

Empowering a Data-Driven Organization

Adam Carnow

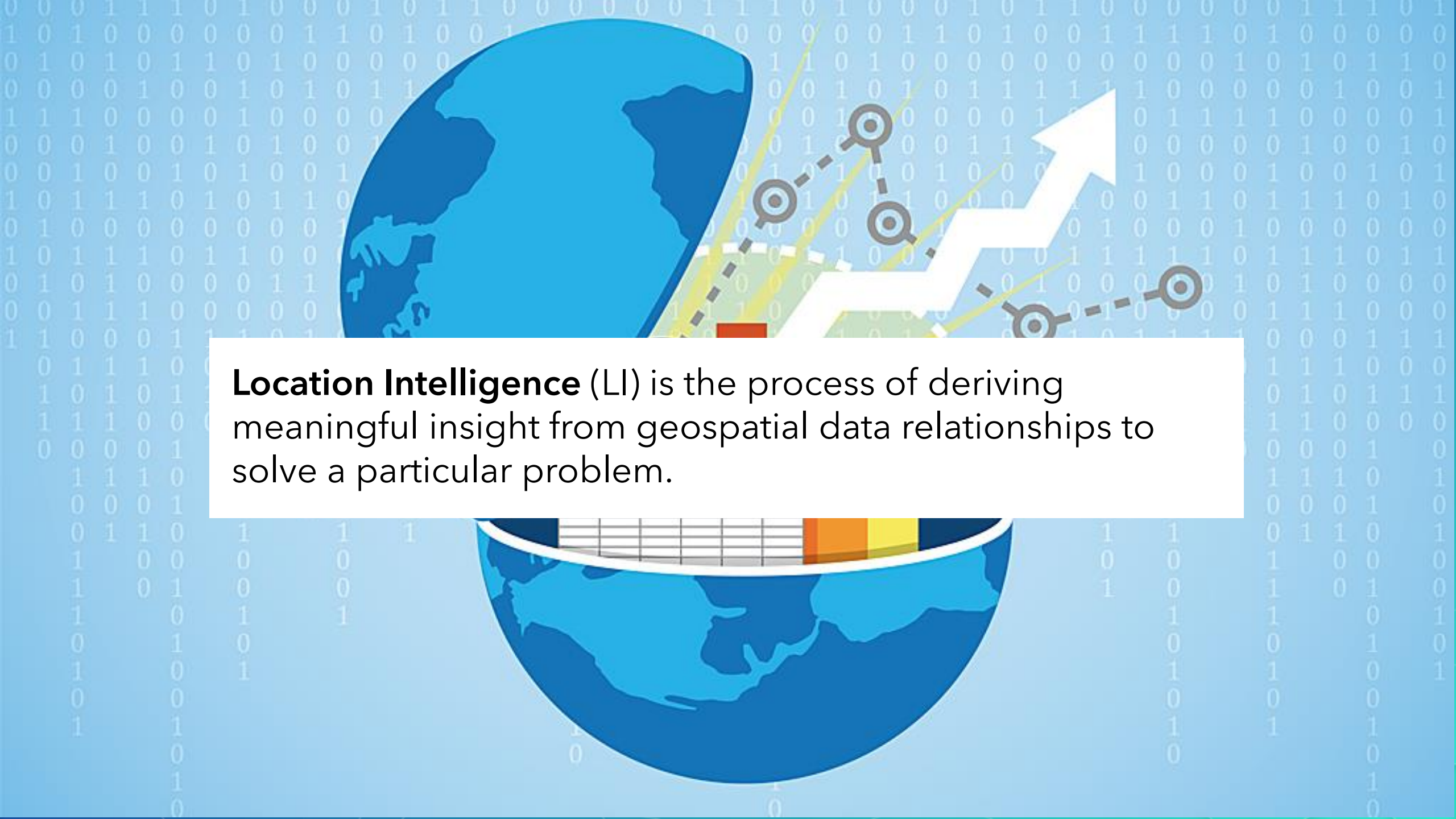
Abstract

There is a lot of discussion surrounding business intelligence and data-driven decisions. But what does that mean? What technology and governance do you need in place? Organizations need to develop a comprehensive strategy for data-driven decision-making. This session will show you how to use Esri technology to create your strategy by first collecting, organizing, and analyzing data in a more meaningful way; then identifying ready-to-use applications to solve problems that affect your community; and finally, providing your personnel with the tools they need to act on this information.

Business Intelligence defined:

Business Intelligence (BI) is the set of techniques and tools for the transformation of raw data into meaningful and useful information for business analysis purposes.





Location Intelligence (LI) is the process of deriving meaningful insight from geospatial data relationships to solve a particular problem.

Data-Driven defined:

...often labeled as business jargon for evidence-based decision-making...

Data-Driven is progress in an activity compelled by data, rather than by intuition or personal experience.

Data-Driven defined:

...often labeled as business jargon for evidence-based decision-making...

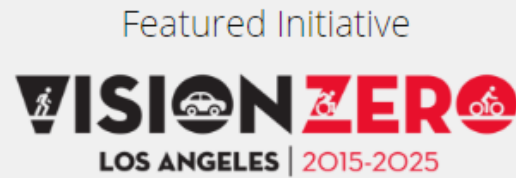
Data-Driven is progress in an activity compelled by data, rather than by intuition or personal experience.

- Controlling for other factors, data-driven organizations are:
 - 5% more productive
 - Analytics pays back \$13 per \$1 invested

Source: Creating a Data-Driven Organization by Carl Anderson

<http://www.slideshare.net/CarlAnderson4/ddo-seattle>

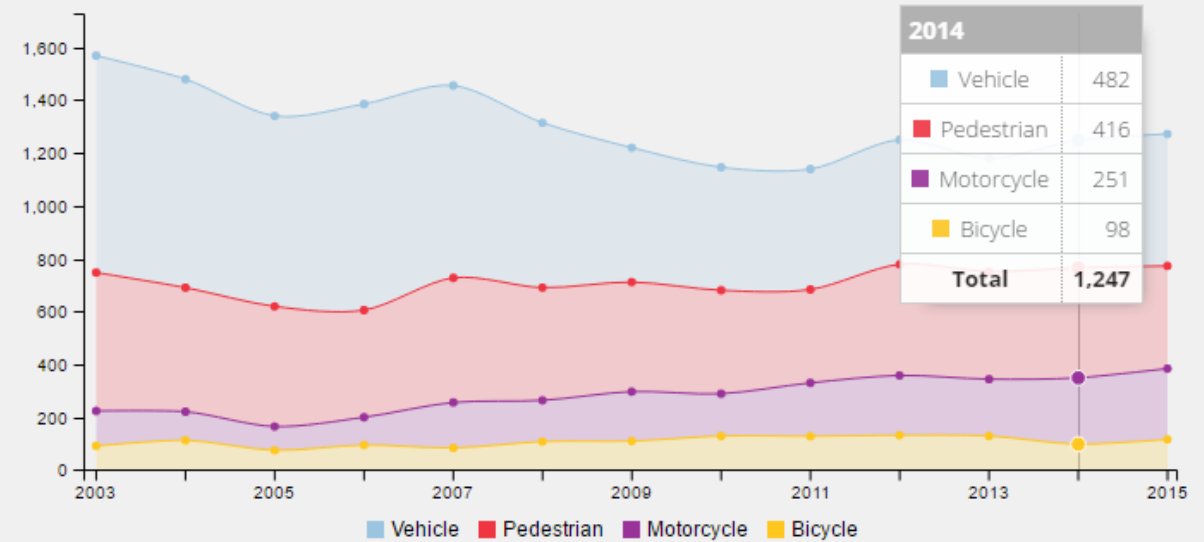
Putting Data to Work



“Every year, more than 200 people are killed while trying to move around Los Angeles. Nearly half of the people who die on our streets are people walking and bicycling, and an alarming number of them are children and older adults. Our streets must be safer.” – Mayor Eric Garcetti

See how the Los Angeles Vision Zero initiative is making our streets safer by putting data to work.

[See Data in Action](#)



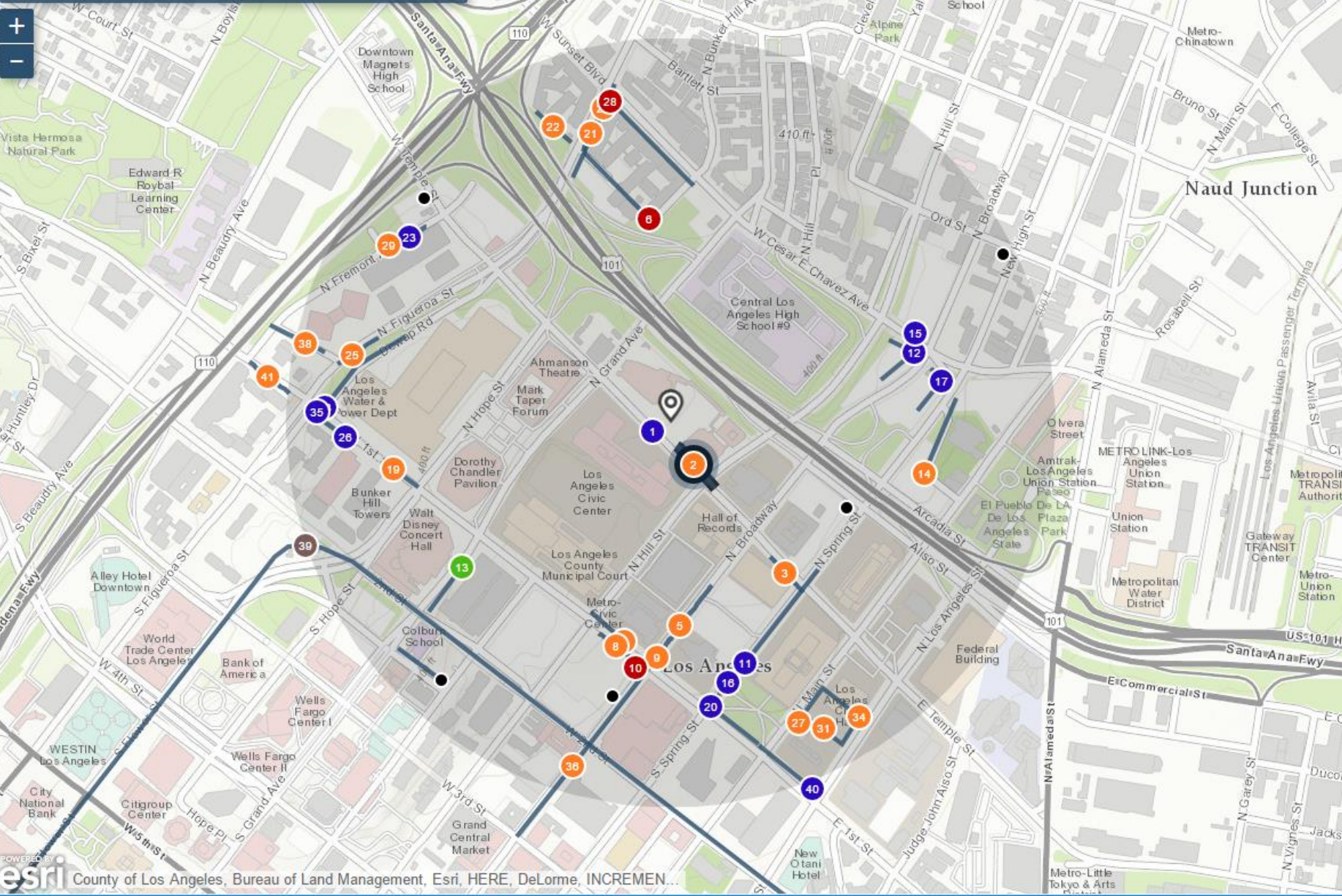
Street Wize

Legend

Current Work

Upcoming Work

Find address or place



41 Projects

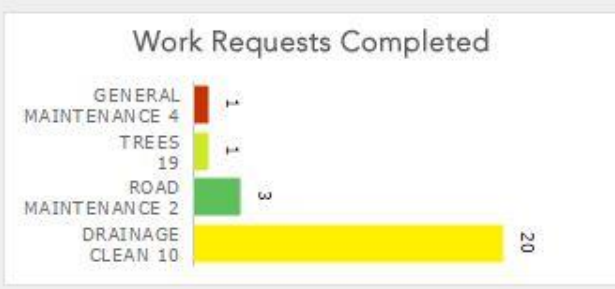
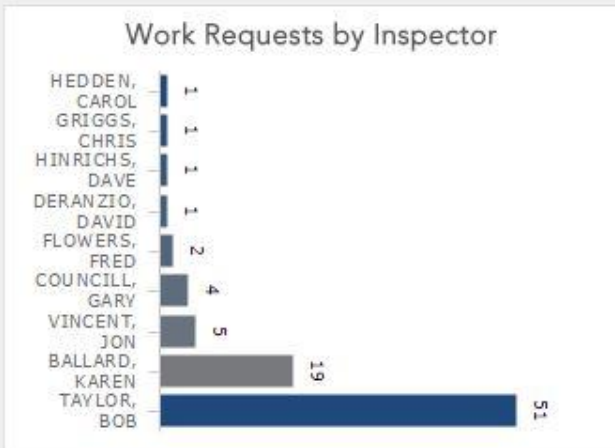
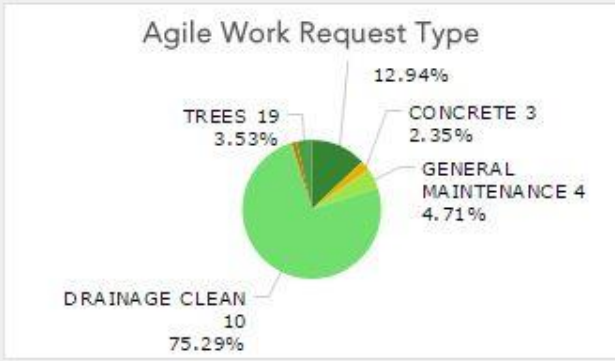
Search Radius (0.5 mi)

2 City Capital Improvement Projects
0.06 MILES Remaining: 11 months

ID	18977-4
Agency	Bureau of Engineering
Category	BOE CIP
Type	Capital Improvement Project - SSRP N07 Broadway & Pico BI
Description	Secondary Sewer Renewal Program.
Contact Name	Mary Thomas
Contact Phone	(213) 485-1552
Start Date	Oct 07, 2015
End Date	Aug 31, 2017
Status	In Progress
Report	More info

3 City Capital Improvement Projects
0.24 MILES Remaining: 11 months

4 Sewer & Stormdrain Permits
0.25 MILES Remaining: 1 year



- ### Latest Calls
- #1594601 ()
NEED HIGH WATER SIGNS INSTALLED (PER KAREN)
 - #1594598 (RODGERS, JOHN)
CITIZEN STATED COUNTY CAME OUT TWICE AND ADVISED PIPE CORRODING UNDER YARD AND SHOULD BE RE-LINED. NOW HOLE IS GETTING BIGGER NEAR DRIVEWAY AND INTEGRITY OF DRIVEWAY IS A FACTOR. THE PIPE GOES INTO JOE'S CREEK. CITIZEN STATED EMERGENCY DUE TO DRIVEWAY IMPACTED SOON.
 - #1594597 (SCF 2857840)
WATER FROM THE DRAINAGE DITCH BEHIND CALAIS IS OVERFLOWING ONTO TOWN APARTMENTS PROPERTY. WITH CONTINUED RAIN OUR DOWNSTAIRS UNITS WILL SOON FLOOD. MAYBE PRIVATE, BUT SAW DRAINAGE PIPES ON MAP.
 - #1594596 (DEFABBRIO, SUSAN)
THE DRAINAGES IN THE DEAD END ARE FILLED WITH GARBAGE AND NOW THE STREET IS FLOODED!
 - #1594595 (COLEMAN, TAMMY)
DRAINAGE ISSUE AS STORM DRAINS ARE NOT DRAINING POSSIBLY CLOGGED & THIS IS AT BOTH THE NORTH & SOUTH ENDS OF THE ROADWAY (WATER IS KNEE DEEP)
 - #1594593 (KENDALL)
TREE FELL ON VACANT HOME POSSIBLY PRIVATE & ON SUNDAY MORNING & YESTERDAY THE NEXT DOOR NEIGHBORS STARTING CUTTING IT UP & LEFT ON ROW & NOW ITS BLOWN INTO THE ROADWAY & IS BEING HIT BY VEHICLES & WORRIED ABOUT THE STORM & WANTS REMOVED
 - #1594592 (GORDON)
POT HOLE IN FRONT OF PROPERTY.
 - #1594591 (TIFFANY)

Road Blocks

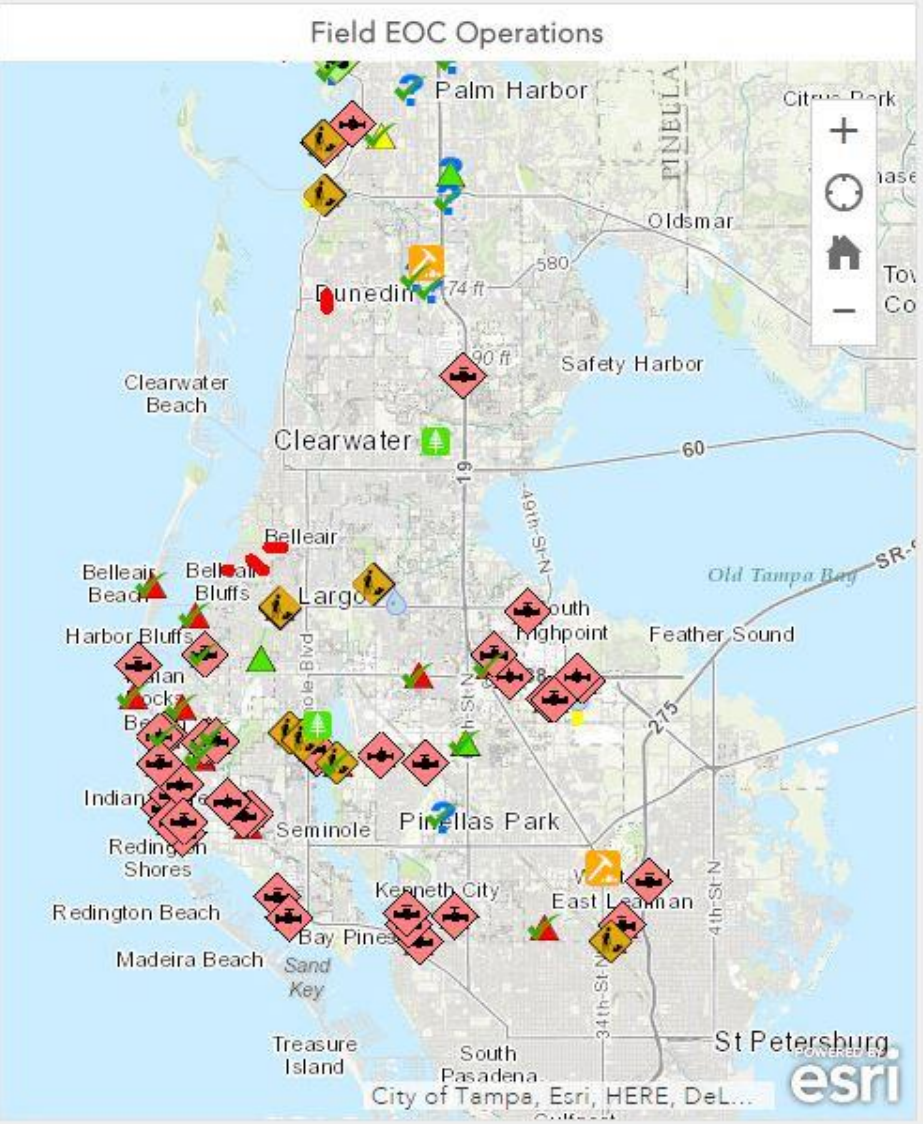
11

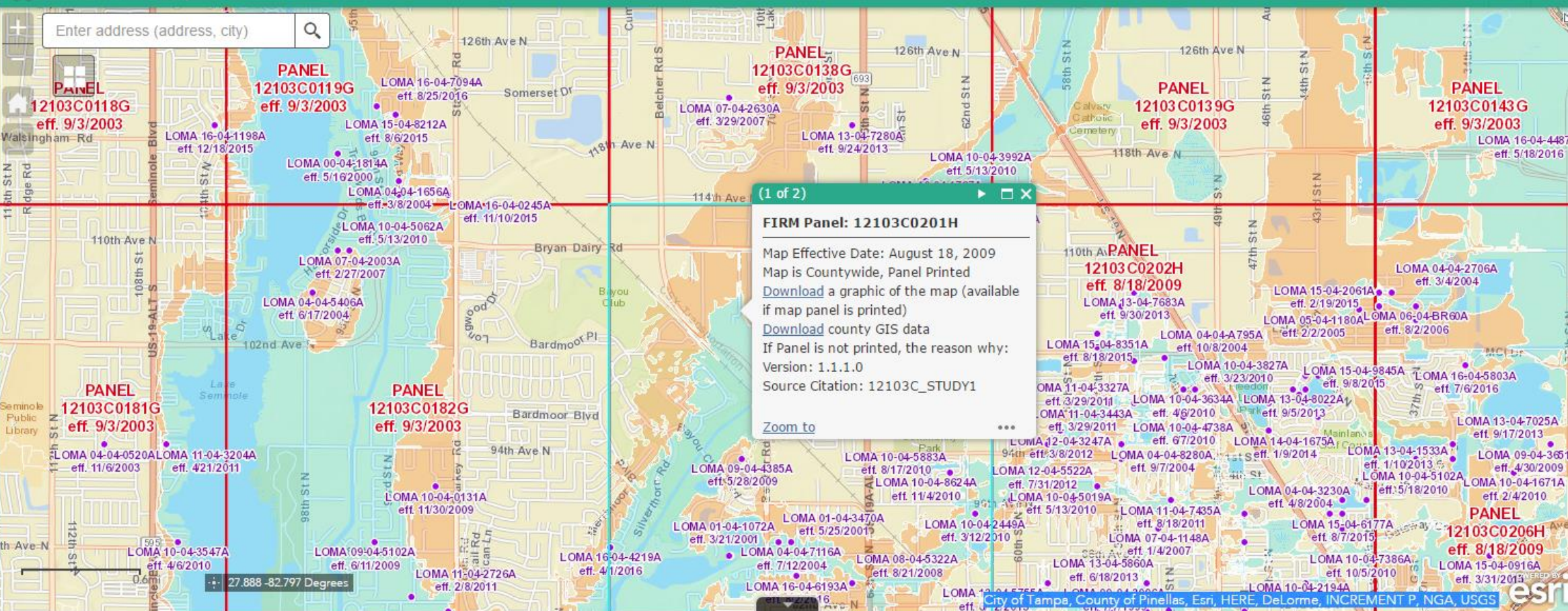
Road Closures

20

Road Detours

0





LOMRs LOMAs FIRM Panels Cross-Sections Base Flood Elevations Flood Hazard Boundaries Flood Hazard Zones

Options Filter by Map Extent Zoom to Clear Selection Refresh

OBJECTID	SHAPE	CASENUMBER	STATUS	PROJECTNAME	PROJECTCATEGORY	DATEENDED	DATEENDEDSTR	CID	COMMUNITYNAME	DETERMINATION	LAT	LON	PDFHYPERLINKID
17155		11-04-5435A	Completed	BEACON RUN, UNIT 2, LOT 76 -- 6519 107TH TERRACE	LOMA	June 13, 2011		120251	PINELLAS PARK, CITY OF	DetermLetter	27.87	-82.73	11-04-5435A-120251
19704		09-04-4385A	Completed	BAYOU CLUB ESTATES, TRACT 4, LOT 38 -- 7336 SAWGRASS POINT DRIVE	LOMA	May 27, 2009		125139	PINELLAS COUNTY *	DetermLetter	27.86	-82.74	09-04-4385A-125139
22539		07-04-2630A	Completed	KNOLLWOOD INDUSTRIAL	LOMA	March 28, 2007		120251	PINELLAS PARK, CITY OF	DetermLetter	27.88	-82.74	07-04-2630A-120251

Johns Creek DataHub

Open Data, Dashboards, and Mapping Apps



The "DataHub" is the City of Johns Creek's central location for open data, dashboards, and interactive mapping applications.

Through this Hub, you can visualize city data in maps, charts, and dashboards. Developers can even tie their own data services and applications into City data.

Visualize Data in Dashboards

Dashboards provide an interactive way of visualizing information in the Johns Creek DataHub.



Most Common Data

Explore the most commonly-accessed data in the DataHub



CreekView

Interact with property information through a map



Business Locations

Find businesses and associated information



Building

Browse building permits and construction projects

Which strategies have proved successful in promoting a data-driven culture in your organization?

Strategy	% of respondents
Top-down guidance and/or executive mandate	49
Promotion of data-sharing practices	48
Increased availability of training in data analytics	40
Communication of the benefits of data-driven decision-making	40
Recruitment of additional data analysts	17

Source: Creating a Data-Driven Organization by Carl Anderson

<http://www.slideshare.net/CarlAnderson4/ddo-seattle>

Smart [insert noun here]

- Smart Phone
- Smart Cars
- Smart Board
- Smart Device
- Smart Sensor
- Smart Network
- Smart Grid
- Smart Growth

- Smart Schools
- Smart Government
- Smart City
- Smart County
- Smart State
- Smart Nation
- Smart World
- **Smart Community**

A Smart Community is...

- **Safe**



SAFE

Detect where police are needed before an incident occurs.

Police departments use intelligent maps to identify threats so they can proactively avert trouble. Share information across jurisdictions to improve situational awareness, safeguard lives, and protect property.

[Discover Safety Solutions](#)

A Smart Community is...

- Safe
- **Well-Run**



WELL-RUN

Intelligently address infrastructure improvements to limit public impact.

To maximize the efficiency of events such as road resurfacing, well-run communities communicate developments publicly through transparent intelligence platforms. Informed citizens can plan to avoid congestion while local utilities can simultaneously take the opportunity to inspect their underground assets, limiting disruptions from breaking ground in the future.

[Explore Optimization](#)

A Smart Community is...

- Safe
- Well-Run
- **Livable**



LIVABLE

Pinpoint potholes before tires pay the price.

Communities thrive when they proactively stay ahead of problems. Map IoT outputs, departmental data, and citizen feedback to track infrastructure fatigue and discover how to improve overall livability.

Support Better Living

A Smart Community is...

- Safe
- Well-Run
- Livable
- **Healthy**



HEALTHY

Know when the flu is going to hit before it does.

To manage disease outbreaks and safeguard the well-being of their citizens, healthy communities scientifically analyze all known datasets available. Communities that visualize the geolocations of inputs such as hospital info, social media commentary, and historical data are better prepared to proactively combat illness.

Heighten Health Awareness

A Smart Community is...

- Safe
- Well-Run
- Livable
- Healthy
- **Prosperous**



PROSPEROUS

Understand what customers want before the competition does.

Whether stimulating small business or attracting revenue to a tax base, a community's economic potential is tied to place. Web maps show investors the properties, amenities, and demographics that make your community a great place for them to live and work.

Strengthen Economic Ties

A Smart Community is...

- Safe
- Well-Run
- Livable
- Healthy
- Prosperous
- **Sustainable**



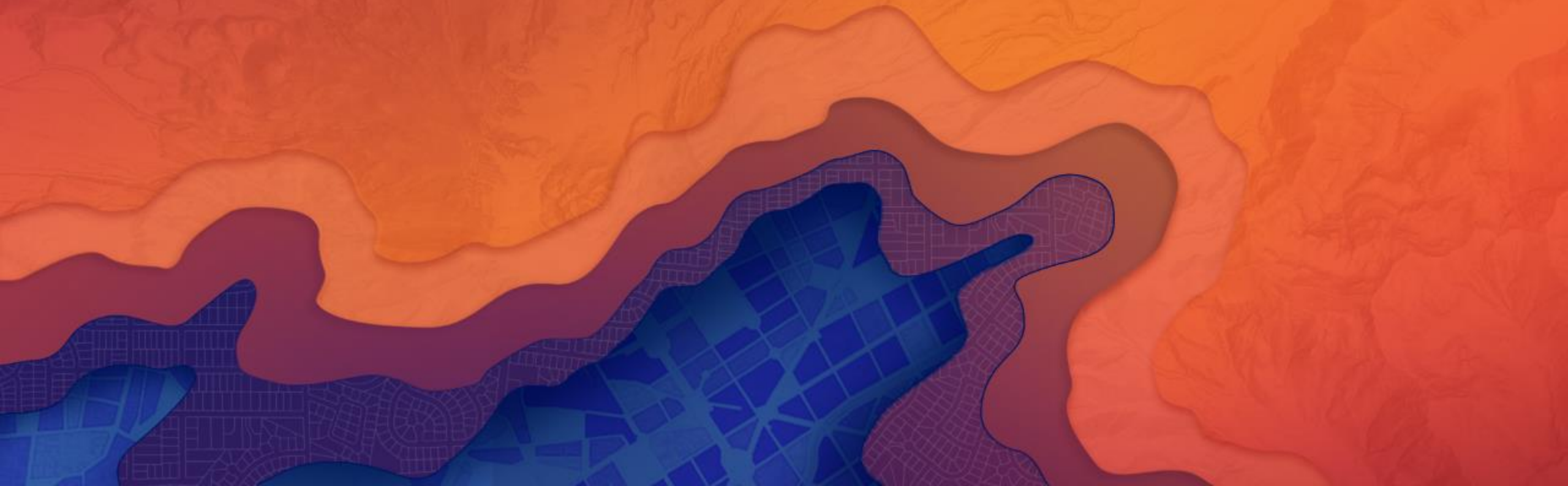
SUSTAINABLE

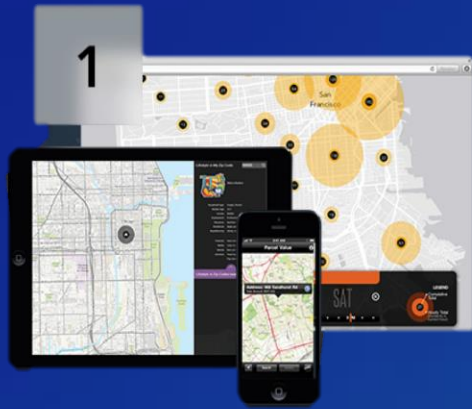
Protect against deforestation while there's still a forest to preserve.

Ensure natural resources endure by making long-term development and conservation decisions based on science. Use spatial analysis to plan green infrastructure and create an interconnected network of open areas that enrich and sustain the community.

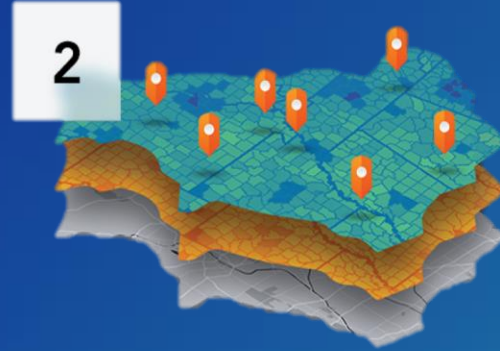
Embrace Preservation

Becoming a Smart Community

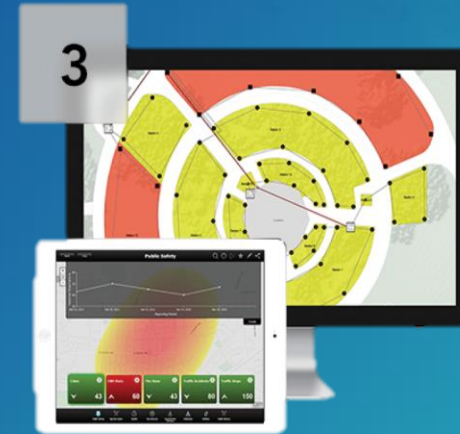




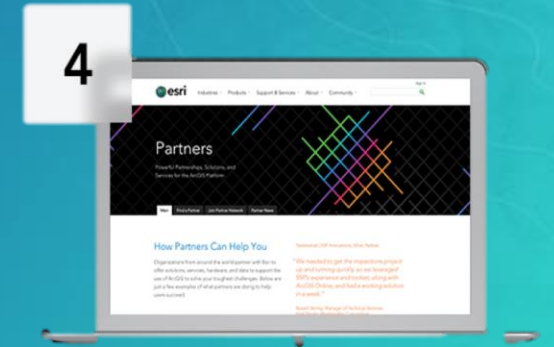
**USE A WORLD-
CLASS GIS
PLATFORM**



**BUILD A
LOCATION
STRATEGY**



**DELIVER REAL
SOLUTIONS**



**DEVELOP
STRONG
PARTNERSHIPS**

1. Use a World-Class GIS Platform

Making Mapping and Location-Aware Apps Available Across Your Organization



1. Use a World-Class GIS Platform

Discover, Use, Make and Share Maps from Any Device, Anywhere, Any Time



2. Build a Location Strategy

Requires Leadership and Vision

Location Enablement



Discover, use, make, and share maps at work – anywhere, anytime

Constituent Engagement



Facilitate and manage communication with stakeholders

Decision Support



Inform execs and management with maps and location intelligence

Field Mobility



Get authoritative information into and out of the field

Analytics



Describe, predict, and improve business performance

Location Data Management



Collect and organize location data about your assets and resources

2. Build a Location Strategy

Find Opportunities Where Location Can Add Value

	Location Enablement	Constituent Engagement	Decision Support	Field Mobility	Analytics	Location Data Management
Elections						
Emergency Management						
Fire						
Health & Human Services						
Land Records						
Law Enforcement						
Parks & Recreation						
Planning & Development						
Public Works						
Transportation						
Utilities						

2. Build a Location Strategy

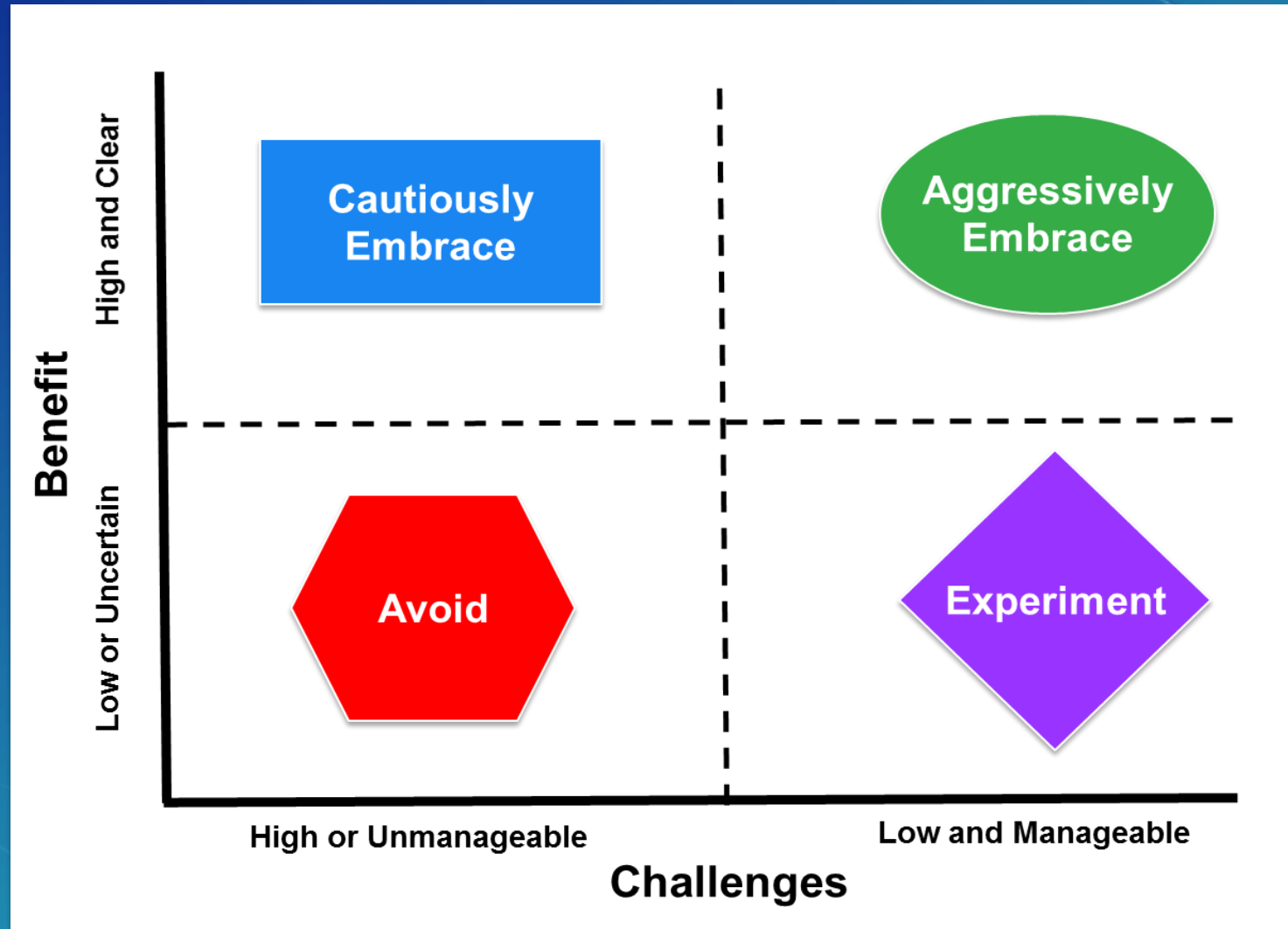
Define and Measure Success

	Location Enablement	Constituent Engagement	Decision Support	Field Mobility	Analytics	Location Data Management
Elections	Red	Yellow	Red	Red	Red	Green
Emergency Management	Red	Yellow	Yellow	Green	Yellow	Green
Fire	Red	Yellow	Red	Red	Yellow	Green
Health & Human Services	Red	Yellow	Red	Red	Red	Yellow
Land Records	Yellow	Green	Green	Yellow	Green	Green
Law Enforcement	Yellow	Yellow	Green	Yellow	Yellow	Green
Parks & Recreation	Yellow	Yellow	Yellow	Red	Yellow	Green
Planning & Development	Yellow	Green	Yellow	Red	Green	Green
Public Works	Yellow	Yellow	Yellow	Green	Yellow	Green
Transportation	Red	Yellow	Red	Red	Yellow	Green
Utilities	Green	Yellow	Yellow	Green	Yellow	Green

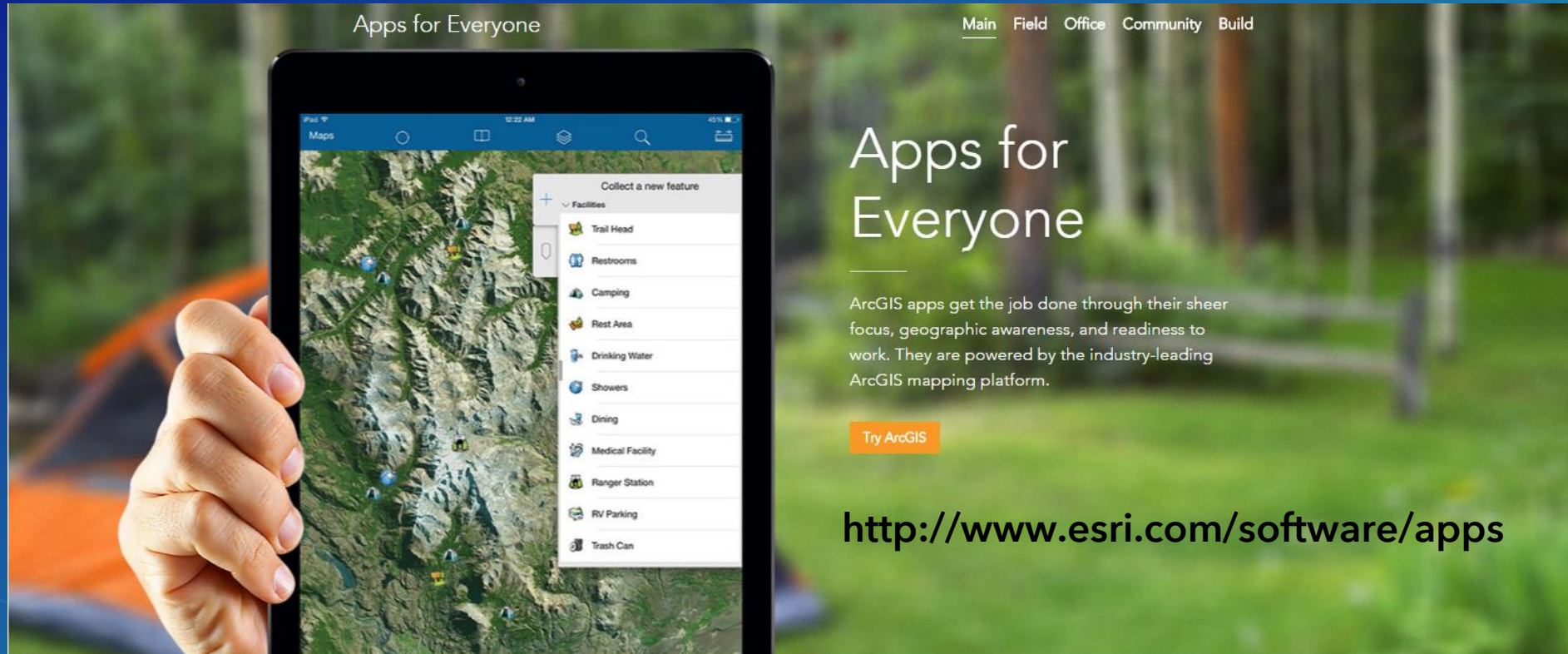
Green = Meeting Need, Yellow = Partially Meeting Need, Red = Not Meeting Need

2. Build a Location Strategy

Project Prioritization



3. Deliver Real Solutions



Apps for Everyone

Main Field Office Community Build

Apps for Everyone

ArcGIS apps get the job done through their sheer focus, geographic awareness, and readiness to work. They are powered by the industry-leading ArcGIS mapping platform.

[Try ArcGIS](#)

<http://www.esri.com/software/apps>

See what ArcGIS Apps are available



Apps for the Field



Apps for the Office




Apps for the Community



App Builders

3. Deliver Real Solutions

Supported, Configurable, Included

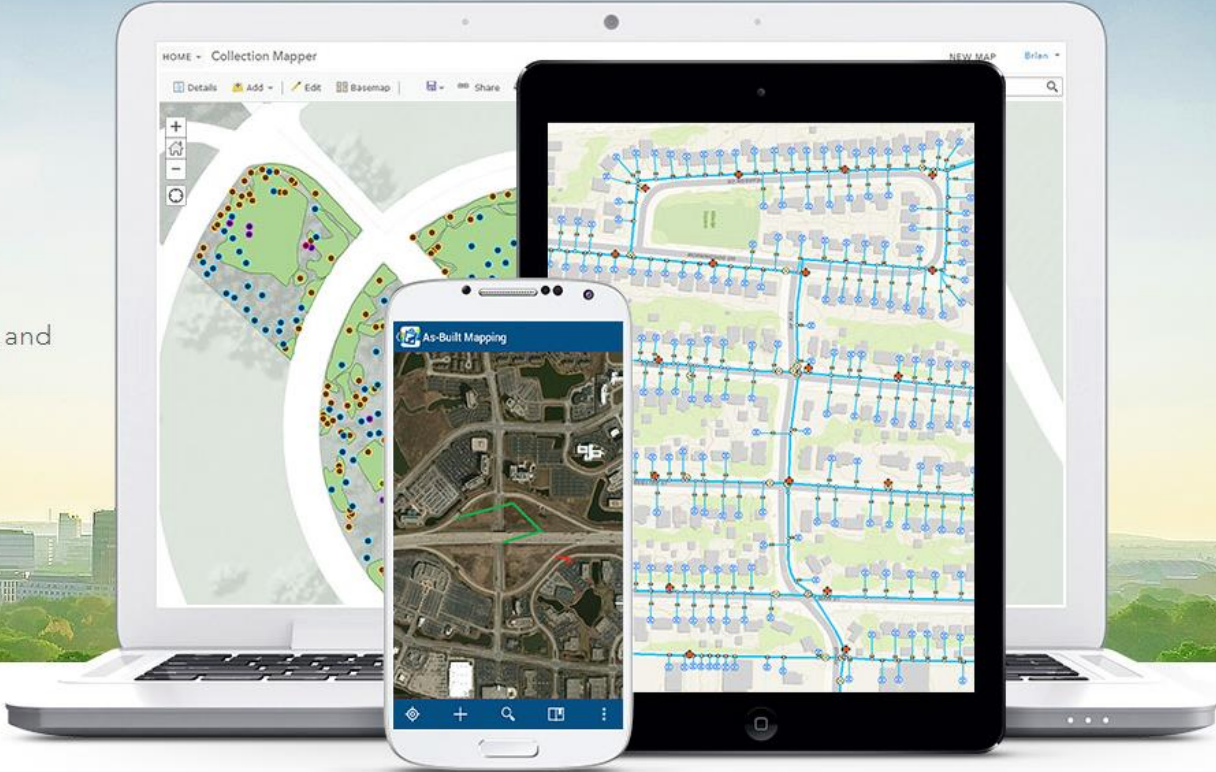
ArcGIS Solutions ▾ GALLERY COMMUNITY SEARCH 

<http://solutions.arcgis.com>

ArcGIS Industry Specific Maps and Apps

ArcGIS Solutions deliver Ready-to-Use Maps and Apps to jumpstart your work

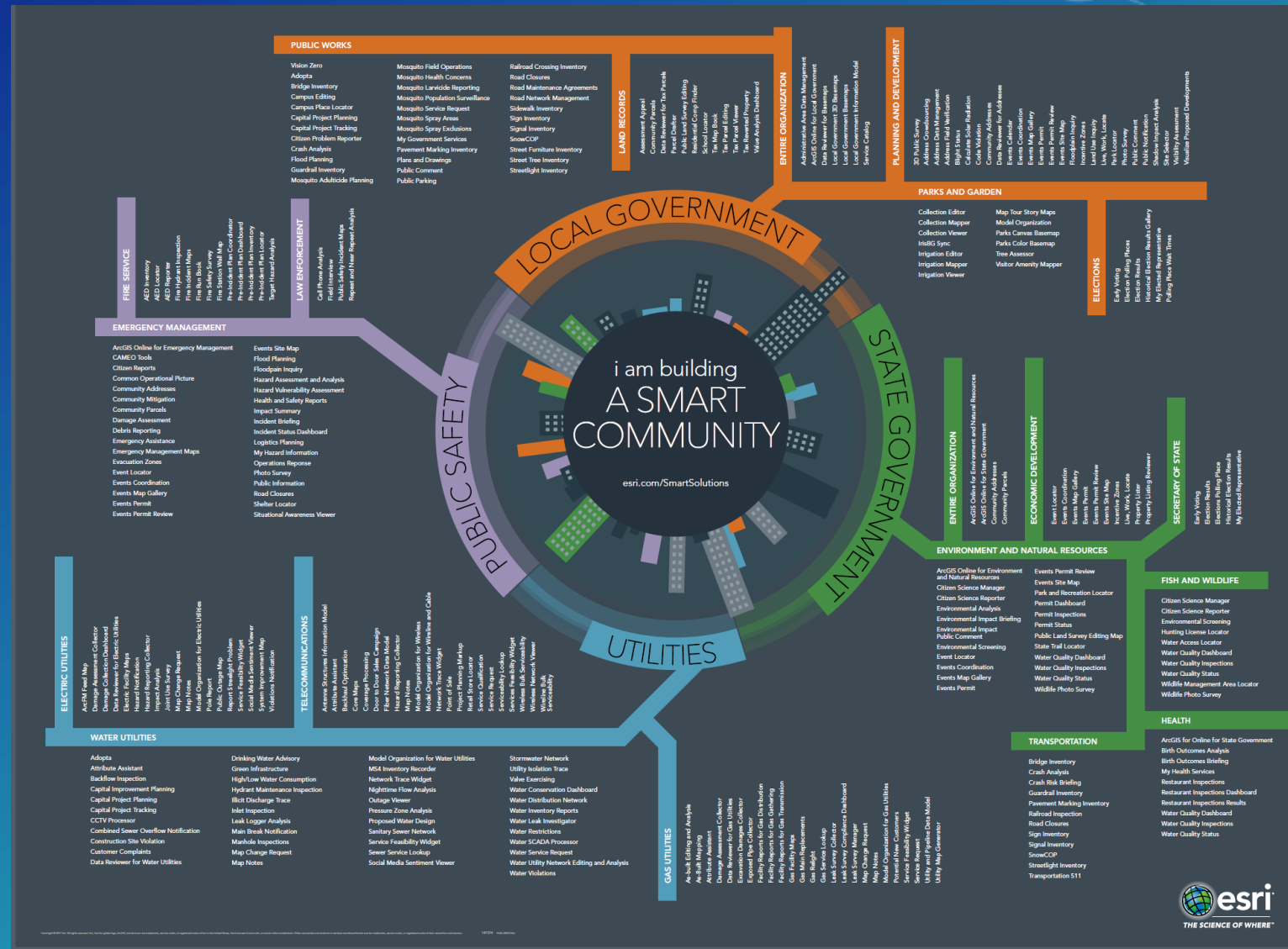
[FIND YOURS ↓](#)



Leverage hundreds of ready-to-use maps, apps, and platform configurations to meet your needs, delivering innovation and best practices for your organization.

3. Deliver Real Solutions

Supported, Configurable, Included



3. Deliver Real Solutions

Supported, Configurable, Included

- Land Records
- Utilities
- Public Works
- Fire Service
- Law Enforcement
- Emergency Management
- Planning & Development
- Elections
- Health & Human Services
- Transportation
- Economic Development
- Fish & Wildlife
- Environment & Natural Resources
- And more...

A Smart Community is: Safe, Well-Run, Livable, Healthy, Prosperous, Sustainable

3. Deliver Real Solutions

Supported, Configurable, Included

Tackle Opioid Epidemic

A collection of maps and apps used by public health and safety agencies to communicate the severity of the opioid epidemic, promote treatment alternatives, and understand the effectiveness of response activities.

A Smart Community is: Safe, Well-Run, Livable, Healthy, Prosperous, Sustainable

3. Deliver Real Solutions

Supported, Configurable, Included

Reduce Homelessness

A collection of maps and apps used by health and human services agencies to count the homeless population, inventory homeless resources, and increase awareness of homeless services.

A Smart Community is: Safe, Well-Run, Livable, Healthy, Prosperous, Sustainable

3. Deliver Real Solutions

Supported, Configurable, Included

Combat Vector Borne Diseases

A collection of maps and apps used by health and human services agencies to manage mosquito populations and combat the spread of vector-borne diseases.

A Smart Community is: Safe, Well-Run, Livable, Healthy, Prosperous, Sustainable

3. Deliver Real Solutions

A promotional banner for ArcGIS Open Data. The top half has an orange background with a white cloud graphic on the right. The bottom half is white. The text is in a clean, sans-serif font.

Products

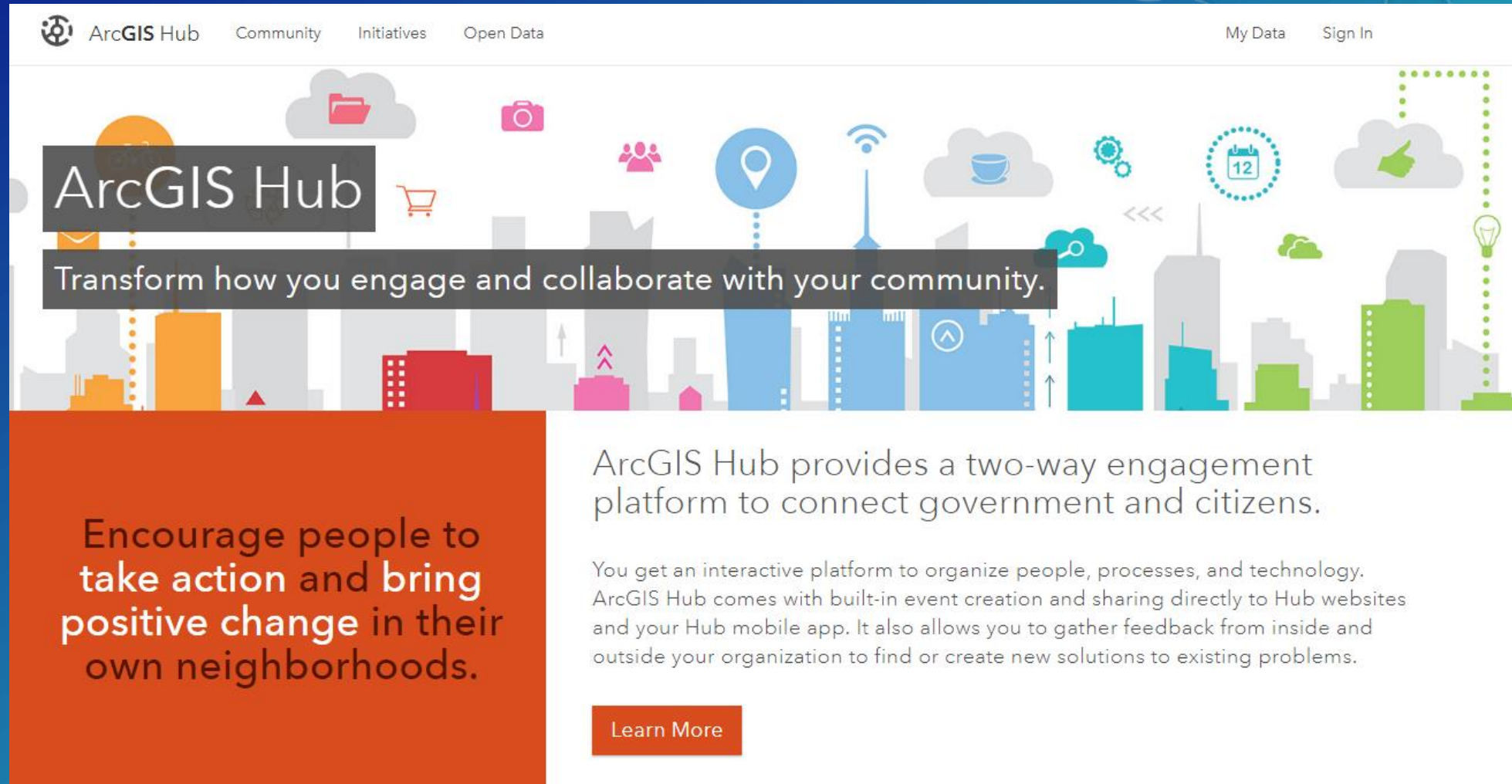
ArcGIS Open Data

Connecting Citizens and Businesses to Your Authoritative Data

Set up a public-facing website within minutes to share your open data. ArcGIS Open Data is an Esri hosted and managed solution that is included with ArcGIS Online.

ArcGIS Hub

provides a two-way engagement platform to connect government and citizens



The screenshot shows the ArcGIS Hub website interface. At the top, there is a navigation bar with the ArcGIS Hub logo, links for 'Community', 'Initiatives', and 'Open Data', and user options 'My Data' and 'Sign In'. Below the navigation bar is a large banner featuring a city skyline illustration with various icons representing community engagement (e.g., folder, camera, location pin, Wi-Fi, calendar, thumbs up). A dark grey box with the text 'ArcGIS Hub' and 'Transform how you engage and collaborate with your community.' is overlaid on the banner. Below the banner, there is a large orange box on the left containing the text 'Encourage people to take action and bring positive change in their own neighborhoods.' and a white box on the right containing the text 'ArcGIS Hub provides a two-way engagement platform to connect government and citizens.' and 'You get an interactive platform to organize people, processes, and technology. ArcGIS Hub comes with built-in event creation and sharing directly to Hub websites and your Hub mobile app. It also allows you to gather feedback from inside and outside your organization to find or create new solutions to existing problems.' A 'Learn More' button is located at the bottom of the white box.

ArcGIS Hub

Community Initiatives Open Data My Data Sign In

ArcGIS Hub

Transform how you engage and collaborate with your community.

Encourage people to take action and bring positive change in their own neighborhoods.

ArcGIS Hub provides a two-way engagement platform to connect government and citizens.

You get an interactive platform to organize people, processes, and technology. ArcGIS Hub comes with built-in event creation and sharing directly to Hub websites and your Hub mobile app. It also allows you to gather feedback from inside and outside your organization to find or create new solutions to existing problems.

Learn More

<https://hub.arcgis.com/>

ArcGIS Hub

provides a two-way engagement platform to connect government and citizens

1

Create and
Launch
Initiatives

2

Put Your
Open Data
to Work

3

Get Your
Citizens to
Participate

4

Find Better
Ways to Tell
Stories

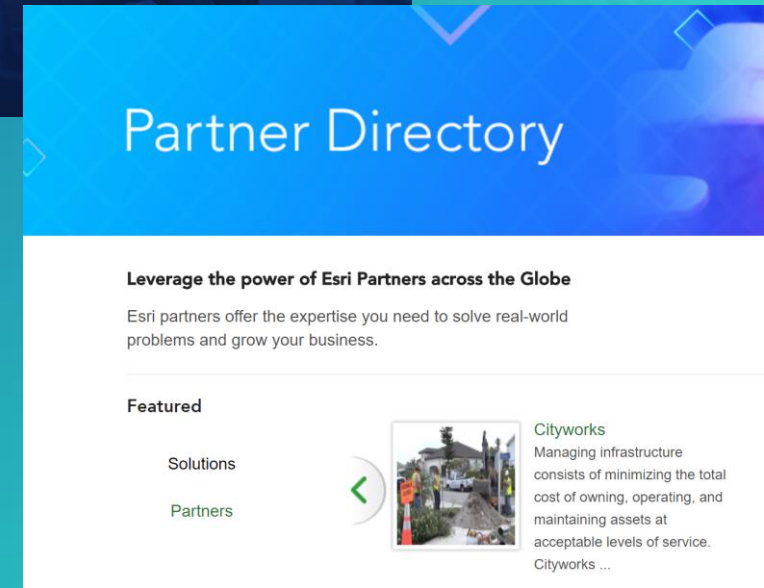
5

Construct,
Repeat, and
Scale

4. Develop Strong Partnerships

Esri Team and Esri Partners

- Esri Team
 - Account Team (Manager and Solution Engineer)
 - Subject Matter Experts
 - Training Consultant
 - Workforce Development Plan
 - Technical Support
 - Premium Support
 - Professional Services
 - Packages, Rent-a-Tech, Projects
 - Esri Enterprise Advantage Program (EEAP)
- Esri Partners
 - Specialties (ArcGIS Online, ArcGIS for Local Government)
 - ArcGIS Marketplace

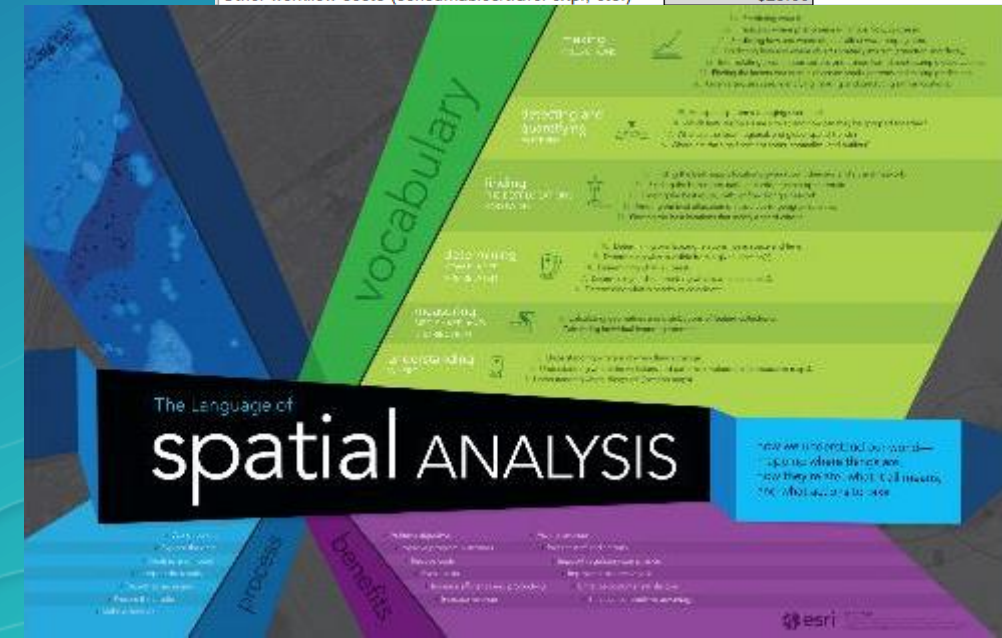


4. Develop Strong Partnerships

Develop and Grow Your Internal Team

- Executive Champion(s)
 - Alleviate their Pain
 - Support their Vision
- IT Leadership
- Align the GIS Plan with the IT Plan and the Organization's Plan
- Enable collaboration and empower others
- Mindset of a GIS Consulting Firm
- Market Spatial Analysis
- Measure and document the impact (ROI)

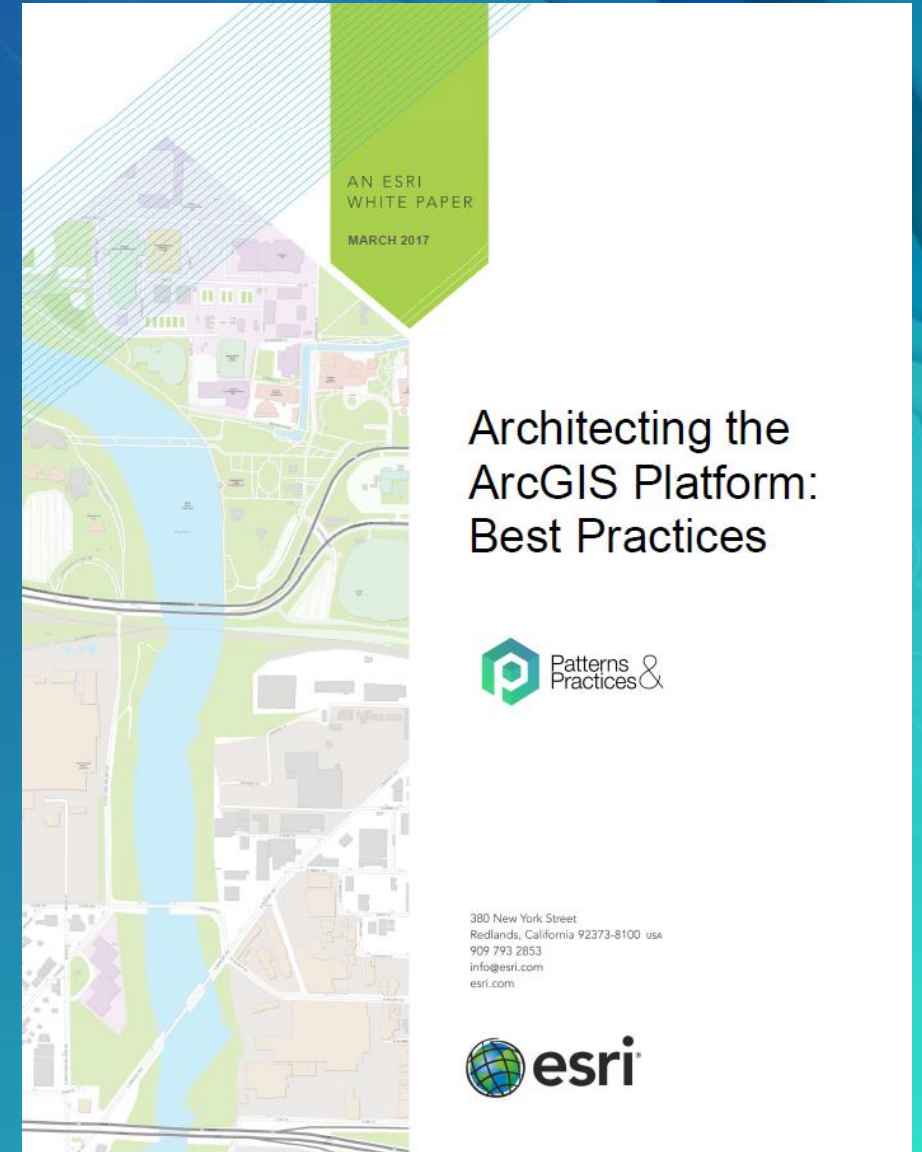
GIS Project ROI and Benefits Report		
Project Name:		
Department or Division:		
Project Manager/Sponsor:		
Project Completion Date:		
Executive Summary: (Concisely state the problem and its impact on the organization then describe the solution)		
Describe current workflow or limitation: (Be as detailed as needed)		
Describe proposed enhancement: (Be as detailed as needed)		
Current Workflow Costs: (Enter values in left column (see wage notes below). Values in right column are calculated.)		
Hours to complete current workflow	6.0	Current Workflow Cost
Hourly wage rate*	25.00	Current Workflow Cost
Annual occurrence of workflow	75	
Other workflow costs (consumables/travel exp., etc.)	\$50.00	
Enhanced Workflow Costs		
Hours to complete workflow after enhancement	2.0	Enhanced Workflow Cost
Hourly wage rate*	25.00	Enhanced Workflow Cost
Annual occurrence of workflow	75	
Other workflow costs (consumables/travel exp., etc.)	\$25.00	



Keys to Success

Follow Best Practices

- People
- Data
- Process
- Technology



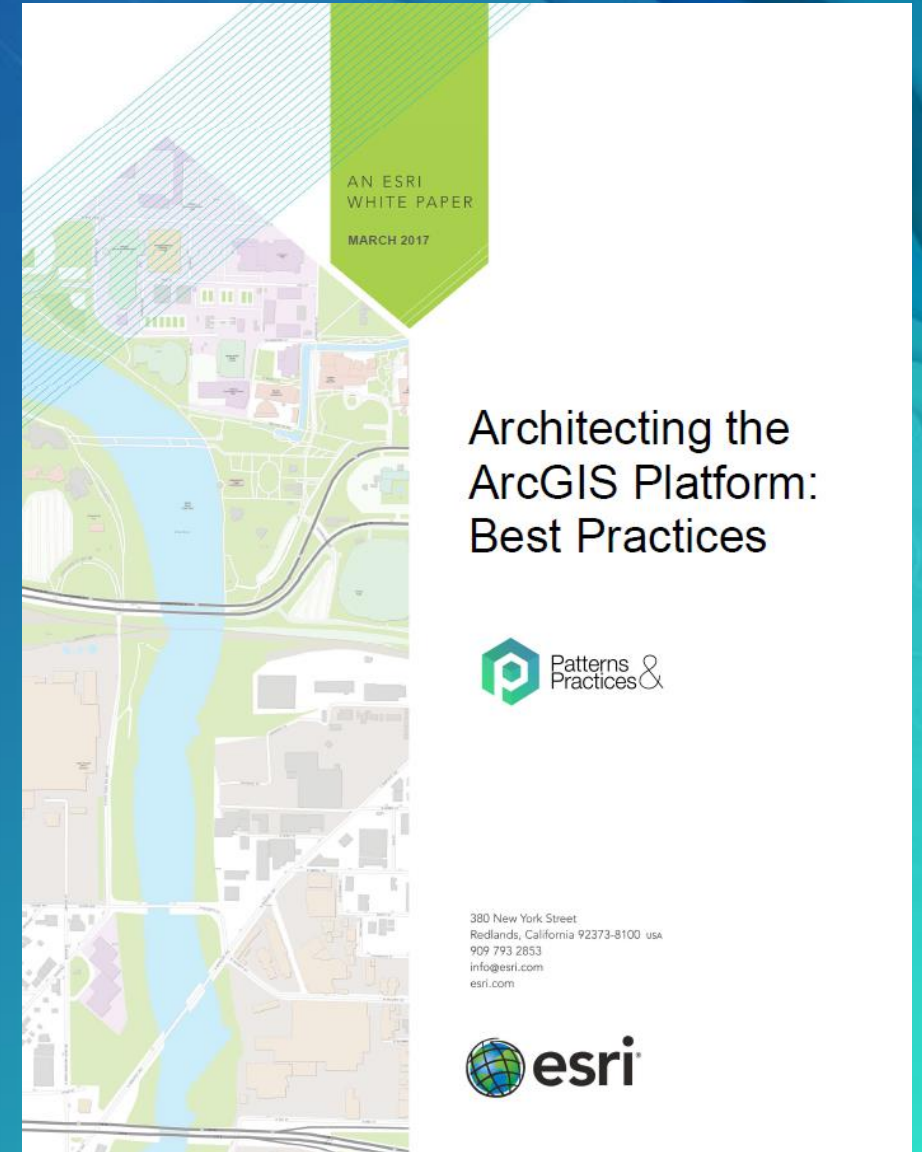
Keys to Success

Follow Best Practices

- **People**
- Data
- Process
- Technology

“...whether or not our GIS implementation is successful is not a technology problem, it's a people problem...”

- Assistant City Manager



ArcGIS Hub Sessions at the User Conference

- **ArcGIS Online: Getting Started with Open Data & Initiatives in the ArcGIS Hub**
 - Tu, July 11, 10:15-11:30AM, SDCC Room 14B
 - Th, July 13, 3:15-4:30PM, SDCC Room 05B
- **Engaging Your Community with Open Data & ArcGIS Hub**
 - Tu, July 11, 2:30-3:15PM, SDCC Demo Theater 10
 - W, July 12, 3:30-4:15PM, SDCC Demo Theater 10
- **SDG Hub – A Federated System for the SDGs (Sustainable Development Goals)**
 - W, July 12, 9:30-10:00AM, SDCC Esri Pavilion: Sustainable World Theaterette
- **The Hub – A Civic Engagement Platform**
 - W, July 12, 2:30-3:15PM, SDCC Envisioning Center 2 (Hall C)
 - Th, July 13, 12:30-1:15PM, SDCC Envisioning Center 2 (Hall C)
- **Best Practices: Implementing Hub**
 - W, July 12, 3:30-4:15PM, SDCC Demo Theater – Implementing Enterprise ArcGIS
 - Th, July 13, 11:30AM-12:15PM, SDCC Demo Theater – Implementing Enterprise ArcGIS



esri

THE
SCIENCE
OF
WHERE

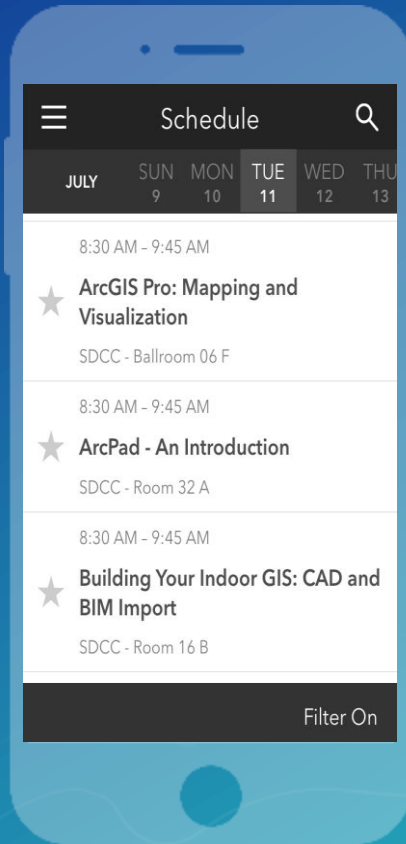
Adam Carnow
acarnow@esri.com
@SpatialAce

Please Take Our Survey on the Esri Events App!

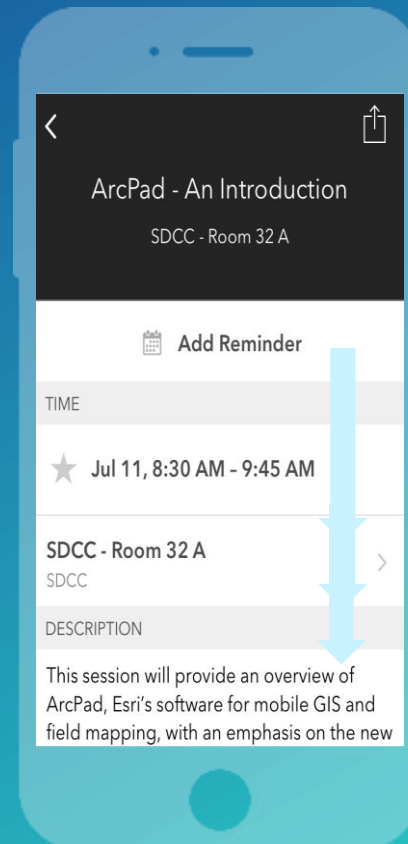
Download the Esri Events app and find your event



Select the session you attended



Scroll down to find the survey



Complete Answers and Select "Submit"

