



NYSAMPO 2023 Conference

ArcGIS: What's New, Trending, and On The Roadmap

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Many new and improved implementations of GIS in new areas, as well as existing tech that is starting to take off.

- Indoor Mapping
- Real-Time GIS
- Experience Builder
- ArcGIS Urban
- ArcGIS Hub
- ArcMap Deprecation
- ArcGIS 3.x
- Solutions

Smart Workplaces

Resource Planning

Allocation
Accessibility
Utilization

Safety and Security

Continuity Planning
Equipment Inspection
Event Response

Complete Workplace Awareness

Asset Maintenance

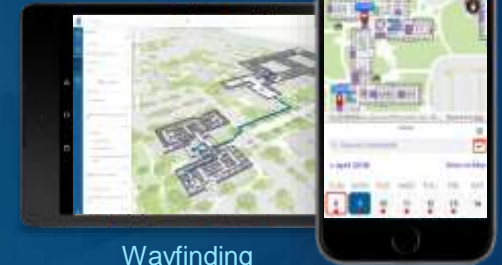
BIM Integration
Real-Time Tracking
Problem Reporting

Wayfinding

Calendar Integration
Employee Routing
Visitor Kiosks



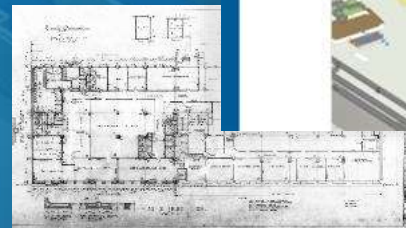
Performance Monitoring



Wayfinding



Space and Asset Visibility



Stakeholders

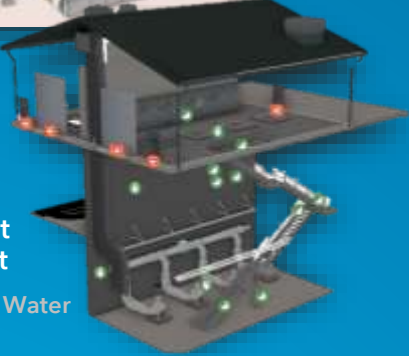
- Business Owners
- Operators
- Employees
- Visitors

Complete Indoor Mapping and Location System

Building and Facility Management



USMC / HDF
North Carolina



Vertical Asset
Management

City of Raleigh Water
North Carolina

Inside Plant



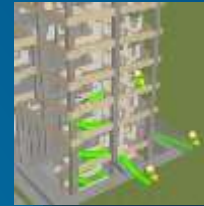
Milwaukee Metropolitan
Sewerage District
Wisconsin

Lease & Asset
Management



Hartsfield-Jackson
Airport
Georgia

Emergency
Evacuation



Universitas
Gadjah Mada
Indonesia

Apartment
Management



One Hundred Feet
California

Space Utilization
Analysis



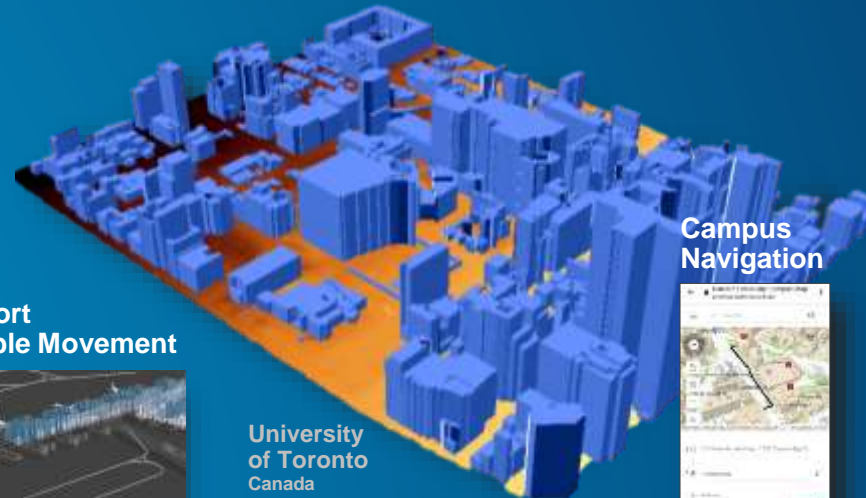
Houston
Texas

Indoor Space
Management



Schoolcraft College
Michigan

3D Campus Solar Anlysis

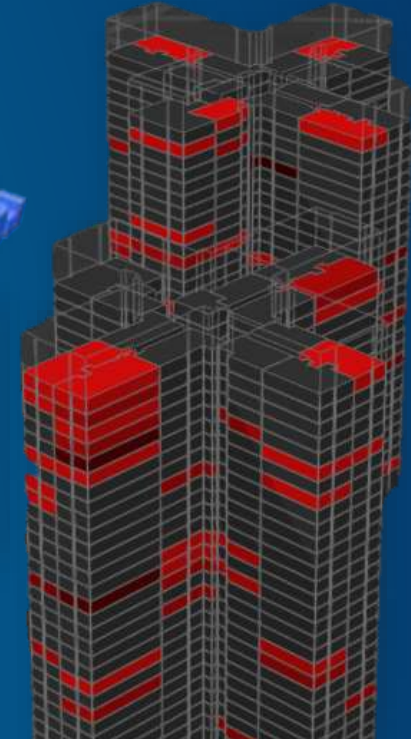


Campus
Navigation



Harvard
University
Massachusetts

Historic Work
Order Management
New York City, New York



BIM Visualization



Geodata
Norway

3D Structural



vGIS
US

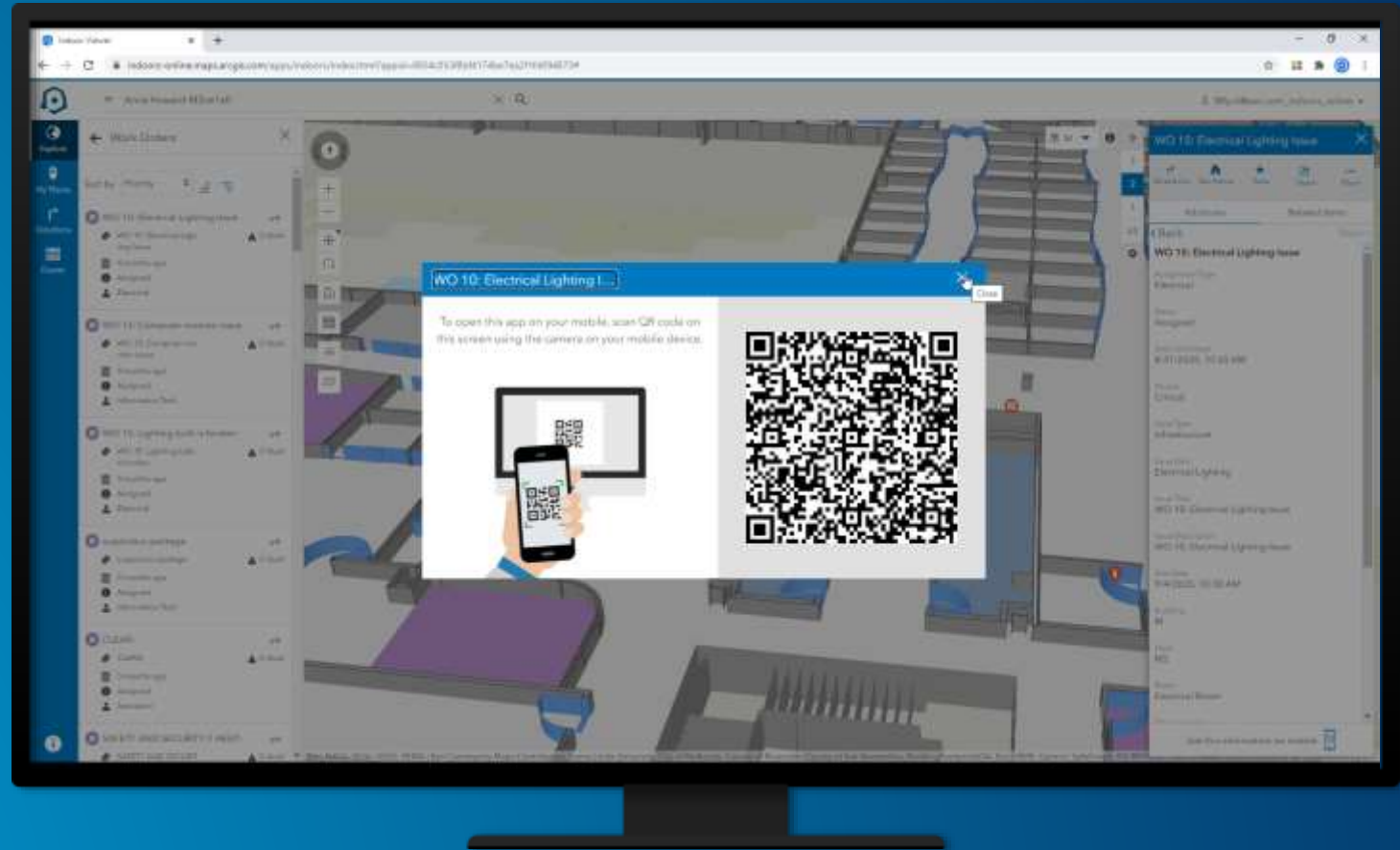
Airport
People Movement



Geodata
Oslo Airport, Norway

ArcGIS Indoors Viewer

- Visualize sites, buildings, floors
- Discover and share facilities
- Find and reserve workspaces
- Navigate and manage workflows



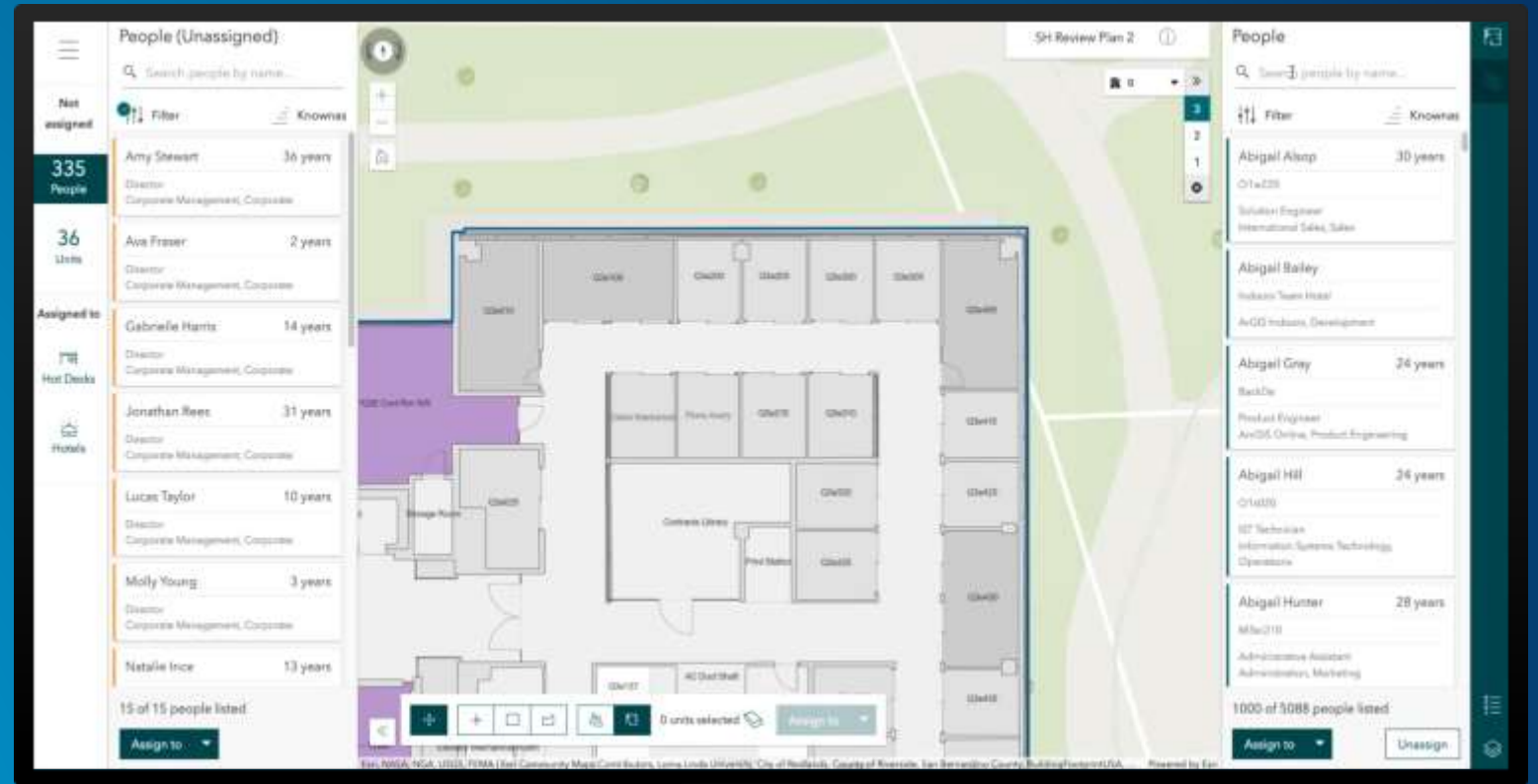
ArcGIS Indoors Mobile

- Indoor positioning compatible
- Integrate calendar events
- Reserve conference rooms and office hotels



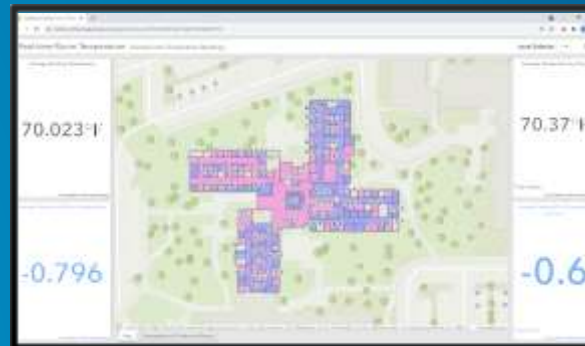
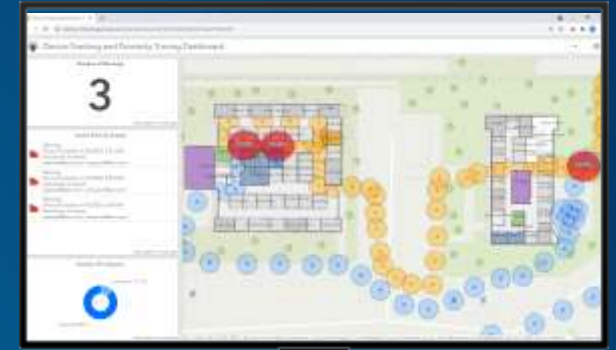
ArcGIS Indoors Space Planner

- Create space plans
- Make space moves
- Create office hotels
- Share new plans



ArcGIS Indoors Dashboards

- Occupancy
- Proximity Analysis
- Asset Tracking
- Work Order Tracking
- Energy Demands
- Security Operations



ArcGIS Indoors for ArcGIS Pro

- Convert floorplans to indoors
- Generate routable networks
- Configure maps and categories
- Publish indoors data

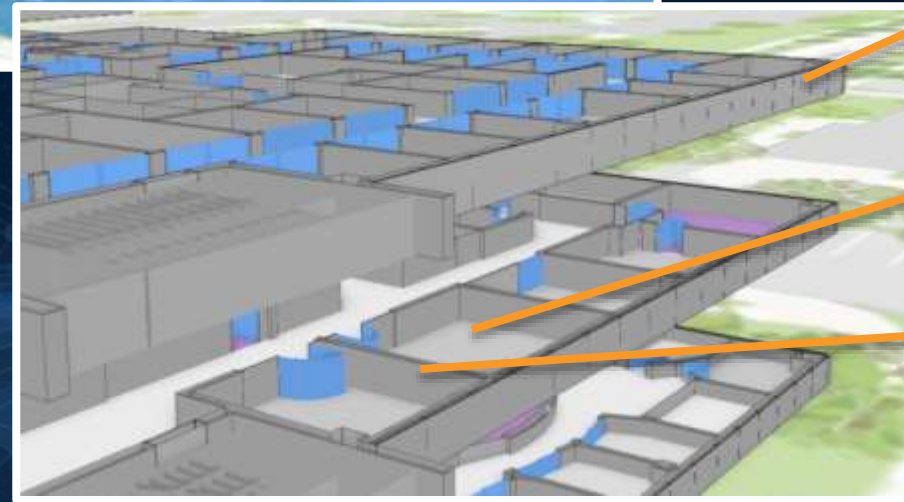
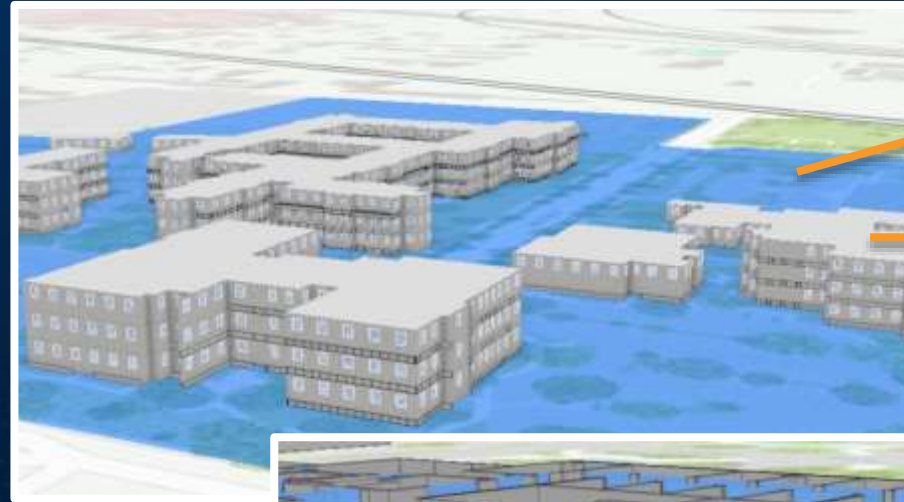


The Indoor Dataset



- Floorplan features
- Routable network

+ *model your own floor aware data*



Sites



Facilities



Levels



Units

Details



ArcGIS IPS

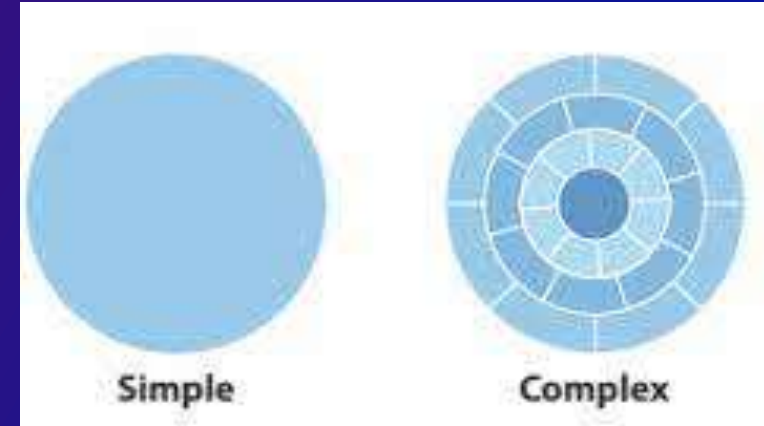
- **Indoor Positioning System (IPS)**
 - Outdoors = GPS
 - Indoors = IPS
- **Real-time positioning capability (or “blue dot”) inside buildings**
- **IPS does not provide indoor mapping but makes use of it (e.g. via ArcGIS Indoors Pro)**





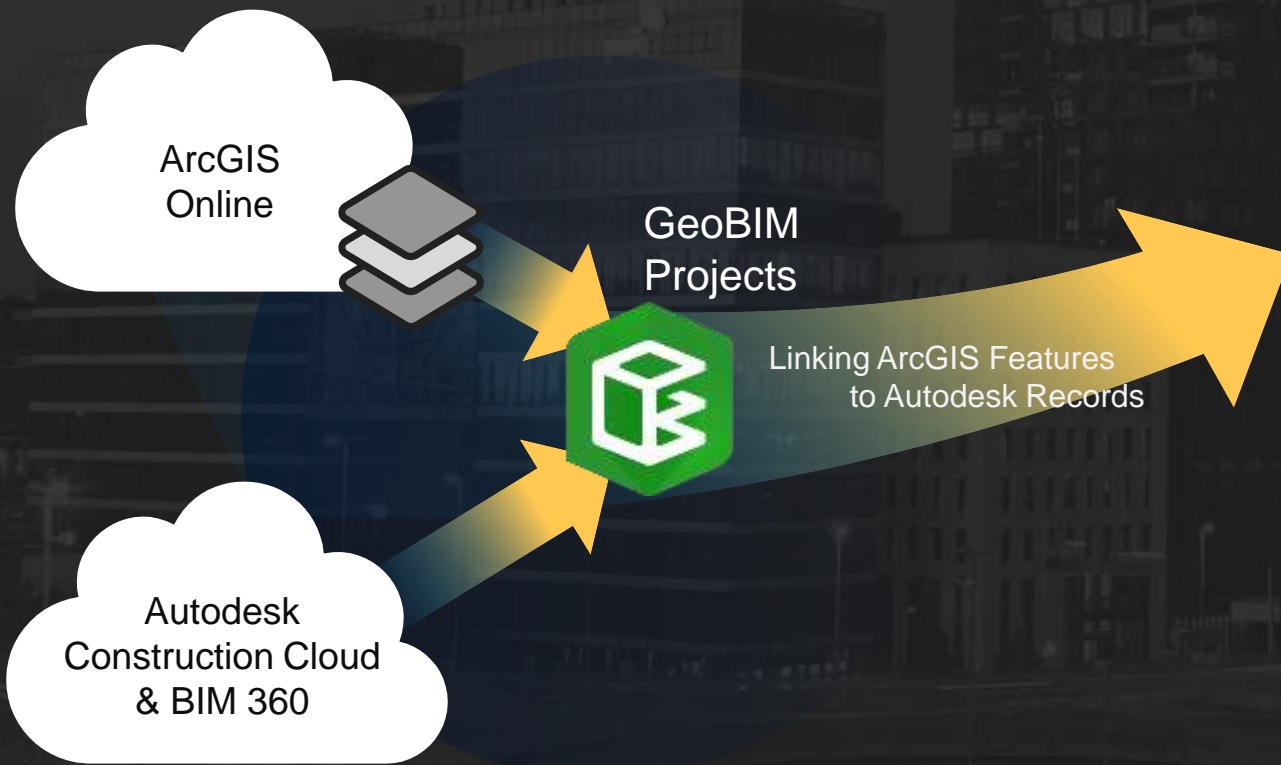
IPS requirements & background

- **Building/Campus of a decent size**
- **ArcGIS IPS uses beacons, Wifi, 3rd party IPS solutions and more**
 - 2021 Release: beacons only
 - 2022: adding Wifi and other technologies
- **Use:cases: Simple VS Complex**
 - **Simple: presence detection (e.g. standing close to a machine)**
 - Roadmap 2022
 - **Complex: indoor positioning (e.g. navigating to a machine)**
 - Release later this year



ArcGIS GeoBIM

Connected Projects in Context

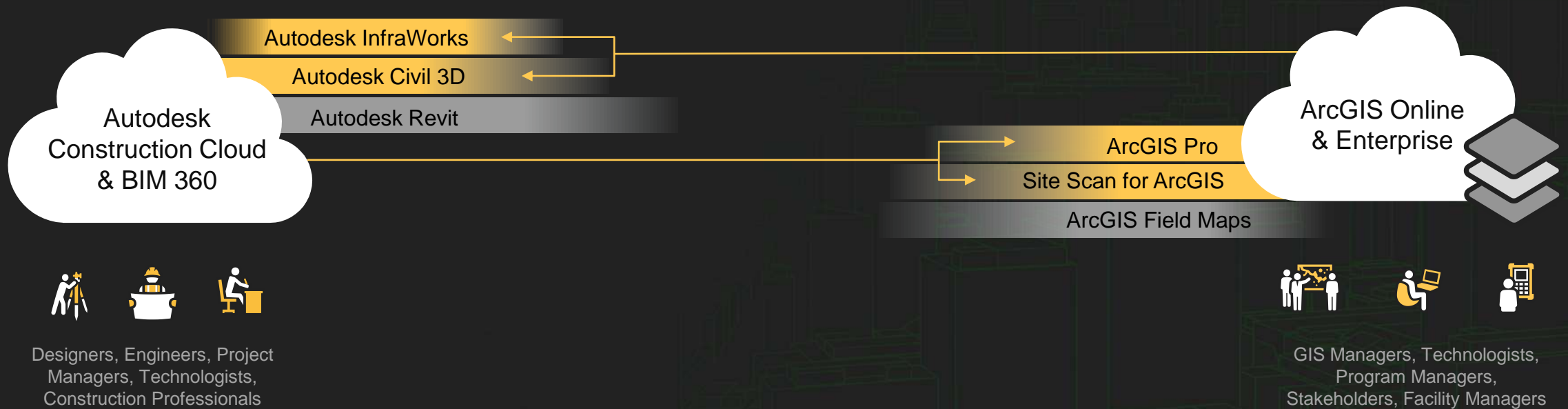


Supporting Integrated Visualization & Query



GeoBIM Apps

Integrating GIS and BIM for Professionals



Resources

- **GeoBIM**

- [ArcGIS GeoBIM – An Introduction \(esri.com\)](#)
- [ArcGIS GeoBIM | Tutorials, Documentation, Videos & Resources \(esri.com\)](#)
- [ArcGIS GeoBIM Overview \(esri.com\)](#)

- **Indoors**

- [Reinvent a Hybrid Workplace with ArcGIS Indoors \(esri.com\)](#)

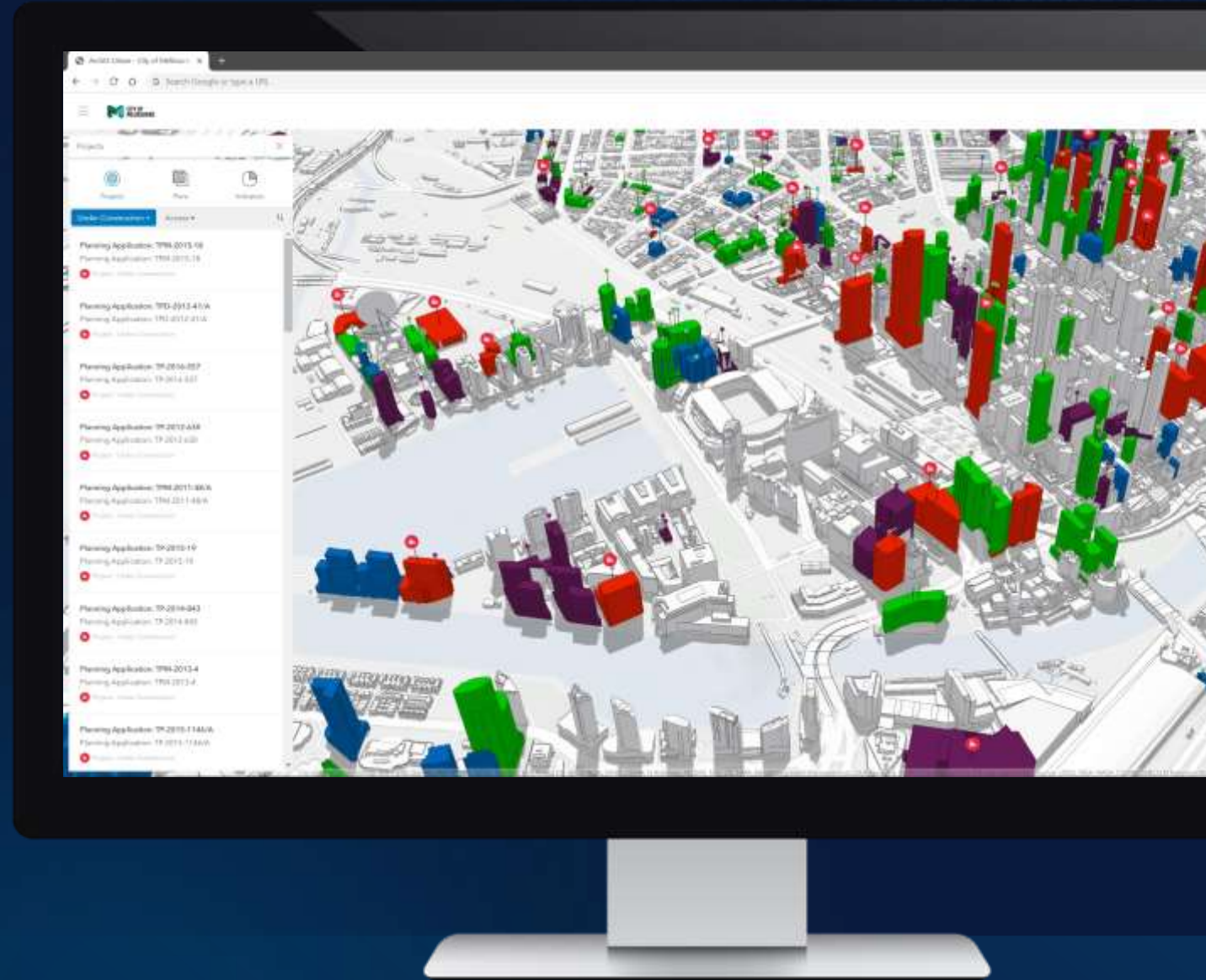
- **IPS**

- [ArcGIS IPS Overview \(esri.com\)](#)





ArcGIS Urban



Our Cities Are Facing Massive Challenges





Visualize Projects Citywide

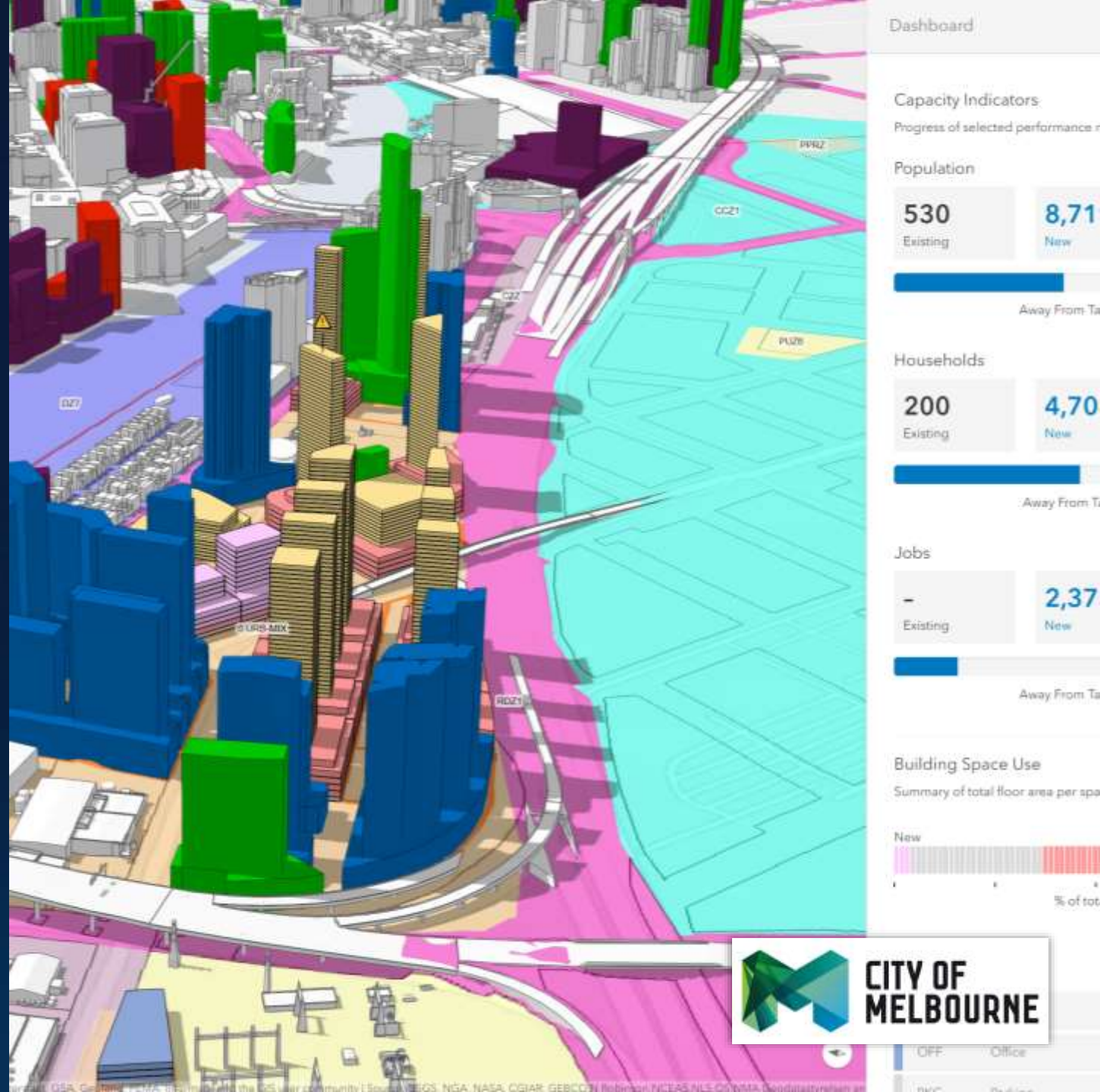
Visualize, track, and review development projects throughout their lifecycle.





Improve Planning Productivity

Streamline the creation and sharing of zoning and land use plans directly in the web browser, in 3D.





Increase Transparency and Understanding

Report on citywide performance indicators and disseminate trends to public and private stakeholders.






Better Engagement

Simplify community involvement
to gain early buy-in.



Demo



Search... 

-  Projects
-  Plans
-  Indicators
-  Ideas



ArcGIS Urban Launch Plan

1

Base Data
Preparation



2

Application
Deployment



3

Example Scenario
Configuration



4

Knowledge
Transfer
(Remote or Onsite)



Resources

Esri UC Plenary and Technical Sessions

youtu.be/u1G_J0FUNqw

Blog: *Getting Started with ArcGIS Urban*

go.esri.com/urban-blog-getstarted

Webinars

go.esri.com/urban-webinars

GeoNet Community

go.esri.com/urban-community

Documentation

doc.arcgis.com/en/urban



ArcGIS Hub is a cloud-based **engagement platform** that helps you work more effectively with your **community**.



Initiatives organize teams, content, and action

Staff



Trusted collaborators:

On initiative teams;
work with staff
Who??



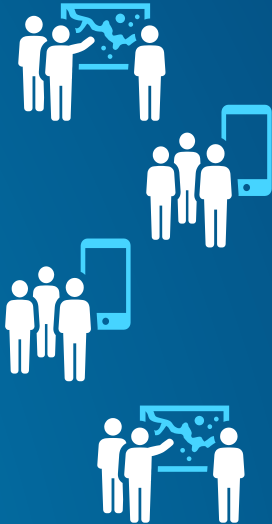
Actively engaged:

Trained volunteers;
on teams



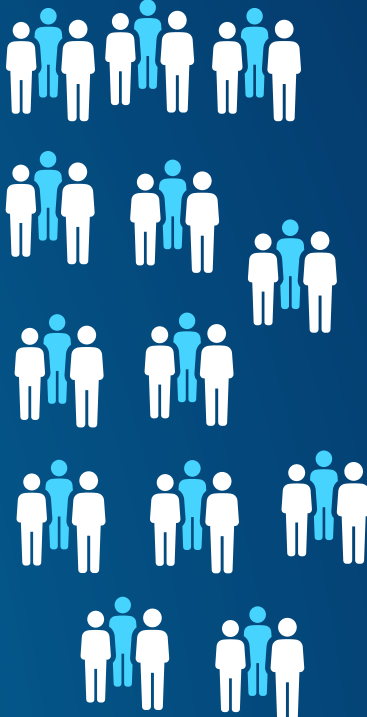
Actively interested:

Have account and
follow initiatives



General public:

Anonymous



On teams

Have identity

INITIATIVES

Hub Enabling Community Engagement

Basic

Hub Sites



Inform and Educate

Open Data and SDI



Share Data & Apps

Premium

Engagement Tools



Collect Feedback, Data

Initiatives, Teams



Deeper Collaboration

Apps & Maps
Dashboards
StoryMaps
Experiences
Plan Scenarios
BA Reports

Data
Apps
Docs

Geospatial Infrastructure



Events
Surveys
Discussions

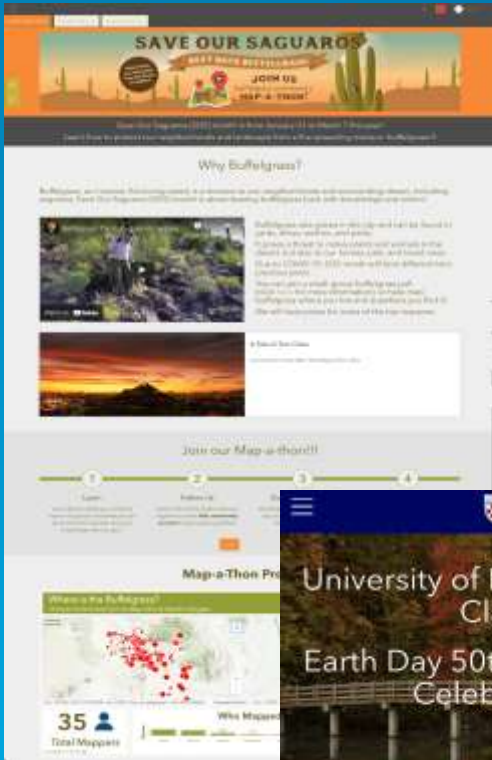
Crowdsourcing

Event Creation
Content Editing
Data Contribution

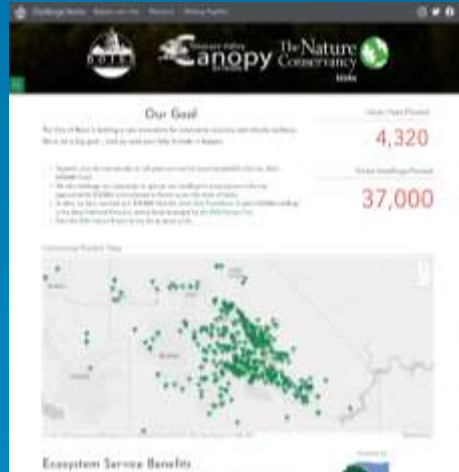
Teams
Messaging

Hubs around the world Building communication bridges

Conservation



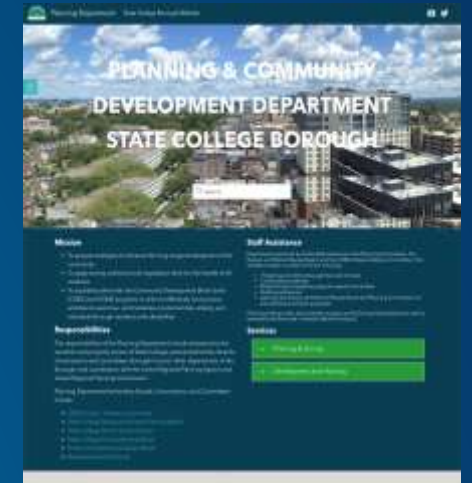
Volunteerism



Transparency



AEC



Professor Wendy Stout's University of Richmond GIS classes celebrate the 50th Anniversary of Earth Day by sharing maps that analyze the themes of Earth Day.

Earth Day is celebrated around the world on April 22 in support of environmental

Education



Neighborhood Projects



Sustainability

Integration and Branding

Integrate your existing site and authoritative data using Hub



Custom Branding options- URLs, Logos, Fonts, Colors, Layout Patters



Surveys

Direct Relief **Global Obstetric Fistula Hub** **FISTULA FOUNDATION**

Connect with the Community

Have an idea for a dataset, analysis, or data visualization? Want to submit fistula repair data for your facility? We would love to hear from you.

We're always interested in improving our services, and every comment submitted will be carefully read.

Global Fistula Hub Communications

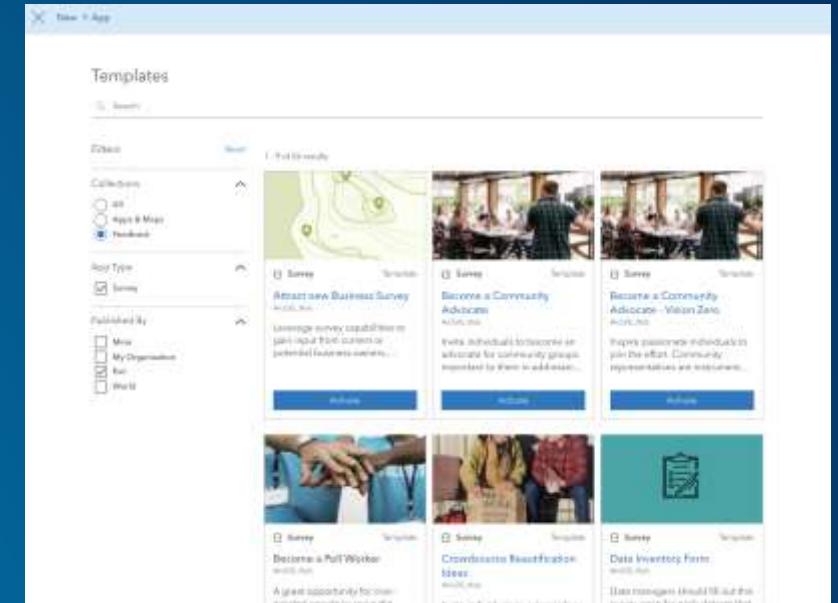
What would you like to do today?*

Please select:

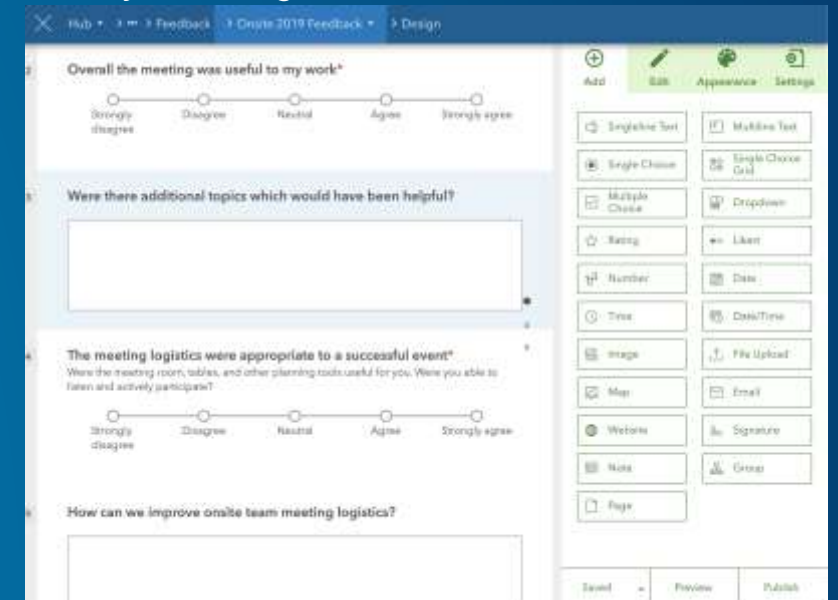
Submit

Powered by ArcGIS Survey123

Survey Templates – From Esri or Community



Survey123 integrated



Hub Events



- Premium only
- Featured events
- Share events across multiple initiatives
- Invite community members
- Email attendees

Hub Resources

- ArcGIS Hub Resources Page- <https://www.esri.com/en-us/arcgis/products/arcgis-hub/resources>
- ArcGIS Hub User Lab- <https://hubuserlab.esri.com/>
- ArcGIS Hub Gallery- <https://doc.arcgis.com/en/hub/gallery/>
- ArcGIS Hub Newsletter- <https://www.esri.com/en-us/arcgis/products/arcgis-hub/news-sign-up>
- ArcGIS Hub Changelog- <https://hub.arcgis.com/pages/changelog>
- ArcGIS Hub GeoNet- <https://community.esri.com/t5/arcgis-hub/ct-p/arcgis-hub>

What is ArcGIS Experience Builder

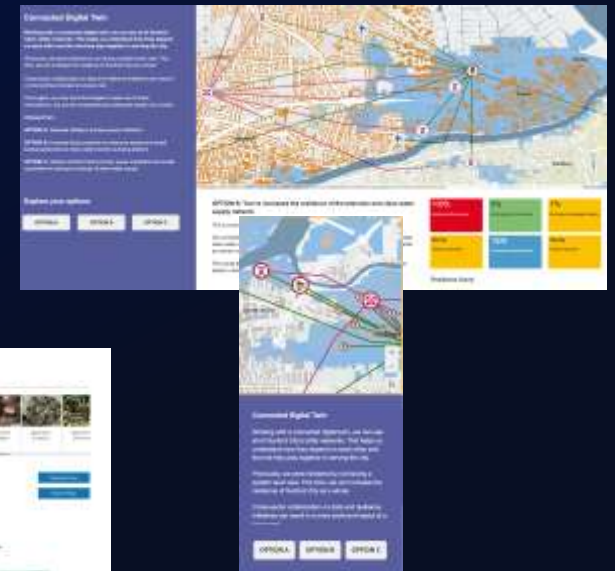
Highly configurable, No-Code application creator

- Build web apps and pages
 - Explore **design** decisions with templates
 - Access ready-to-use **tools**
 - build custom tools
- Data driven
- Modern interface
- Successor to Web App Builder



ArcGIS Experience Builder Key Features

- Mobile optimization
- Flexible Design
- 2D and 3D in one app
- Interconnection between widgets
- Integration with other ArcGIS apps
- Extensibility



An
experience

Design/
config



2023 Roadmap

Q1 2023

- Add Data widget
- Business Analyst widget (out of beta)
- Utility Network Trace widget (out of beta)
- New Slice tool in 3D Toolbox widget
- New Histogram chart in Charts

Q2 2023

- Basemap Gallery widget
- Swipe widget
- Near Me widget (include capabilities in Situation Awareness, Screening, Info Summary)
- Related table editing
- Accessibility

Q4 2023

- Geoprocessing widget
- Analysis widget
- Image Measurement widget
- App URL parameters
- Mobile-first design

Get started with a Learn Lesson

<https://learn.arcgis.com/en/projects/get-started-with-arcgis-experience-builder/>

Helpful Resources



- [Experience Builder Developer Edition](#)
- [Experience Builder Online Edition](#)
- [Gallery](#)
- [Product page](#)
- [Community](#)
- [Blog](#)
- [Learn lessons](#)
- [YouTube Playlist \(full video\)](#)
- [YouTube Playlist \(short video\)](#)
- [YouTube Release Playlist](#)

Transitioning from Web AppBuilder to Experience Builder

**ExB Will Reach Significant Parity By
End of 2023**

Many ArcGIS Solutions are already moving from
Web AppBuilder to Experience Builder

Web AppBuilder Retirement Plan

- The developer edition will retire in July 2024, alongside the legacy 3.x version of ArcGIS API for JavaScript.

[JavaScript API version 3.x Retirement](#)



- Web AppBuilder in ArcGIS Enterprise will be *deprecated* as of now. The final release of Web AppBuilder as part of ArcGIS Enterprise will be planned to be H1 2025 (Enterprise 11.5).
- Web AppBuilder in ArcGIS Online will retire at the end of 2025.

Web AppBuilder Roadmap for Retirement Blog

- Blog

- Timelines
- FAQ
- Migration resources



Speaking of “Retirement” ...so you’re still using ArcMap...

ArcMap is slated for retirement March 1st, 2026

[ArcMap Product LifeCycle](#)

[ArcMap Continued Support Plan](#)

If you are an ArcGIS Enterprise User

With no plans for an ArcMap 10.9,
the runtime that allows for services
to be published from ArcMap
will be removed from ArcGIS Enterprise at version 11
Current version is 11.1

What does this mean exactly?

ArcGIS Enterprise contains two internal runtimes.

The diagram features a central yellow circle on the left containing the text 'ArcGIS Enterprise contains two internal runtimes.' Three lines radiate from the right side of this circle to three stacked rectangular boxes on the right. The top box contains the text 'One runtime for services to be published from ArcMap.' The middle box contains 'One runtime for services to be published from ArcGIS Pro.' The bottom box contains 'Keeping these runtimes up to date involves work for every release.' The background is a dark blue gradient with a faint map of South America in the bottom left corner.

One runtime for services to be published from ArcMap.

One runtime for services to be published from ArcGIS Pro.

Keeping these runtimes up to date involves work for every release.

Starting with the
ArcGIS 2021
releases...

Both runtimes will still
be included.

New tooling will switch
compatible services
from ArcMap runtime
to ArcGIS Pro runtime.

Services that aren't
compatible will need to
be republished.

Starting with the
ArcGIS 2022
releases...

Only the
ArcGIS Pro runtime
will be included.

It will no longer
be possible
to publish or run
services from ArcMap.

Some ArcMap-based
services will no longer
run.

ArcGIS 2021

ArcGIS 2022

10.8.x



10.9.x



11.x



2020

2021

2022

Contains both
ArcMap and
ArcGIS Pro runtimes.

Will contain both
ArcMap and
ArcGIS Pro runtimes
+ migration tooling.

Will only contain
ArcGIS Pro runtime.

ArcGIS Pro 3.x

Semantic Versioning

- ArcGIS Pro version numbers use the semantic versioning specification
- Given a version number MAJOR.MINOR.PATCH, increment the:
 - MAJOR version when you make incompatible API changes,
 - MINOR version when you add functionality in a backwards compatible manner, and
 - PATCH version when you make backwards compatible bug fixes.

Example **2.9.2 vs 3.1.1**

ArcGIS Pro 3.x

At 3.0 ArcGIS Pro is moving to .NET 6 (formerly known as .NET Core)

- 4.8 was the last release of the .NET Framework
- .NET 6 is the current Long Term Support release of the new .NET line

This will result in breaking changes to the Pro APIs

- Add-ins will need to be converted to .NET 6
- Recompiled to work with Pro 3.0 and breaking changes fixed



Projects in 3.x

ArcGIS Pro projects are a zip archive

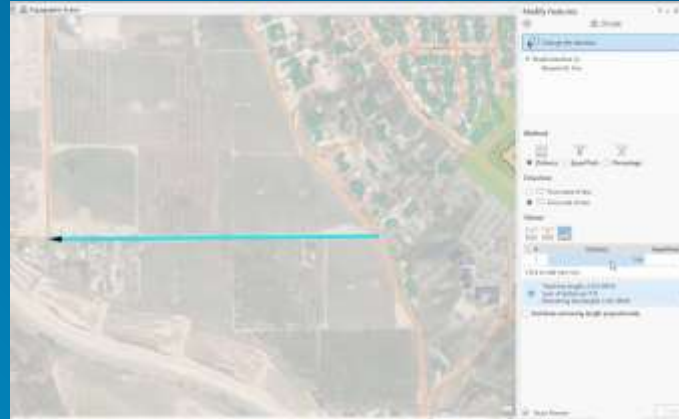
- 1.x and 2.x projects contained CIM objects persisted as XML

At 3.0, the CIM objects in the zip archive move to JSON

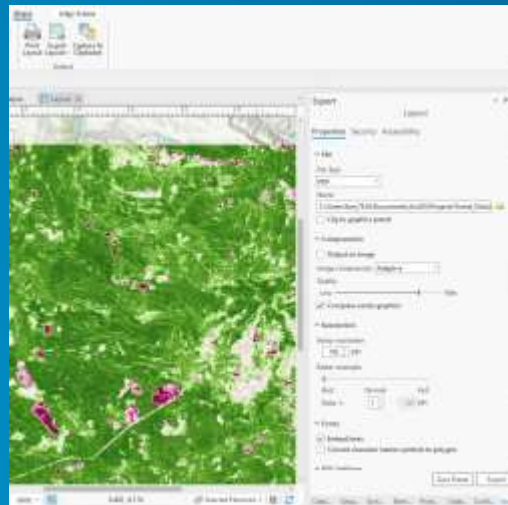
- Smaller size
- Faster
- Matches lyrx, mapx, pagx, files and styles
- Matches the use of the CIM on web and mobile
- We document the CIM spec as JSON at <https://github.com/esri/cim-spec>
 - This will expand to include JSON Schema

Performance and Productivity Enhancements

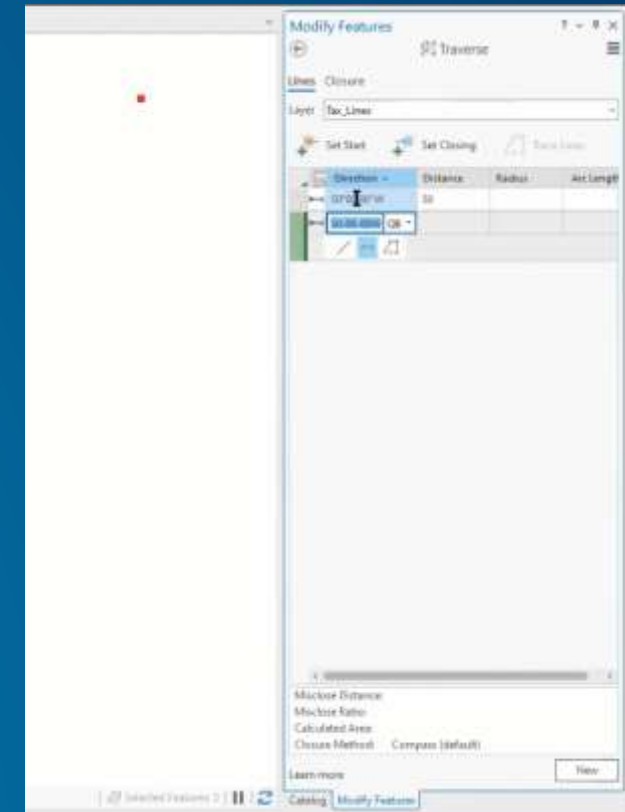
- Content Management
- Editing
- Display
- Geodatabase
- Geoprocessing
- Layout
- Map Authoring
- Parcel Fabric
- Scene Layers



Repetitions for distances - Divide tool

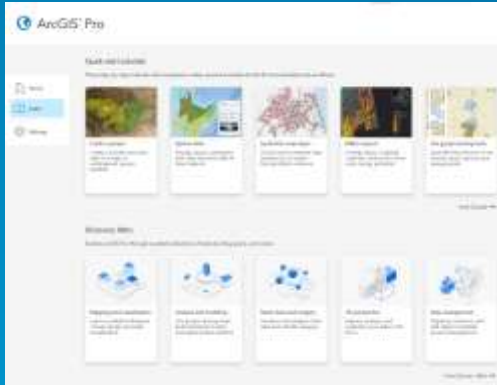


Export presets

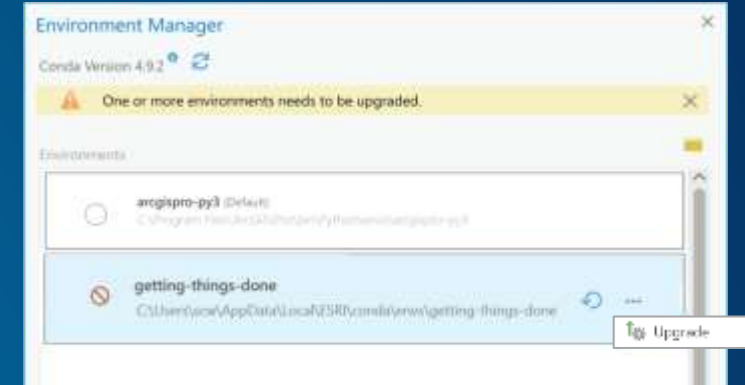


Traverse entry grid performance

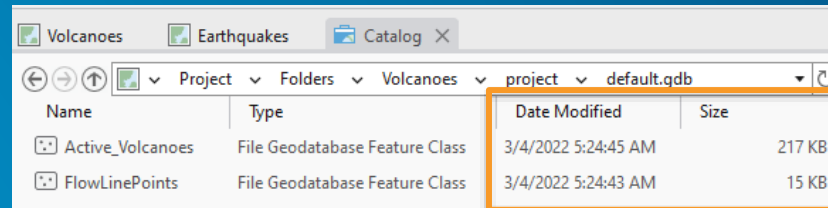
ArcGIS Pro 3.x Highlights



Dedicated Learn Page



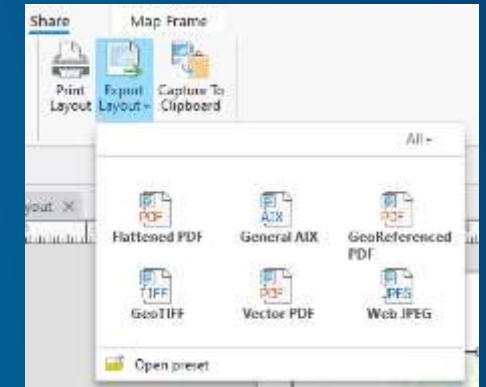
Update Cloned Python Environments



Date Modified & Size in Catalog View

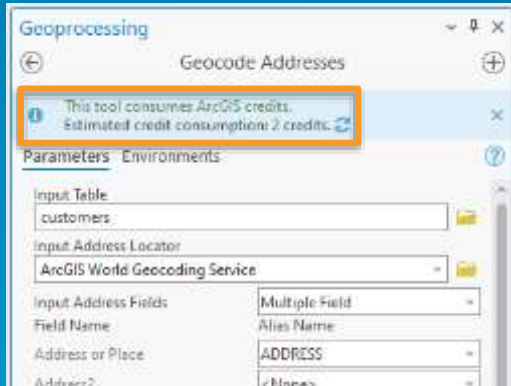


OpenStreetMap 3D Layers

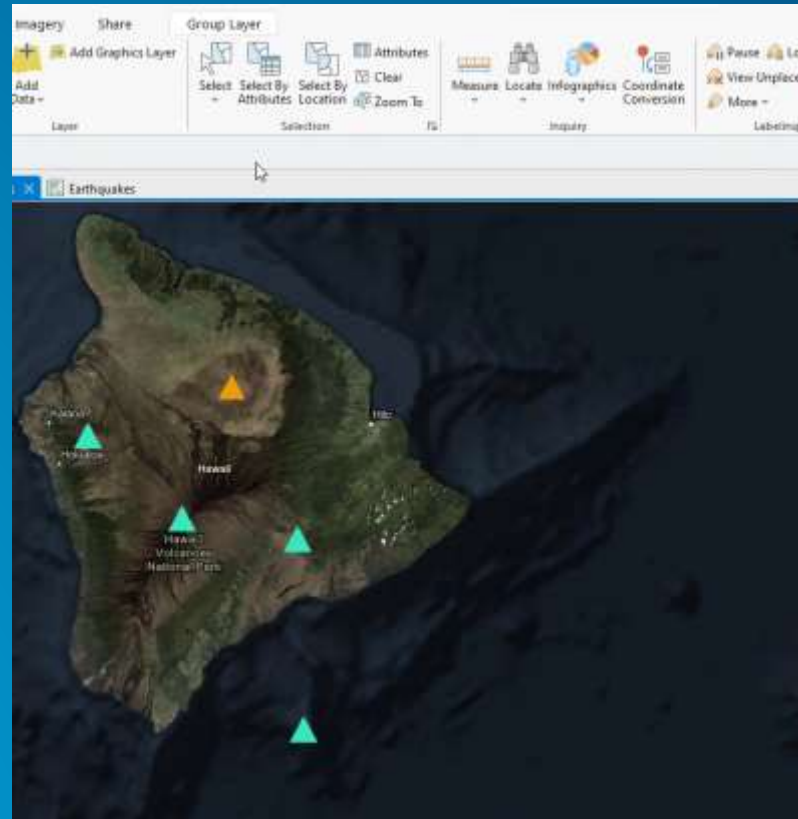


Export Presets

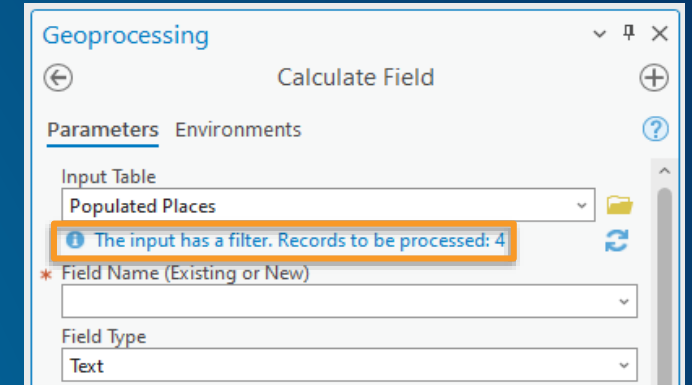
ArcGIS Pro 3.x Highlights



Geocoding Credit Estimation



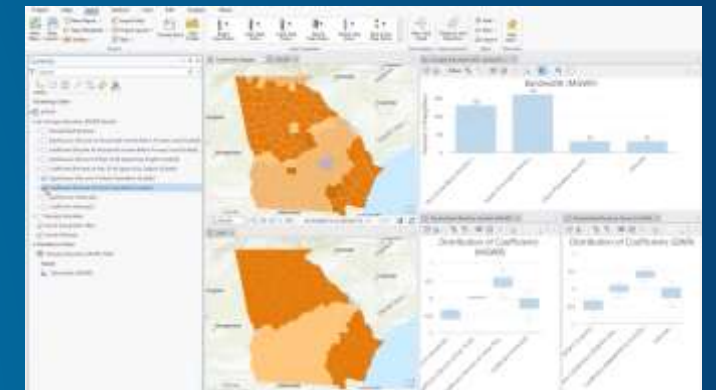
Tool parameter memory/autofill



Selection and filtered input notification



New Hydrology Analysis Tools

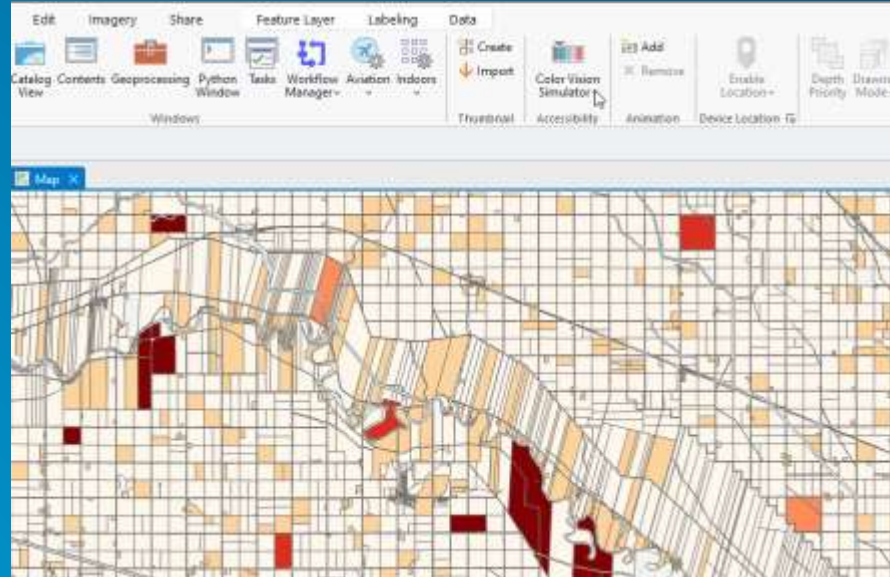


Multiscale Geographically Weighted Regression (MGWR)

ArcGIS Pro 3.x Highlights



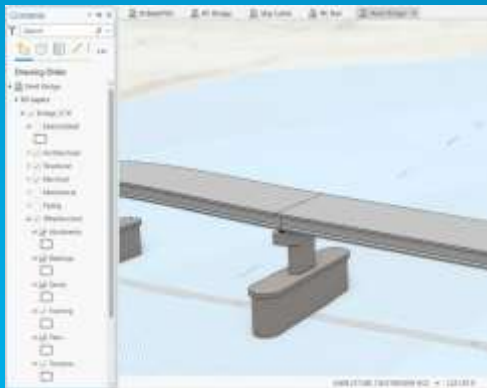
Time aware stand-alone tables



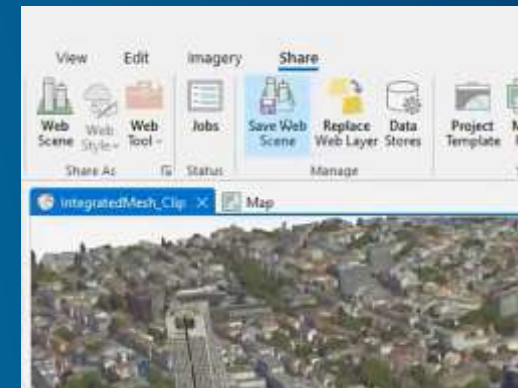
Color Vision Deficiency Simulator



Maps in Reports



IFC Infrastructure Discipline Support



Save Web Scene

ArcGIS® Pro Roadmap

go.esri.com/ProRoadmap

Now

- Upgrade Python Environment
- Reality Mapping Extension
- **Projects in the Enterprise**
- Export Presets
- **Provenance in Knowledge Graphs**
- **Indoor Positioning**
- **Suitability Modeler Additional Weighting**
- Parcel metes and Bounds Visualization
- **Roof Editing**
- Enhanced Radar Data Support
- Hydrologic Analysis
- Multiscale GWR
- Scene Layer Performance
- OSM Streetmap 3D Layers
- Maps in Reports

Near

- Simulation Modeling
- Catalog Layers
- Point Cloud Scene Layer Data Management
- Non-versioned Editing
- Presentations
- Spatio-temporal Density Analysis
- Scientific Data (DSG) Ingestion
- Managed Indoor Data Pipeline
- Roof Editing in Stereo
- ENC Chart Viewing
- 64-Bit Object ID

Coming

- Terrain Editing
- Materials Authoring
- High Fidelity Rendering
- 3D Mesh as Ground
- Integrated Mesh Scene Layer Data Management
- New Data Types (BigInteger, Timestamp with Time zone)

Location Tracking in ArcGIS | Tracking Services for Your Organization

- **New Organizational Capability**

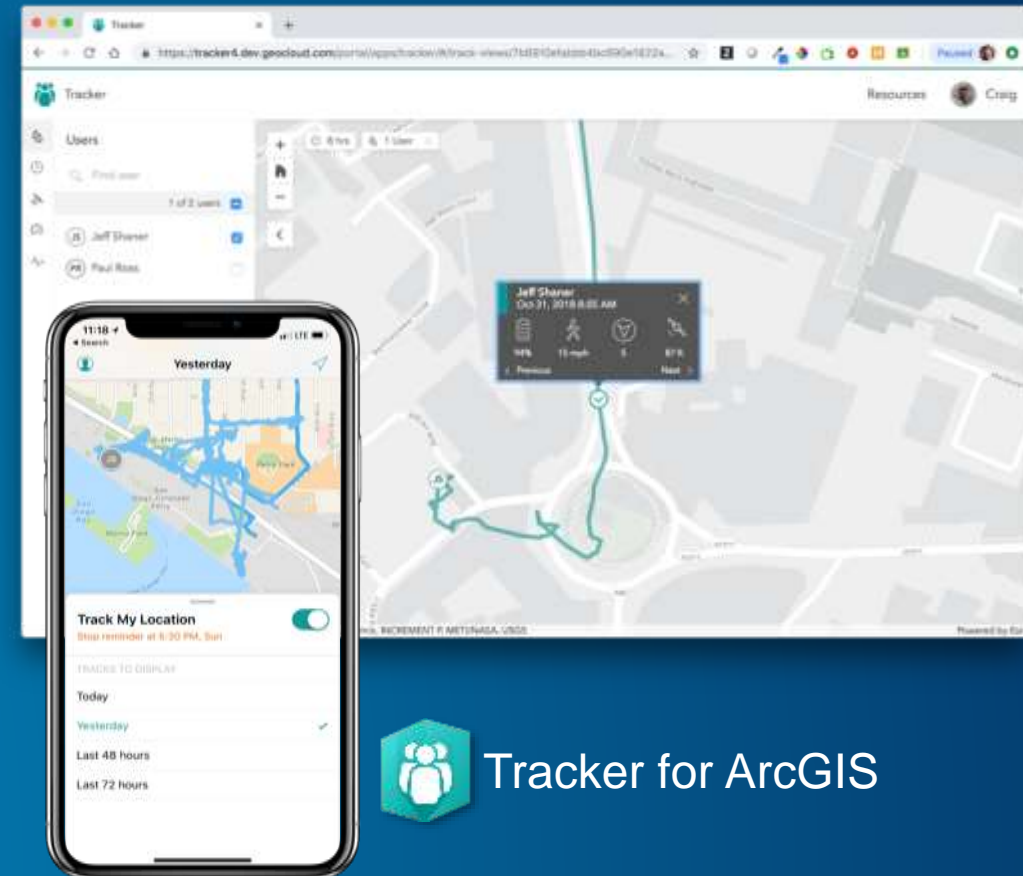
- Administrators can enable location tracking in their organization
- Will create a single service for storing & managing location tracks in the big data store

- **Mobile app**

- Simple, schedule-driven tracking experience
- Supports offline use
- Optimized for low battery consumption

- **Web app**

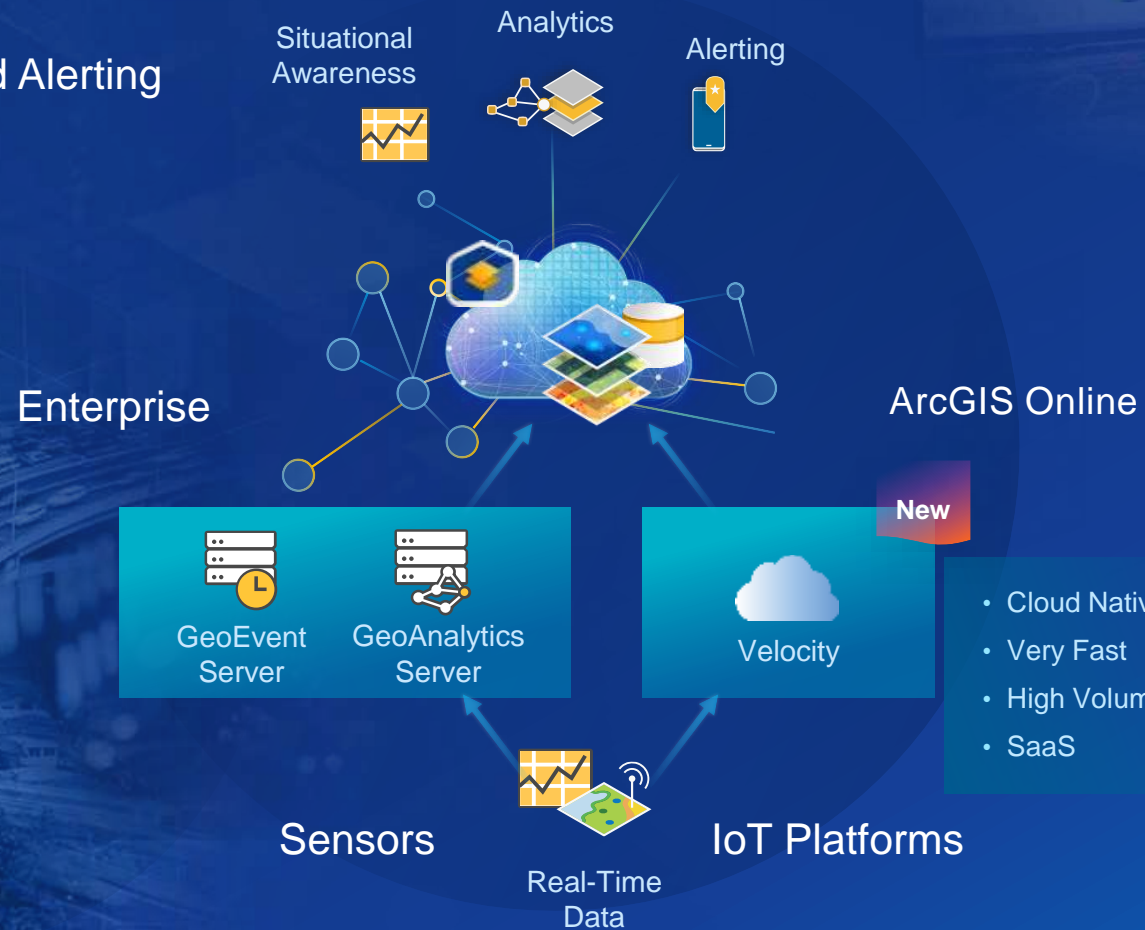
- Create Track views
- Display and manage users & their location history
- See only the users that you have access to



Tracker for ArcGIS

Real-Time Visualization & Analytics Integrating Sensor Networks and IoT

Supporting High-Velocity Data Streams
Tracking, Monitoring and Alerting



Collapsing the Time from Measurement to Decision Making

ArcGIS GeoEvent Server

ArcGIS Velocity

Enterprise ready

Cloud ready

On-premises, requires ArcGIS Enterprise

Software as a service (SaaS), requires ArcGIS Online

Secure deployments in local or cloud environments

Kubernetes-based, cloud-native architecture

Real-time data ingestion, processing, and analysis

High-speed, real-time data ingestion; processing; and analysis

Extensible

Easy configuration and maintenance with built-in resiliency and failover

Advanced real-time processing

Big data analysis

ArcGIS Velocity

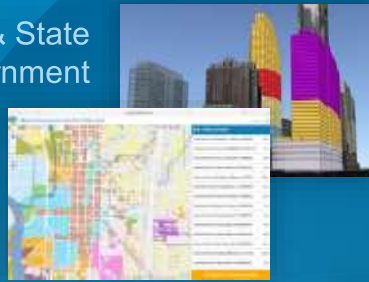
Leverage sensor and IoT data for geospatial reasoning



...connects to industry leading cloud IoT platforms, data lakes, and sensor vendor APIs

Solution Components

Local & State Government

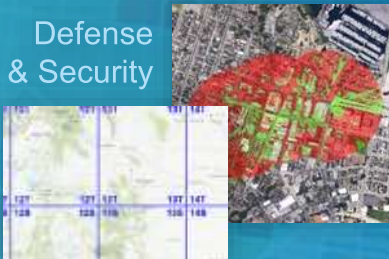


Utilities & Telecom



Emergency Management & Public Safety

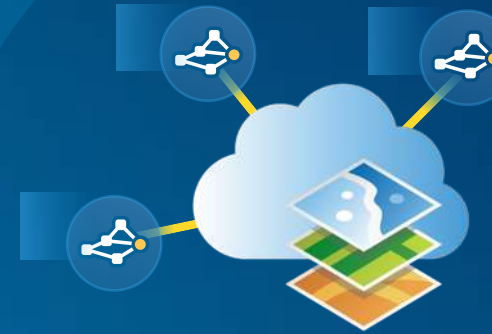
Defense & Security



- Popular (500K Downloads)
- Extensive (450+)
- Open Source
- Fully Supported

- Tools
- Data Models
- Apps Workflows
- Maps
- Widgets Add-Ins
- Dashboards

Solution Configurations



New

Preconfigured

Ready to Deploy

- Technology
- Workflows
- Implementation
- Training
- Support

Services are deployed from ArcGIS Online

<http://solutions.arcgis.com/>

New and Planned Solutions

- New
 - Parks Management
 - Broadband Outreach
 - Lead Service Line Inventory
 - Curb Restriction Management
 - ROW and Easement Management
- Planned
 - Spatial Finance
- Built on Key ArcGIS Tech
 - ArcGIS Hub
 - Experience Builder
 - Survey 123





Curb Regulation Management

- Streamline curb regulation inventories

Example: Curb Regulation Management

Streets now support a vast array nonvehicular uses

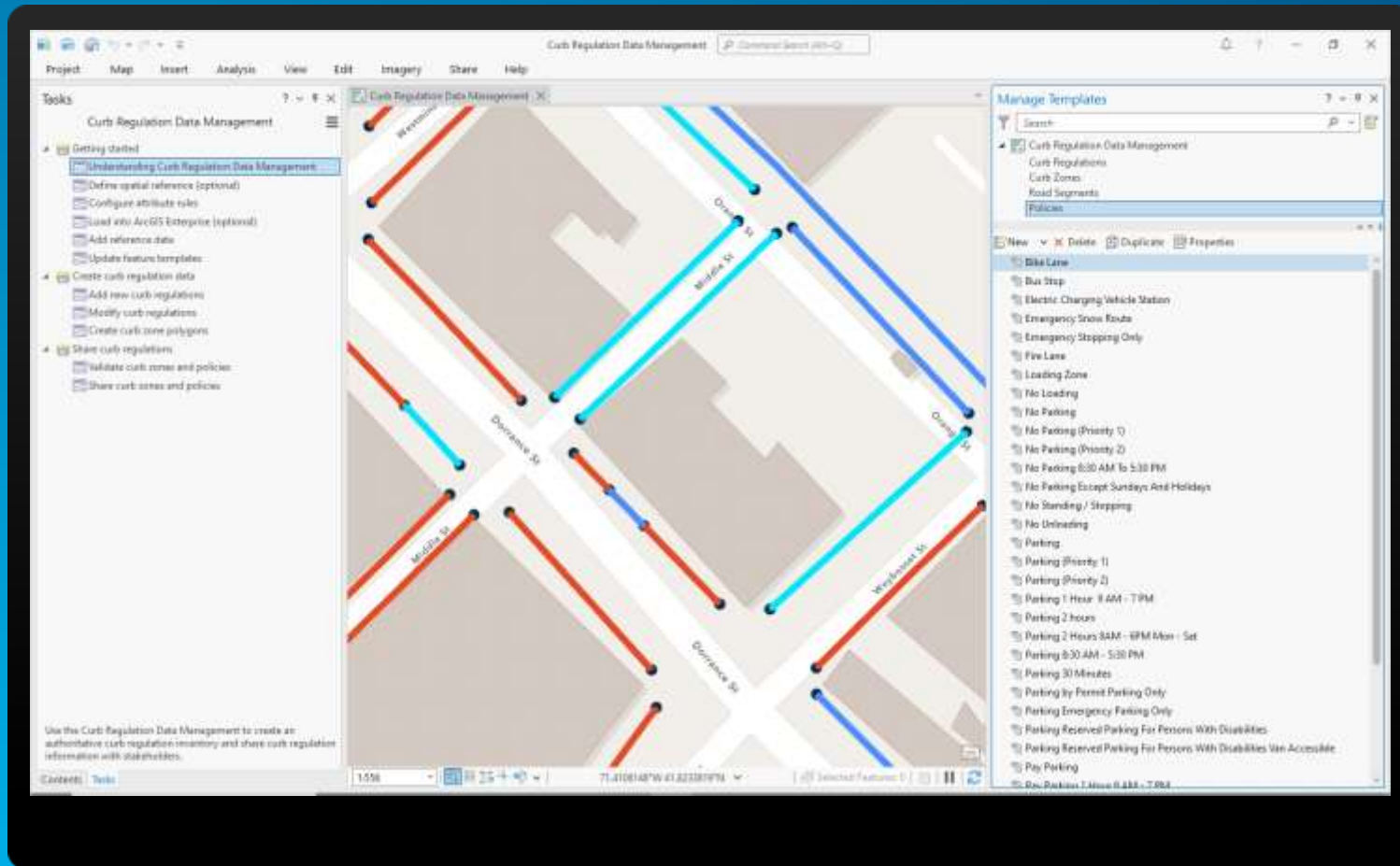
- Growing use of, and competition for, curb space in urban areas and downtowns
- Data and knowledge about the curb is generally lacking
- Many departments in local government need access to curb information

Curb Regulation Management

Focused Maps and Apps



Streamline curb regulation inventories




An ArcGIS Pro project used to maintain an inventory of curb regulations and share regulations with internal stakeholders.

Streamline curb regulation inventories



An ArcGIS Experience Builder app used by planning, engineering, and enforcement staff to visualize and understand curb regulations.

A futuristic cityscape at night, featuring a prominent skyscraper in the center. The scene is overlaid with a glowing purple and blue grid, suggesting a digital or augmented reality environment. The text is presented in white, bold, sans-serif font.

Tomorrow's Challenges

**Electric &
Autonomous
Vehicles**

Site EV
Charging
Stations

**Indoor
Mapping**

Space and
Asset
Management

**Drone-Based
Imagery**

Streamline Damage
Assessments

What's Next?

Identifying Opportunities for Reimagination...



What's Next

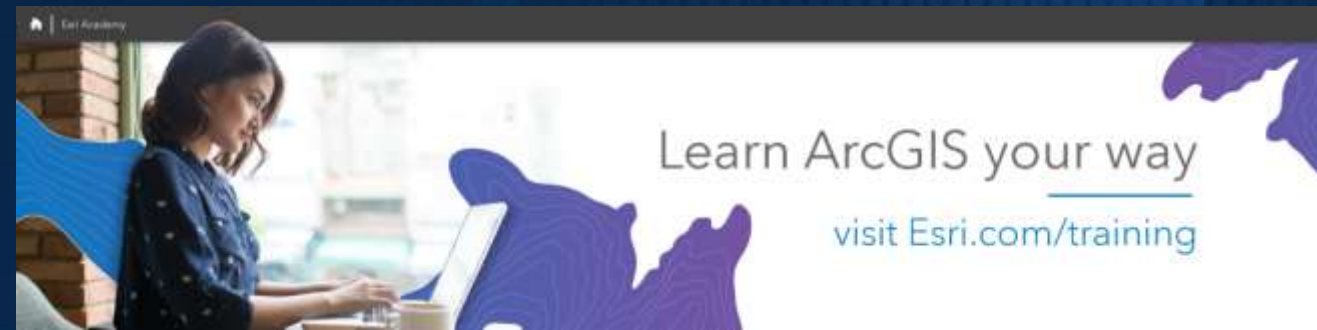
Learning & Community

Learning

- Classes & E-Learning
- Esri Technical Certification
- ArcGIS for Personal Use

Community

- Esri Events
- GeoNet



DESKTOP

ArcGIS Desktop Entry
ArcGIS Desktop Associate
ArcGIS Desktop Professional

ENTERPRISE

ArcGIS Enterprise Administration
Professional
Enterprise Geodata Management
Professional

SPECIALTY

ArcGIS API for JavaScript Specialty
ArcGIS Online Administration Specialty



Questions &
Answers
mscott@esri.com

...slides will be
provided ASAP...

Thanks!

See you this Fall!

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Desmond Crowne Plaza, Albany, NY



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