



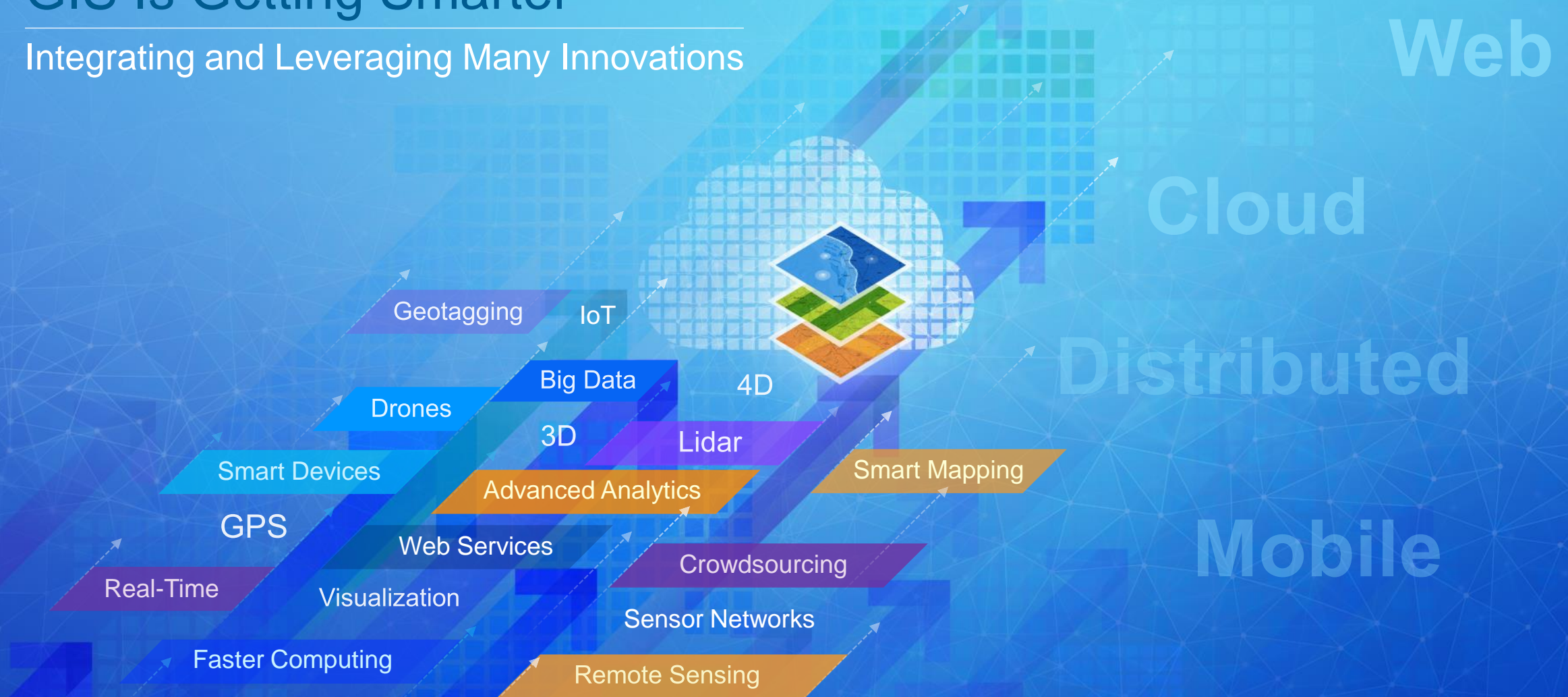
# Engaging the Crowd

Nick Land

[nland@esri.com](mailto:nland@esri.com)

# GIS Is Getting Smarter

Integrating and Leveraging Many Innovations



*Helping Organizations Work Smarter*

# Challenges

- Provenance
- Objectivity
- Quality
- Privacy
- Reliable

CNN politics

45 Congress Security The Nine Trumpmerica

Search CNN...

**HACKING ADWORDS** How to Get a (Near) Perfect Quality Score

DOWNLOAD FREE GUIDE

WordStream

## Conway: Trump White House offered 'alternative facts' on crowd size

By **Eric Bradner**, CNN

Updated 12:38 PM ET, Mon January 23, 2017

Top stories

White House says it will let others see reputed surveillance info

Rubio says he was targeted, too -- yesterday

Building analytics applications on geospatial data

Watch the Webinar

planet

Advertisement

News and Buzz

Now Playing

Conway: White House

Sources: Trump

Tapper: Excluding the

Ben Stein: Media

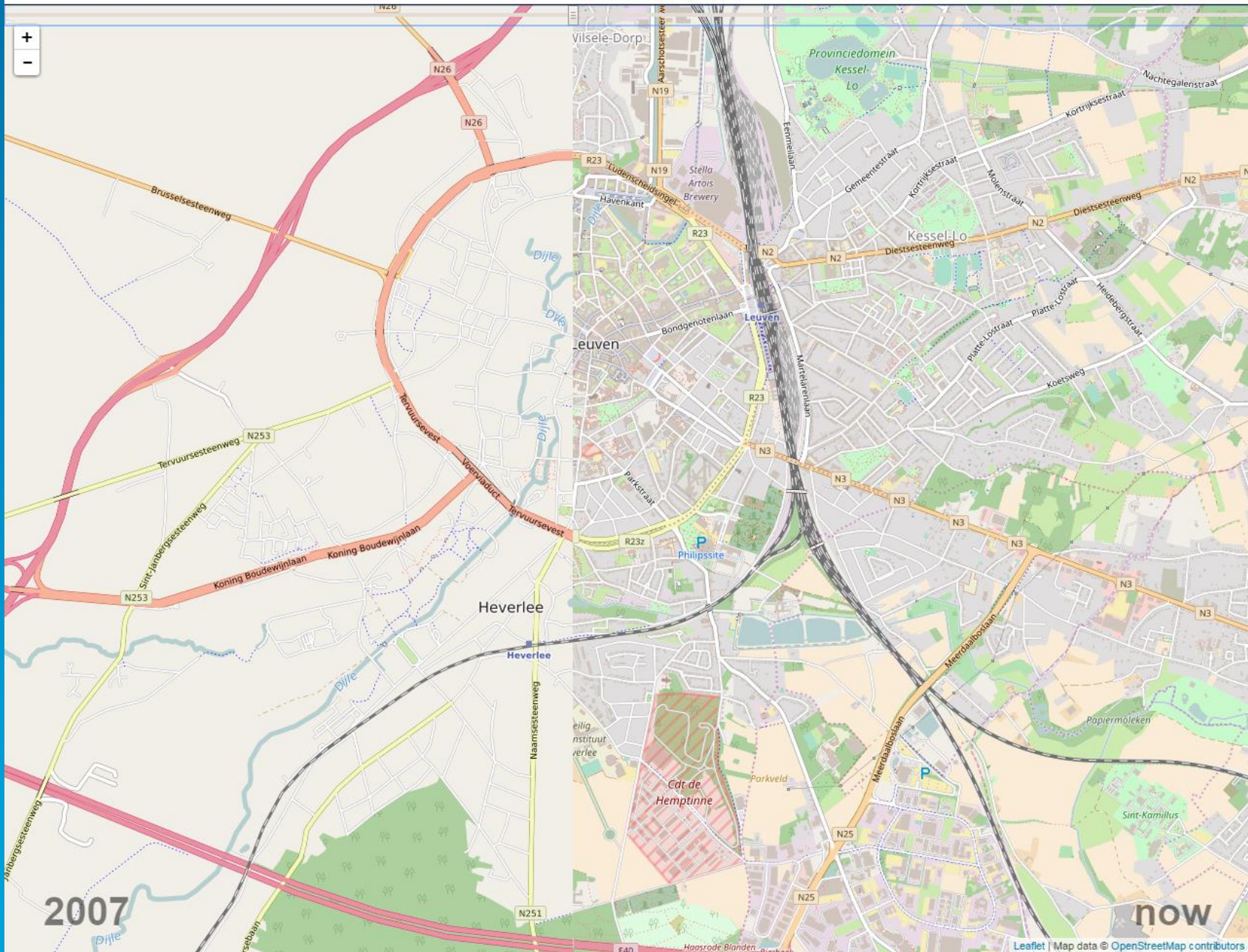
President T

## Crowdsourcing & Geography



# OSM Then And Now

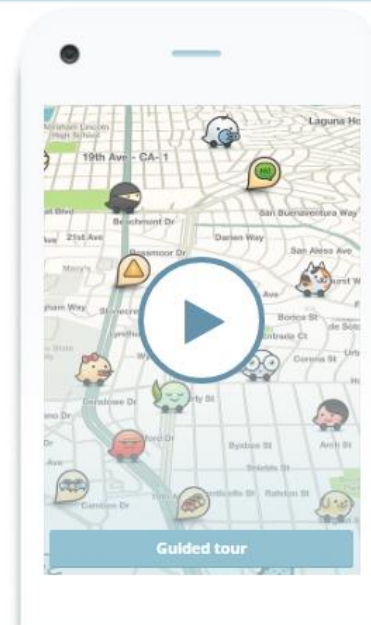
To the left you see OSM data as it was in early October 2007. To the right you see the current state. Use the slider to see more of the one or the other. Please be gentle and be patient. The tiles will load eventually. A thing by Martijn van Exel / [fork me on Github](#)



## Get the best route, every day, with real-time help from other drivers.

Waze is the world's largest community-based traffic and navigation app. Join other drivers in your area who share real-time traffic and road info, saving everyone time and gas money on their daily commute.

WAZE. OUTSMARTING TRAFFIC, TOGETHER.



### Nothing can beat real people working together

Imagine millions of drivers out on the roads, working together towards a common goal: to outsmart traffic and get everyone the best route to work and back, every day.

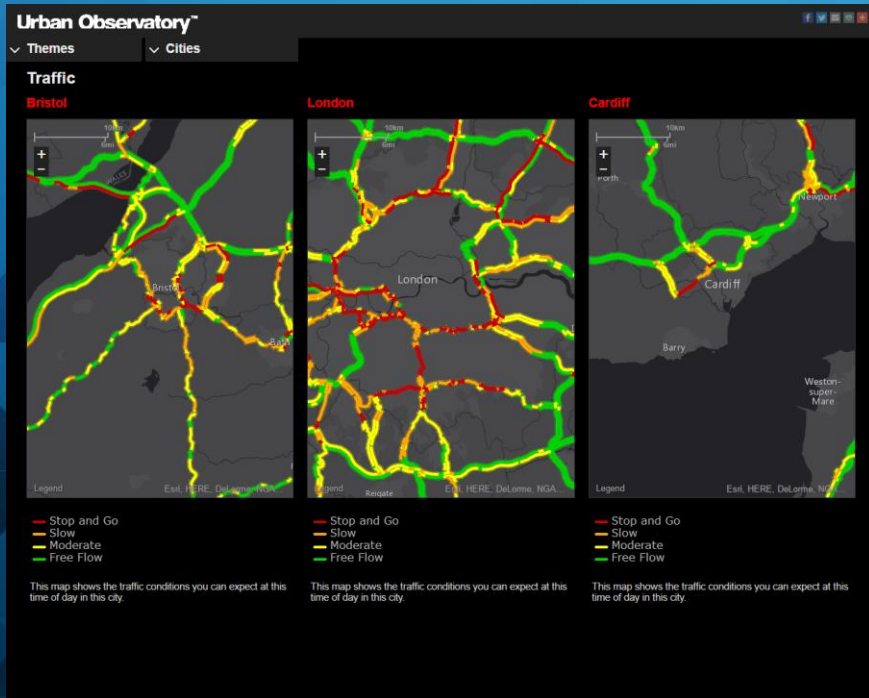
### Traffic is more than just red lines on the map

Get alerted before you approach police, accidents, road hazards or traffic jams, all shared by other drivers in real-time. It's like a personal heads-up from a few million of your friends on the road.

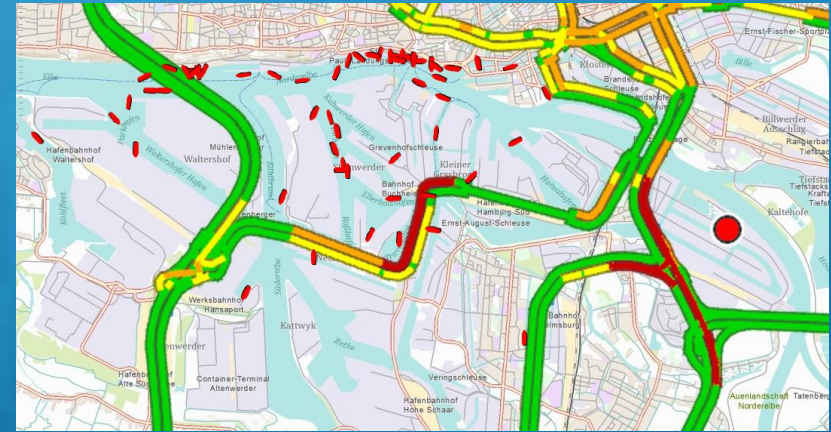


# Real-Time ▶ High-Velocity Monitoring and Alerting

## Urban Observatory



## Vessel Tracking - Hamburg



## Train Tracking - Finland



## Vessel Tracking - Belgium



Analytics

GeoEvent

Alerting

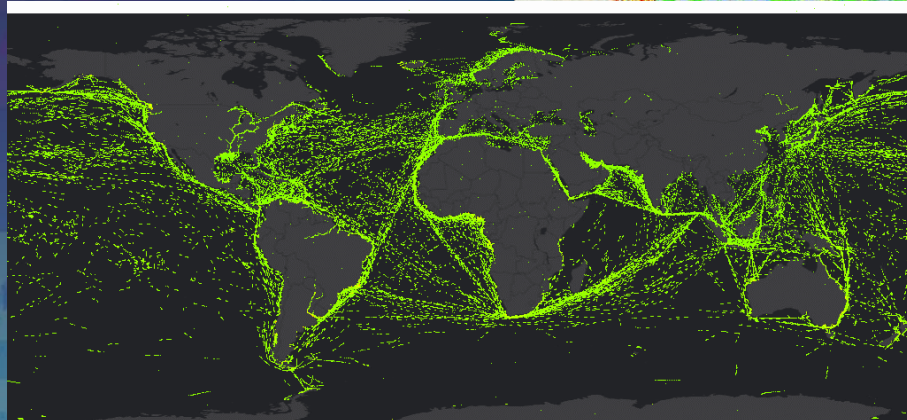
# BIG Data

GIS Analysis and  
Visualization of Massive Data

### NYC Ship Tracks



### AIS Ship Movements



Dec 31, 2011 4:00:00 PM - Jan 1, 2012 4:00:00 PM

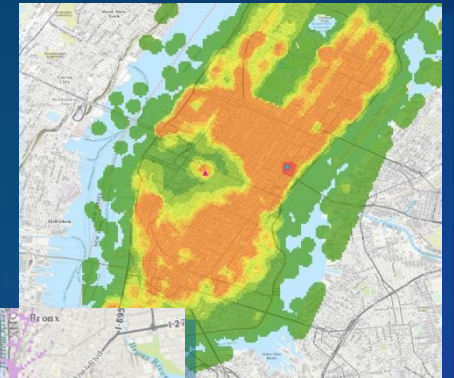
Includes material © 2015 exactEarth, Ltd. All Rights Reserved.



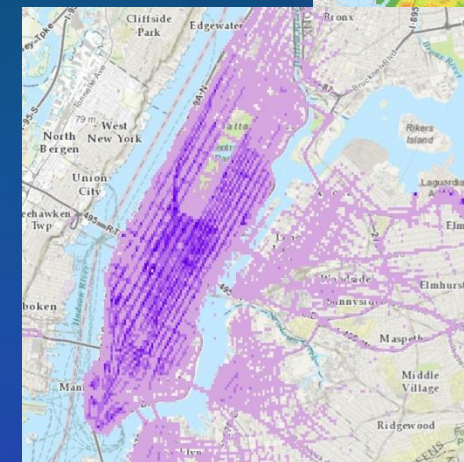
### NYC Taxi Saturday Night



### NYC Taxi Density



### NYC Taxi 2013







FEMA

Follow FEMA:



Visit: FEMA.gov

# FEMA GeoPlatform

Providing geospatial data and analytics in support of emergency management



2013 Colorado Floods Situational Awareness



Tropical Storm Karen

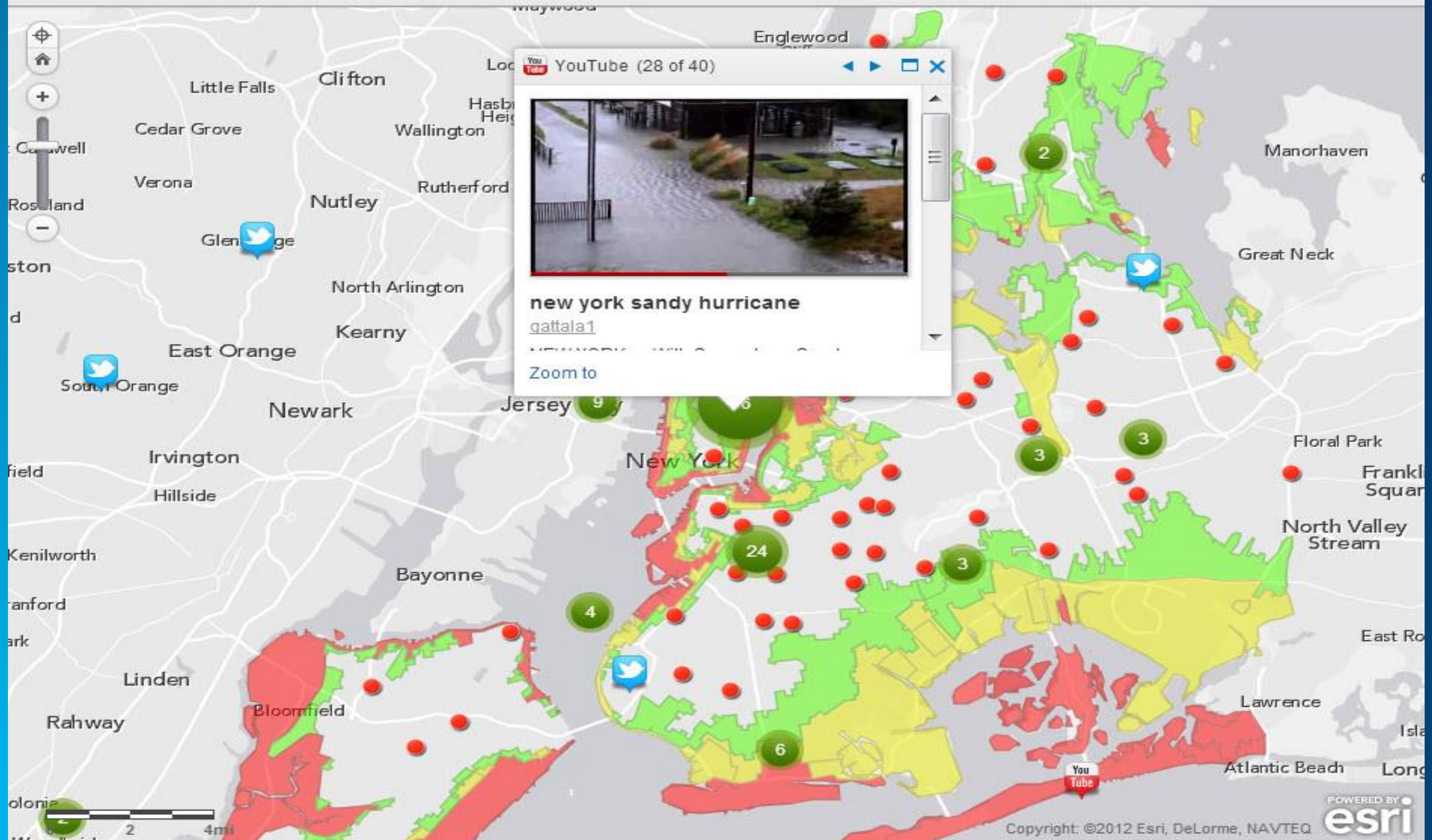


FEMA's National Flood Hazard Layer




FEMA Oklahoma Tornadoes Situation Map

FEMA is a partner of the FGDC's National Geospatial Platform Visit: [www.geoplatform.gov](http://www.geoplatform.gov)



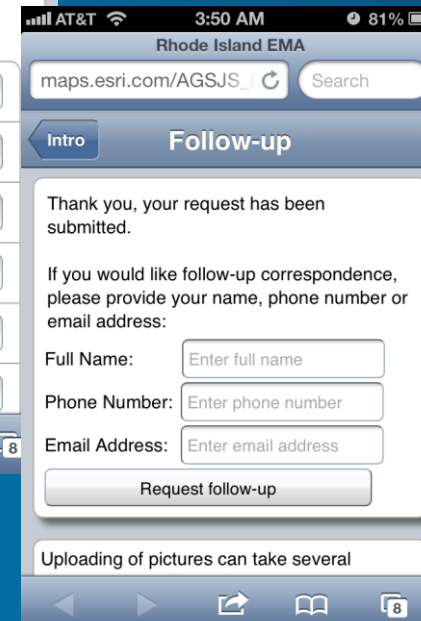
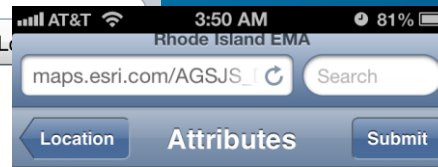
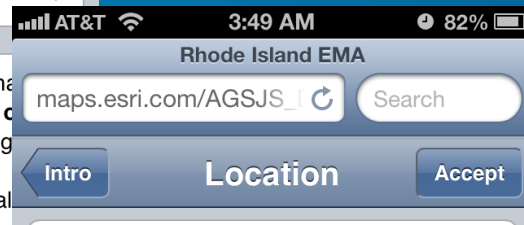
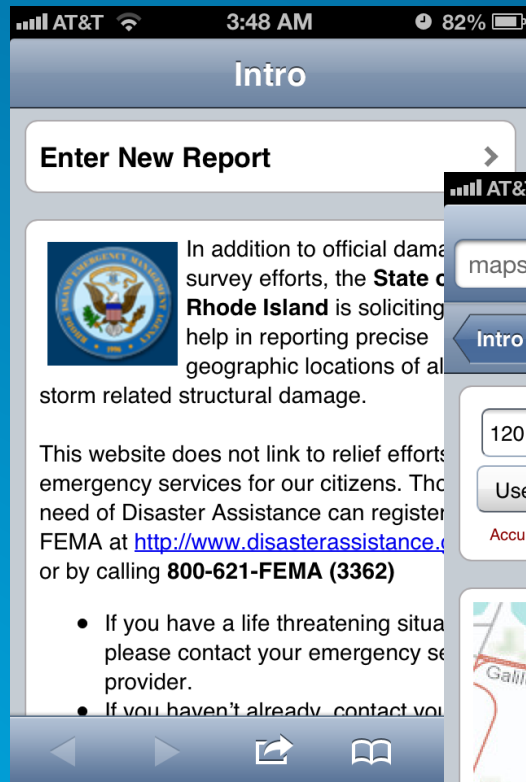
YouTube (28 of 40)



**new york sandy hurricane**  
[gattala1](#)  
 NEW YORK WILL BE ...  
 Zoom to



# Solicited Crowdsourcing



# Community Base Map

ArcGIS Topographic Map Feedback

Modify Map Sign In

Details Edit Basemap Share Print Measure Find address or place

Legend

- Topographic\_Map\_Feedback - Draw Polygon to Add Comment
  - Closed Issue
  - Open Issue
- Topographic\_Map\_Feedback - Draw Line to Add Comment
  - Closed Issue
  - Open Issue
- Topographic\_Map\_Feedback - Draw Point to Add Comment
  - Closed Issue
  - Open Issue

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Esri Report Abuse

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ANTARCTICA

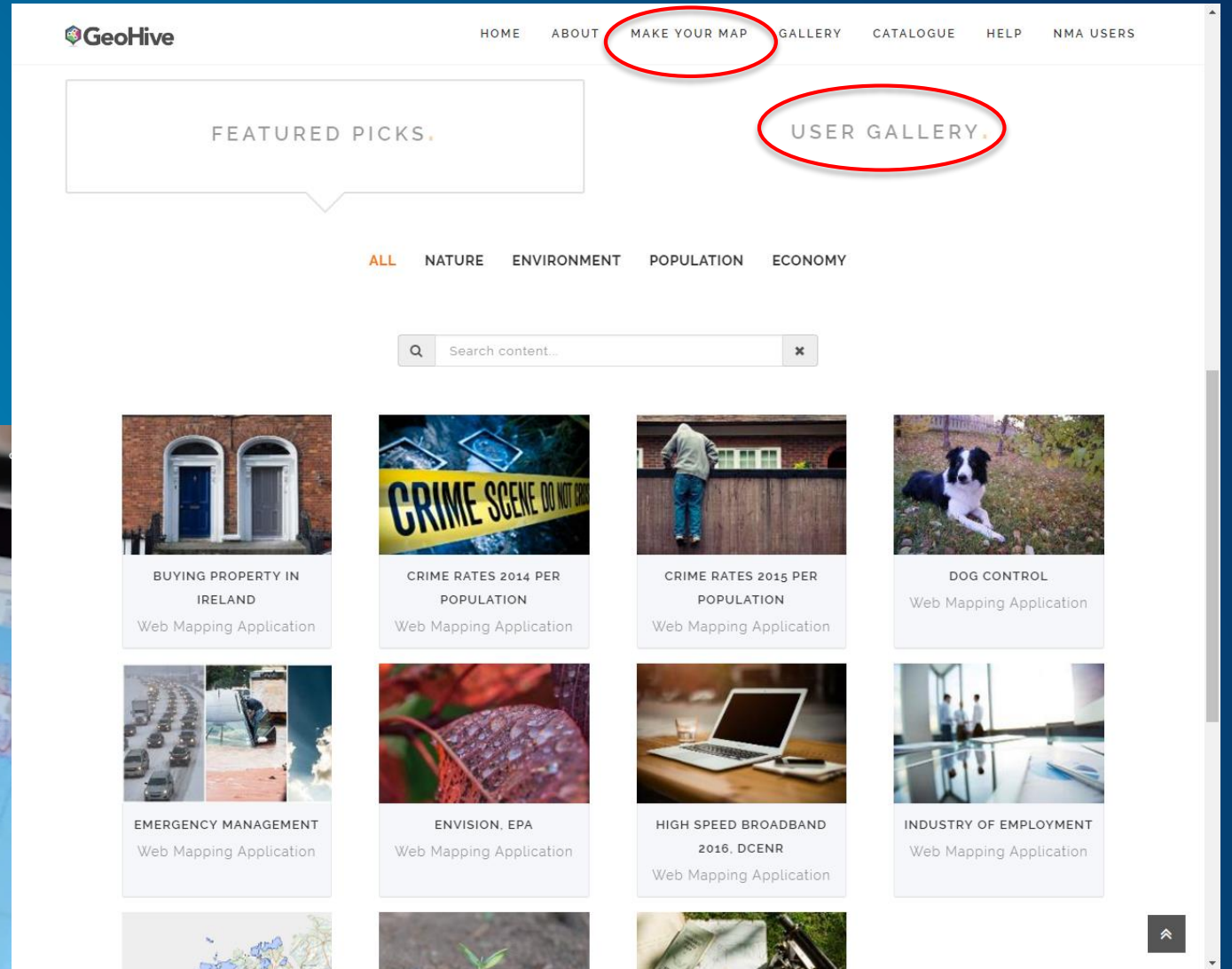
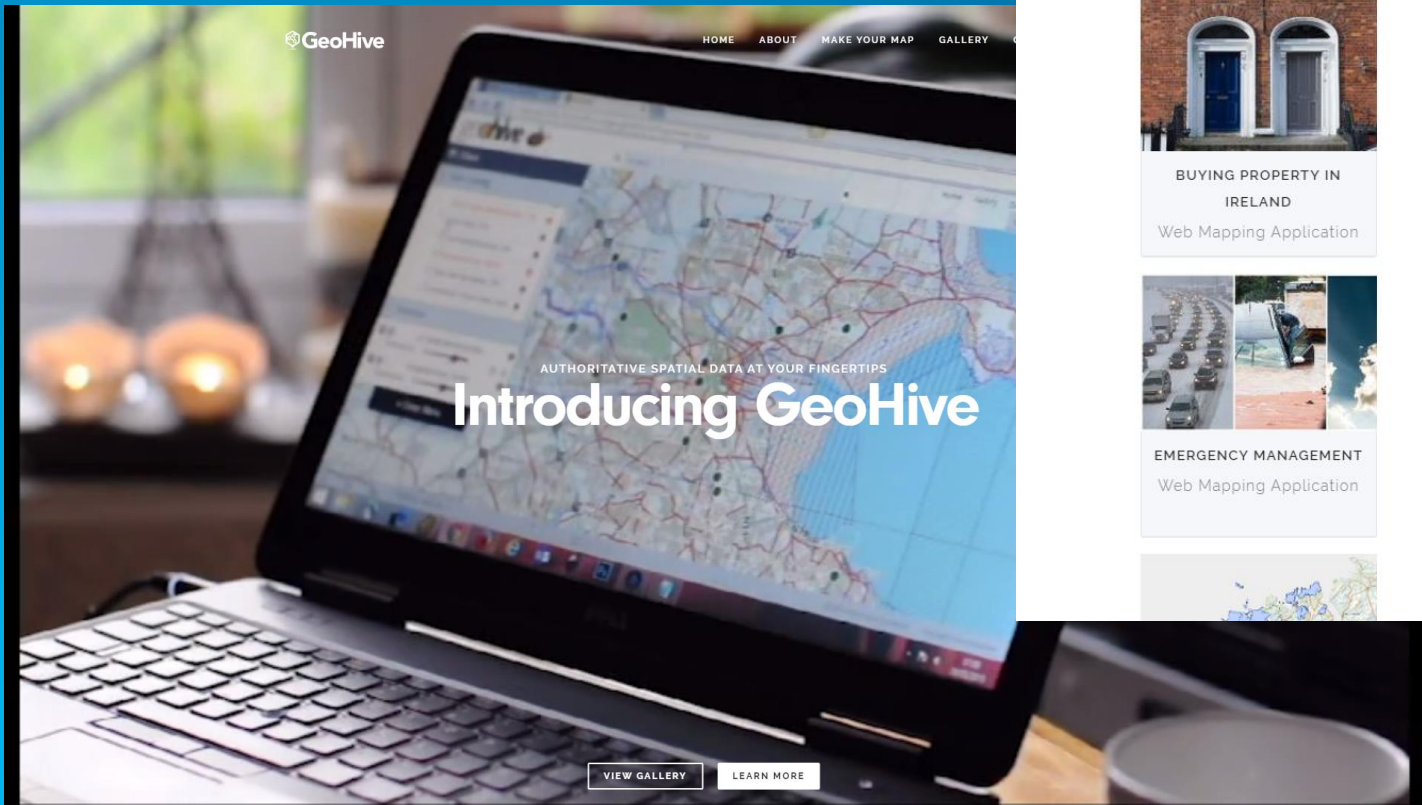
Esri, HERE, FAO, NOAA

POWERED BY esri

# SDIs & Crowdsourcing

From Compliance to Use

- Open Data
- Collaborative platform

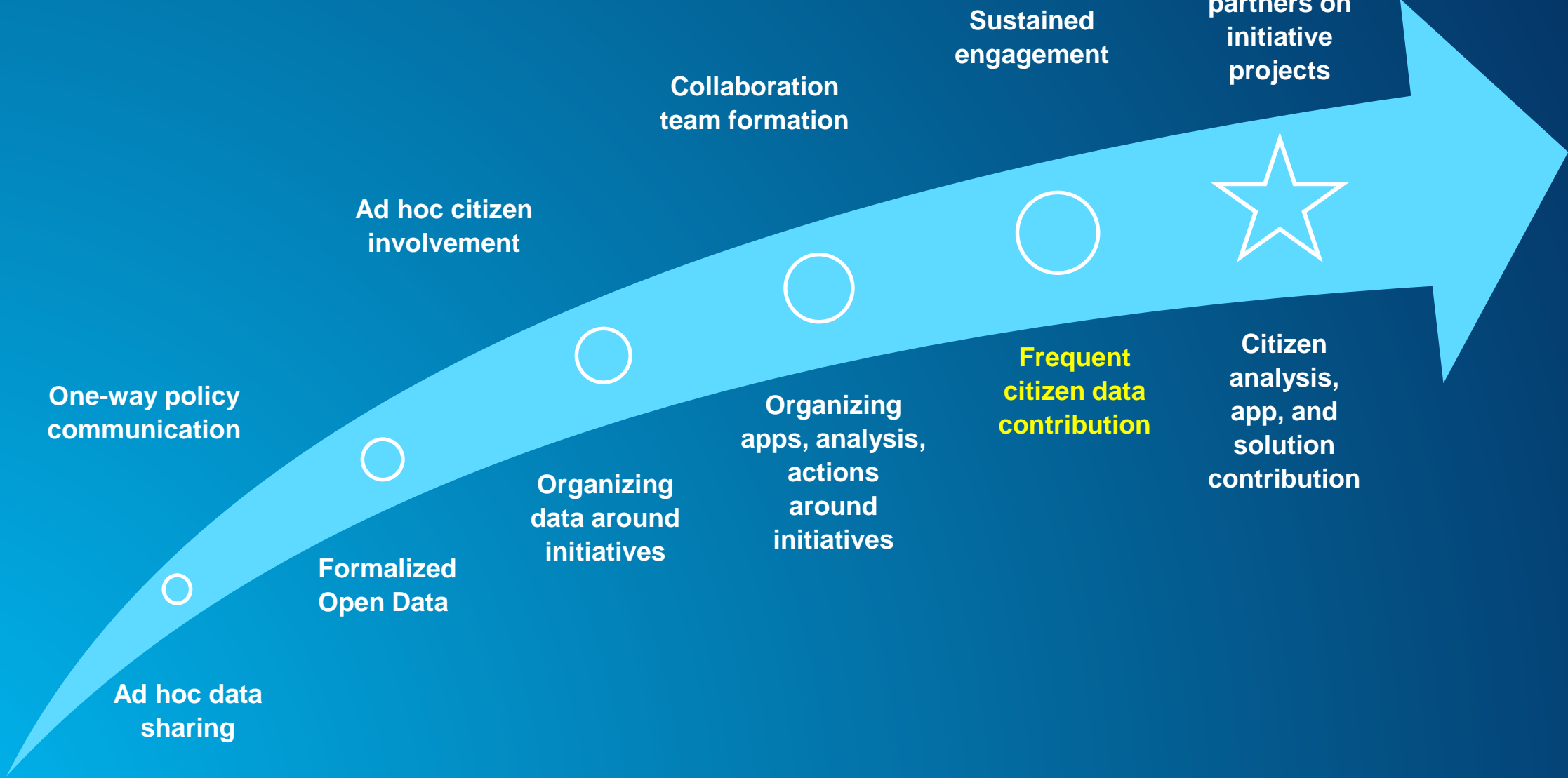


<http://geohive.ie>

# Engagement Maturity Path – Today



# Engagement Maturity Path



# Leaders respond to challenges with “Smart” promises and aspirations



Safe



Healthy



Sustainable



Well-run



Livable



Prosperous





Those aspirations get translated into actionable, real-world **initiatives**



**Implement  
Performance  
Management**

**Reduce Traffic  
Congestion**

**Create More  
Affordable Housing**

**Reduce  
Homelessness**

**Increase Recreation  
Opportunities**

**Ensure Clean  
Drinking Water**

**Make Parking Easier**

**Create Job  
Availability**

**Improve Emergency  
Response Times**

**Use Less  
Energy**

**Encourage  
Startups**

**Improve Earthquake  
Preparedness**

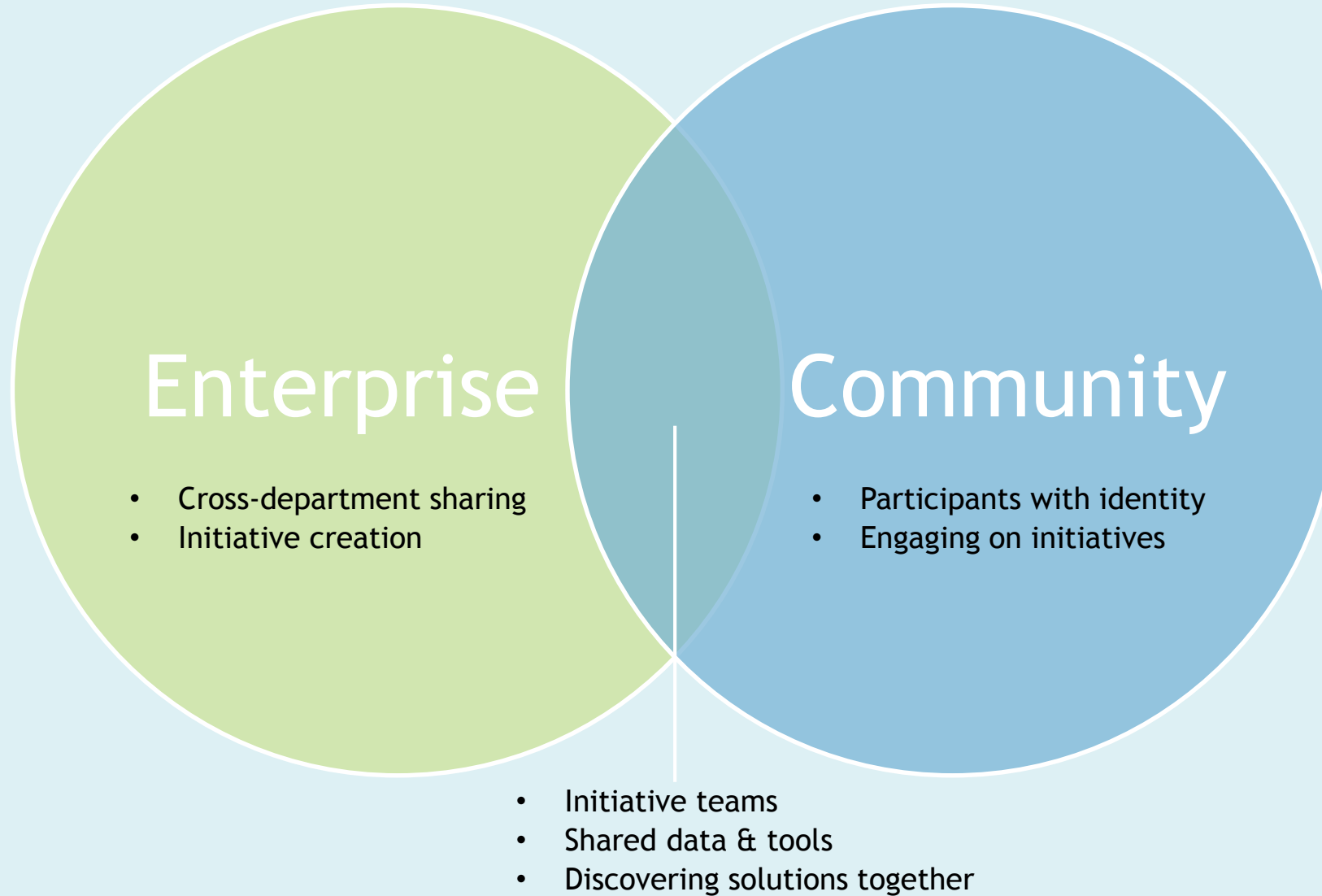
# THE HUB

*INNOVATION AND ENGAGEMENT*





# Partnership



LOS ANGELES 311

Data Catalog Developer Resources News & Updates My Activity

# Los Angeles GeoHub

The GeoHub is the City's new public platform for exploring, visualizing, and downloading location-based Open Data. You can also analyze and combine Open Data layers using maps, as well as develop new web and mobile applications. Let's make our great City even better, together!

## Find Data

Or explore all data

Are you a City Employee?

LOS ANGELES 311

## Unlock the City's Geodata

Anyone can use open data from the City of Los Angeles Innovation Hub at no cost. Download raw data and share your insights with your community or build new applications that serve specific users.

Explore  
Dig into the data.

Visualize & Analyze  
Highlight spatial patterns and discover trends.

Build  
Develop new apps using templates and APIs.

Share  
Embed analysis on your website.

## Understanding Our City

Use Open Data with curated Community data to understand the City. See more examples [here](#)

Job Accessibility by Transit  
Number of jobs accessible by

Household Above & Below Poverty Line

Population Pressure  
Map showing where the

Demographic Atlas  
Atlas featuring themes on

# Initiative Web Pages

Featured Initiative



“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

Vision Zero Initiative page

- Banner
- Narrative
- Performance
- Apps
- Data Catalog
- Maps
- Ways to Engage
- Participating Agencies

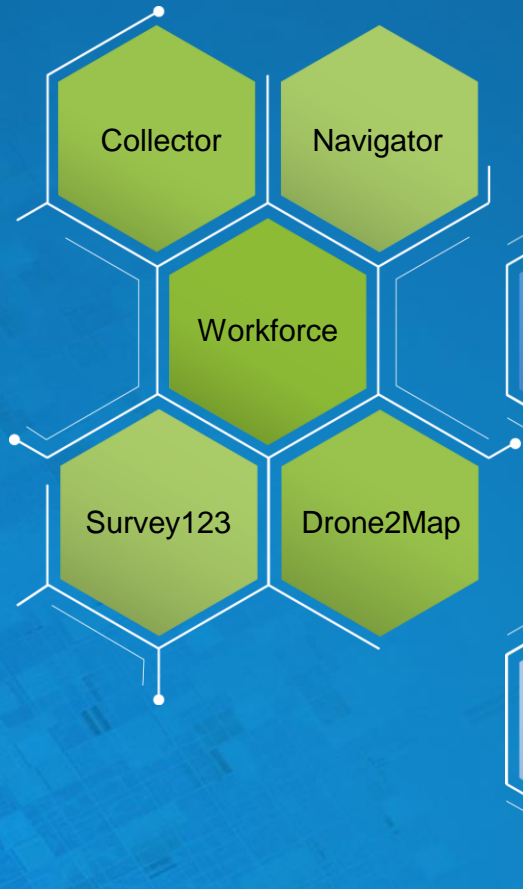
The screenshot shows the Vision Zero Initiative website with the following sections:

- Banner:** A header with the text "Los Angeles Vision Zero Part of CA 2025" and a map of Los Angeles with red dots indicating incident locations.
- Narrative:** A paragraph explaining the initiative's goal to reduce serious injuries and deaths on roadway corridors.
- Performance:** A section titled "Moving to a Safer Los Angeles" featuring three charts: two donut charts showing the percentage of total deaths by mode (Pedestrian/Bicyclist, Motorist, and Other) and a line chart showing the number of deaths from 2015 to 2025.
- Apps:** A section titled "Vision Zero Maps & Applications" with four interactive map tiles: "High Injury Network", "Vision Zero & Data-Driven Approach", "Walkability in LA", and "Collision Landscape in Los Angeles".
- Data Catalog:** A section titled "Indicators & Related Data" with three main categories: "Safety" (Highway Deaths, Pedestrian Deaths, Bicyclist Deaths), "Transportation" (Motor Vehicle Deaths, Deaths on Bikes, Deaths on Scooters), and "Health" (Hospitalizations, Deaths, Disability).
- Maps:** A section titled "Understanding Our City" with four map tiles: "Transit Frequency in Los Angeles", "Los Angeles Transit Atlas", "Senior Population", and "Jobs Proximity Index".
- Ways to Engage:** A section titled "Be a Part of the Vision Zero Solution" with three sub-sections: "Join Us on Social Media", "Attend a Meeting" (Vision Zero Kick-Off Group), and "Spread the Word" (CROWD, LA 2025 Vision Zero Alliance).
- Participating Agencies:** Logos for "VISION ZERO LOS ANGELES | 2015-2025" and "LADOT Department of Transportation Public Health".

# Apps

## Focused Applications

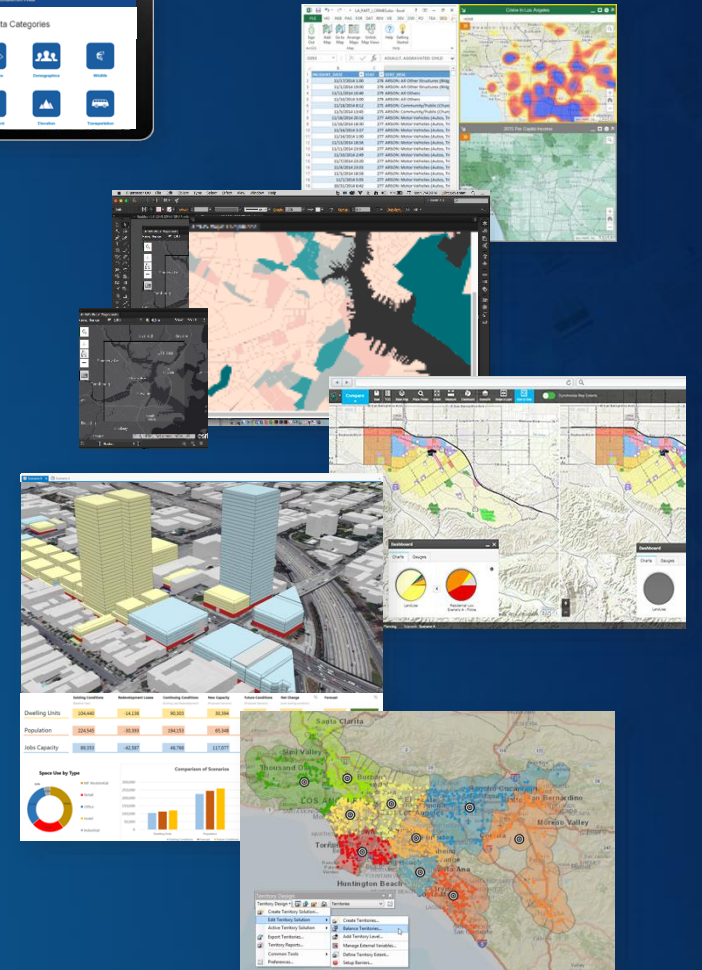
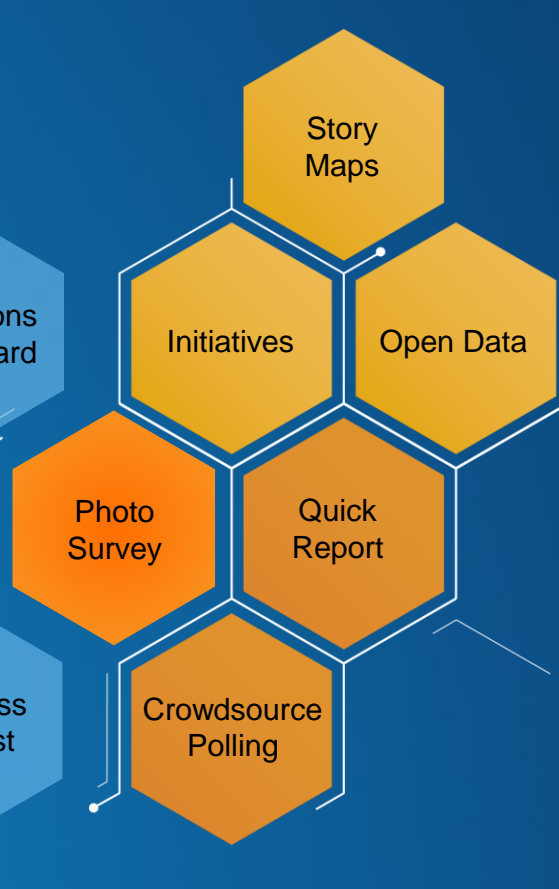
### Field



### Office



### Community



*Focused, Powerful, and Ready-to-Use*

# Configurable Apps for Crowdsourcing

ArcGIS for Local Government | GALLERY | COMMUNITY | DOCUMENTATION | SEARCH | esri


## Crowdsource Reporter

Home | Get Started

### Overview

Crowdsource Reporter is a configurable application template that allows users to submit problems or observations. The application has been optimized for smartphones but is responsively designed to be used on smartphones, tablets, and desktop computers.

The Crowdsource Reporter application presents one or more maps that can be used to report a problem or observation. Users can anonymously submit new reports, review existing reports, and comment and vote on reports or observations submitted by other users. They also can authenticate with their social media or ArcGIS credentials and track the status of problems or observations they have reported.



[REQUIREMENTS](#)
[WHAT YOU GET](#)
[WHAT'S NEW](#)
[VIEW APPLICATION](#)

### Requirements

Crowdsource Reporter requires specific technical experience and software.

Requirement	Description
Experience	<ul style="list-style-type: none"> <li>Authoring maps</li> <li>Configuring application templates in ArcGIS Online or Portal for ArcGIS</li> </ul>
Software	<ul style="list-style-type: none"> <li>ArcGIS Online or Portal for ArcGIS subscription</li> </ul>

### You may be interested in

ArcGIS for Local Government includes several related maps and apps that also can be configured in your organization:

- Crowdsource Manager
- Crowdsource Polling

Crowdsource Reporter is used in the following maps and apps that can be configured for your organization:

- Citizen Problem Reporter
- Mosquito Service Request
- Vision Zero

ArcGIS for Local Government | GALLERY | COMMUNITY | DOCUMENTATION | SEARCH | esri

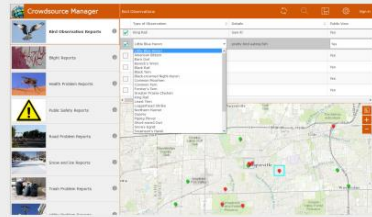
## Crowdsource Manager

Home | Get Started

### Overview

Crowdsource Manager, a companion configurable application template to data collection apps such as Crowdsource Reporter, allows users within an organization to review problems or observations submitted through the Reporter application. The application can be used on tablets and desktop computers.

The Crowdsource Manager application presents one or more maps that can be used to review problems or observations reported. Users authenticate with their ArcGIS credentials and look for patterns and clusters, review problem details, update status, and assign responsibility.



[REQUIREMENTS](#)
[WHAT YOU GET](#)
[WHAT'S NEW](#)
[VIEW APPLICATION](#)

### Requirements

Crowdsource Manager requires specific technical experience and software.

Requirement	Description
Experience	<ul style="list-style-type: none"> <li>Authoring maps</li> <li>Configuring ArcGIS Online or Portal for ArcGIS configurable application templates</li> </ul>
Software	<ul style="list-style-type: none"> <li>Portal for ArcGIS or ArcGIS Online subscription</li> </ul>

### You may be interested in

ArcGIS for Local Government includes several related maps and apps that also can be configured in your organization:

- Crowdsource Reporter
- Crowdsource Polling

Crowdsource Manager is used in the following maps and apps that can be configured for your organization:

- Capital Project Tracking
- Citizen Problem Reporter
- Mosquito Service Request



# Crowdsourcing: Surveys & Data Collection

- Initiative-specific data gathering by the public community **with identity**
- Provides trust in data collected

**Responses**

Type	Count
Other	2
Horseback	4
Bicycling	5
Walking	11
Wheelchair	1
Other	1

**Help us learn more about Greenways**  
The Capital Area Greenway System is a network of public open spaces and recreational trails which provides for activities such as walking, jogging, hiking, bird watching, nature study, fishing, picnicking and outdoor fun. The trails connect many of Raleigh's parks and in many cases provide a complement to the recreational activities at the parks. Many of the city's major ecological features can be experienced in their natural state along the Greenway. A major goal of the Greenway Program is to establish a completed network of interconnected trails throughout the city.

**Share your voice**  
We want to hear from you. Fill out the survey to share your feedback on our greenways. Your input is immediately available on the map above and will be used by our teams to improve your city.

**Join our Events**  
Subscribe to our Greenways initiative to participate in events, contribute analysis and build new apps to help citizens and the city.

**Sign up & Participate**

**Raleigh Greenways**

How do you travel greenways? \*

Walking  
 Bicycling  
 Horseback  
 Other

Do you want to be contacted with more questions?

Share an image of your favorite Greenway  
Click here to upload file, (410MB, support: jpg, jpeg, png, gif)

Which Greenway to you enjoy? \*

Find address or place

Lat: 35.7876 Lon: -78.6290

**Submit**

Powered by Survey123 for ArcGIS

**Baltimore Performance Reporting**  
Measuring our City for Better Outcomes

**How to Report**

1. Sign into your Baltimore Reporting Account
2. Enter your performance metrics
3. Submit the performance report

Visit Baltimore Reporting to see the data in action.

**Performance Reporting**

Performance Area \*  
Better Schools

Performance Measure \*  
Child Food Insecurity

Performance Value \*  
10

Performance Date \*  
1/29/2017

Performance Location  
Set Location

**Record Performance**

Powered by Survey123 for ArcGIS

**Better Schools**

This Priority Outcome aims to promote lifelong learning so that individuals can be prepared for careers and remain competitive in an increasingly knowledge and technology driven economy; community engagement and partnerships that bring individuals and organizations together in a collaborative and coordinated process; and quality and consistency, reducing duplication in services to all youth including those who are disengaged, at-risk, unstably housed or otherwise vulnerable.

**A Healthy & Safe Start**  
10.3  
Rate per 1,000 births  
On Track

**School Readiness**  
76 percent  
On Track

**Academic Achievement**  
30 percent  
On Track

**Child Food Insecurity**

**Child Abuse Investigations**

**Child Food Insecurity**  
24.5 percent  
Children cannot thrive from cradle to college if they are not well-nourished. As a result of 20% of Baltimore children living in food deserts without access to healthy, affordable food, a quarter of Baltimore's children are food insecure. Food insecure children are significantly behind their peers in kindergarten readiness (1), third-grade reading and math (2), and attendance due to illness (3), which can all affect graduation rate (4). Food insecurity is a measure of lack of access to times, to

**Number of Systems-Involved Juveniles**  
180.8  
This is the total number of children committed to the justice and/or social service systems, specifically the number of children whose cases are "high risk", youth 18 and older who are found "guilty", and cases of children who are removed from their homes due to abuse and/or neglect. Now

**Number of Child Abuse New Investigations**  
5,767  
This goal is measured by tracking Child Abuse New Investigations Child Abuse New Investigations in number.

Copyright 2016. Your Organization.

Powered by Survey123 for ArcGIS

# Community Engagement Dashboard

Measure the level of community engagement... overall, by initiative, by event, by location, and by individual.

ArcGIS Open Data Documentation GeoNet Melissa

ESRI R&D Center

Sites Initiatives Data Team Settings

Dashboard Initiatives Gallery Initiatives Manager

**ACTIVITY**

Pignotes Shares

ALERTS: 6 Applications need attention

NEW: 11 Available Initiative Templates

JOINED: 18 Active Initiatives

SHARING: 2 Team, 1 Organization, 15 Public

My Initiatives

INITIATIVE NAME

ACTIVITY

DATASETS COMPLETION ALERTS

18 63% 4

View Edit

Initiative Manager

New Initiatives Templates

Initiative Template A

Create your own initiative by combining existing applications with a custom site....

Designed By: Your Organization

View

Initiative Template B

Create your own initiative by combining existing applications with a custom site....

Designed By: Your Organization

View

Initiative Template C

Create your own initiative by combining existing applications with a custom site....

Designed By: Your Organization

View

Initiative Gallery

# Story Maps

Story Maps ▾ Apps Gallery Resources Blog My Stories Sign In English esri

## Story Map Crowdsourcing

Overview Gallery Tutorial

### National Park Memories

2016 marks the centennial of the National Park Service. Help us celebrate 100 years of the world's premier park system by sharing your favorite photos and experiences in America's national parks.

Explore Map

View this story map

Get inspired!

The Story Map Crowdsourcing app is simple to set up and can be used to gather contributions from anyone on almost any subject, and present them in an attractive, engaging way. Browse our gallery to see how storytellers have used the app to collect photos and experiences.

Search Story Maps Gallery

Subject

- Business and Economy
- Disasters and Humanitarian
- History and Culture
- In The News
- Infrastructure and Construction
- Nature and Conservation
- People and Society
- Planning and Design
- Science and Technology
- Sports and Entertainment
- Travel and Recreation

Industry

- Business
- Education and Research
- Government: Local
- Government: State & Regional
- Government: National
- Health & Human Services

Super Bowl Celebrity Watch  
By Houston Chronicle

1Frame4Nature: Share Your Pictures & Stories  
By Intl. League of Conservation Photographers

2016 GIS Day Events: Share a photo of your day  
By Esri Story Maps team

Cumberland Colours  
By Cumberland County, Nova Scotia

Find Your Beach  
Where's Your Favorite Beach?

ted! Gotta love those election sticl

[BUILD A CROWDSOURCE STORY](#)

Story Maps ▾ Apps Gallery Resources Blog My Stories Sign In English esri

## Story Map Crowdsourcing Tutorial

Overview Gallery Tutorial

### Before you start

To create a Crowdsourcing story the main thing you need before you start is an idea that will engage people!

It's important to note that Story Map Crowdsourcing is different from the other Story Maps apps in that it enables people to post pictures and information onto your map. Unlike the other apps, where you do all the authoring, you don't have complete control over what content appears in your Crowdsourcing story. You'll need to review contributions to check for inappropriate or unwanted posts, and you also need to consider privacy issues. For example, a contributor's current location, such as their current street address, can be exposed in a Crowdsourcing story, and appear with their post on your map both as a point location and as text. This is OK if your story is soliciting contributions about, say, great places to visit in a city, where that location is a public place and you want that place's location to appear on your map. But it may not be desirable for other subject matter, especially if people may be posting onto your Crowdsourcing story from their home. It is up to you as the author of a Story Map Crowdsourcing story to ensure that your application complies with the privacy and data collection policies and standards of your organization, your community, and your intended audience. We recommend that you set up a limited pilot or internal test of any Story Map Crowdsourcing project before deploying and promoting a Crowdsourcing story publicly, in order to review if it meets those requirements.

You also need to use an ArcGIS subscription account with publishing privileges in order to create a Crowdsourcing story. This is because behind the scenes, the content people contribute to your story is automatically stored in a service that the Crowdsourcing app creates and manages for you. Services can't be created at the ArcGIS public account level.

If you are using a free ArcGIS public account you'll need to upgrade to an ArcGIS subscription in order to make a Crowdsourcing story (see our Resources page for details about getting accounts). If you are not sure which account you have, the Crowdsourcing Builder will check your account when you launch it and will let you know if you can't build a story.

Get tips about how to create a great Crowdsourcing story.

[BUILD A CROWDSOURCE STORY](#)

<https://storymaps.arcgis.com/en/app-list/crowdsourcing/>

1

Start the Story Map Crowdsourcing Builder. You have to use an ArcGIS subscription account to create a Crowdsourcing story.

2

Enter the title for your story. This title will appear on your story's cover page.

Welcome to Crowdsourcing Builder

# Create Events

- Organizations can schedule Events
- Citizens can sign up to attend event.
- initiative Calls to Action that need help solving.
- Citizen developed solutions are contributed back to the Event Group
- The Event Group maintains an archive of Event participants, contributed solutions, and conversations

Initiative Event

initiative-event.dc.opendataqa.arcgis.com

DC Vision Zero Hackathon

My Data

esri DcAdminQA

# Vision Zero Hackathon

February 2, 2017 @ 10am

**Build Apps to improve pedestrian safety**

Join us on Saturday, February 2 at the Coworking Space to build apps and analysis.

[Learn more about the initiative](#)

[Sign up & Participate](#)

## Call to Action

- Provide Data

# A Whole New Type of GIS Is Emerging

Connecting Individuals, Organizations and Communities



# GIS is Evolving Rapidly

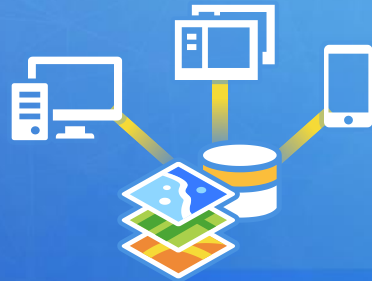
## Multiple Implementation Patterns

An Interconnected Network  
Is Emerging . . .

Desktop



Server



Cloud / SaaS



System of  
Systems



. . . A Distributed Platform of Open Geospatial Services

# GIS Connects Everyone

Creating a System of Engagement

Supporting Real-Time Awareness and Collaboration

Communities

Organizations

People



*GIS Provides a Common Language for Communication*



esri

THE  
SCIENCE  
OF  
WHERE