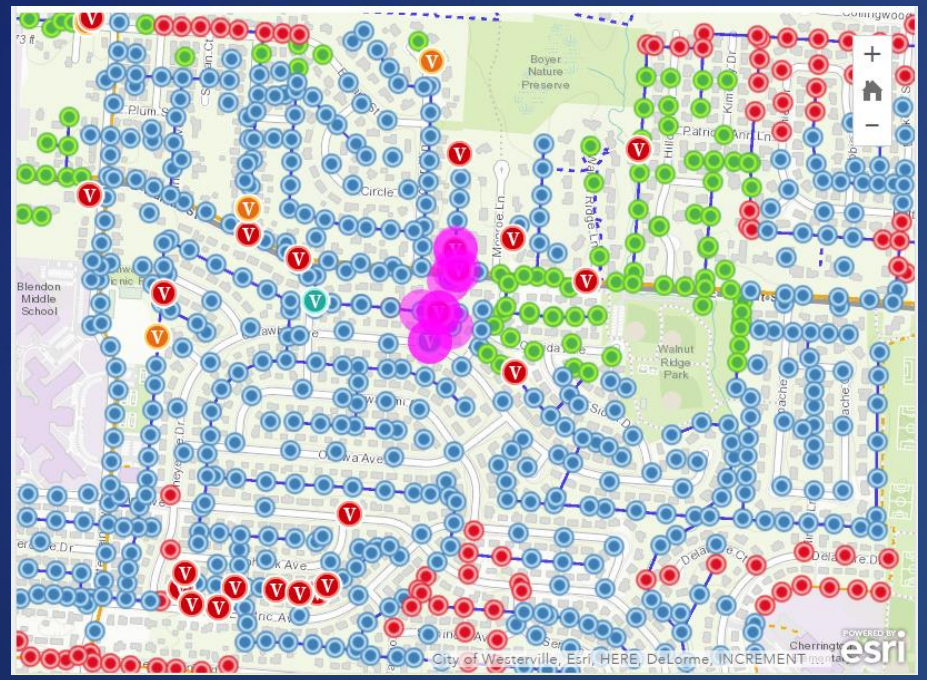


Best Practice: Create interesting and useful apps

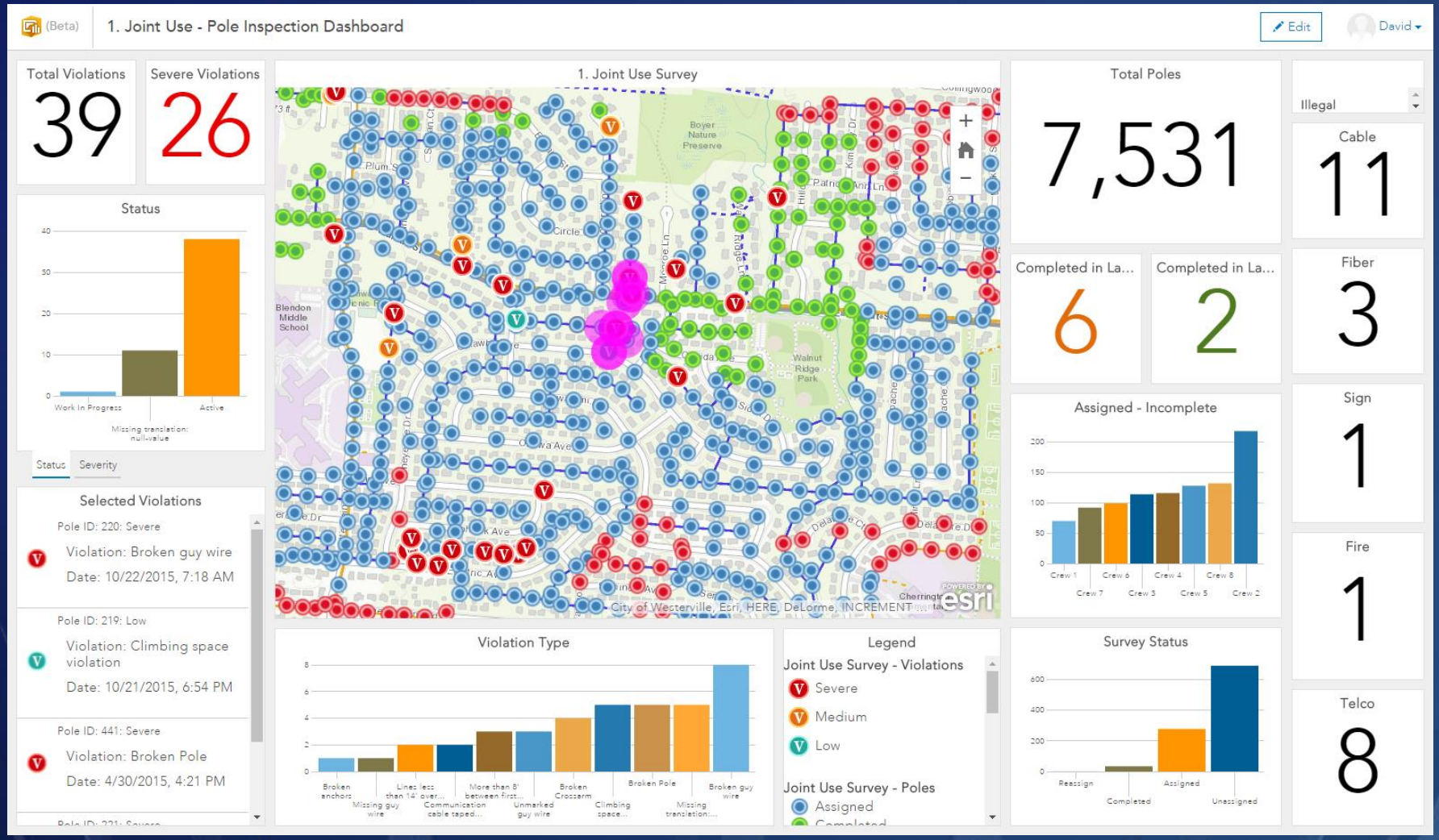
GREAT APPS THAT SUPPORT WORKFLOWS,
DELIVER ACCESS, TELL STORIES…



Apps complete the user experience

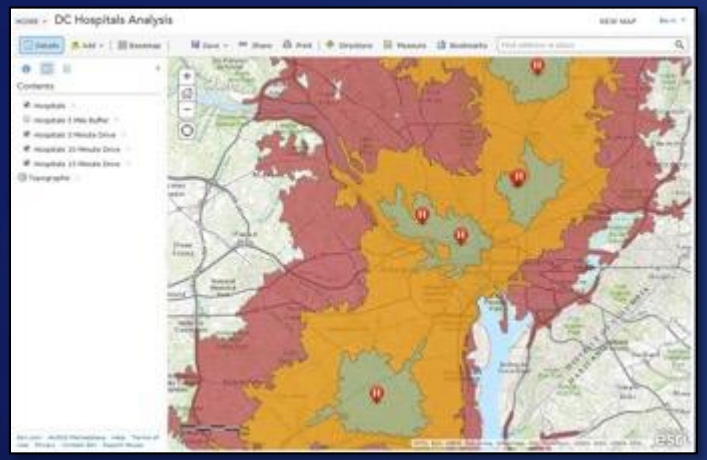


Apps complete the user experience

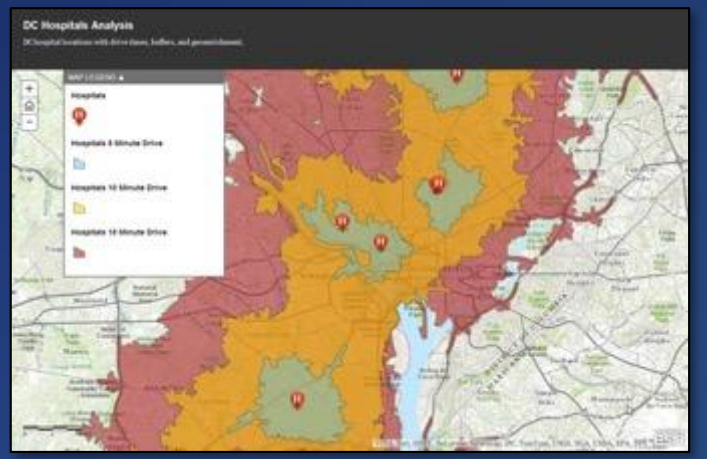


Map viewer vs. apps

Deliver your map in the right context

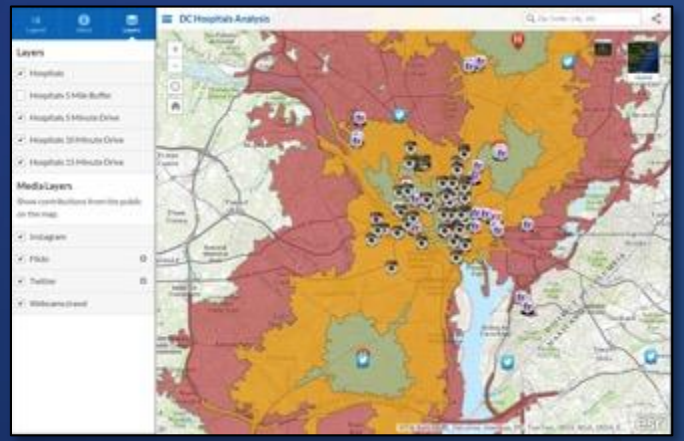


Map viewer (for authoring)



Storytelling basic

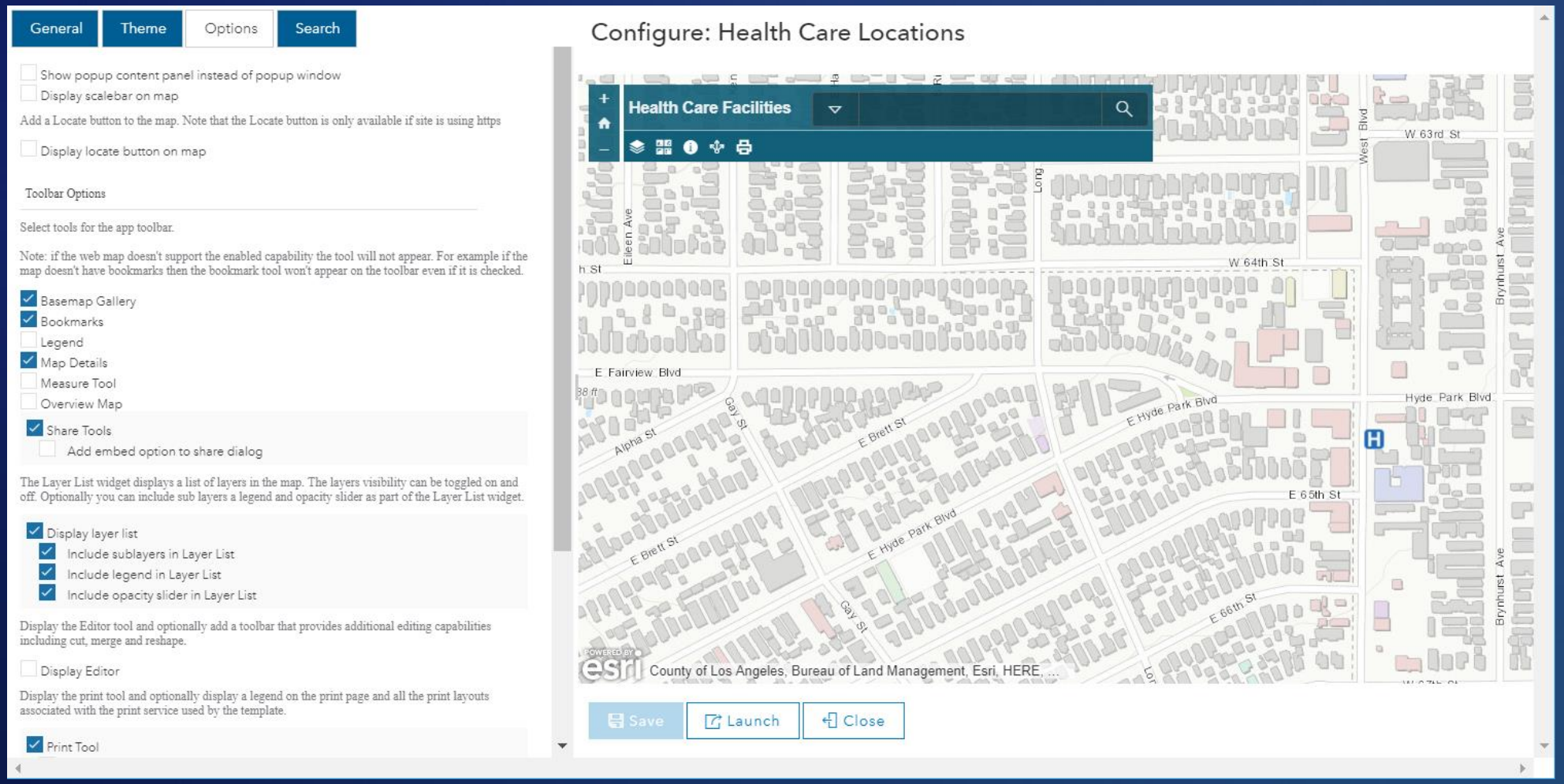
Public Information



Story Map Tour

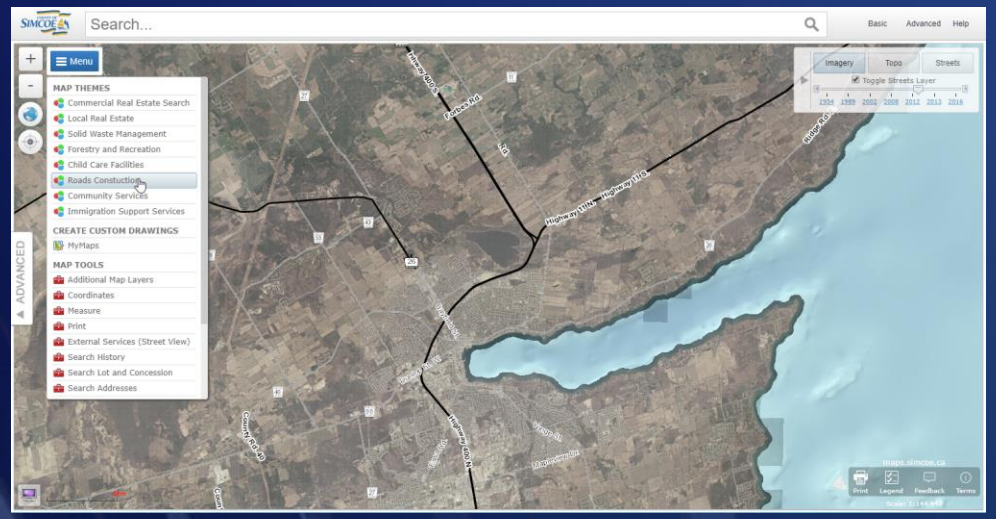
Try a "quick share"

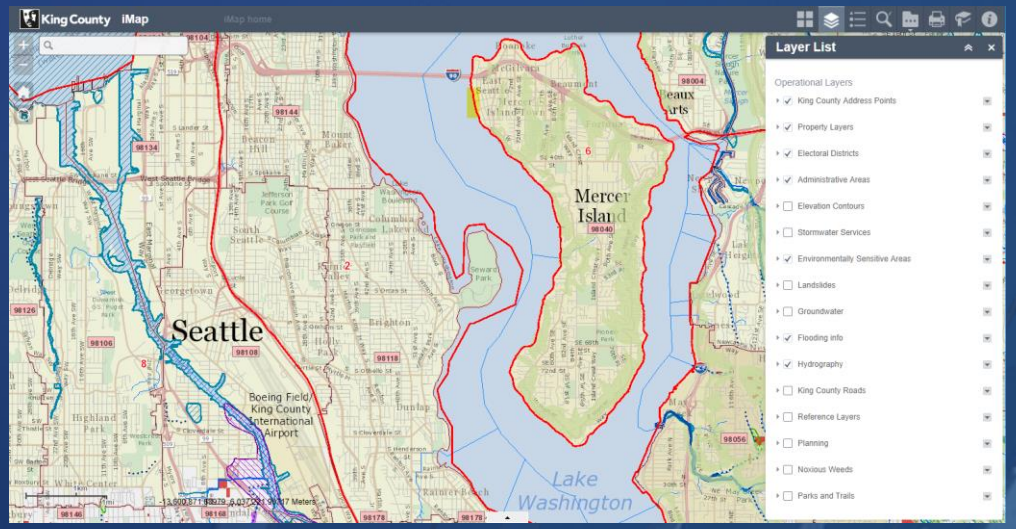
Easy to configure



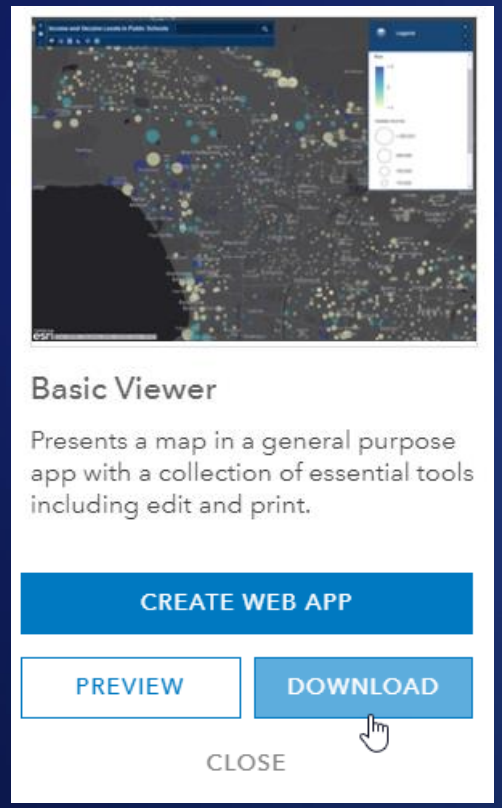
Web AppBuilder

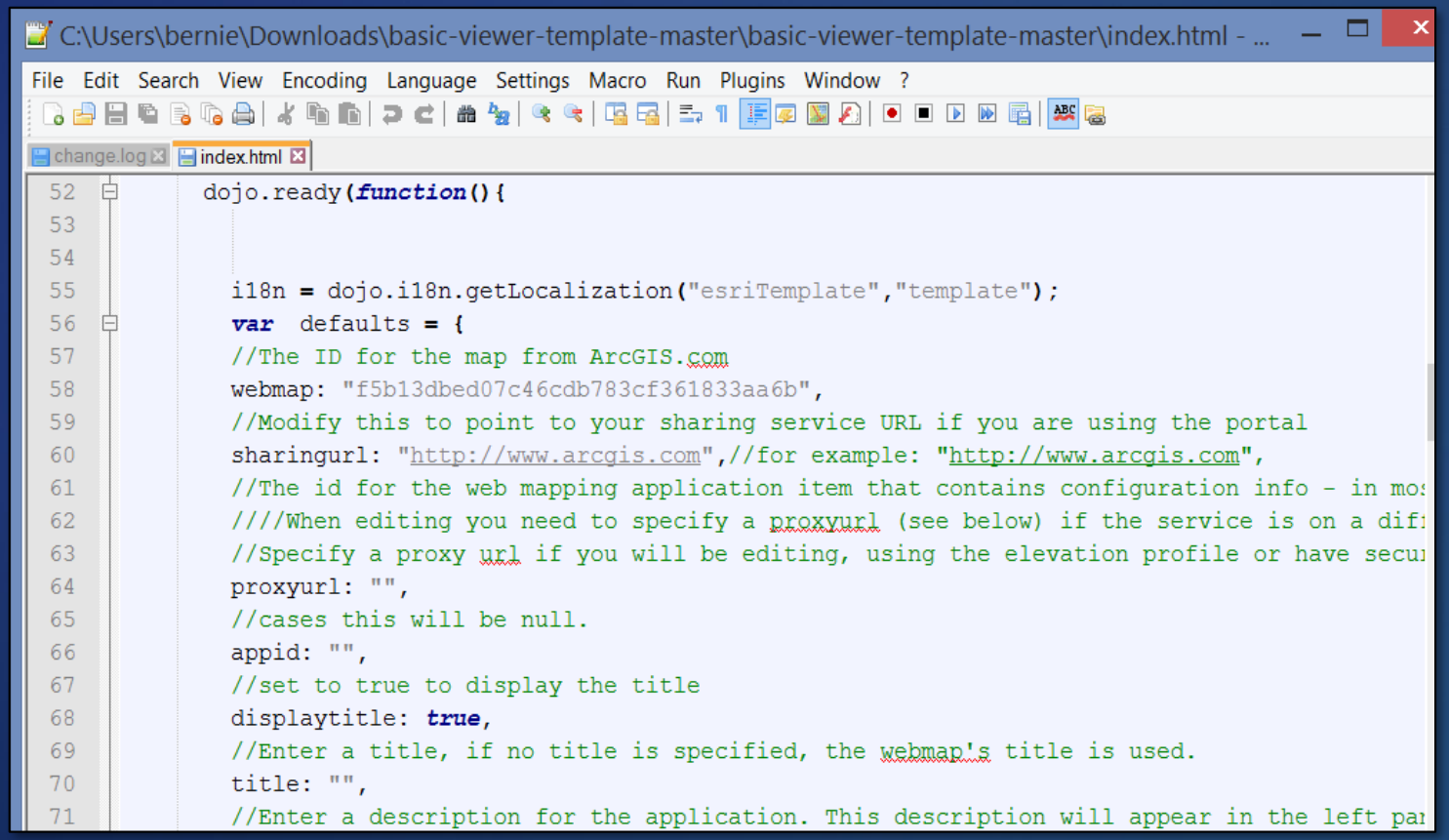
- Build apps using widgets
- Easiest way to create custom configurable apps for your organization
- Developer edition





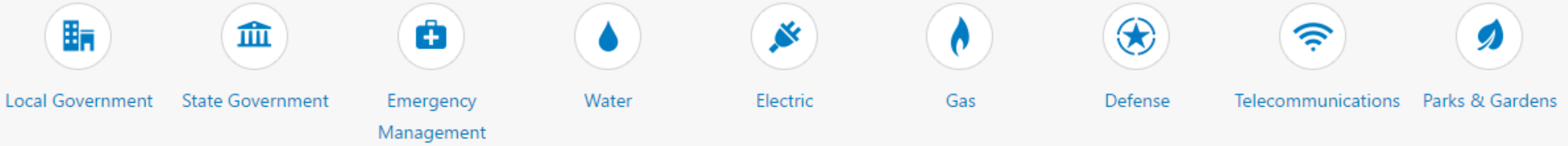
Alternative: Download source, modify and host





ArcGIS Solution templates for organizations

- Tailored to specific domains
- Follow best practices & trends
- Include:
  - Platform (ArcGIS organization) configurations
  - Configurable apps and map resources
  - Community



Example: ArcGIS for Local Government

Maintain Property I

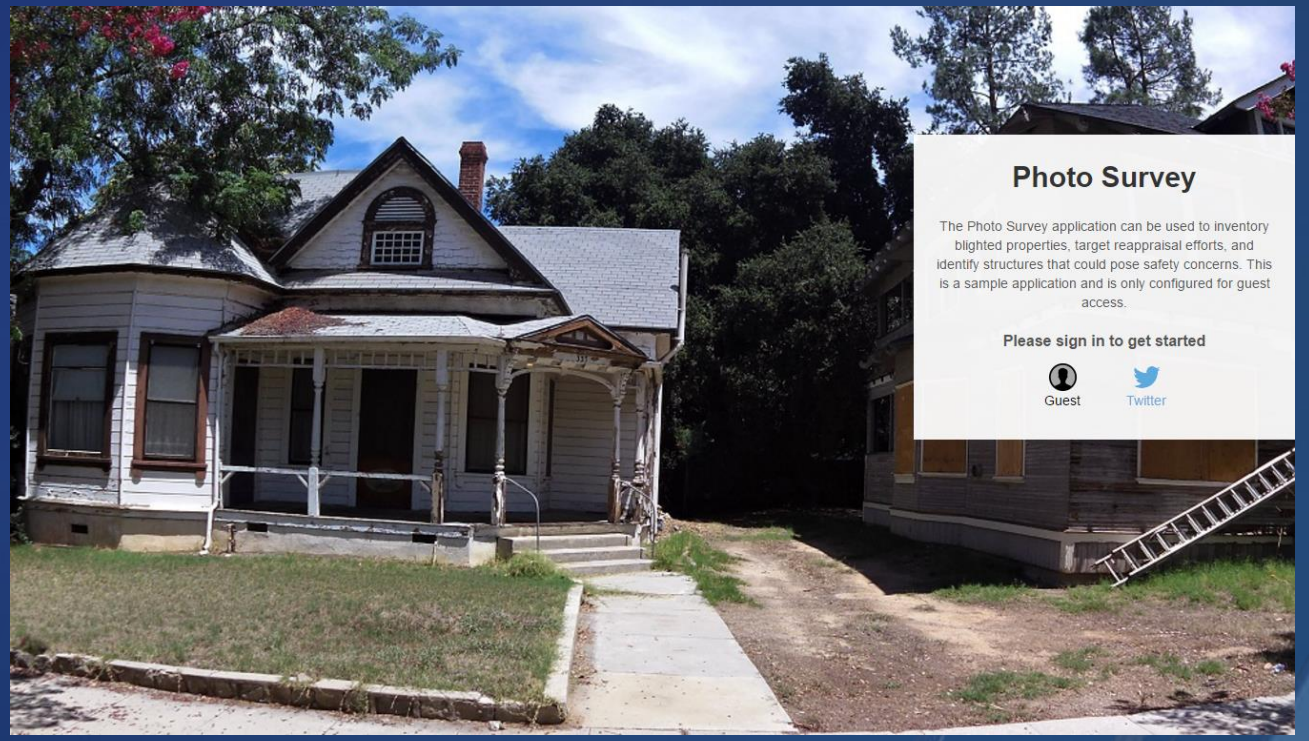
A collection of maps and apps used
technicians to maintain a survey fra
deeds, inventory tax parcel descript
books, and publish property inform

Learn more

Photo Inventory Properties

The Photo Survey application can be used by local governments to publish street-level photo collections and conduct focused property surveys that may identify blight, damaged structures, or construction activity.

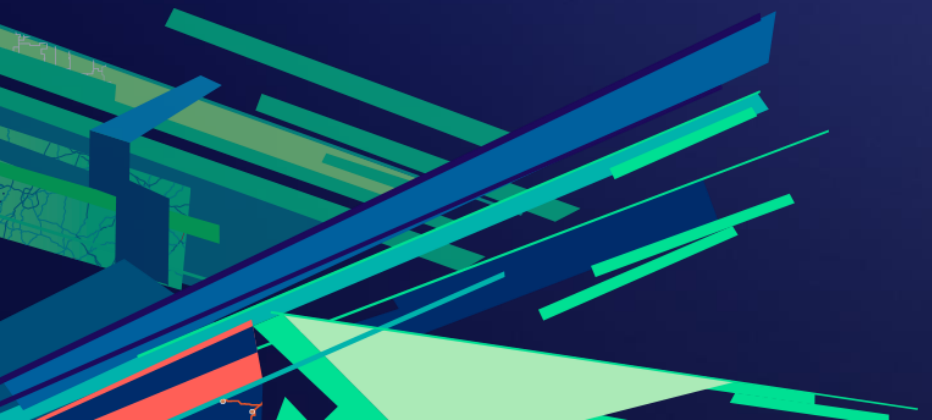
Download
Try it Now
Learn more



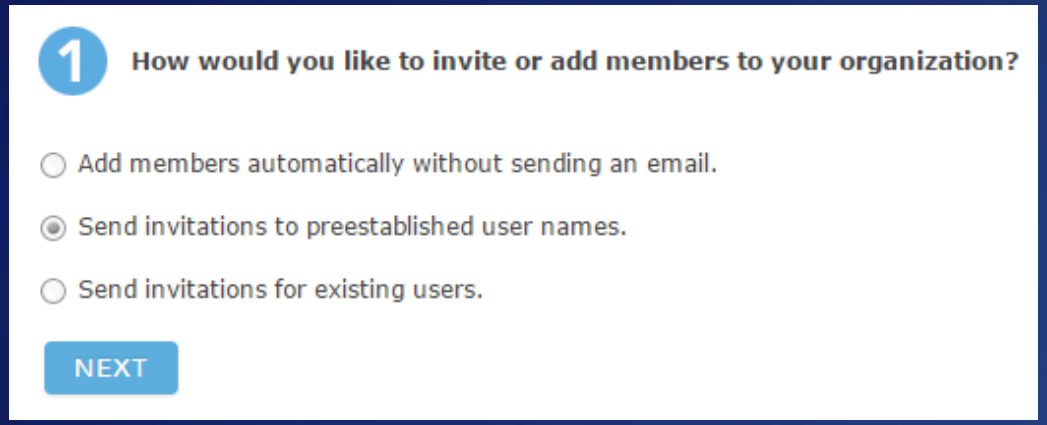
Note information model requirements

Best Practice: Invite members and make them feel welcome

PROVIDE A GREAT EXPERIENCE FOR MEMBERS



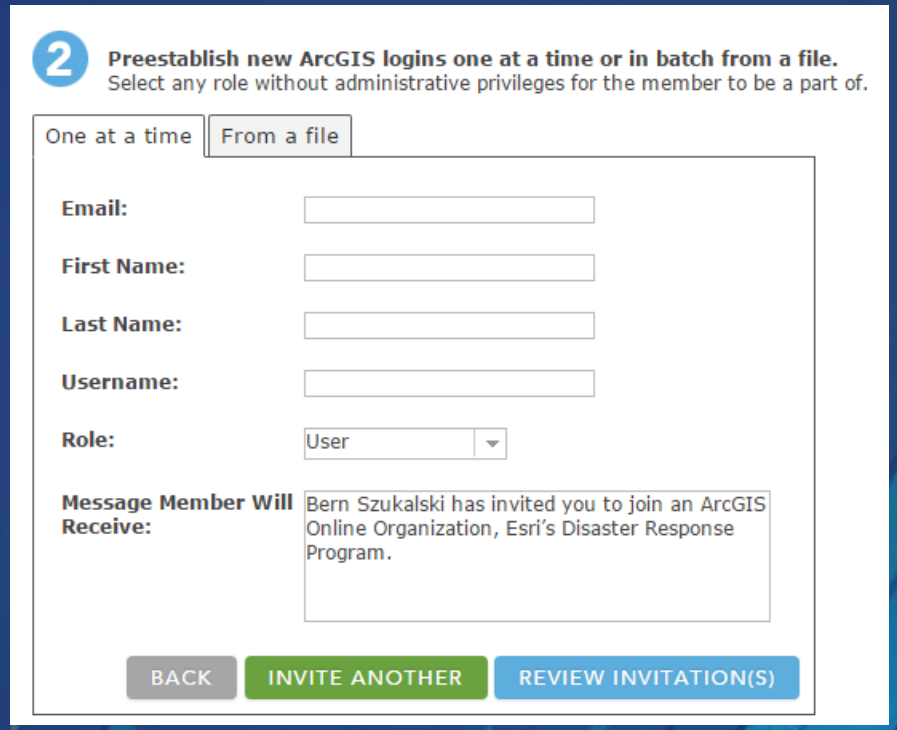
Invite users



(Pre-establish recommended)

Use enterprise logins
(Best)

Invite and establish Role

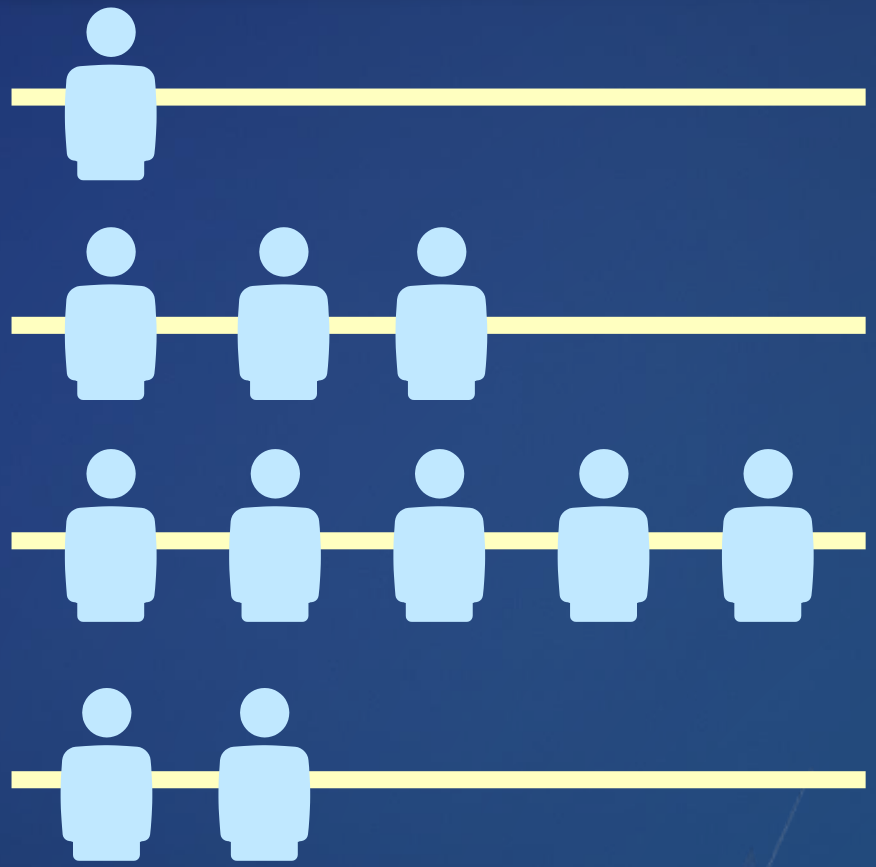


As an admin…

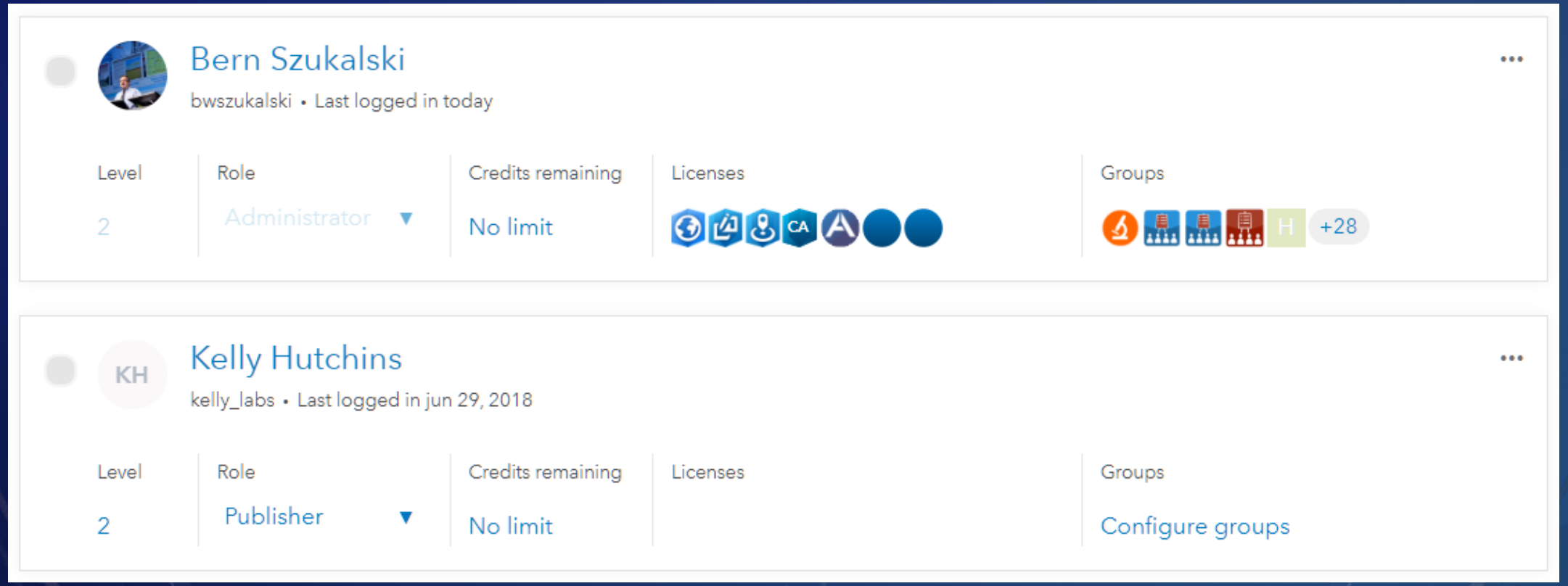
- Assign roles
- Assign users to groups
  - Make sure groups have good content to get them started
- Assign credit limits (if desired)
- Ensure users complete a profile
- Monitor and mangage

Organization roles

- Built-in roles
  - Administrator
  - Publisher
  - User
- Custom roles
  - Based on templates
  - Created by an administrator
- User Types

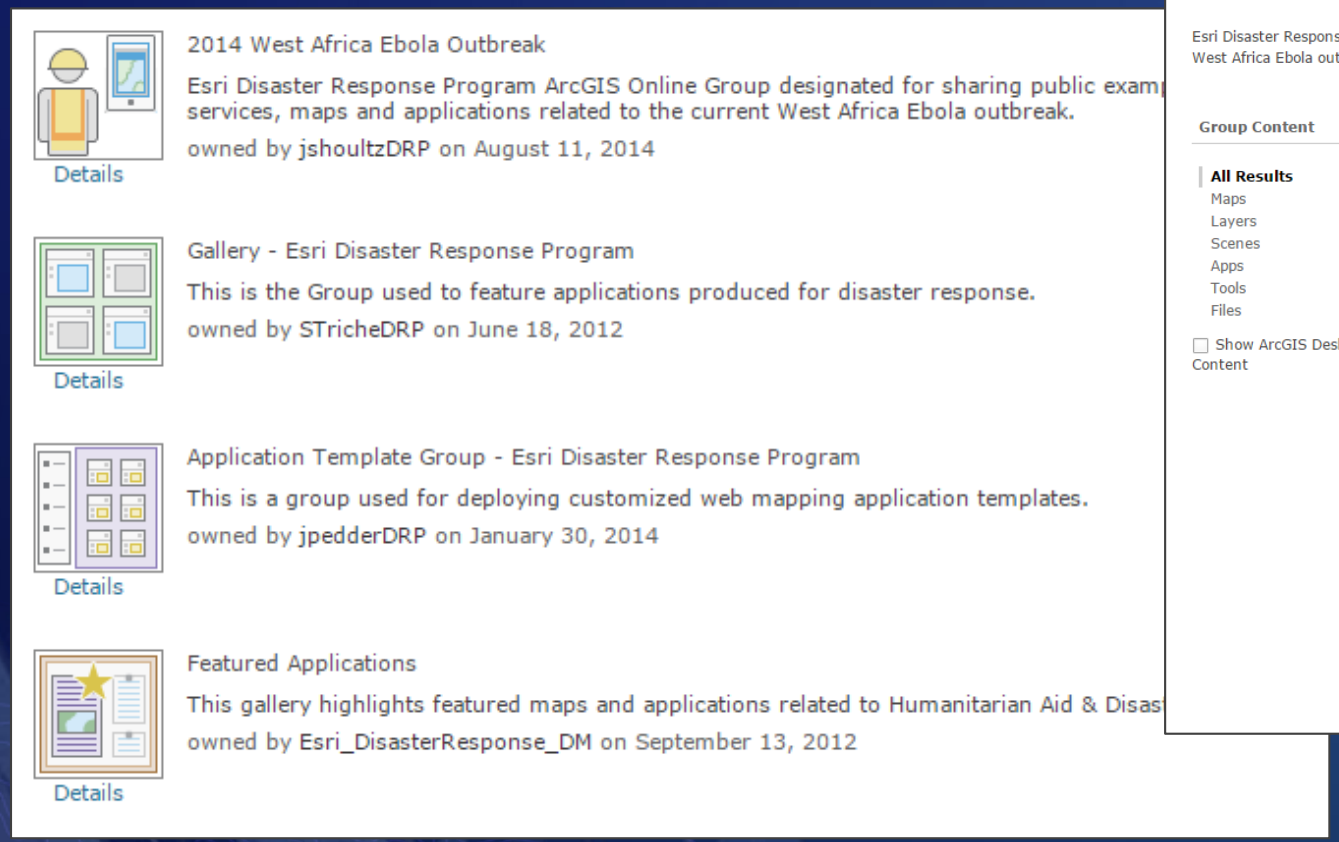


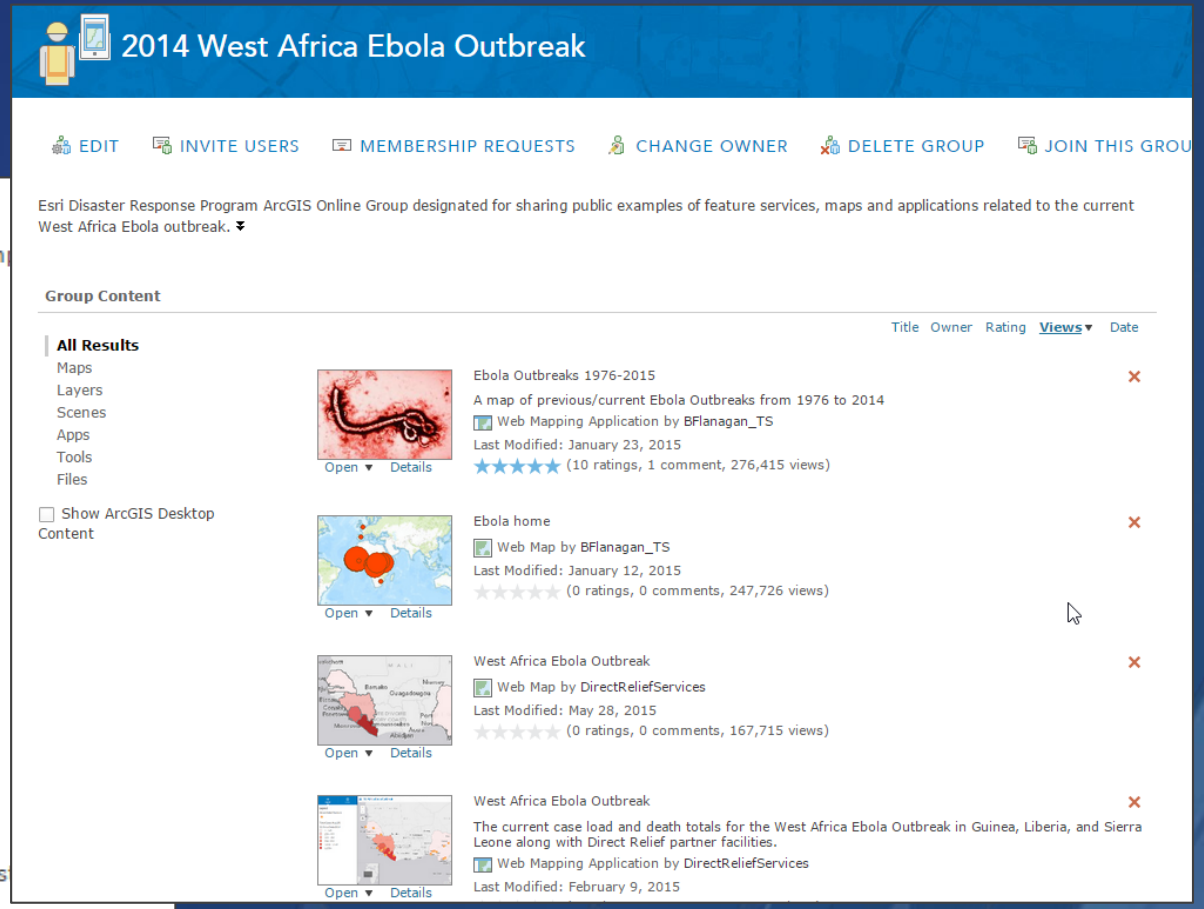
Organization settings – Budgeting credits



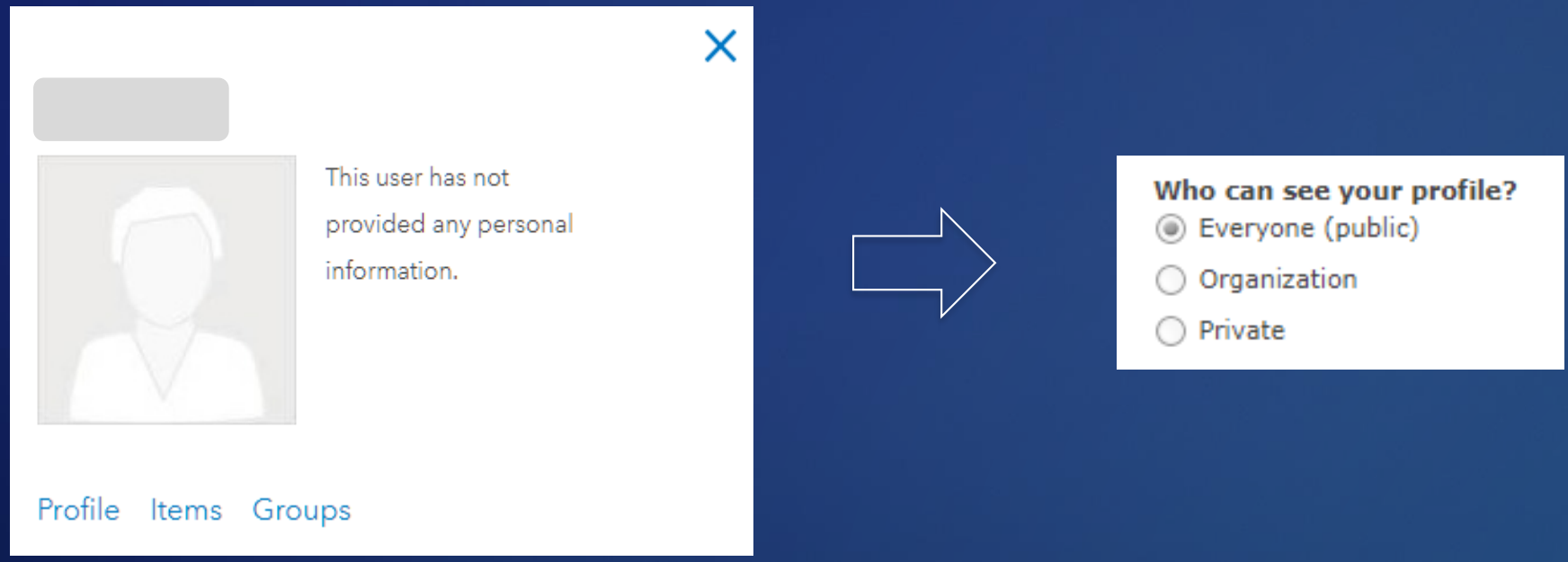
Assign member to meaningful groups

Pre-populate groups with useful content





User profiles



Profiles

Thumbnail, name email

Your Bio

Profile Visibility

Licenses

Bern's Profile

Click thumbnail to change image.

First Name
Bern

Last Name
Szukalski

New Email
bszukalski@esri.com

Confirm Email

Username
bwszukalski

Bio
Profile for Bern Szukalski at the ArcGIS Online Laboratory

https://bwszukalski.maps.arcgis.com

bszukalski@esri.com&#10
;
Phone: 909 793-2853
x1315

Mobile: 909 499-
0584

Twitter:
@bernszukalski

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Link Your ArcGIS Accounts
Manage Linked Accounts

Password
CHANGE PASSWORD

Security Question
What city were you born in?

Answer

Who can see your profile?
- (•) Everyone (public)
- ( ) Organization
- ( ) Private

Language
English-English

Region
United States

Units
US Standard

Level
2

Role
Administrator

Organization
ArcGIS Online Labs

Organization URL
https://bwszukalski.maps.arcgis.com

Licensed Products
ArcGIS Pro
GeoPlanner for ArcGIS
ArcGIS Community Analyst
ArcGIS Business Analyst

What a good profile looks like

Sandy Ebersole

Organization: Geological Survey of Alabama, Geologic Investigations Program; sebersole@gsa.alabama.gov; Specialties: Geology,

Lindsay Withers

GIS Cartography Manager at the The Trust for Public Lan
Trust for Public Land works to protect the places people
and to create close-to-home parks–particularly in and ne
where 80 percent of Americans live. Our goal is to ensu
child has easy access to a safe place to play in nature. W
conserve working farms, ranches, and forests; lands of h
and cultural importance; rivers, streams, coasts, and wat
and other special places where people can experience n
at hand. The Trust for Public Land's Vision and GIS servic
cutting-edge research and innovative mapping techniqu
parks, protect open space, and deliver community-driven
conservation plans. To learn more about The Trust for Public Land and its GIS services, visit https://www.tpl.org/how-we-work/plan

Profile Items Groups

Stephanie Smith

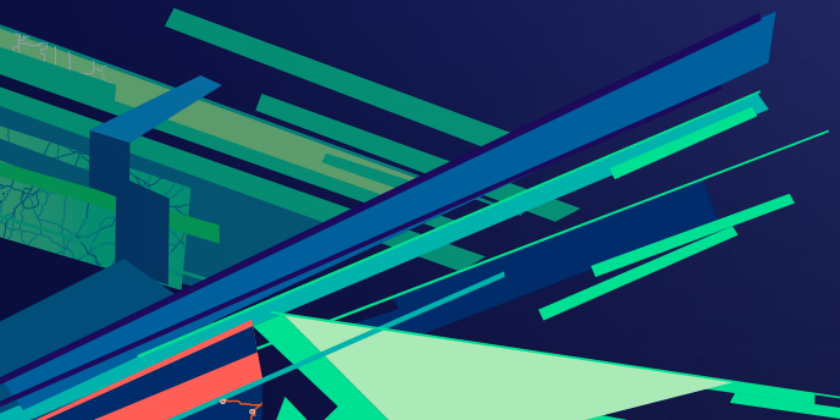
The mission of the Grand Canyon Trust is to protect and restore the Colorado Plateau – its spectacular landscapes, flowing rivers, clean air, diversity of plants and animals, and areas of beauty and solitude. The Trust was established in 1985 by Arizona Governor Bruce Babbitt and other leading conservationists as a national trust for projects in the Grand Canyon. Soon after, Trustee Stewart Udall made an impassioned plea that issues do not stop at the boundaries of the Park, and the Trust should be an advocate for both the Grand Canyon and the surrounding Colorado Plateau. The suggestion was adopted and Grand Canyon Trust emerged as a leading regional conservation organization, with offices across the Plateau and extensive connections among policymakers, land managers, scientists, and community leaders.

Profile Items Groups

Best Practice: Open access to your data, maps, and apps beyond your organization

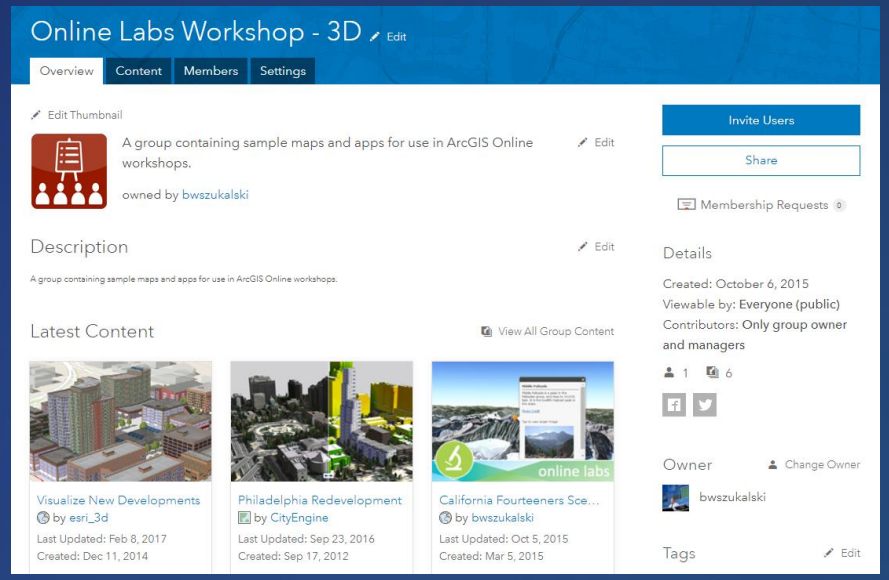
THE MORE USERS THE MORE VALUE

EXTEND YOUR REACH



Make your content discoverable

Description and Tags

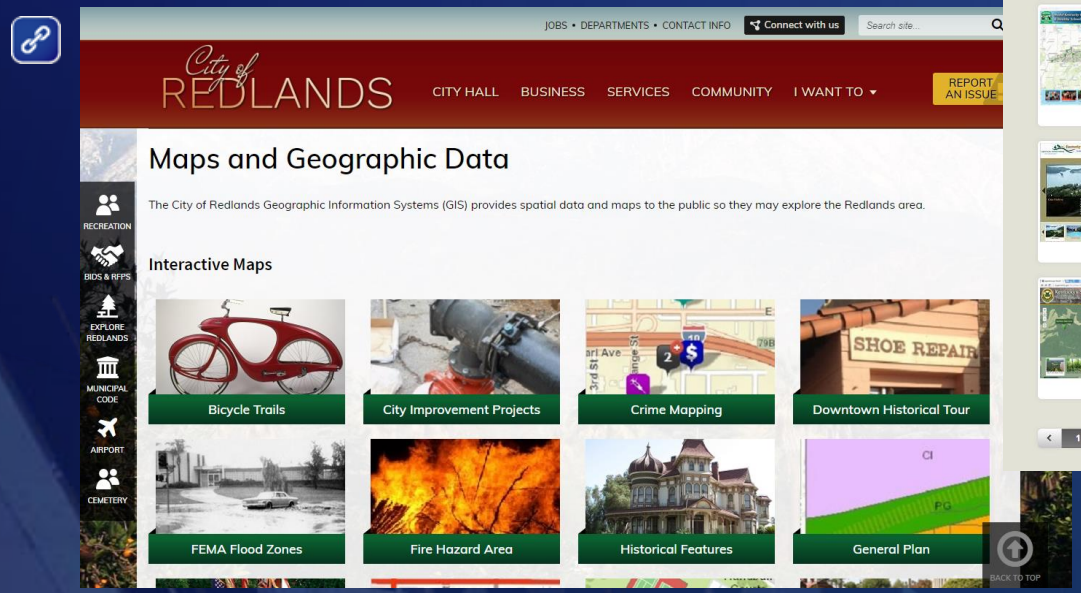


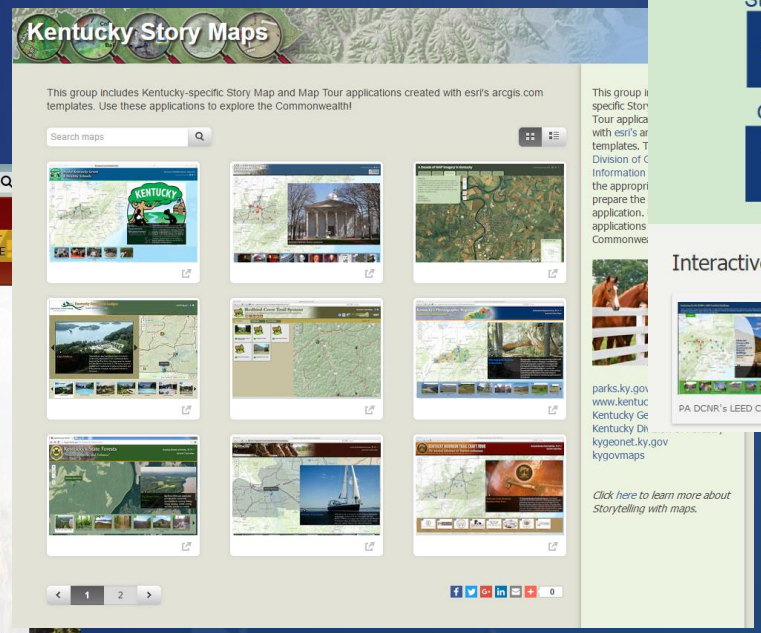
Groups and group galleries

Organization gallery

Other ways to deliver access to your content

- Embed maps and apps
- Group gallery apps & ribbons
- Open Data for ArcGIS





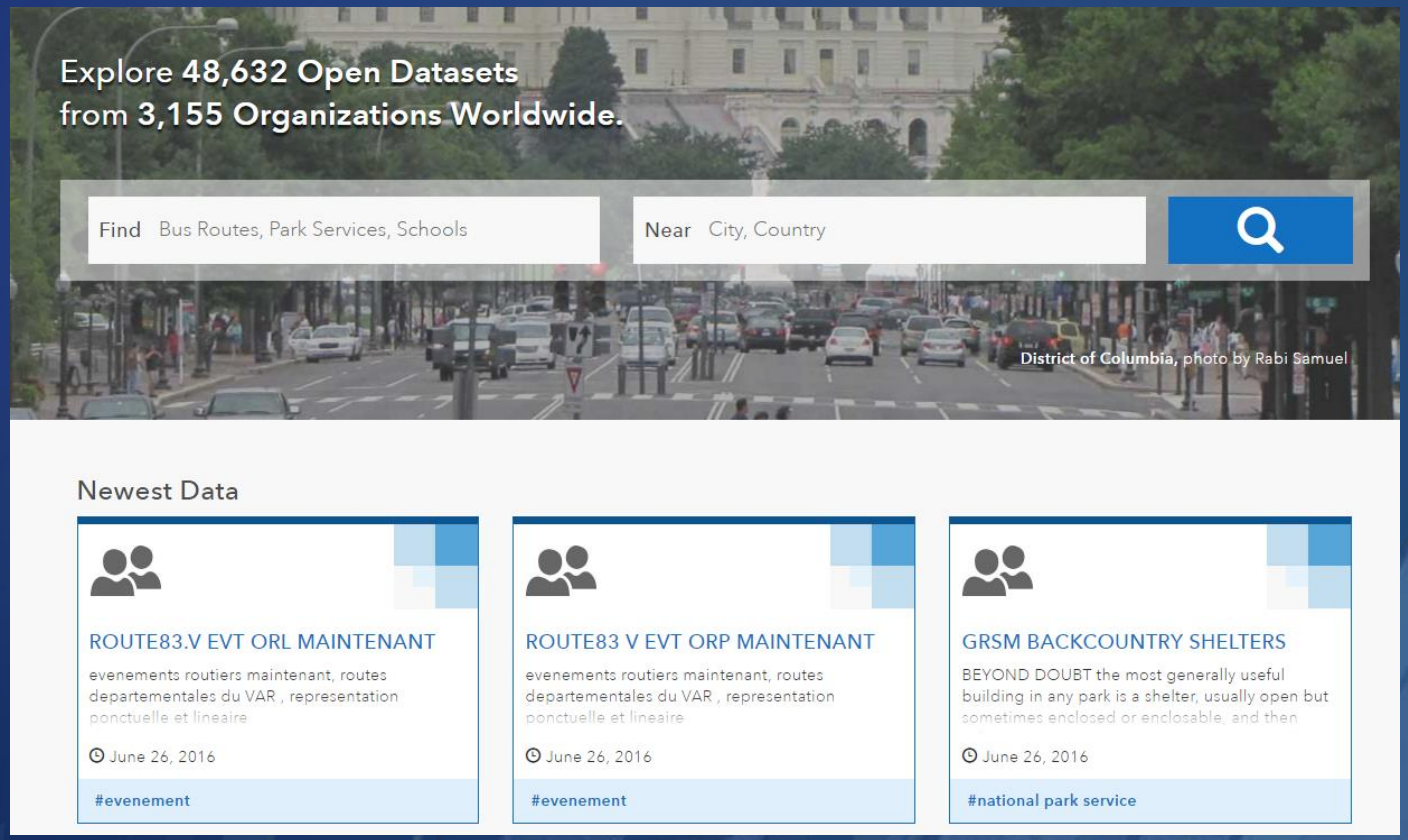
Authoritative public content

- Verify your organization via Esri customer service
- Public content marked authoritative will get badge
- Publicly searchable via Status

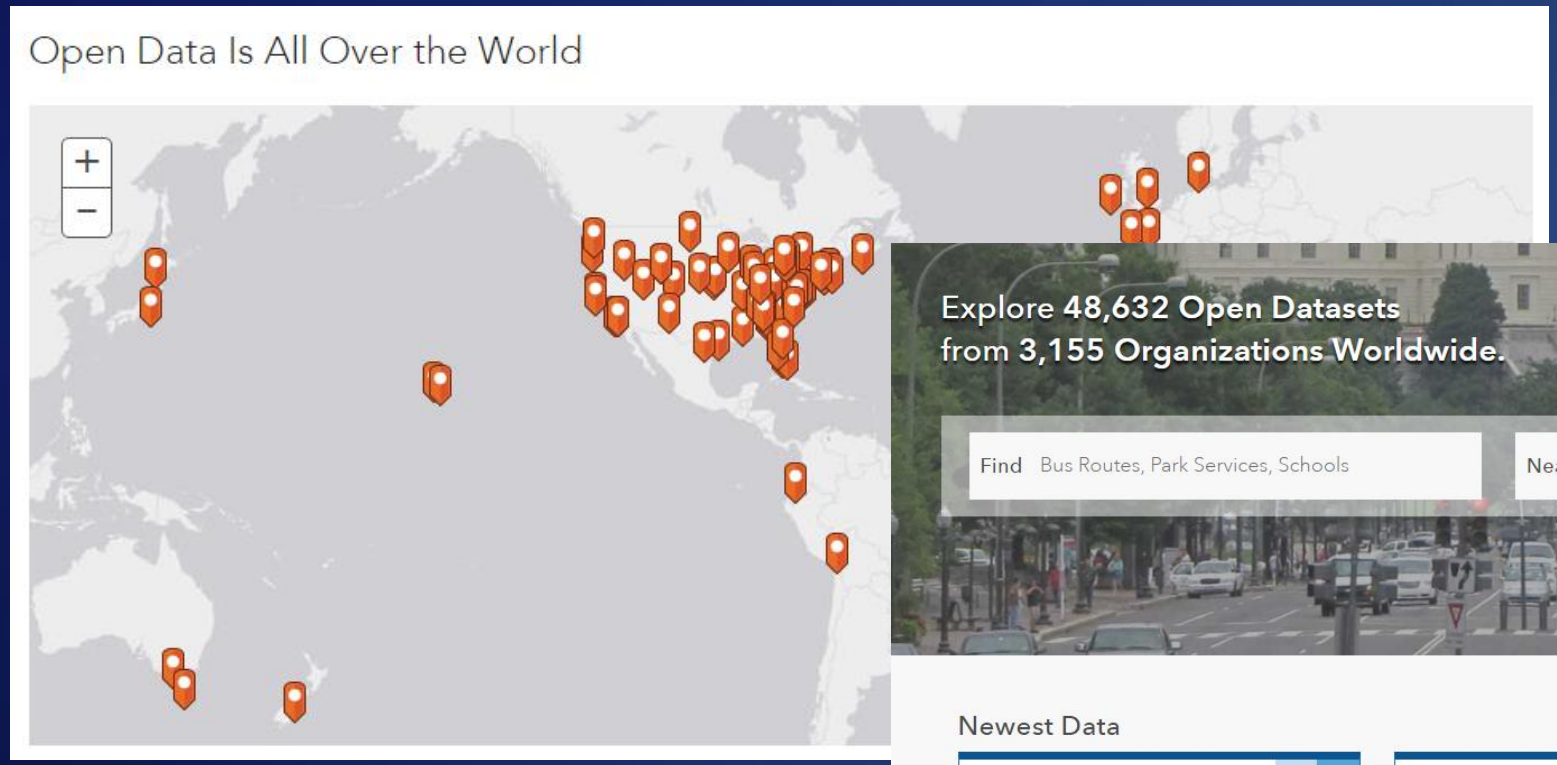
Note that link goes back to org home

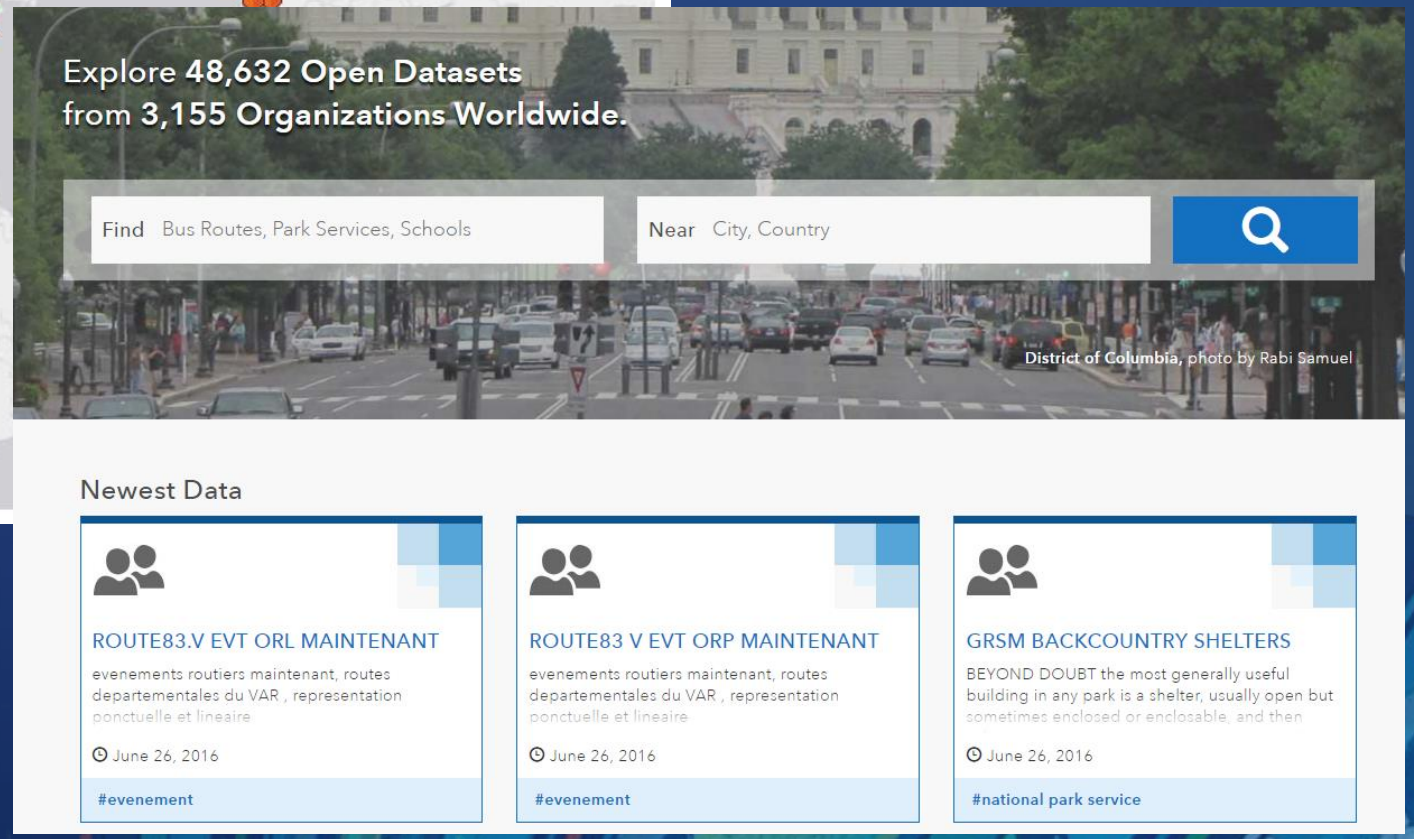
Open Data

- Built-in to your organizations
- Uses your organization content
- Group-based
- Multiple sites
- Serves data for
  - Developers
  - Contractors
  - Businesses
  - Citizens
  - Others…

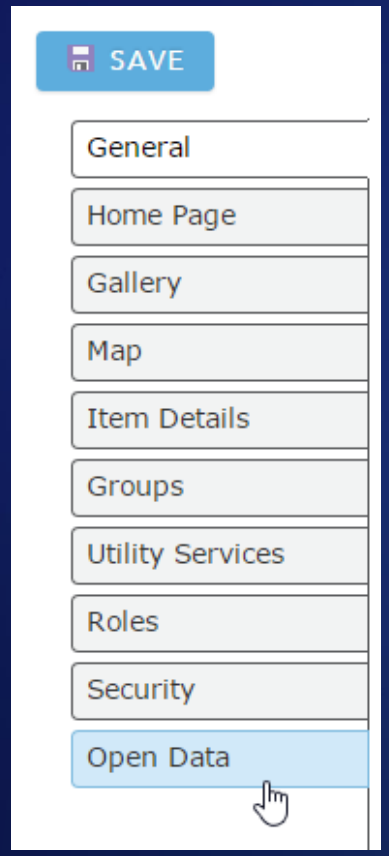


Open Data


Open Data Is All Over the World

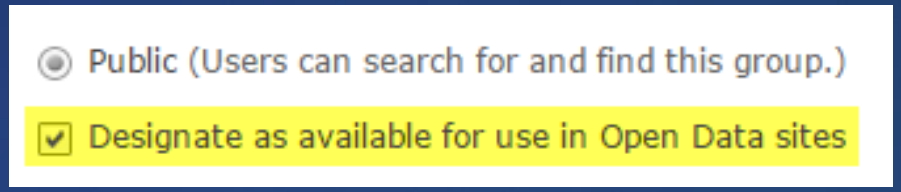

Explore 48,632 Open Datasets
from 3,155 Organizations Worldwide.
Find Bus Routes, Park Services, Schools
Near City, Country
District of Columbia, photo by Rabi Samuel
Newest Data
ROUTE83.V EVT ORL MAINTENANT
evenements routiers maintenant, routes departementales du VAR , representation ponctuelle et lineaire
June 26, 2016
#evenement
ROUTE83 V EVT ORP MAINTENANT
evenements routiers maintenant, routes departementales du VAR , representation ponctuelle et lineaire
June 26, 2016
#evenement
GRSM BACKCOUNTRY SHELTERS
BEYOND DOUBT the most generally useful building in any park is a shelter, usually open but sometimes enclosed or enclosable, and then
June 26, 2016
#national park service

Configuring Open Data



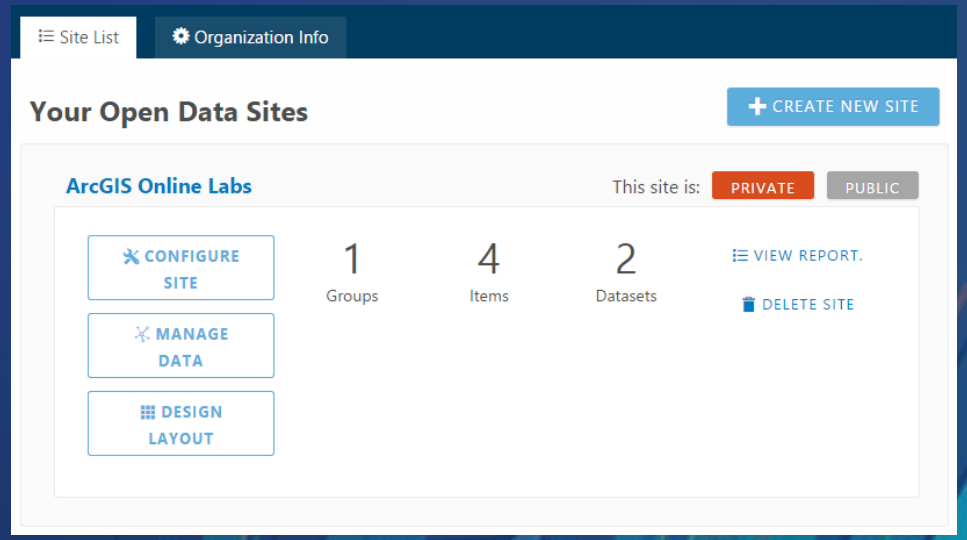
(1) Settings

(2) Enable Open Data



(3) Designate participating Groups

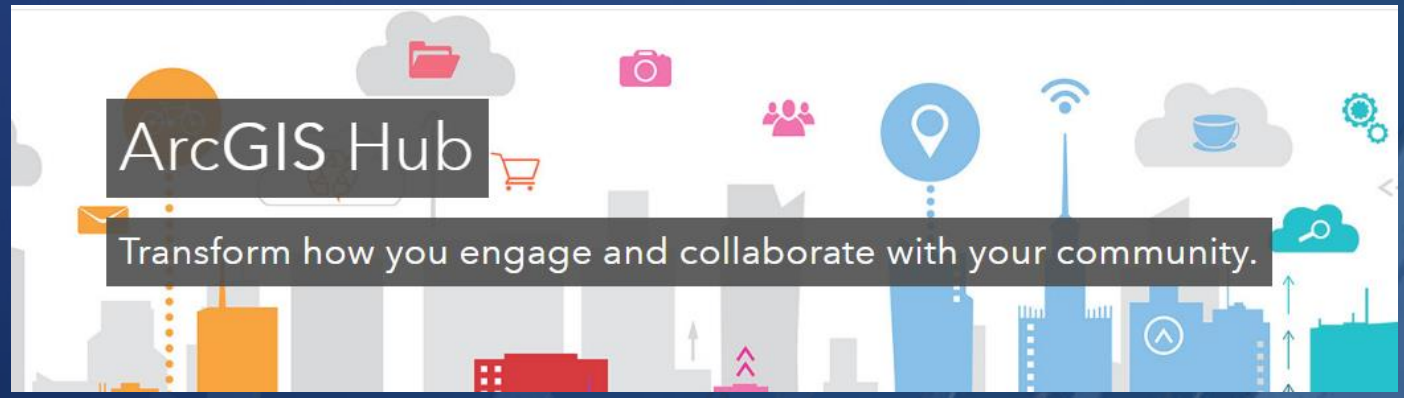
(4) Configure Sites



Now configured via hub.arcgis.com

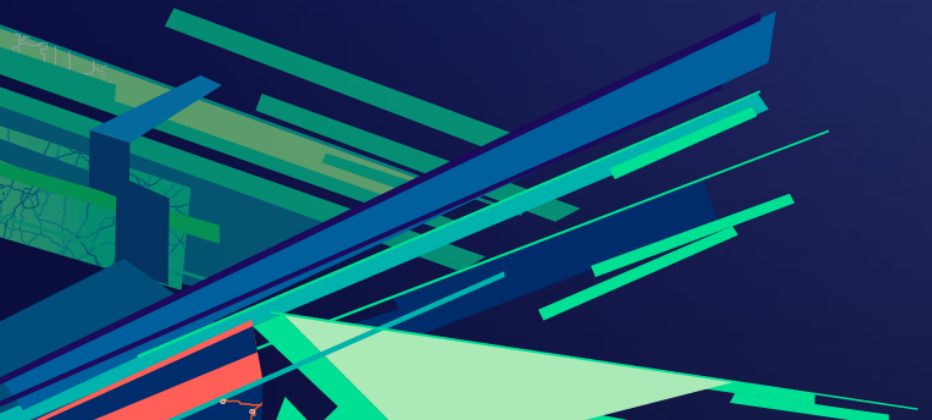
ArcGIS Hub

- Connects your org to citizens
- Initiatives
- Components:
  - ArcGIS Hub Open Data
  - ArcGIS Hub Collaboration
  - ArcGIS Hub Initiatives



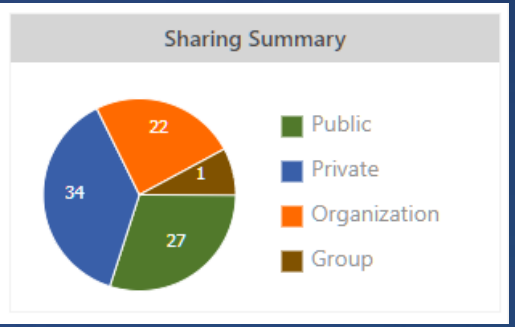
Best Practice: Curate, monitor, manage, and grow…

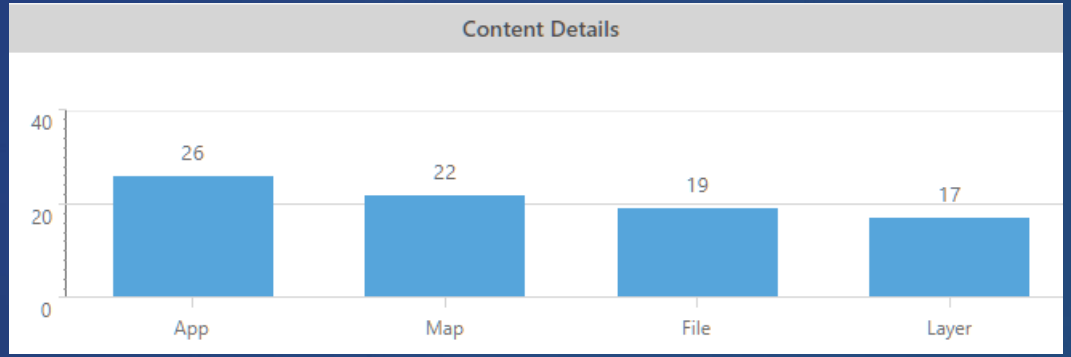
KEEP YOUR ORGANIZATION HEALTHY & VIBRANT

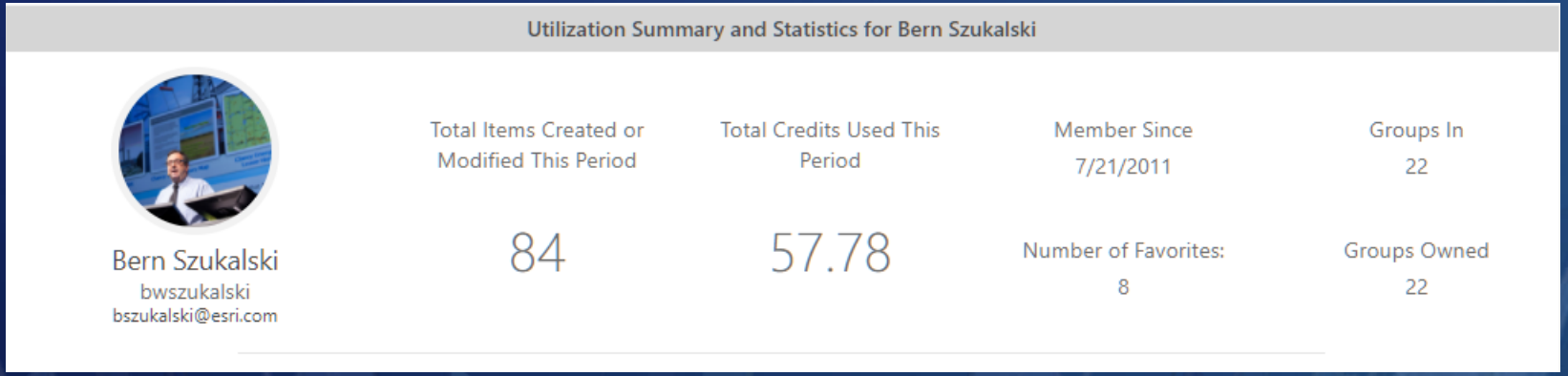


Member and item curation

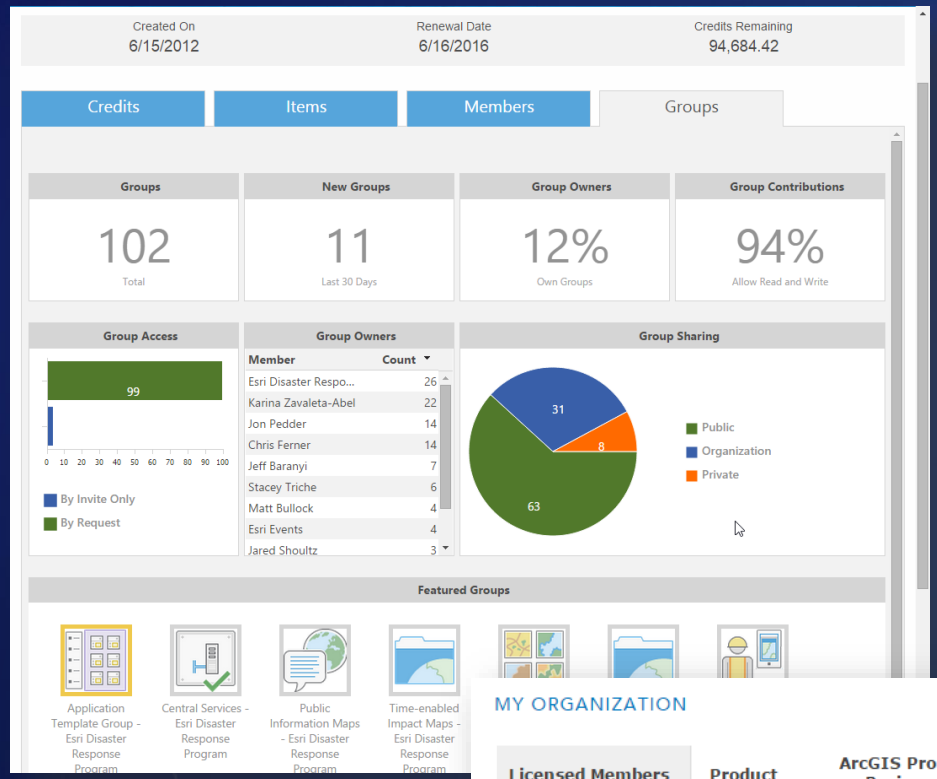
- Usage by app
- Usage by member
- Members by role and credit usage
- Utilization summary
- Pro usage
- More…

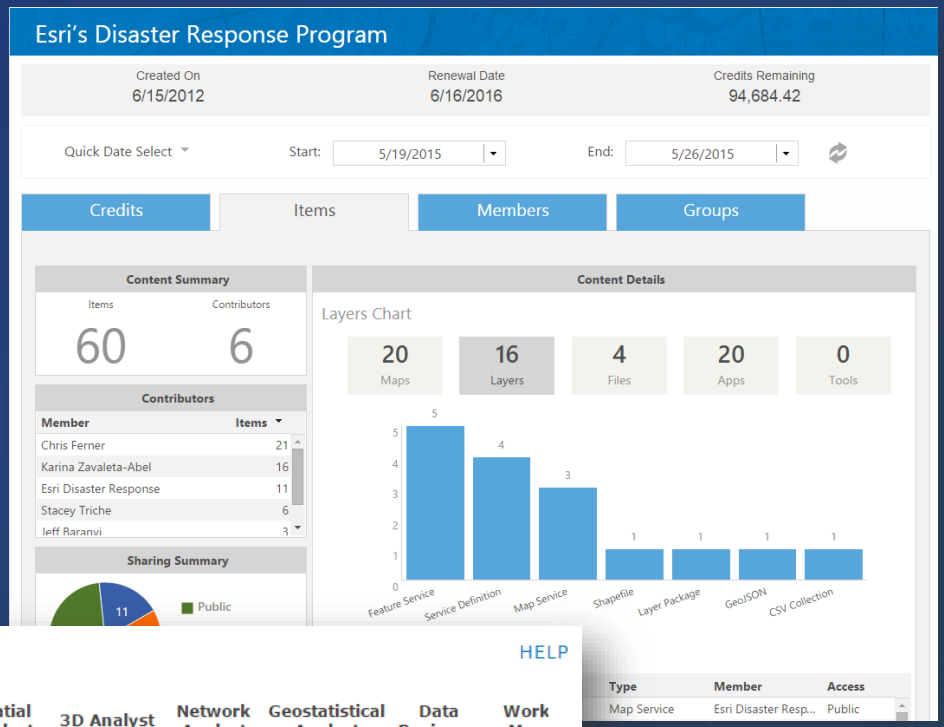


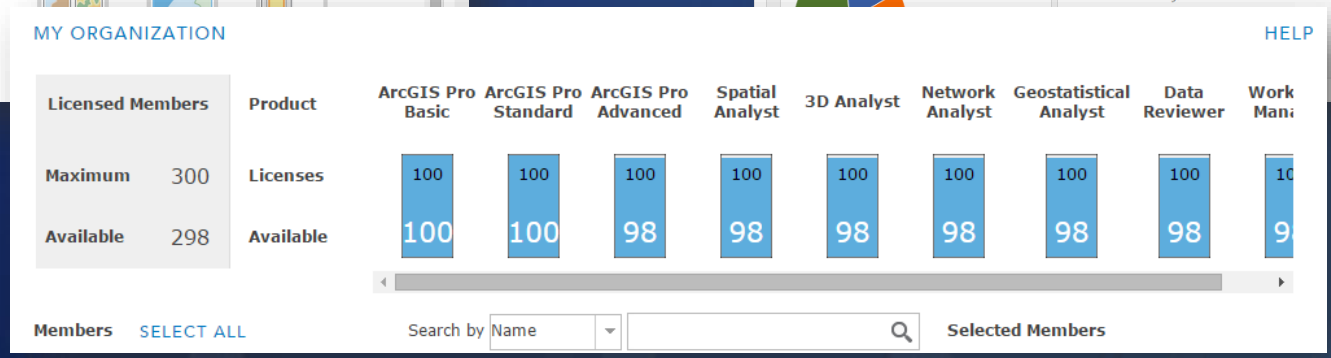




Organization Status and Management



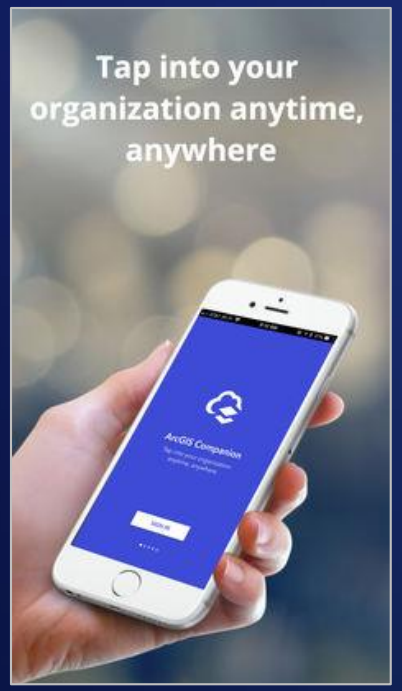


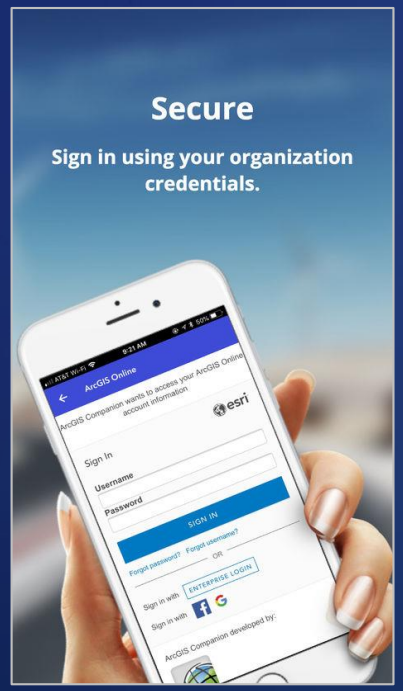


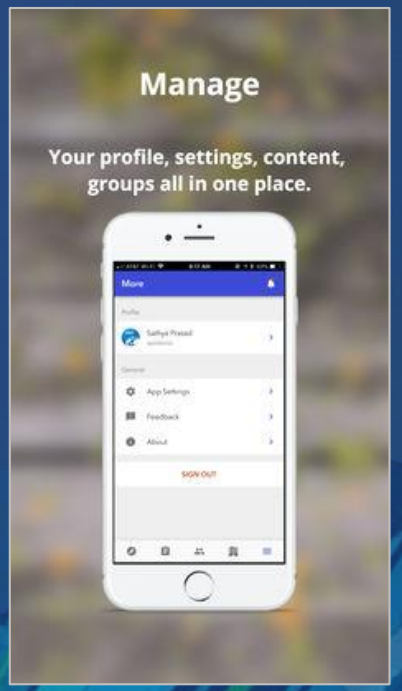
ArcGIS Marketplace – marketplace.arcgis.com

ArcGIS Companion

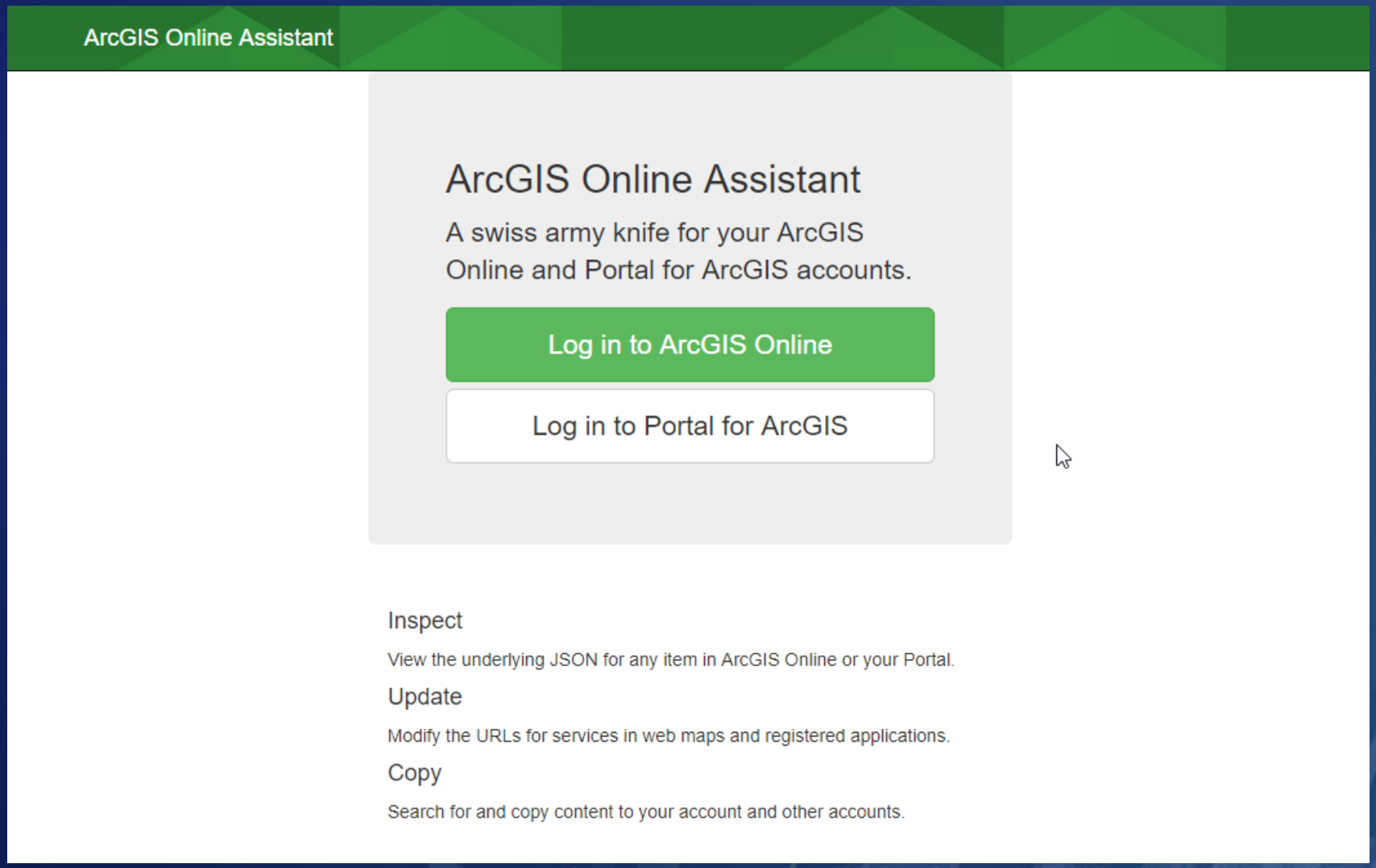
- Native app for portal access and administration



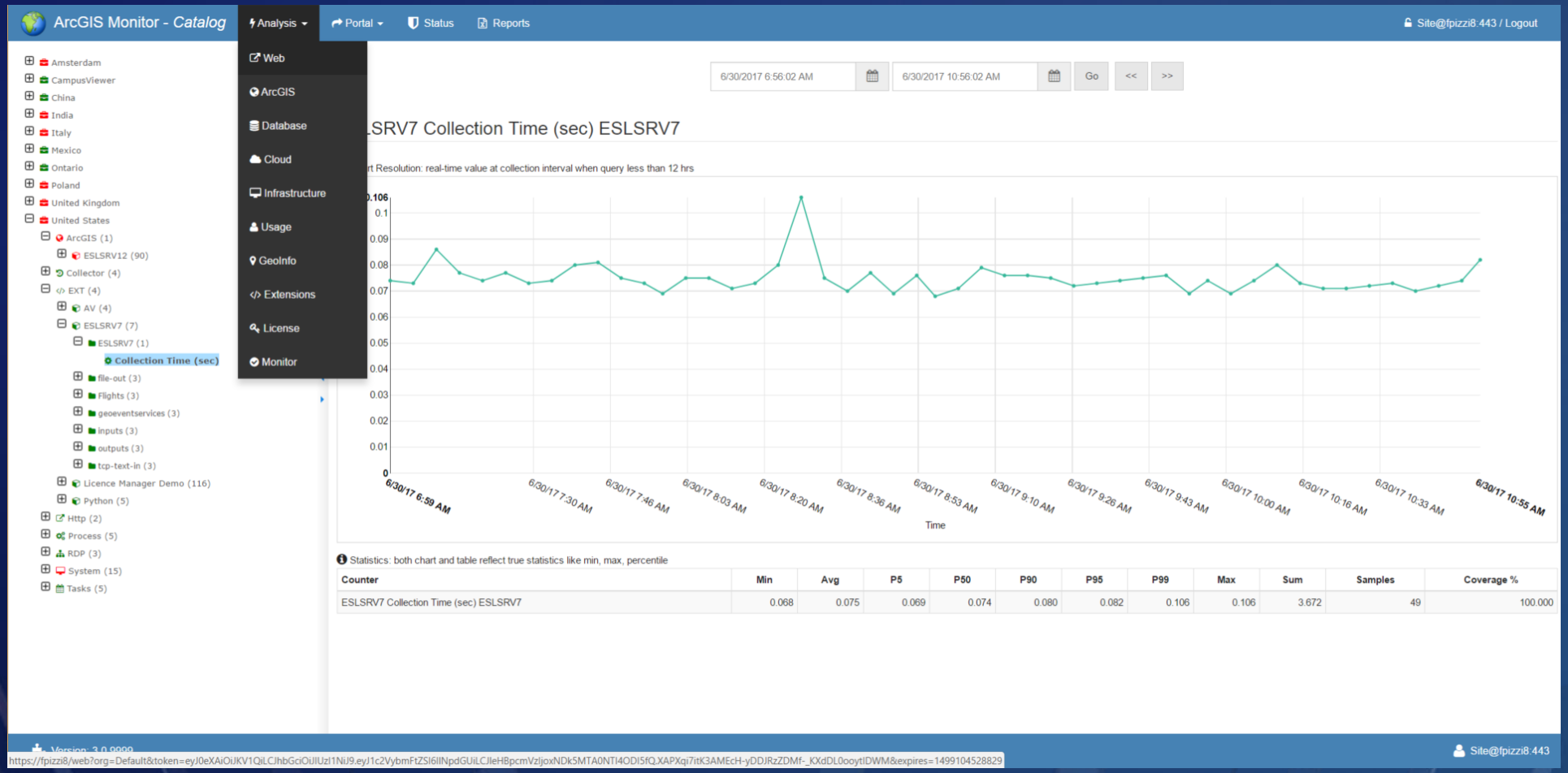




ArcGIS Online Assistant



ArcGIS Monitor

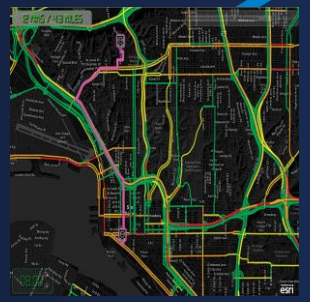


ArcGIS Enterprise Sites

- Available with ArcGIS Enterprise
- Enables you to create destinations within your organization
- Composed of *Sites* and *Pages*
- Creates a focused experience for a topic or audience

The vision

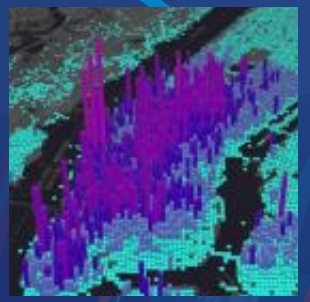
Data


Real-time

Imagery/Raster

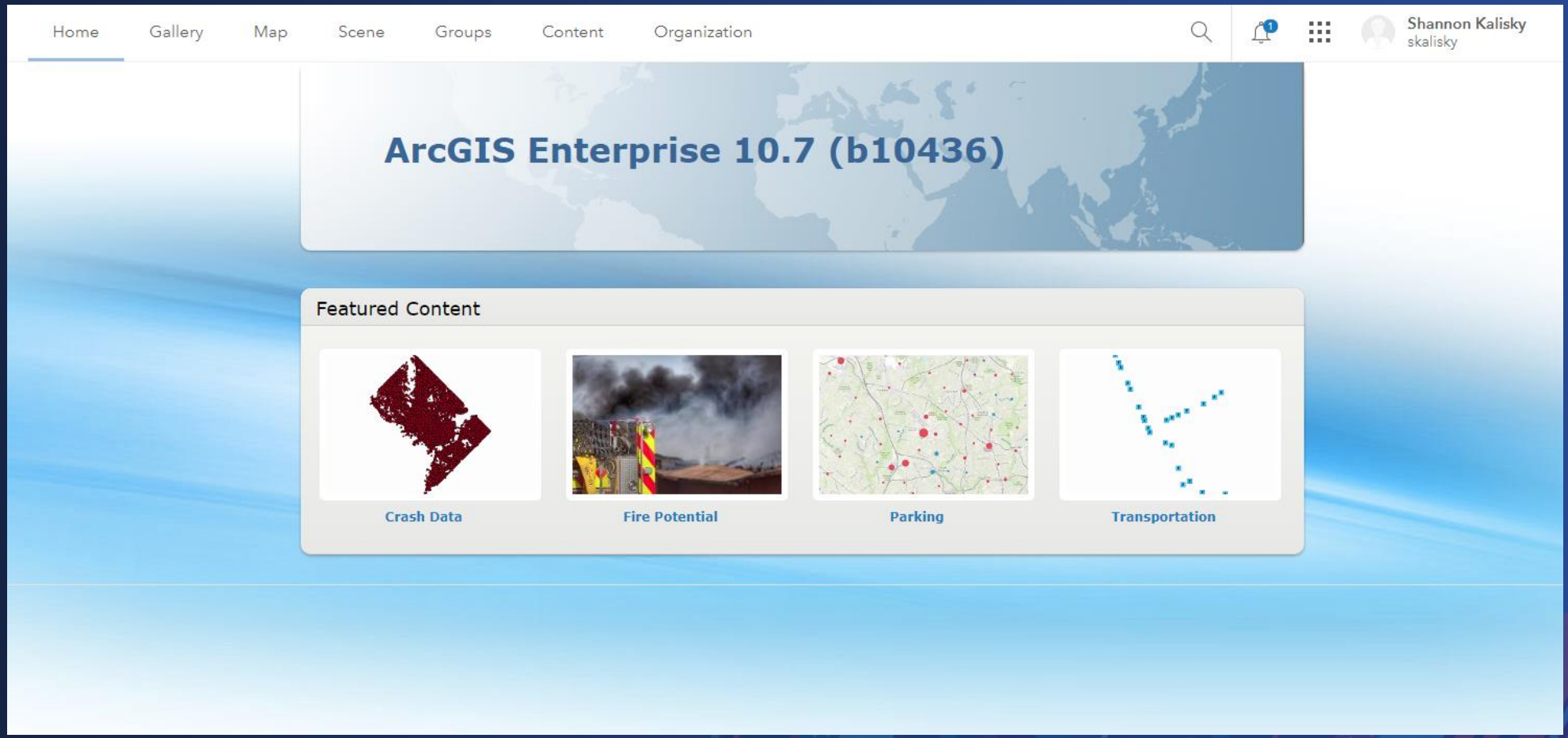
Vector

BI

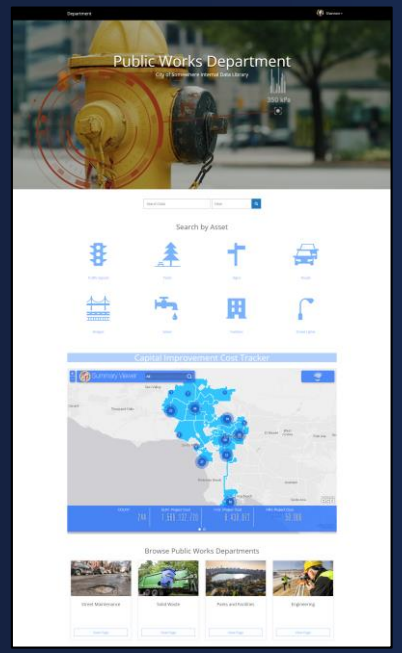

Big data

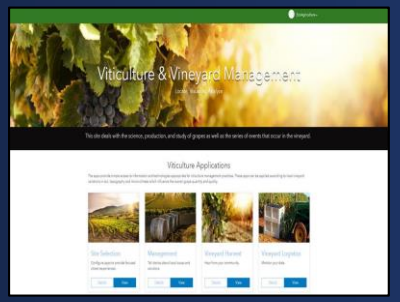
Tabular

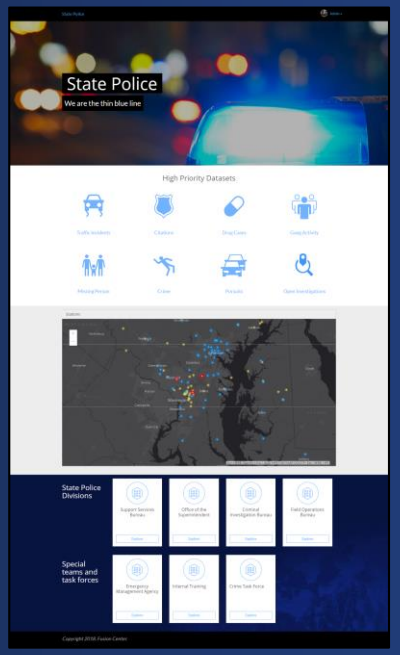
The challenge



ArcGIS Enterprise Sites







The same portal, now with the ability to tailor the user experience to meet users' needs and expectations.

Who are sites for?

- **Sites are for the end users of the portal – people who do not need to use the map making and data editing capabilities of the portal in their everyday work**
  - Non-GIS users within the organization
  - Decision makers
  - External users

- **Sites is not intended to be used by:**
  - Admins
  - Data editors
  - Publishers
  - “Internal sites” are an exception

What is the best way to use Sites?

- **Provide strategic touchpoints with portal capabilities**
  - Example: "View as web map" option in a site
- **Prioritize and organize data and content**
  - Accomplished through site design:
    - What content is shown
    - The order
    - The widgets used
- **Contextualizing content**
  - Telling bigger, interconnected stories

Features

- Drag and drop widgets
- Custom colors and branding
- Ability to create a sophisticated web experience
  - Sites with subpages
  - Customization options (HTML/CSS)
- Content security is maintained
- No extra installation or setup – just launch Sites from the app launcher

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