

# ArcGIS Living Atlas of the World

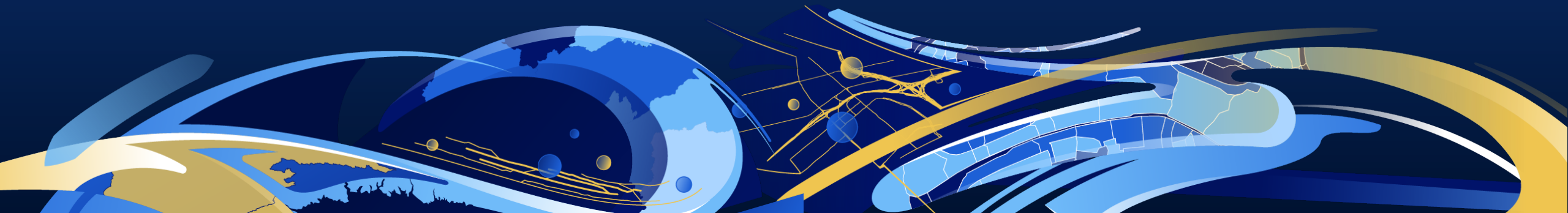
## An introduction



Deane Kensok  
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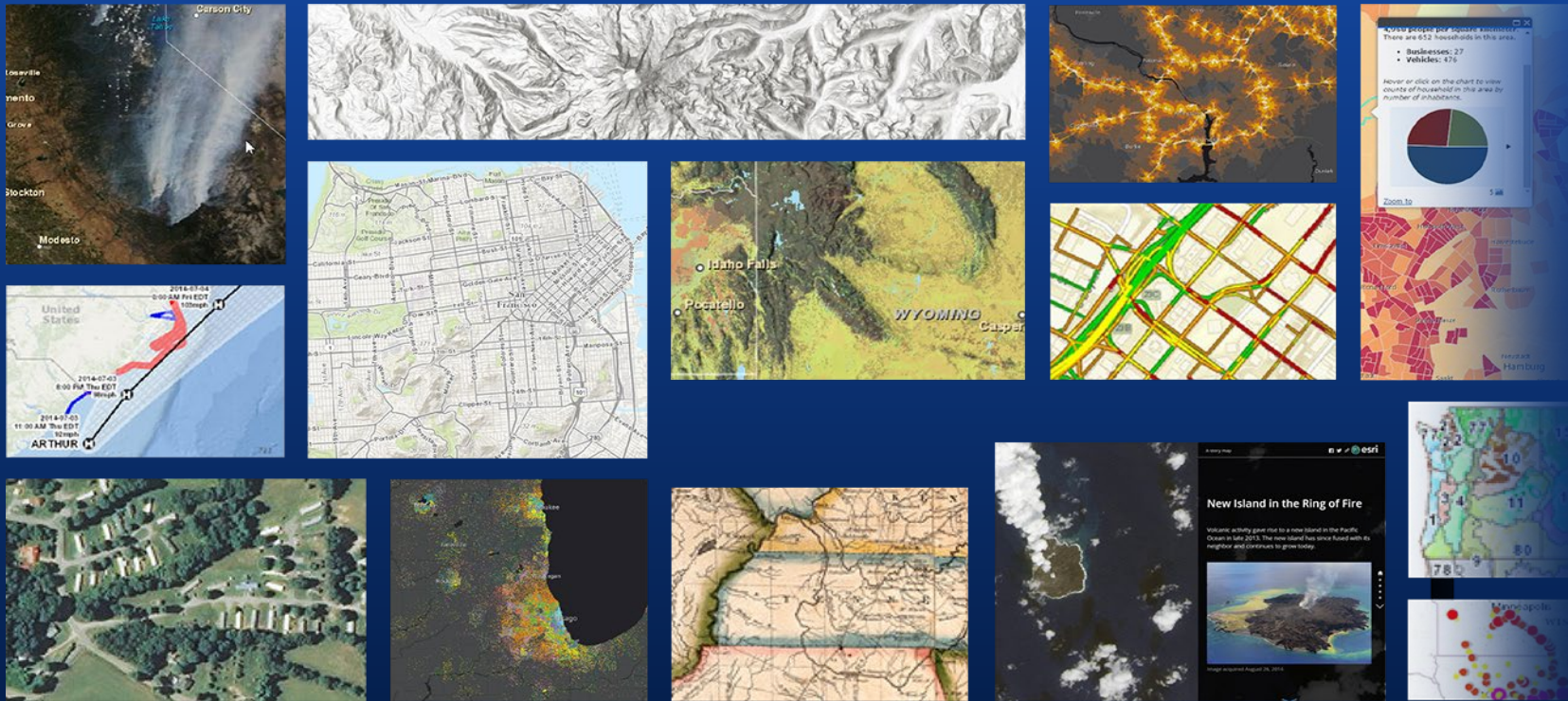


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# ArcGIS includes ready-to-use content

Basemaps, maps, apps, layers, and more from Esri and the global GIS community – a Living Atlas



Trending  
POI  
Transportation  
Environment  
Observations  
Landscape  
Infrastructure  
Basemaps  
Boundaries  
Land Cover  
Oceans  
Historical  
Imagery  
Weather  
People  
Demographics  
Places  
Habitats  
Business  
Movement  
Hazards  
Hydro  
Elevation

... curated, authoritative content with continuous updates



# ArcGIS Living Atlas is built-in to the ArcGIS user experience

Deeply integrated and integral to ArcGIS Pro, Enterprise, Online, and more...

The image displays the ArcGIS Pro interface. On the left, the 'Organize' pane shows the 'Living Atlas' folder selected. The main pane displays search results for 'USA Storm Reports'. The details pane shows the layer's metadata, including its type (Feature Layer), owner (esri\_livfeed), and location (https://services9.arcgis.com/RHVPKkIFTONKbxq3/arcgis/rest/services/NOAA\_storm\_reports\_v1/FeatureServer). On the right, the 'Map Viewer' is open, showing a map of the USA with a 'Social Distancing Scorecard' overlay. The scorecard is titled 'Unacast Social Distancing Score (Latest Available)' and includes a summary: 'Using the change in average distance traveled from pre-COVID-19 days, visitation to non-essential venues, and difference in encounter density, we...'. The 'Add to Map' button is visible at the bottom of the scorecard.


...the foundation for maps, apps, analysis, and sharing the Science of Where

# ArcGIS Living Atlas website

A destination for news, content, blogs, resources, and community participation

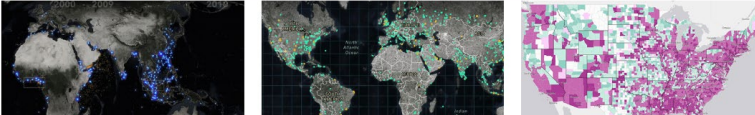
### What's new

Explore items recently added to ArcGIS Living Atlas of the World, learn about GIS events, and discover ways to use content.



#### Sea level rise and coastal flooding

As sea level continues to rise, so does the risk of flooding to coastal communities. The Coastal Flooding story map, available in ArcGIS Living Atlas of the World, describes how coastal communities are being impacted by sea level rise and identifies resources, such as the NOAA Sea Level Rise Inundation layers in Living Atlas, that can help manage this risk.



### 30 years of nautical piracy


How has nautical piracy changed over the decades and what areas have experienced the greatest increases? Using ArcGIS Living Atlas of the World live feed information from NOAA, it is possible to visualize this information as another potential data point in this global phenomenon.

### ArcGIS Living Atlas Articles

Search ArcGIS Blog

### Highlighted apps

Content from ArcGIS Living Atlas of the World is used to make stunning, valuable apps for visualization and analysis.



Contributor  
**Eri Landscape**

#### SSURGO Downloader

Download ready-to-use project packages with dataset.

[View application](#)

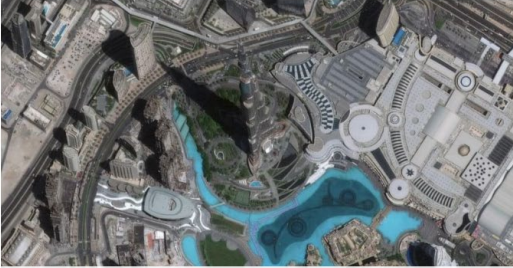
### FEATURED ARTICLE

#### What's new in World Imagery (June 2020)

Robert Waterman | Jun 04, 2020

World Imagery from top to bottom, check out what the ArcGIS Living Atlas of the World team has been busy working on.

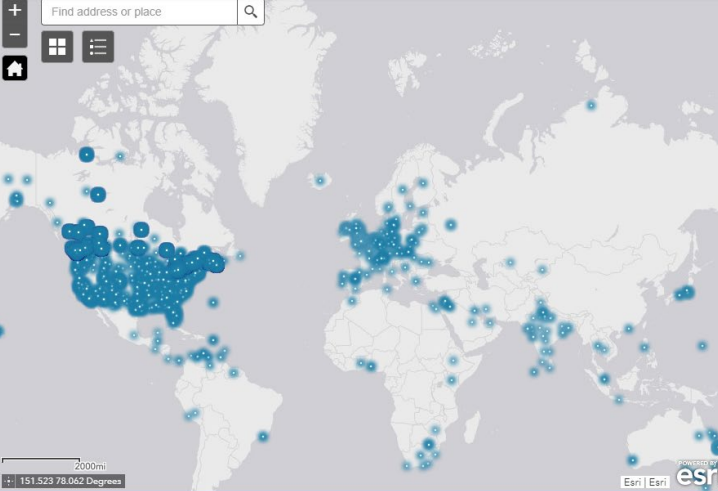
[Read this article →](#)



MAPPING

### Community Maps Basemap Contributors

Find address or place



Esri | Esri

### See who has contributed to the Community Maps Program

For a complete listing of all current contributors to the four ArcGIS Online Community Maps basemaps, use the links below:

- Contributors for the World Imagery Map
- Contributors for the World Street Map
- Contributors for the World Topographic Map
- Contributors for the Ocean Basemap

Apps

Community

News

Blog

<https://livingatlas.arcgis.com>



# ArcGIS Living Atlas browse

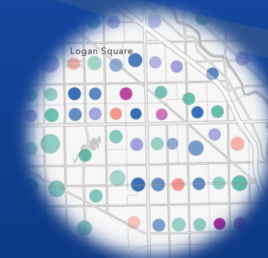
Find maps, layers, scenes, apps, story maps, dashboards, and tools

- Sign in to begin your workflow here

The screenshot shows the ArcGIS Living Atlas of the World United States Edition browse interface. At the top, there is a navigation bar with the ArcGIS logo and the text "ArcGIS Living Atlas of the World United States Edition". Below this is a search bar with the placeholder text "Search Living Atlas for maps, apps, and more" and a search icon. Under the search bar, there are several icons representing different content types: All, Trending, Basemaps, Imagery, Boundaries, People, Infrastructure, and Environment. Below the icons, there are filters for "All content types", "All time", "United States", "Esri-only content", and "Authoritative-only content". The "Sort by" dropdown is set to "Relevance". The page shows "127 Results" and "Top results". The top results are displayed in a grid of five items, each with a thumbnail image and a title:

- Gridded Surface Weather and... (Map Image Layer) By NOAA.GeoPlatform
- NOAA Estuarine Bathymetry (Map Image Layer) By NOAA.GeoPlatform
- Sea Surface Temperature (°C) (Imagery Layer) By esri
- USA Forest Type (Imagery Layer) By esri
- USA NLCD Land Cover (Imagery Layer) By esri

Browse



# Living Atlas apps

Easy-to-use apps that unlock the potential of Living Atlas content

- Help you discover, learn about, and leverage content
- Use app, download source on GitHub

## Highlighted apps

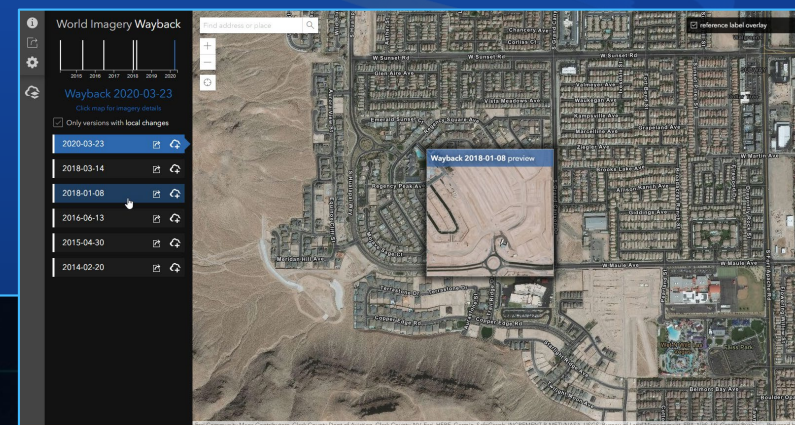
Content from the ArcGIS Living Atlas of the World is used to make stunning, valuable apps for visualization and analysis.



# ArcGIS Living Atlas apps

Updated and improved, with new apps highlighting new content

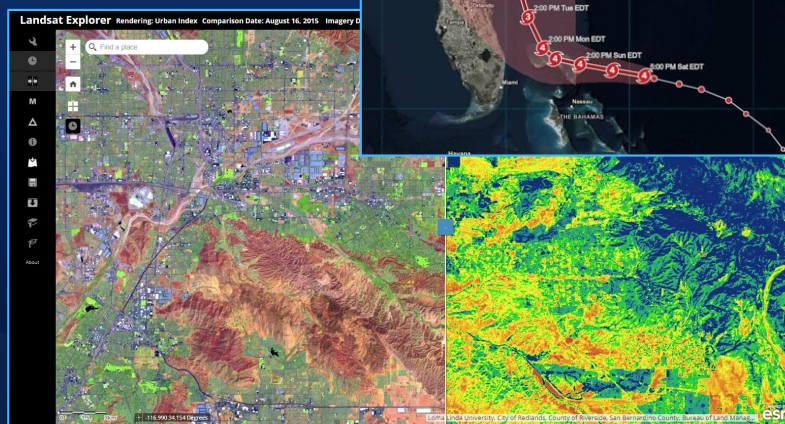
- World Imagery Wayback
- Historical Topographic Map Explorer
- Hurricane Aware
- Landsat Explorer
- Vector Tile Style Editor
- EMU Explorer
- Intact Habitat
- And more...



Wayback



Hurricane Aware

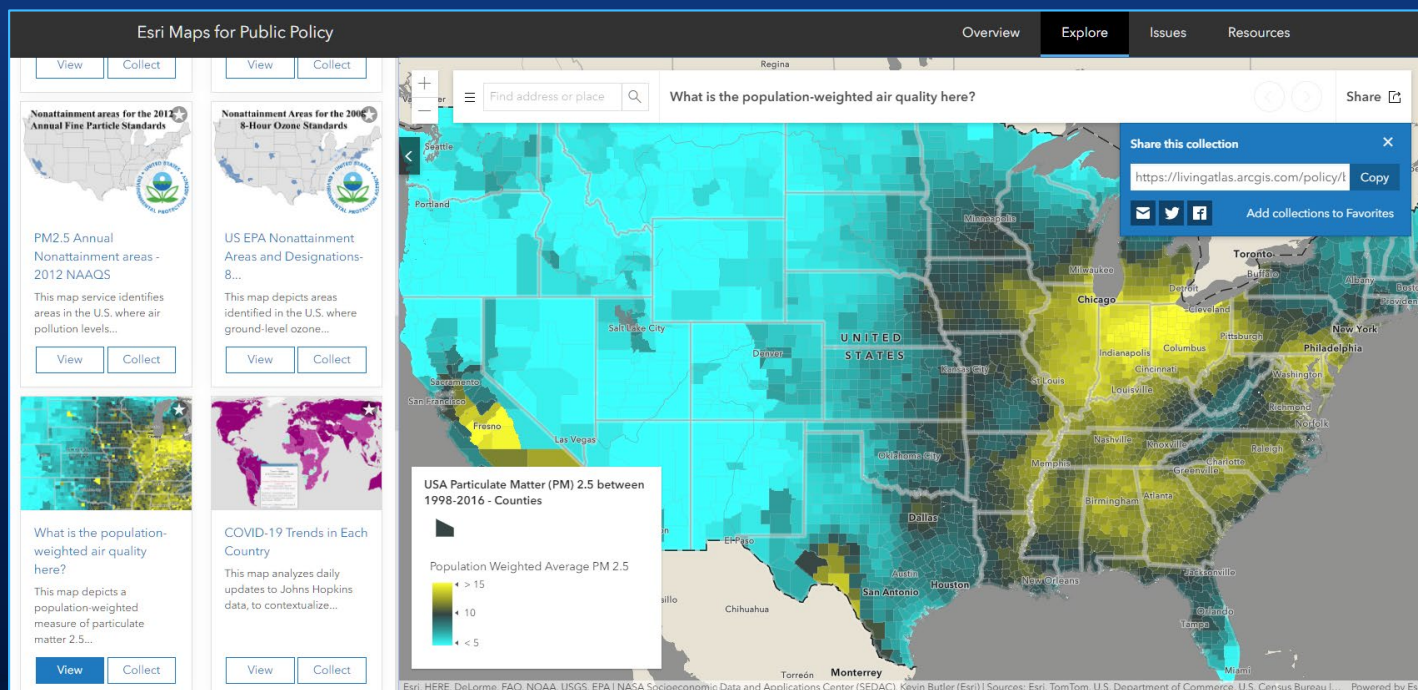


Landsat Explorer

# Esri Maps for Public Policy

Living Atlas content revealing important community facts

- Delivers access to hundreds of expressive policy maps
- Enables open use and sharing via app
- Expands focus beyond demographics (air quality, broadband, environment, more...)





# ArcGIS Living Atlas Community

Shared content and contributions from the global GIS community

- Curated community contributions
  - Maps, layers, scenes, apps, dashboards, story maps, tools
- Community Maps Program
  - Basemaps, imagery, addresses, elevation, bathymetry, hydrology, stream gauges



Feedback



Edit Features



Contribute Data

*...a vibrant and growing crowdsourcing community*



# Demonstration




# Living Atlas Content

Deane Kensok (CTO, ArcGIS Content)



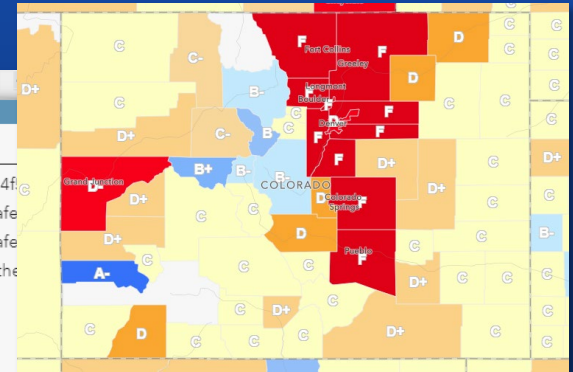
# Content is Published by Esri, Partners, and Users

Built by the ArcGIS Community and Curated by Esri



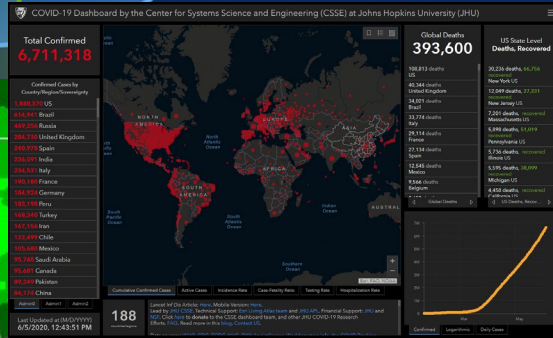
### SafeGraph Places

The Broken Yolk Cafe  
safegraphPlaceID sg:e51cc87d0d5f44f  
poiName The Broken Yolk Cafe  
brands The Broken Yolk Cafe  
topCategory Restaurants and Other  
address 355 6th Ave  
city San Diego  
state CA  
zipCode 92101



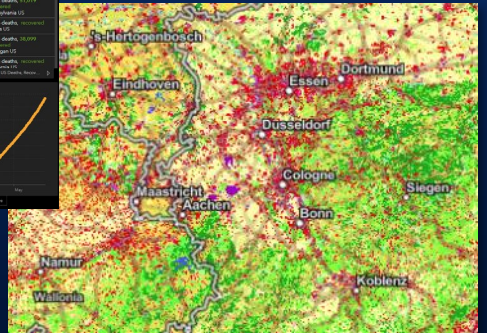
### Unicast Social Distancing

### NOAA Real-time Weather



### JHU COVID Dashboard

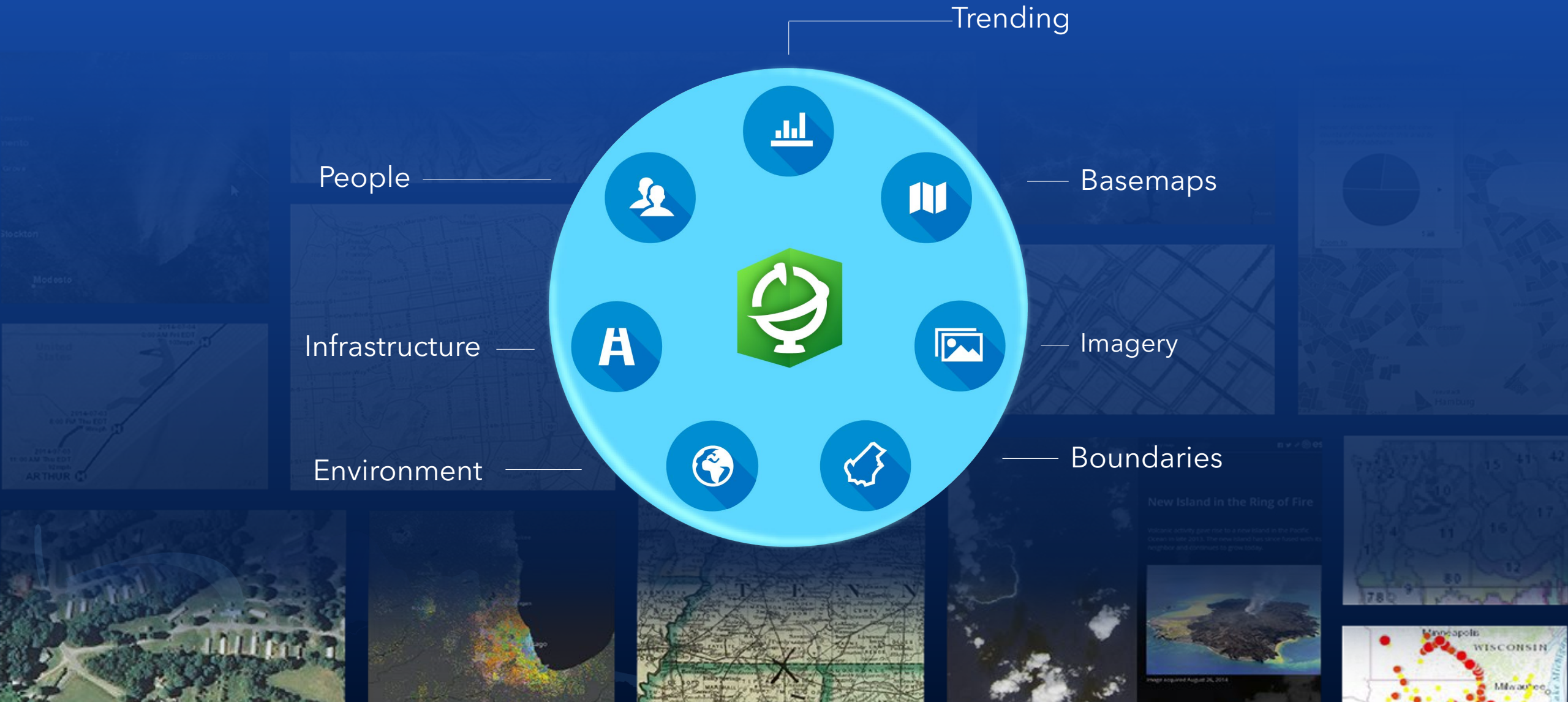
### EEA Land Cover





# Esri Content Portfolio

Esri Contributions to ArcGIS Living Atlas

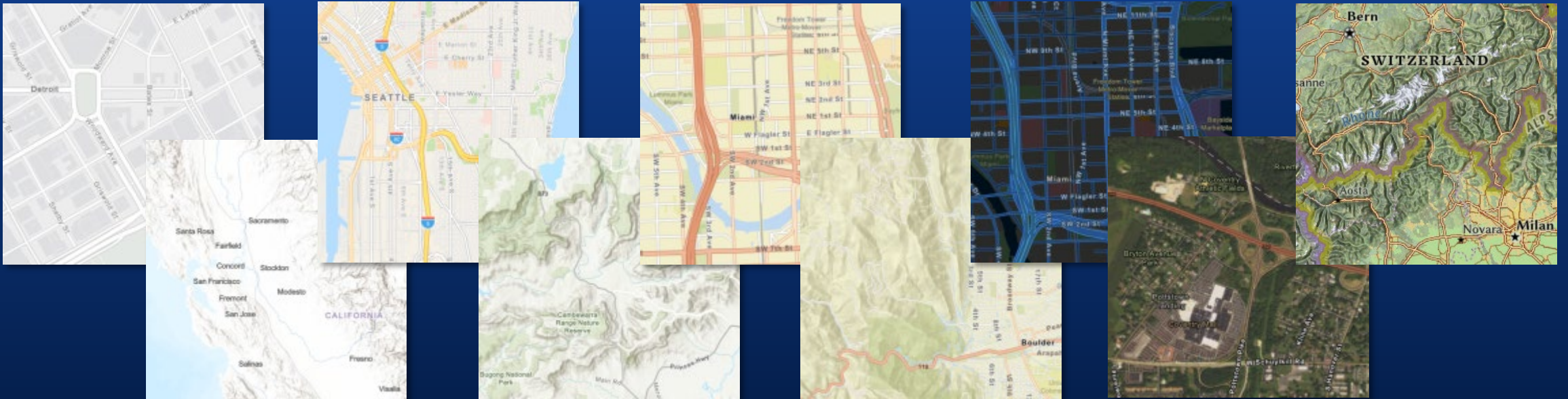




# Basemaps

Suite of basemaps to support your web maps and applications

- Variety of Basemaps for Different Maps and Apps
  - From neutral background maps to rich foreground maps, describing human or physical worlds



- Data from Leading Data Providers (e.g. HERE, Garmin, BFUSA, OSM, & GIS Community)
- Now Available in both 'Raster' and 'Vector' Formats

# Benefits of Vector Basemaps

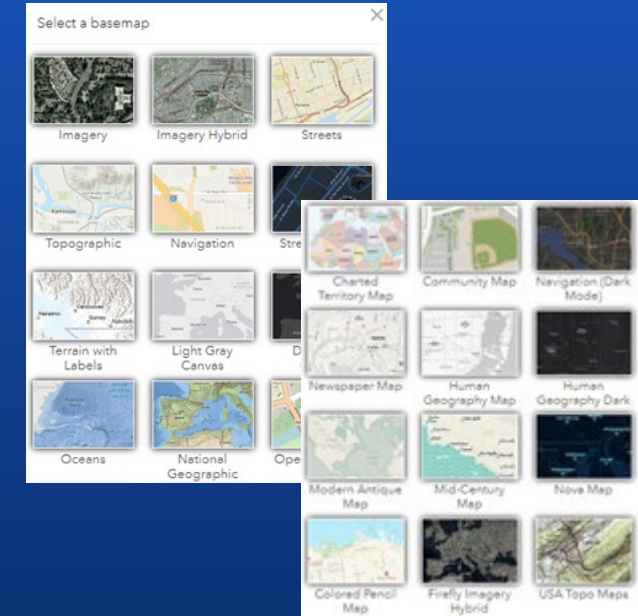
Delivering basemaps in vector tile format provides several benefits to users

- **More Styles Available**
  - Currently ~20 'core' styles from Esri
  - Several more 'creative' styles
- **Customizable by Users & Developers**
  - Turn layers on / off
  - Change colors and other renderers
  - Change labels for different languages
  - Change treatment of disputed places
- **Faster to Update**
  - Cache updates in hours, not weeks
- **Look Great on Hi-Res Displays**
  - Vector features and labels look sharper
- **Better Support Disconnected Use**
  - Store larger areas on small devices
- **More Interactive**
  - Display at any scale with clearer rendering
  - Rotate the map / live text
- **Support Other Map Projections**
  - Available in other projections (GCS, BNG, ...)
  - Client-side re-projection of tiles

# Esri Vector Basemaps

## What's New

- Many Map Styles Available
  - Basemap Gallery includes Rich Collection of Map Styles (June Update)
    - More Styles in [GCS WGS84 Tiling Scheme](#) (Defense/Intel & Petro Users)
    - Basemaps **updated every 3 weeks** worldwide with Latest Available Data
- Localization: maps localized for different languages and regions
  - Languages: now includes default plus **24 languages**
    - Maps display based on your browser settings or Online user language or region preferences
  - Disputed Places: vector basemaps enable **different treatments of disputed areas**
    - Custom styles available for selected regions reflecting local views of disputed areas
- Over **130k features contributed** through Community Maps Editor app!
  - Enhance detail for high-priority AOs (e.g. parks, schools, stadiums, etc.)
    - Communities such as City of Yakima, WA using to enhance map in priority areas

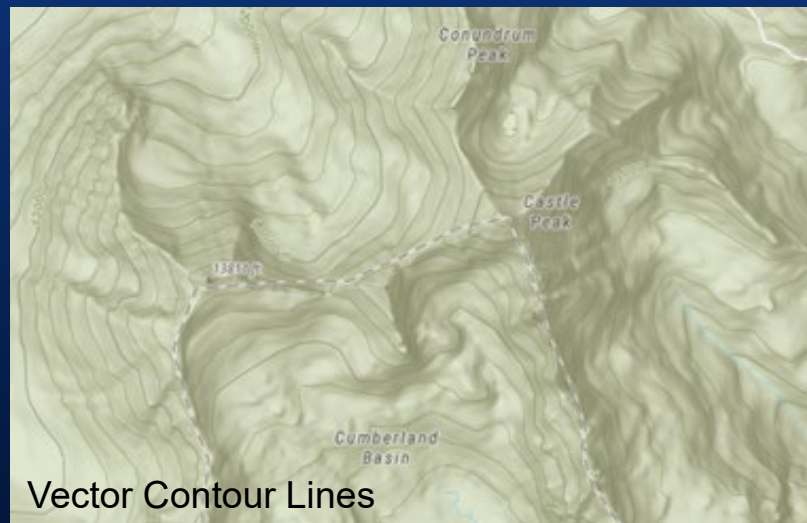




# Esri Vector Basemaps

## What's Next

- More Localization: maps to be localized in all ~40 supported languages
- New Data and Layers
  - **Places**: new layer including millions of places (POIs) around world in selected styles (Beta Now)
  - **Vector Contours**: contour lines published as separate vector tile layer (Beta at UC)
  - **Vector Hillshade**: vector polygon layer derived from raster hillshade imagery (Q3 2020)



# Esri Raster Basemaps

## Status and Life Cycle



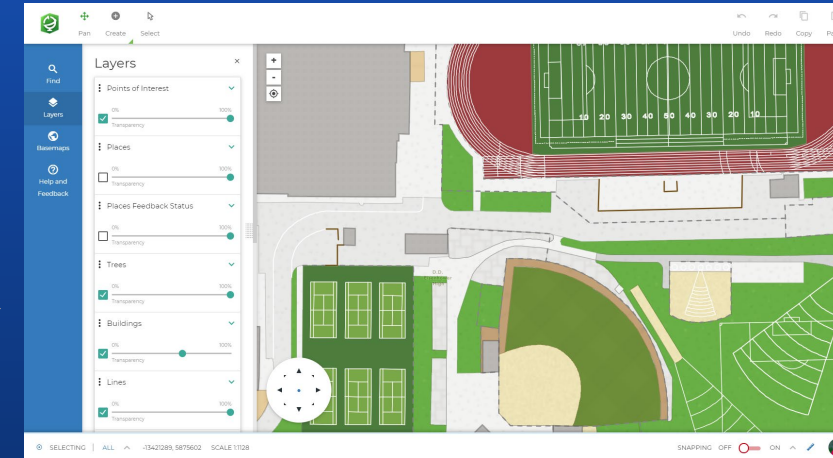
- Esri Continues to Maintain our Collection of Raster Tile Basemaps
  1. World Imagery, World Hillshade, World Street Map, World Topo Map, Ocean Base, ...
  2. Light Gray Canvas, Dark Gray Canvas, Terrain with Labels, and Oceans, ...
  3. World Shaded Relief, USA Topo Maps, National Geographic, ...
- Esri is Transitioning many Raster Basemaps into **Mature Support** 2019 - 2021
  - Mature Support maps will continue to be hosted by Esri, but not actively updated
  - Latest Info Available Online in [Basemaps Life Cycle Support Status](#)
- Esri will Continue to Actively Maintain Top Maps for Next 1.5+Years
  - World Street Map, World Topographic to be maintained through 2021
  - World Imagery, World Hillshade, Ocean Base to be maintained indefinitely ...

# Community Maps Editor

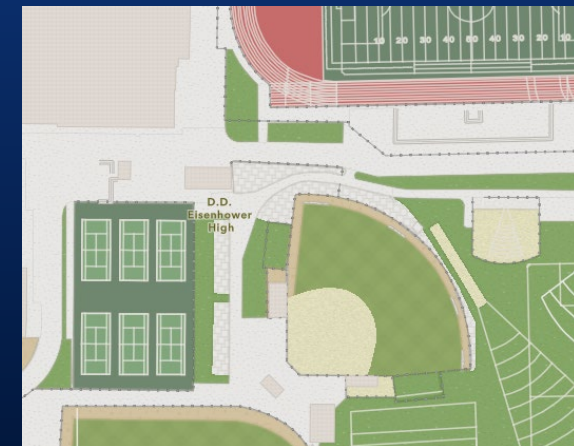
New Web Editing App to Create and Edit Data for Esri Basemaps

- 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

City of Yakima, WA Schools and Parks



From the App ...  
... to the Map

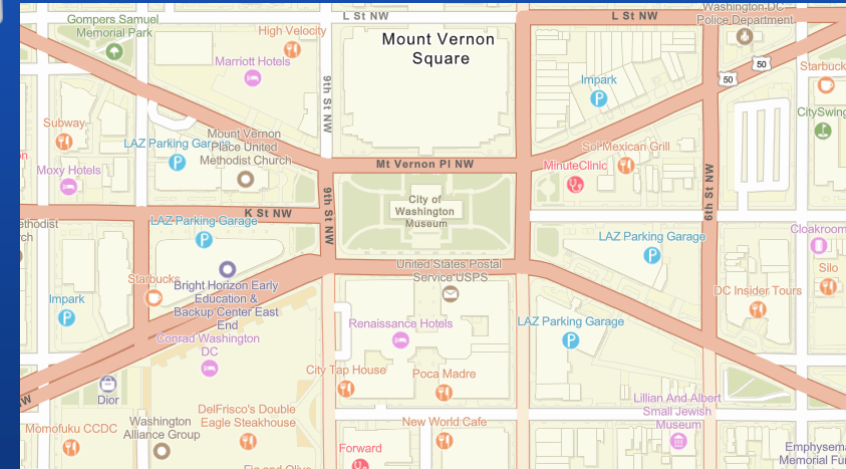


Get started at [communitymaps.arcgis.com](https://communitymaps.arcgis.com)



# Places (Points of Interest)

New layer in Esri Vector Basemaps that shows location of places



- Expanded Set of Places (POI) Data being added to ArcGIS
  - Stores, restaurants, hotels, parks, museums, parking, ...
- Designed to Support Multiple Use Cases
  - **Visualization**: new Places layer in Esri Vector Basemaps (Beta Now!)
    - Places for **countries around world being added** to map styles
  - **Search**: expanded set of POIs / Places to find in Esri Geocoding
    - Additional APIs for spatial search by categories for display and analysis
  - **Directions**: new capability for directions based on POIs along route
- Data assembled from Leading Places Data Providers
  - SafeGraph Places (USA), HERE Places (Global)

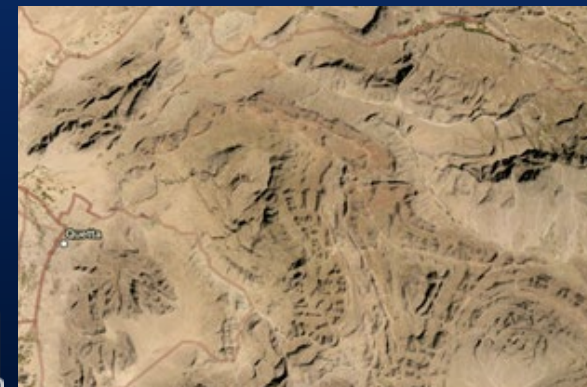


Road Ahead

# World Imagery

## What's New

- Map featuring **Most Recent**, High-res imagery from Best Available Sources
  - Includes metadata with source, acquisition date, resolution, accuracy, ...
- Updates with Maxar basemap imagery (began in 2016)
  - Over **250 million sq. km.** of imagery updated in past 3.5 years
  - Updates to worldwide mosaic (Vivid) and 1,000 cities (Metro) annually
- Updates also from GIS User imagery through Community Maps
  - Hundreds of contributions from national, provincial, and local sources
    - -AUS, AUT, CAN, CHE, ESP, EST, DEU, JPN, LVA, NLD, NZL, SWE, USA, ...
- Small-scale Imagery Enhanced with '**Bump Mapping**' Technique



# Maxar Imagery Enhancements

Vivid and Metro Products are being enhanced



- Vivid (global) and Metro (1,000 metros)

Currency

- Cloud processing enables global annual updates to Vivid (>50% refresh)

Clarity

- HD will enable expanded 30cm GSD coverage for all Metros

Accuracy

- Large-area image bundling enables higher accuracy of Vivid (4-5m)

- First collection of Enhanced Vivid imagery has been published for CONUS
  - Remainder of Vivid updates will be published in 2020-21





# World Imagery (Wayback)

Explore archive of World Imagery updates for the past several years

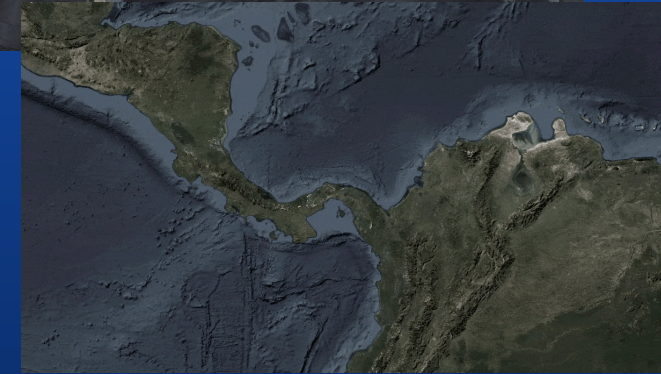
- ~120 Versions of World Imagery going back 6+ years
  - Releases from January 2014 through Present
  - Published as performant and scalable basemap tile layers
    - Includes metadata with source, date, resolution, accuracy
- Esri adds **Adding More Imagery** every 3 weeks
  - Each new release of World Imagery is added to Wayback at the same time (next release is next week)
- Provides Access to ~500 TB of Imagery Cache!
  - **Custom On-Premises Version** Option Available upon Request



# World Imagery (Firefly)

Alternative view of the World Imagery map

- View of World Imagery for use as Neutral Background
  - Stylized to de-saturate color so it doesn't compete with overlays
- Features the Same Imagery as the World Imagery map
  - Transitions to standard full-color imagery at large scales
- Designed for Use Cases that Require Imagery with Muted Color
  - [Firefly cartography](#), maps with bright overlays, etc.
  - Includes the texture and richness of imagery
- **Recently Enhanced** with Latest Imagery and New Styling
  - See [Firefly Imagery Updates](#) on Living Atlas Blog

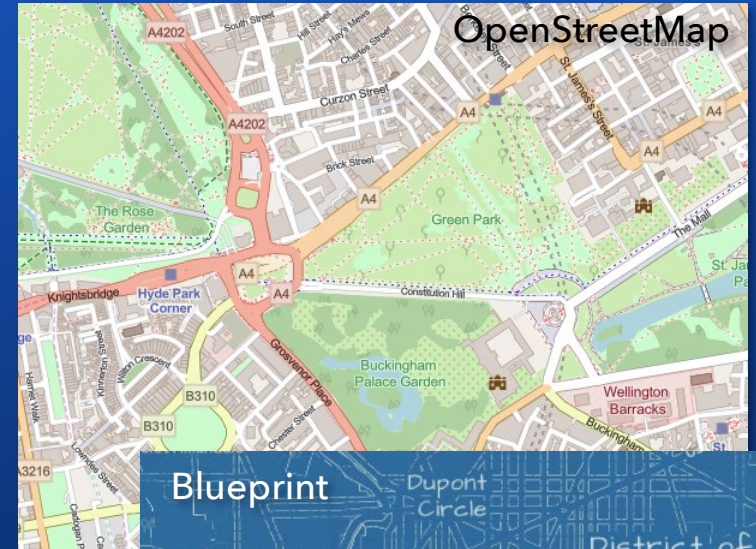




# OpenStreetMap Vector Basemap

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!
  - 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, Canvas, ...
- Now Available for On-Premise Deployment!
  - New product option for ArcGIS Data Appliance

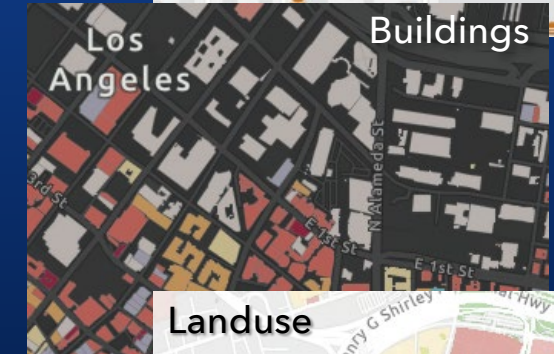




# OpenStreetMap Feature Layers (New!)

Esri hosted feature layers of live OpenStreetMap data

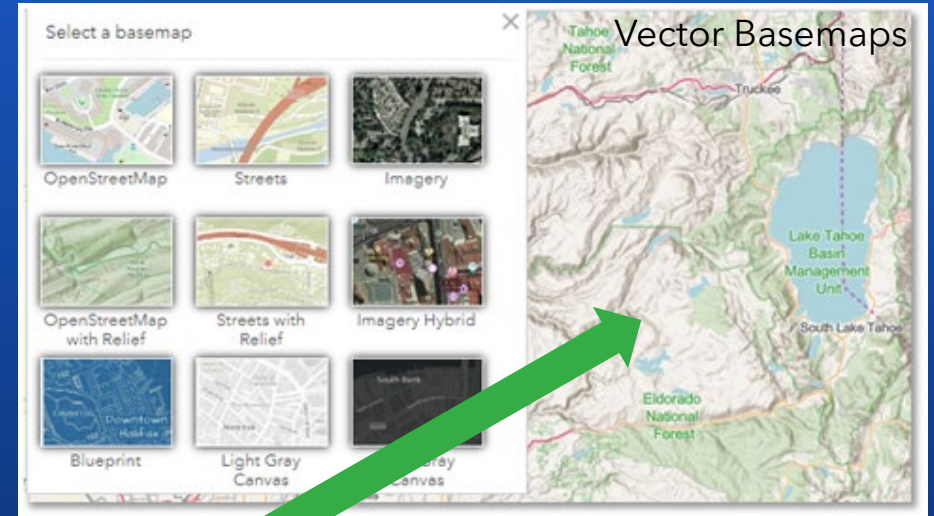
- Esri providing OSM data for Visualization, Analysis, and Extract
  - Layers include Buildings, POIs, Streets, etc.
  - Layers are **updated with minutely diffs** from OSM to present the latest updates!
  - Layers can be easily re-styled in ArcGIS Online, with custom popups
- Initial Set of **Feature Layers Now Available!**
  - Layers published for North America, Africa, Central America, ...
  - [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**



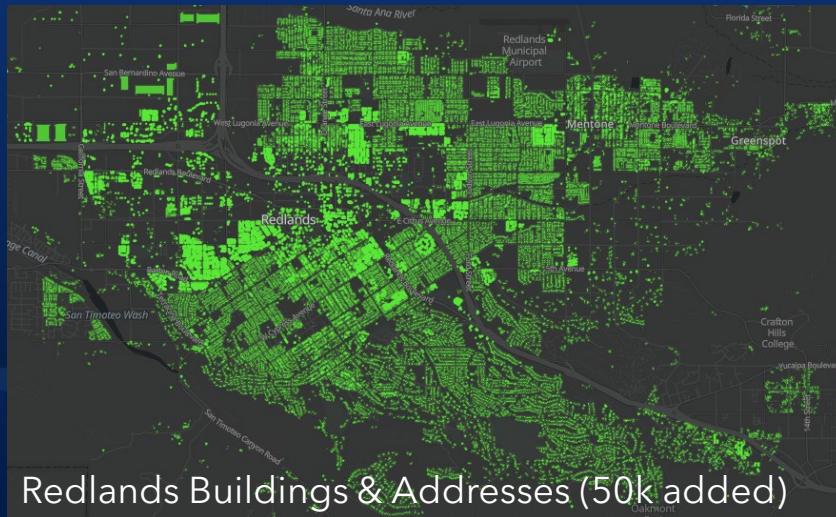
# OpenStreetMap

## What's New

1. OSM Vector Basemap (Available)
2. OSM Feature Layers (Now in Beta)
3. Enhancing OSM Data (Active Edits)



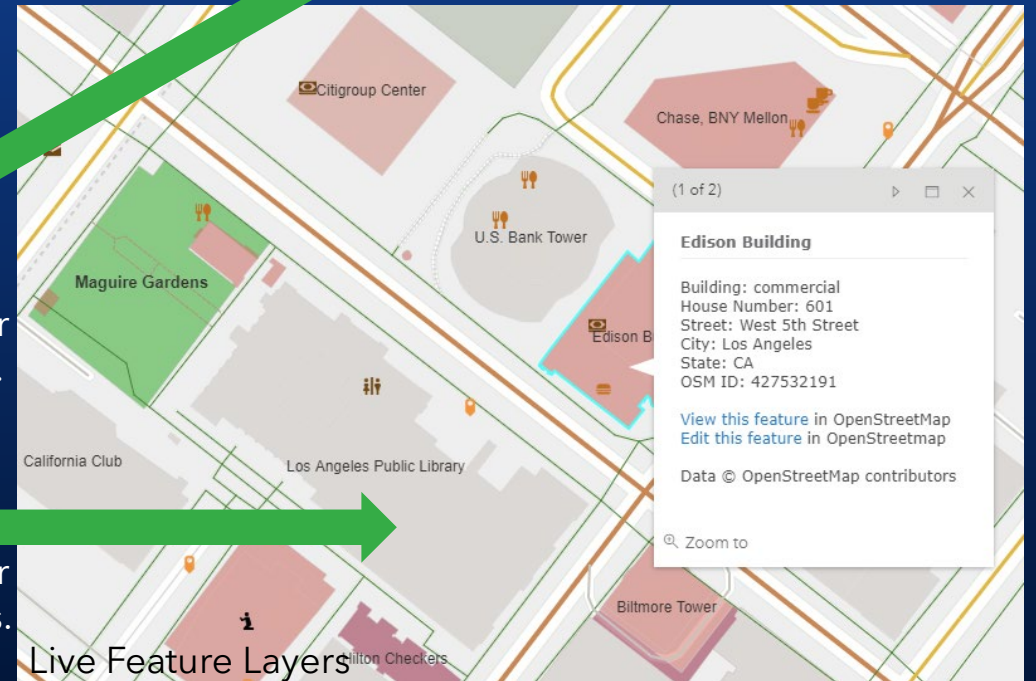
Vector Basemaps



Redlands Buildings & Addresses (50k added)

Edits appear  
in ~3-5 wks.

Edits appear  
in ~1-2 mins.



Live Feature Layers


# OpenStreetMap

## What's Next

1. New Community Maps Data Sharing Option
2. Enhanced OSM RapiD Editor supporting ArcGIS

### New Option for Data Sharing

In addition to adding your data to Esri's Basemaps, we are now offering a **new option** for Contributors to **also** share their data with selected Esri partners and organizations (e.g. OpenStreetMap) through a **Creative Commons by Attribution (CC BY 4.0)** license.

Share my data with other map providers. [Learn more](#) 

You can change your setting at any time from the My Account Tab.

[Apply](#)

### ArcGIS Datasets

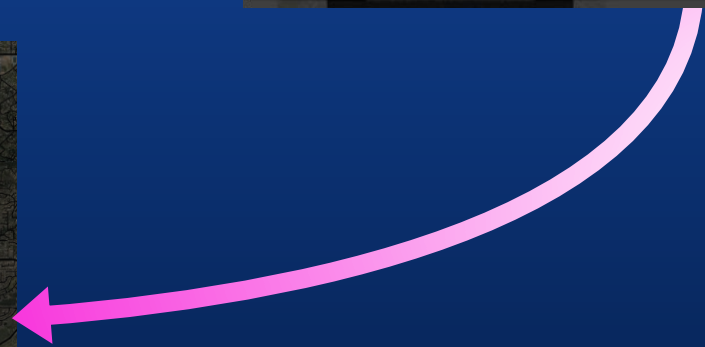
Home / Search

City of Alexandria, VA Addresses  
This layer contains pre-processed address points for the City of Alexandria, Virginia to update OpenStreetMap.  
[Add to Map](#)

City of Boston, MA Addresses  
This layer contains pre-processed address points for the City of Boston, Massachusetts that can be added to OpenStreetMap.  
[Add to Map](#)

City of Riverside, CA Buildings  
This layer contains pre-processed building footprints for the City of Riverside, California to be added to OpenStreetMap.  
[Add to Map](#)

City of Tampa, FL Buildings  
This layer contains pre-processed building footprints with addresses for Tampa, Florida and surrounding communities that can be added to OpenStreetMap.  
[Add to Map](#)

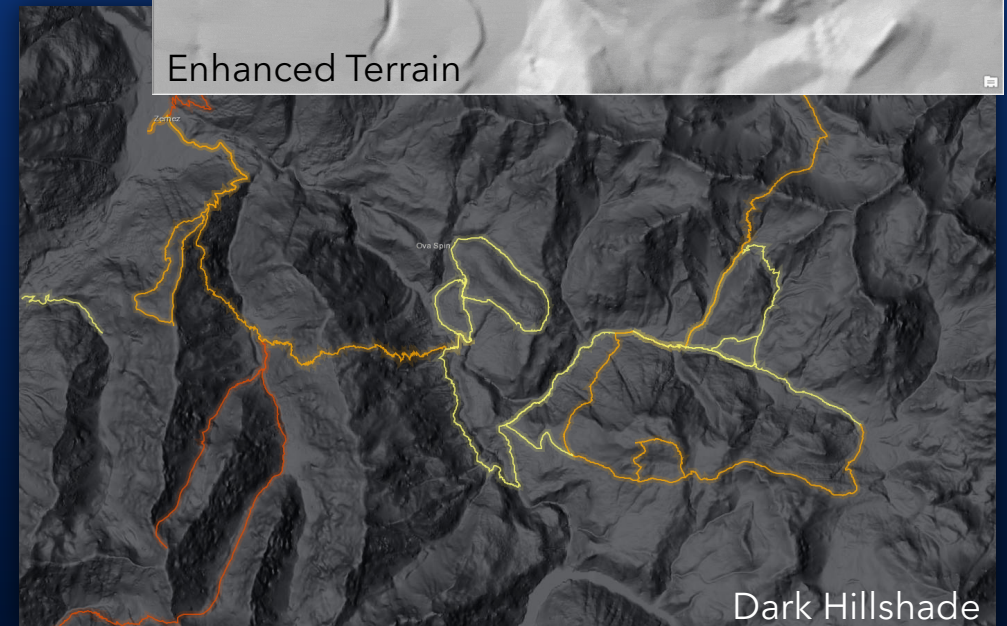
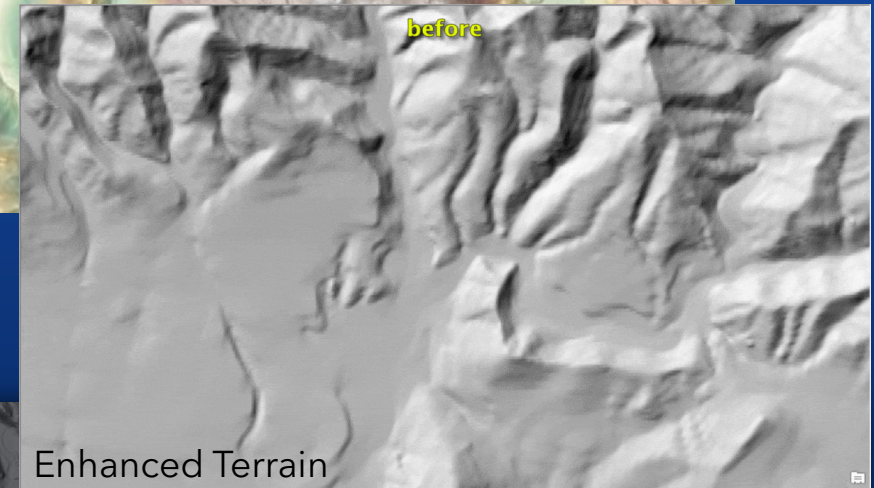




# World Elevation

## What's New

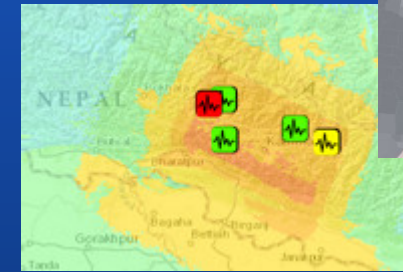
- Global Elevation Layers from Many Sources
  - Mix of Commercial and Community Data (24m to <1m)
- Variety of Services for 2D and 3D Use Cases
  - World Elevation Image Service (Terrain & TopoBathy)
  - Analysis Services (Profile, Viewshed, Summarize)
  - 3D Elevation (Terrain3D & TopoBathy3D)
  - World Hillshade (Light and Dark) Tile Services
- Recent Enhancements
  - USGS 3DEP 1m DTMs for CONUS, 5m for AK
  - NCEI 3m DTMs in Puerto Rico and Virgin Islands
  - Lidar 1m DTMs in parts of Australia and Spain
  - Lidar 0.5m DTMs in parts of Austria



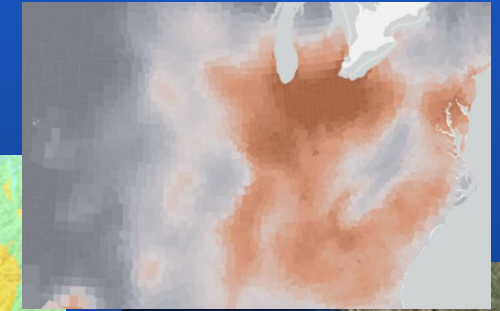
# Live Feed Layers

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!**



Recent Earthquakes



Storm Reports



Active Hurricanes

Weather Observations

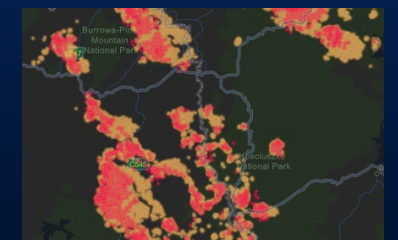
Weather Forecasts

Weather Warnings

Air Quality Conditions

Active Wildfires & Hotspots

Live Feeds  
Hosted Features





# Thank You!

Bern Szukalski, Deane Kensok

Please [share your feedback](#) via the survey available at the link below the presentation!