

Esri Climate Resilience App Challenge 2014

An “Apptitude” for Resilience



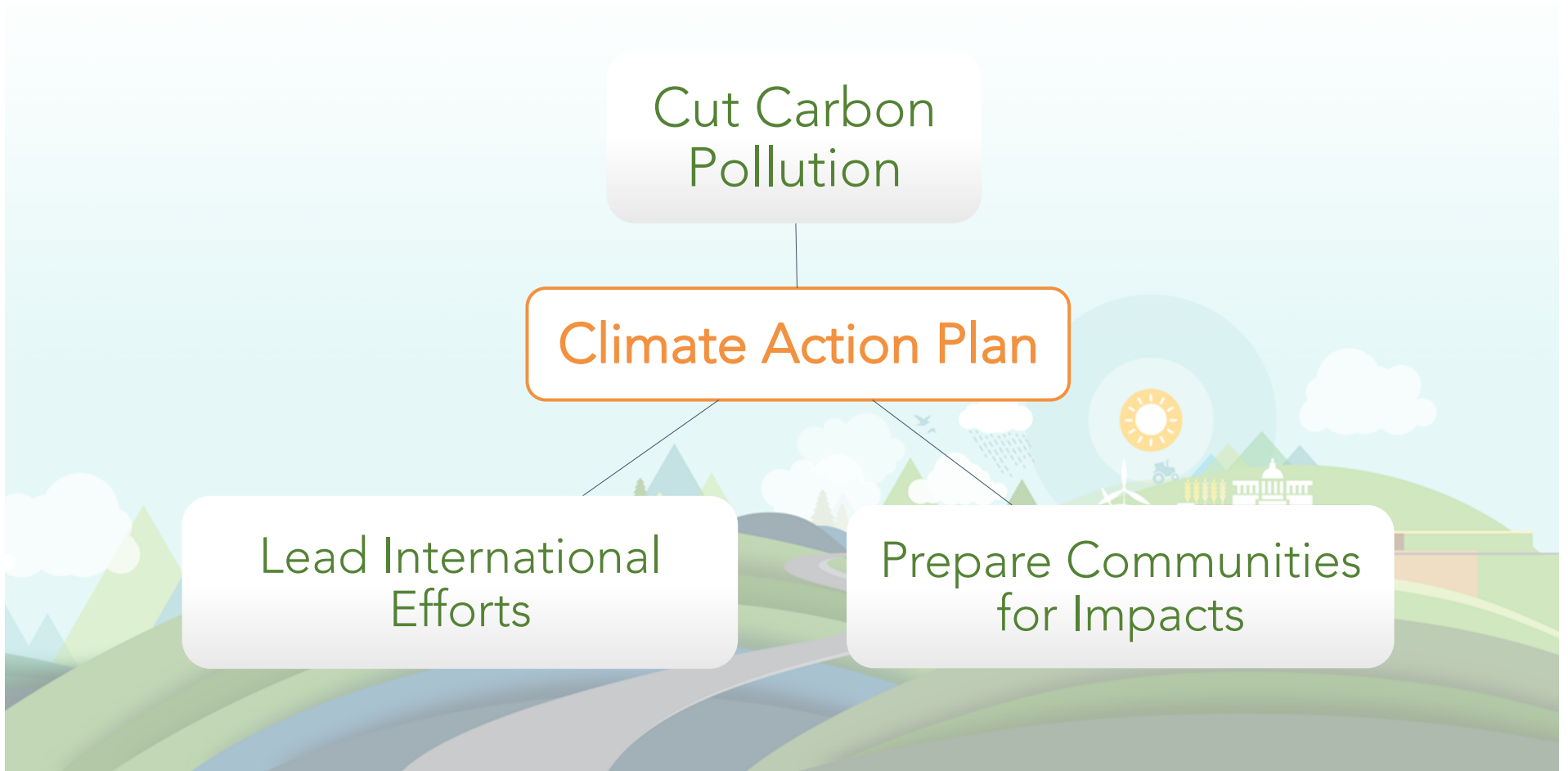
The White House Climate Action Plan – June 2013

Cut Carbon
Pollution

Climate Action Plan

Lead International
Efforts

Prepare Communities
for Impacts

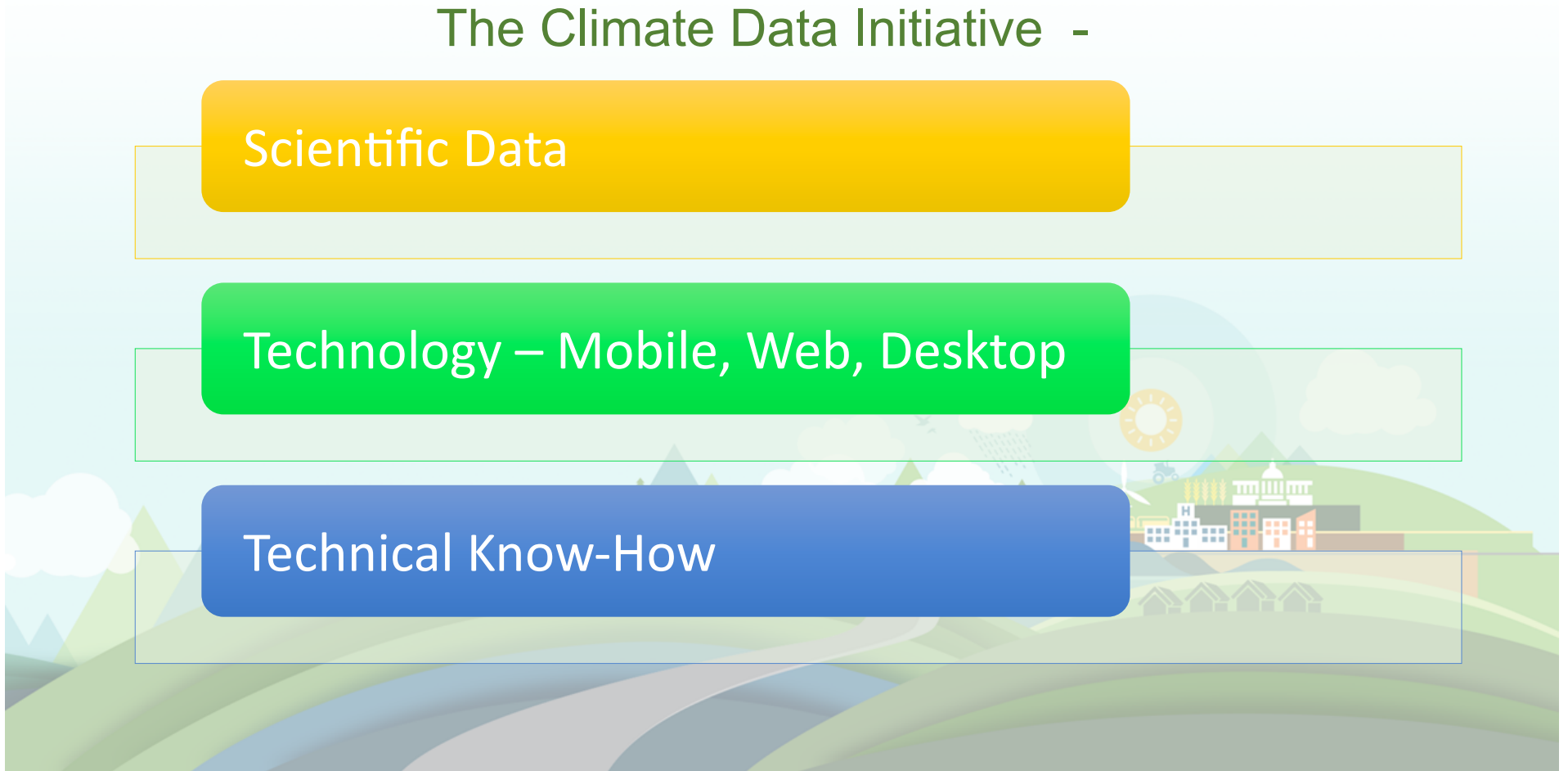


White House Climate Action Plan The Climate Data Initiative -

Scientific Data

Technology – Mobile, Web, Desktop

Technical Know-How



Climate Action Plan

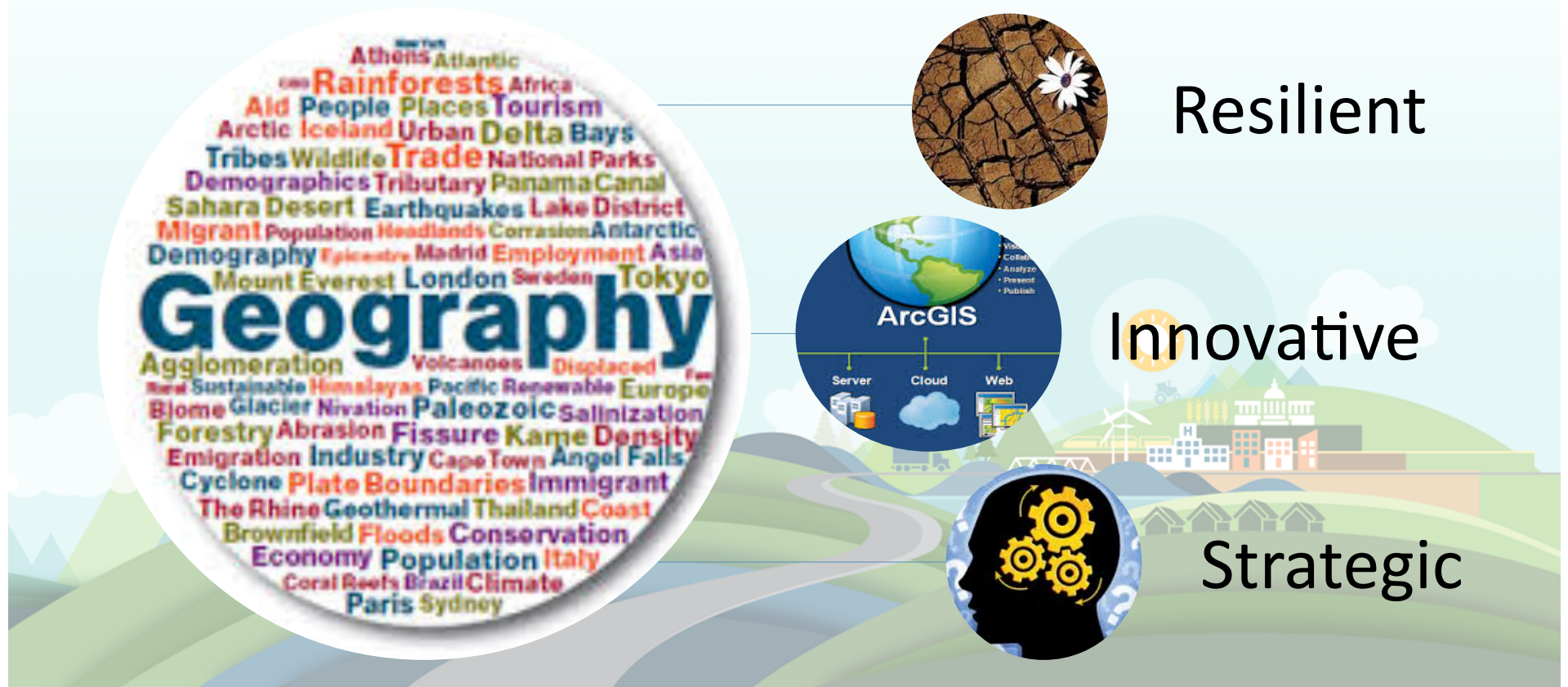
Climate Data Initiative

Leverage Federal data sources to stimulate innovation and entrepreneurship

- **Extensive**
- **Freely-available**
- **Climate-relevant**



Esri Climate Resilience App Challenge 2014 - Motivation



Esri Contribution

Provide Geospatial Technology

Host Geocollaboration Portal

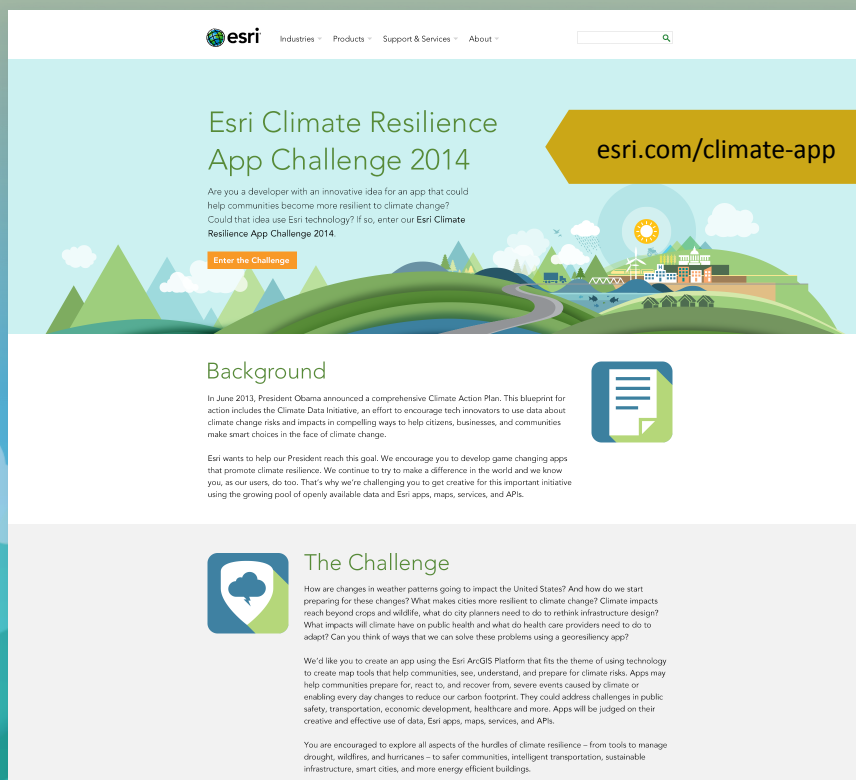
Sponsor The App Challenge

Esri Climate Resilience App Challenge 2014



App Challenge

Making Communities More Resilient



Esri Climate Resilience App Challenge 2014

Are you a developer with an innovative idea for an app that could help communities become more resilient to climate change? Could that idea use Esri technology? If so, enter our Esri Climate Resilience App Challenge 2014.

[Enter the Challenge](#)

esri.com/climate-app

Background

In June 2013, President Obama announced a comprehensive Climate Action Plan. This blueprint for action includes the Climate Data Initiative, an effort to encourage tech innovators to use data about climate change risks and impacts in compelling ways to help citizens, businesses, and communities make smart choices in the face of climate change.

Esri wants to help our President reach this goal. We encourage you to develop game changing apps that promote climate resilience. We continue to try to make a difference in the world and we know you, as our users, do too. That's why we're challenging you to get creative for this important initiative using the growing pool of openly available data and Esri apps, maps, services, and APIs.

The Challenge

How are changes in weather patterns going to impact the United States? And how do we start preparing for these changes? What makes cities more resilient to climate change? Climate impacts reach beyond crops and wildlife, what do city planners need to do to rethink infrastructure design? What impacts will climate have on public health and what do health care providers need to do to adapt? Can you think of ways that we can solve these problems using a georesilience app?

We'd like you to create an app using the Esri ArcGIS Platform that fits the theme of using technology to create map tools that help communities, see, understand, and prepare for climate risks. Apps may help communities prepare for, react to, and recover from, severe events caused by climate or enabling every day changes to reduce our carbon footprint. They could address challenges in public safety, transportation, economic development, healthcare and more. Apps will be judged on their creative and effective use of data, Esri apps, maps, services, and APIs.

You are encouraged to explore all aspects of the hurdles of climate resilience – from tools to manage drought, wildfires, and hurricanes – to safer communities, intelligent transportation, sustainable infrastructure, smart cities, and more energy efficient buildings.

Shareable Apps

Creative Ideas

Innovative Methods

Open Data

Many Participants

Governments

Startups / Developers

Businesses

Academics & NGO's

Building a Resilient Platform

App Challenge

esri.com/climate-app

Making Communities More Resilient

Participation – Over 35 App and Video Submissions

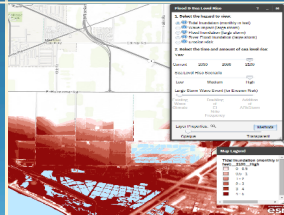
Narrowed down to 13 Top Submission for Final Judging

Broad Diversity in Topic and Scale

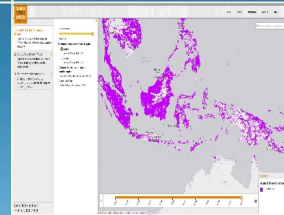
Building a Resilient Platform

Esri Climate Resilience App Challenge 2014

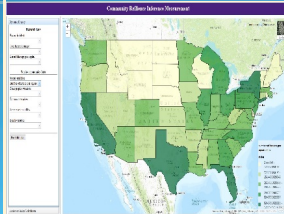
Coastal
Resilience



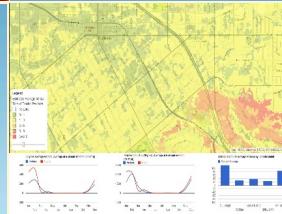
Global
Forest
Watch



Solar Resilience



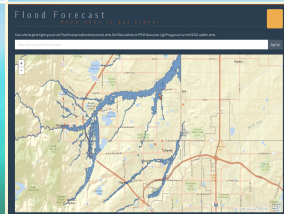
Community
Resilience
Measurement



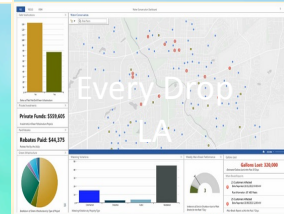
CommunityViz



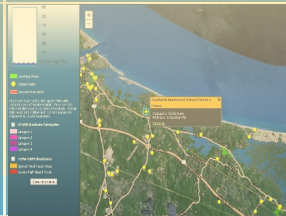
Flood
Forecast



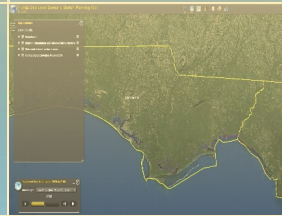
Every Drop LA



Solar
Resilience



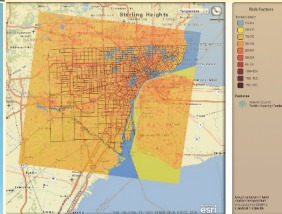
Cape Cod Sea Level Rise



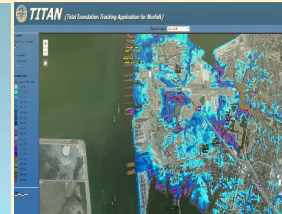
Radar for Life



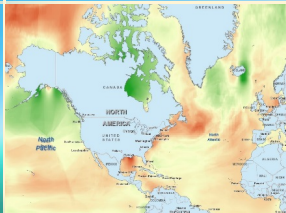
I-Heat



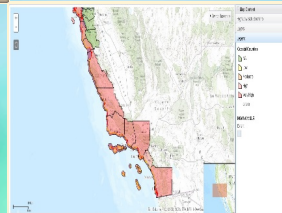
Sea Level Rise Calculator



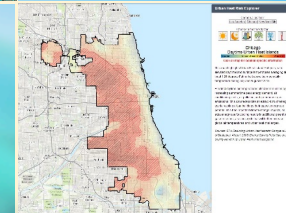
T.I.T.A.N.



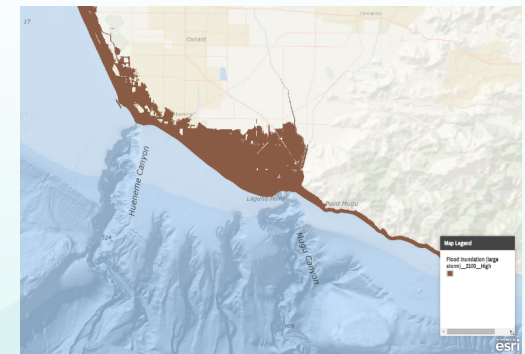
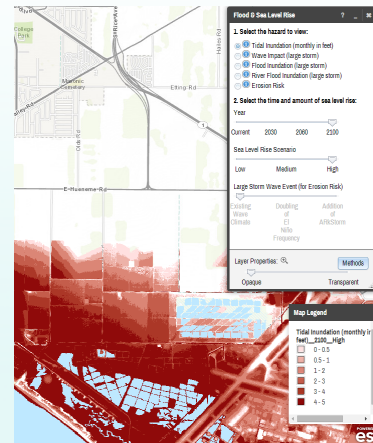
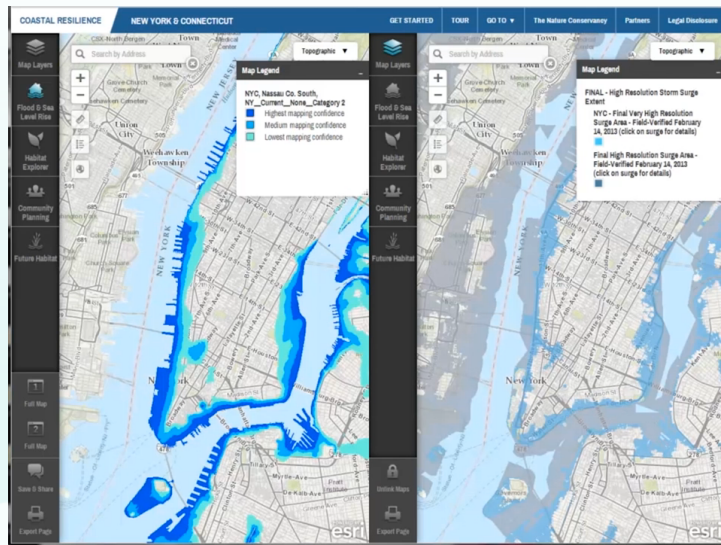
Sea level
Vertical Land



Seal Level Rise Map



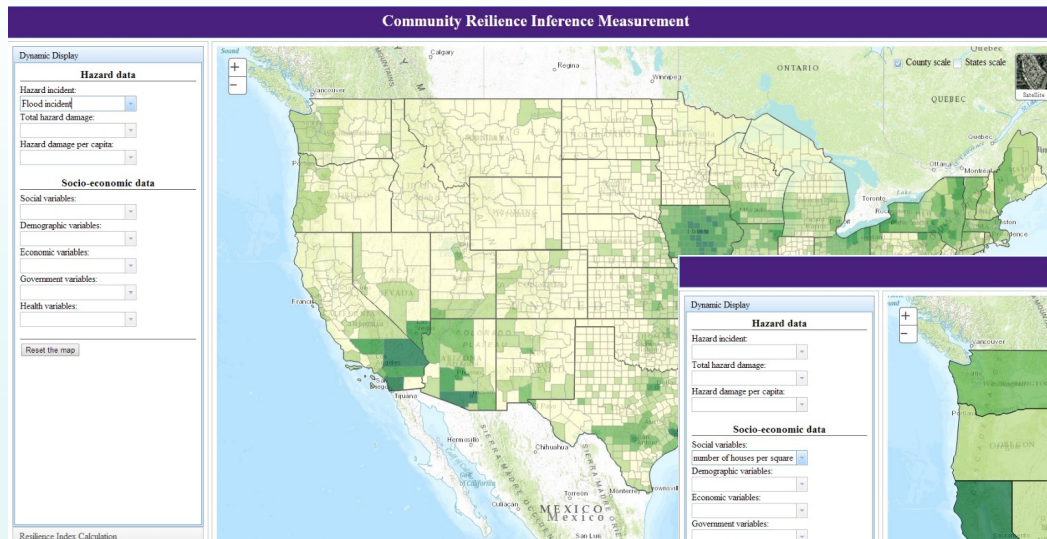
Coastal Resilience 2.0



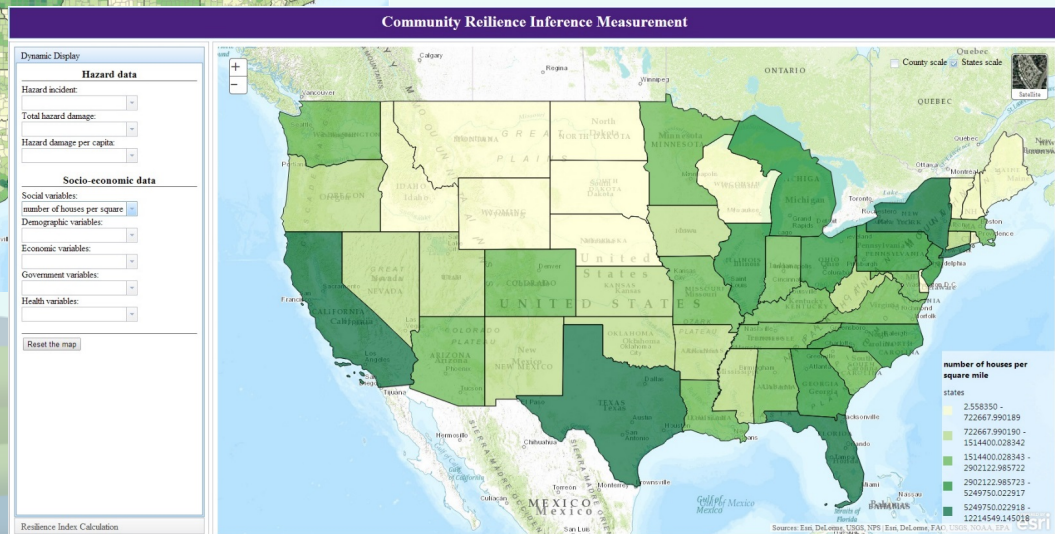
Tidal Changes

Flood Risk

Community Resilience Inference Measurement



Flood Damage by County



Population Density by State

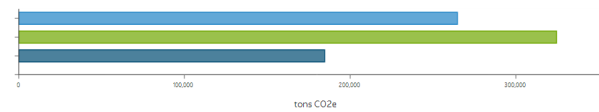
CommunityViz Web App

Indicators

Impact and performance measures for scenarios

Scenario	Show	
Base Scenario	<input checked="" type="checkbox"/>	
Business As Usual	<input checked="" type="checkbox"/>	
Strategic Measure	<input checked="" type="checkbox"/>	
Category	Show	
Strategic Measure Lighting	<input checked="" type="checkbox"/>	

Greenhouse Gas Generation



MWh per year consumed in the Highway 43 corridor. This is residential use only.



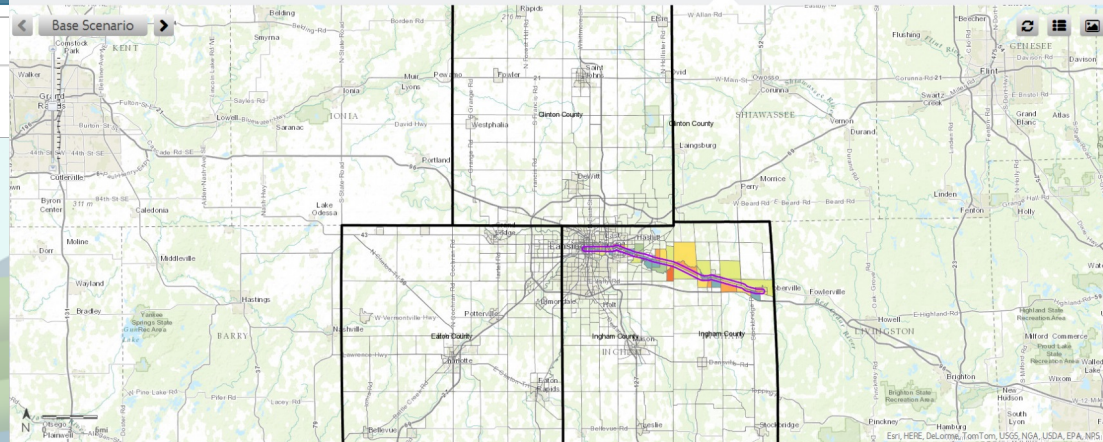
PlacewaysClimateApp

a CommunityViz Web App

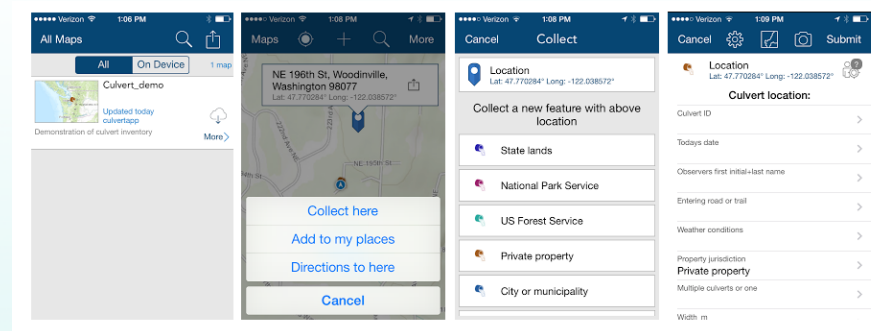
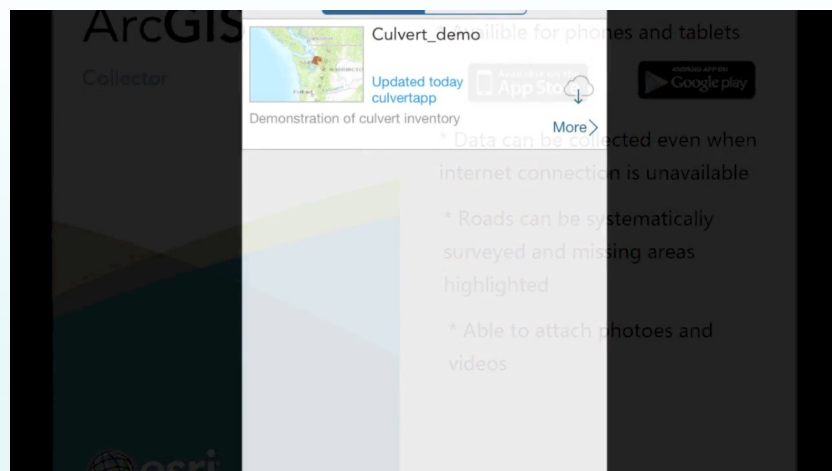
Energy Usage Data

Map Indicators Assumptions Description

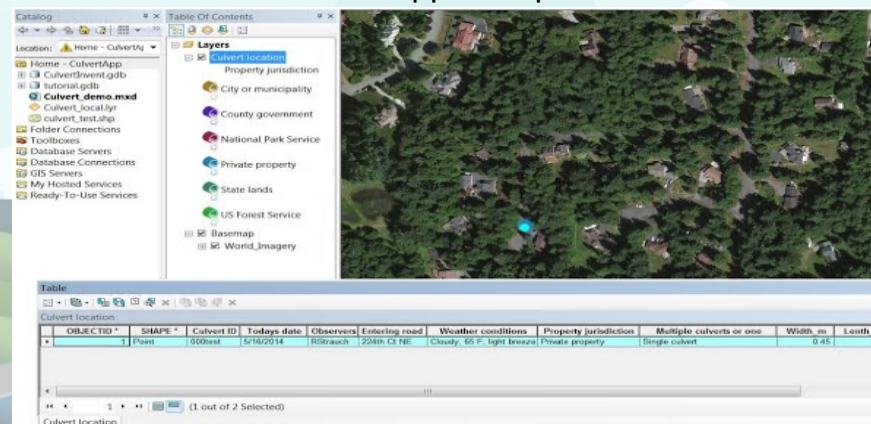
Energy Use by County



Culvert Inventory for Climate Resilience

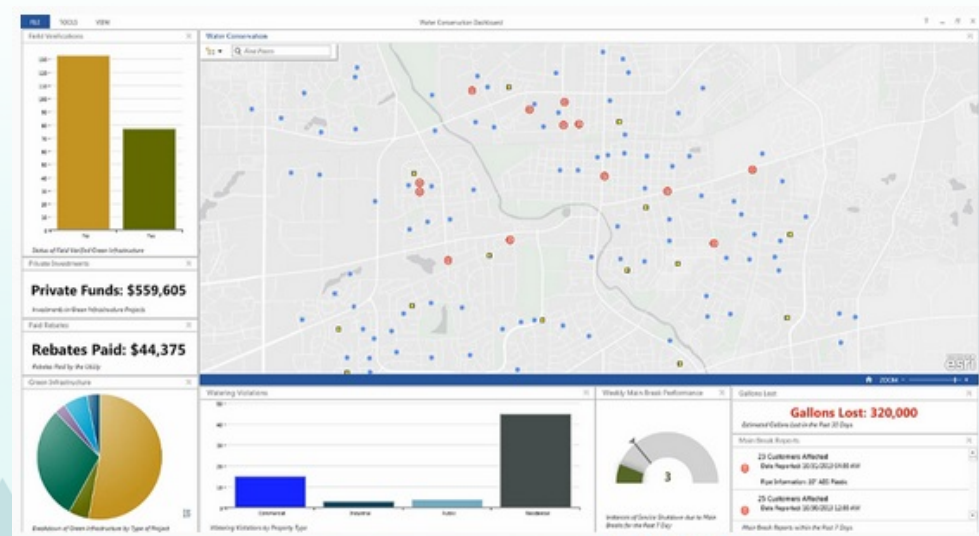


Mobile App Examples



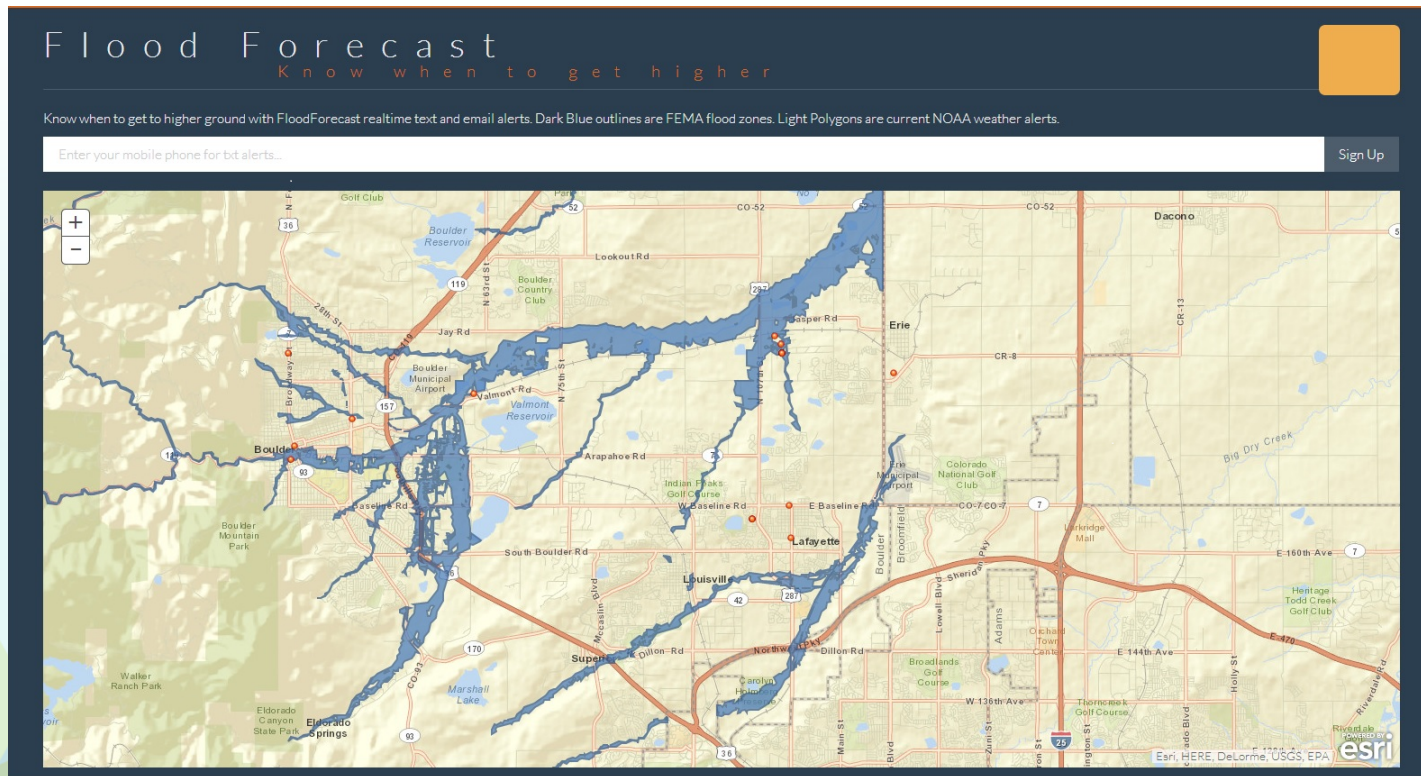
Property Jurisdiction

Every Drop LA



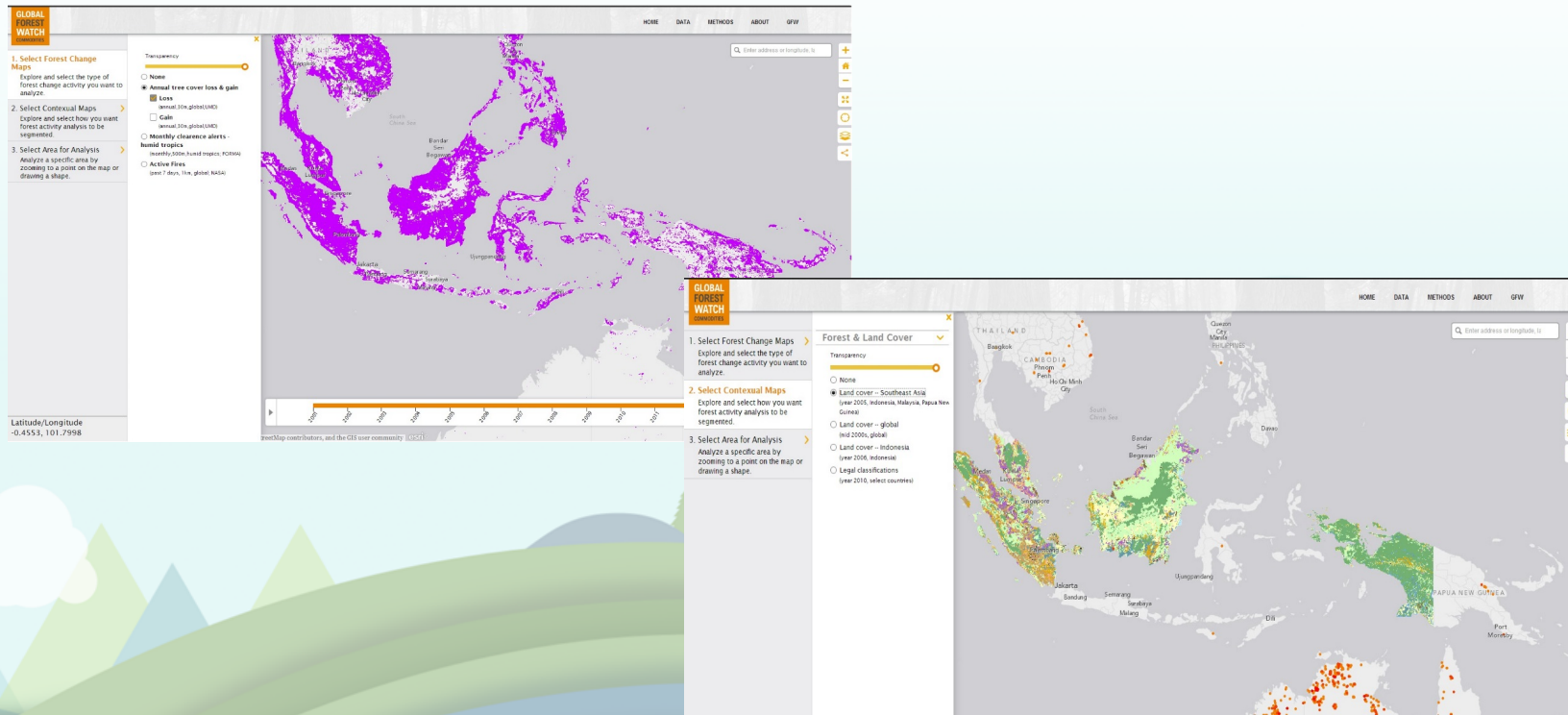
Water use Calculator

Flood Forecast



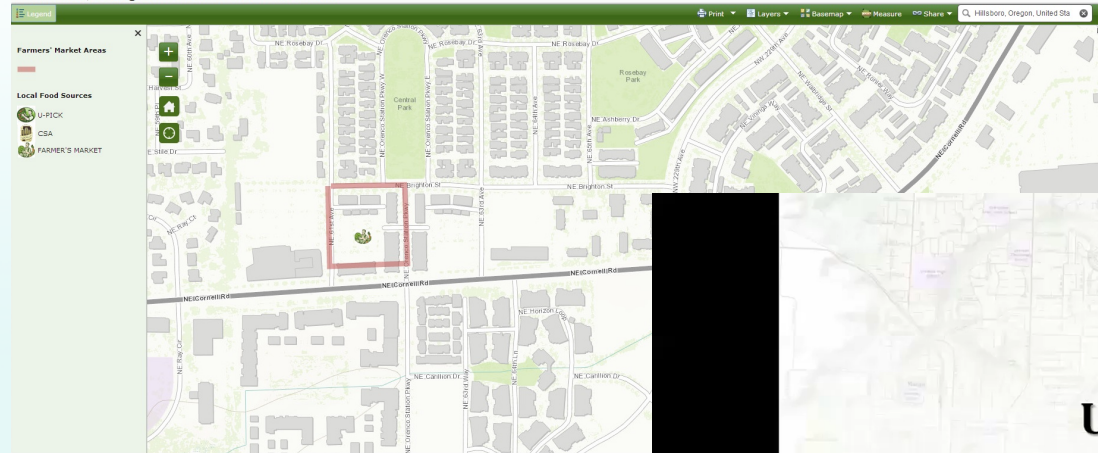
Potential Flood Risk Map

Global Forest Watch Commodities – Geospatial Tools to Help Reduce Greenhouse Gas Emissions from Land Use Change



Local Food Alternatives in Washington County

Hillsboro, Oregon Local Food Providers

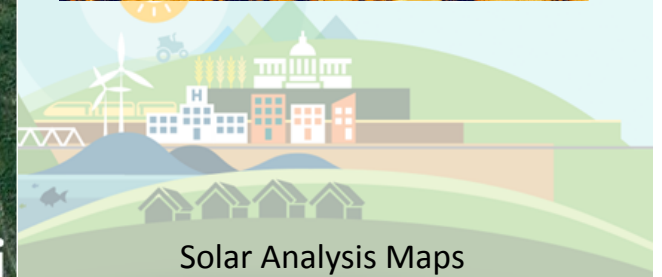
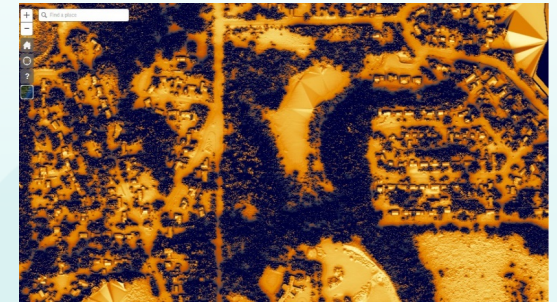
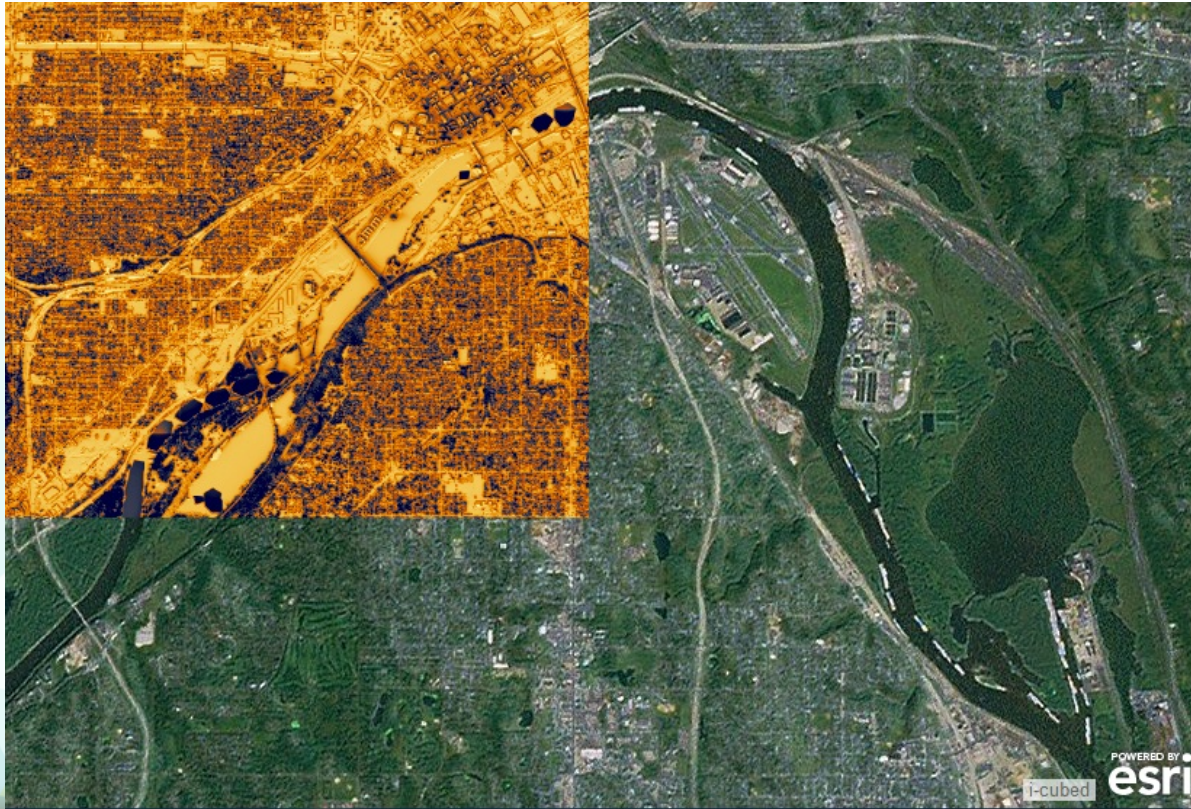


Locations of farmers
markets in Washington
County

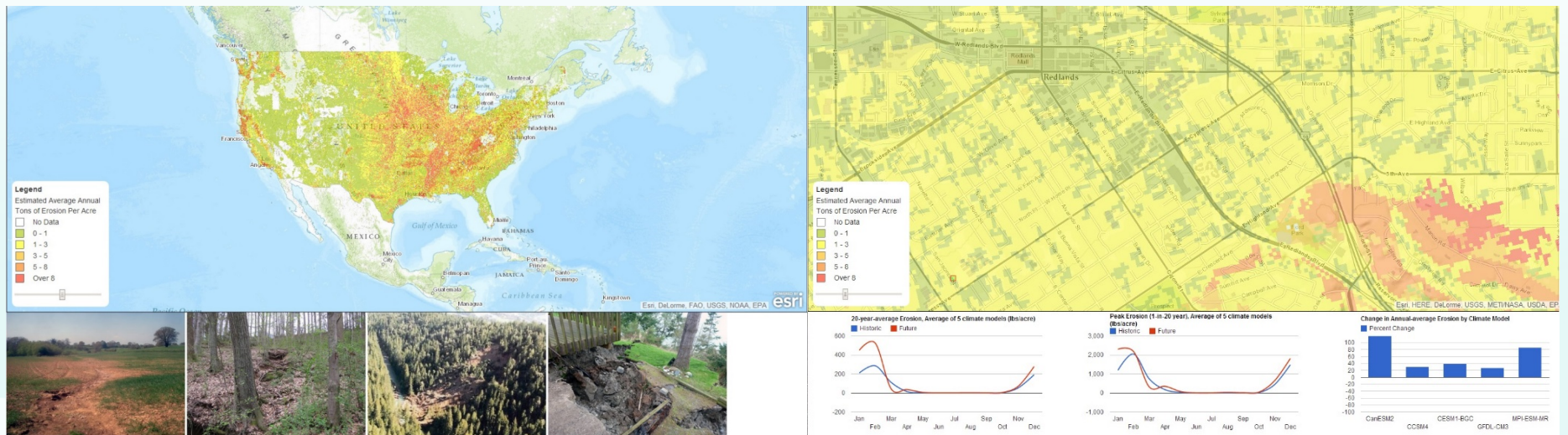
**Utilizes
ArcGIS Technology**

Launch

Minnesota Solar Suitability Analysis

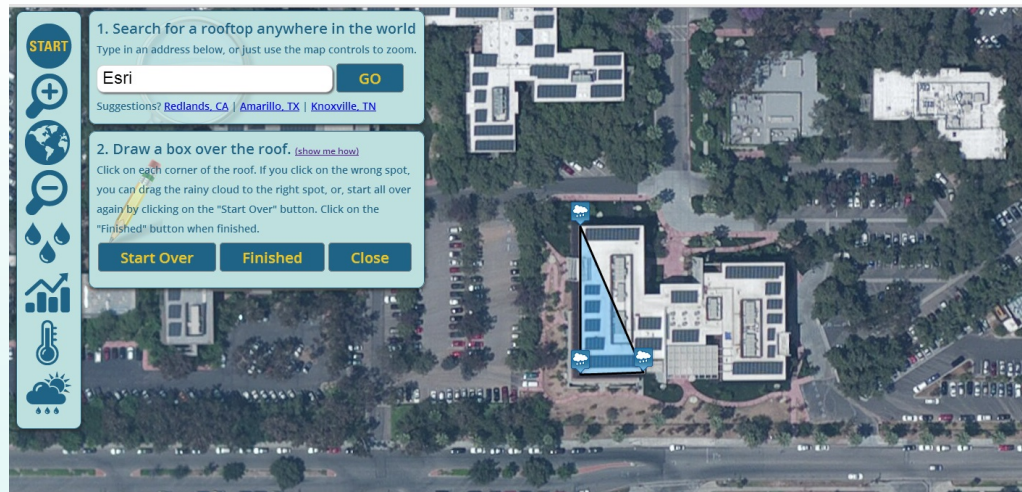


Modeling Community Erosion from Climate Change

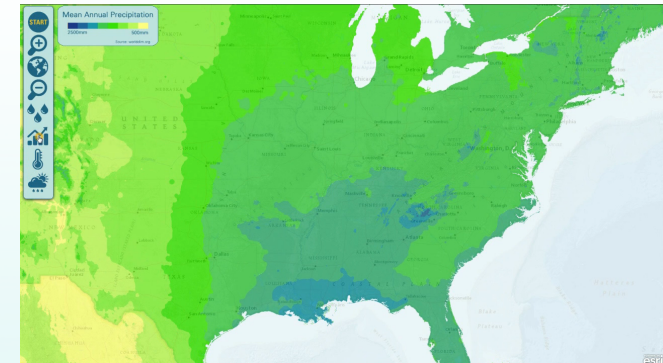


Estimated Average Annual Tons of Erosion per Acre

Save the Rain



Esri World Headquarter Estimated Rain Usage Data



The first screenshot shows the MyWayToGo homepage with the tagline "Find a better commute." and a search bar for start and destination locations. Below the search bar, it states "Easily compare transportation modes and track your mileage." and includes a "Let's Go!" button. The second screenshot displays a comparison of transportation modes: Carpool (1 Result), Vanpool (No Results), Transit (3 Results), Walk (1 Result), Bike (2 Results), and Drive (1 Result). The third screenshot shows a detailed route planning interface with a map of Denver and a list of results for a trip from Denver to Aurora, Colorado, on June 5, 2014, at 11:30 AM. The results include a route via Vector Street and Colfax Ave & Sherman St, with a total time of 47 minutes and 10.3 miles.

The screenshot displays the Waytogo website's reverse search functionality for carpooling. The interface is divided into a sidebar on the left and a main map area on the right.

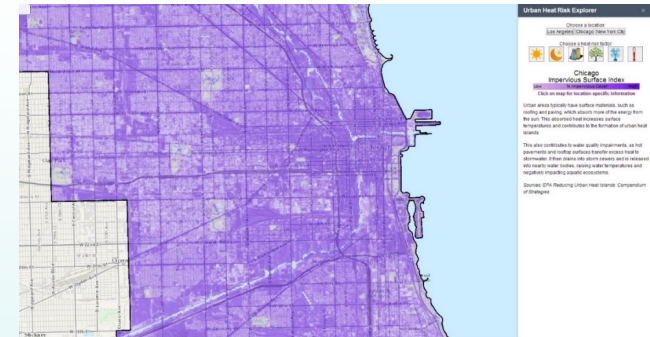
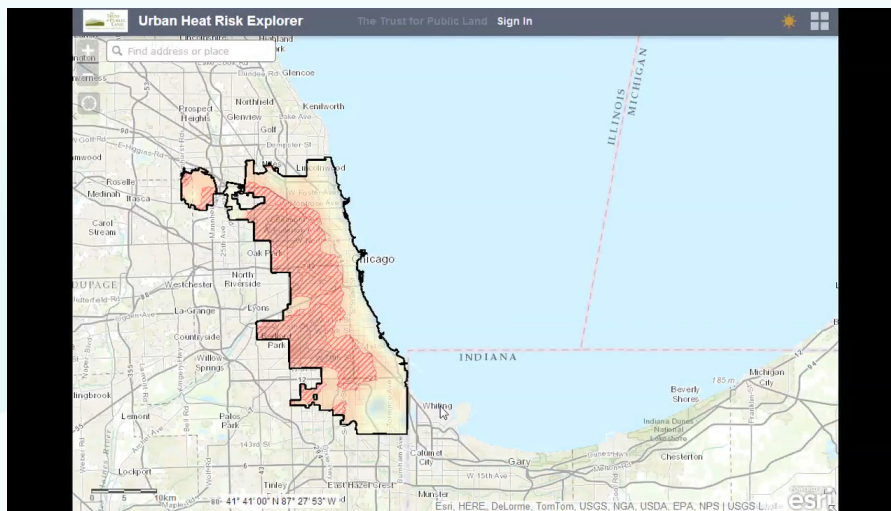
Reverse Search Section:

- Origin:** Denver, Colorado
- Destination:** Boulder, Colorado
- Date/Time:** Jun 5, 2014 @ 11:30 AM
- Transportation Modes:**
 - Carpool:** 1 Result
 - Vanpool:** No Results
 - Transit:** 3 Results (15 Bta CO2, 26.9 mi, 1 hr 47 min)
 - Walk:** 1 Result (9 Bta CO2, 4,738 calories, 30.2 mi, 15 hr 17 min)
 - Bike:** 2 Results (9 Bta CO2, 1,721 calories, 15.6 mi, 2 hr 55 min)
 - Drive:** 1 Result (23 Bta CO2, \$15.28, 37.7 mi, 37 min)

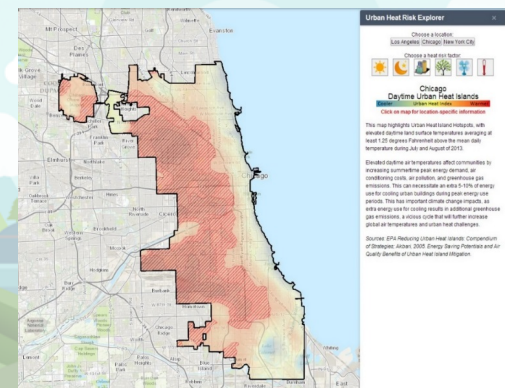
Map Area:

- Reverse Search Section:**
 - Origin:** Denver, Colorado
 - Destination:** Boulder, Colorado
 - Date/Time:** Jun 5, 2014 @ 11:30 AM
- Transportation Modes:**
 - Carpool:** 2 Results
 - Vanpool:** No Results
 - Transit:** 3 Results (6 Bta CO2, 13.4 mi, 47 min)
 - Walk:** 1 Result (9 Bta CO2, 1,342 calories, 8.8 mi, 2 hr 54 min)
 - Bike:** 2 Results (6 Bta CO2, 562 calories, 8.8 mi, 51 min)
 - Drive:** 1 Result (7 Bta CO2, \$4.53, 8.9 mi, 23 min)

Urban Heat Risk Explorer



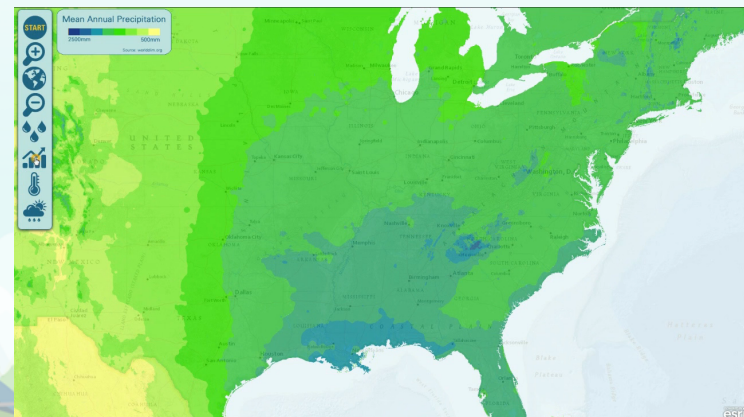
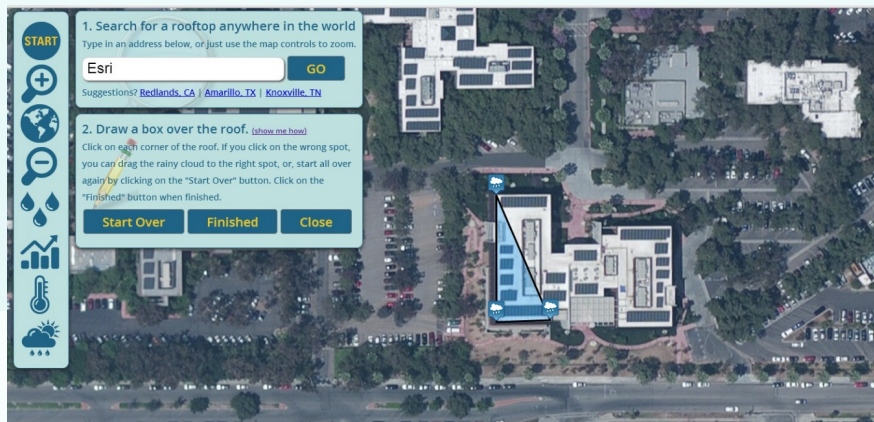
Chicago Impervious Surface Index



Chicago Daytime Urban Heat Islands

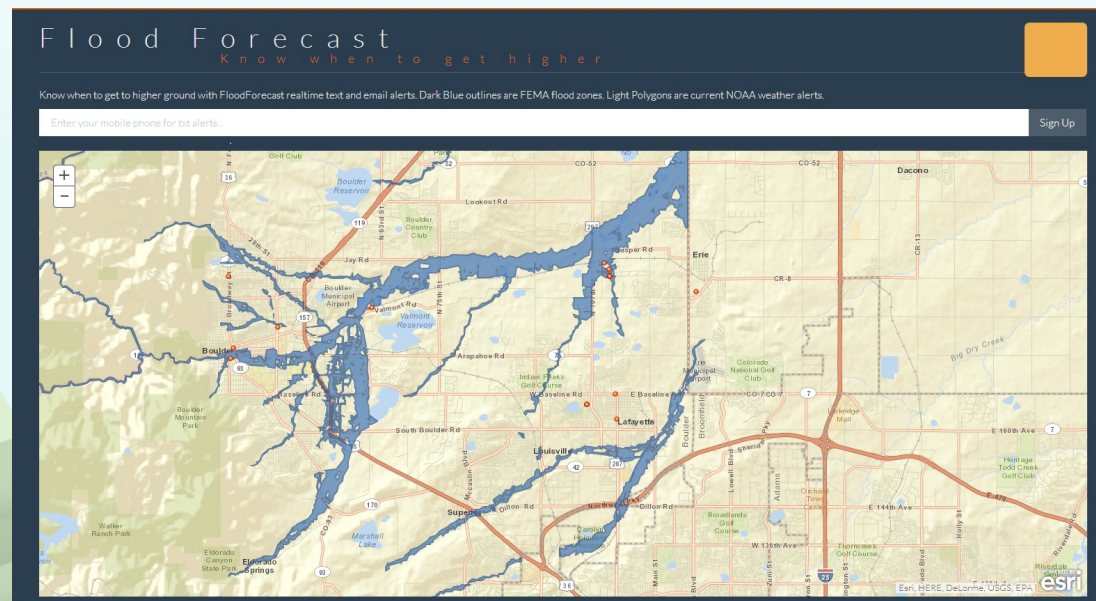
Third Place

Save the Rain



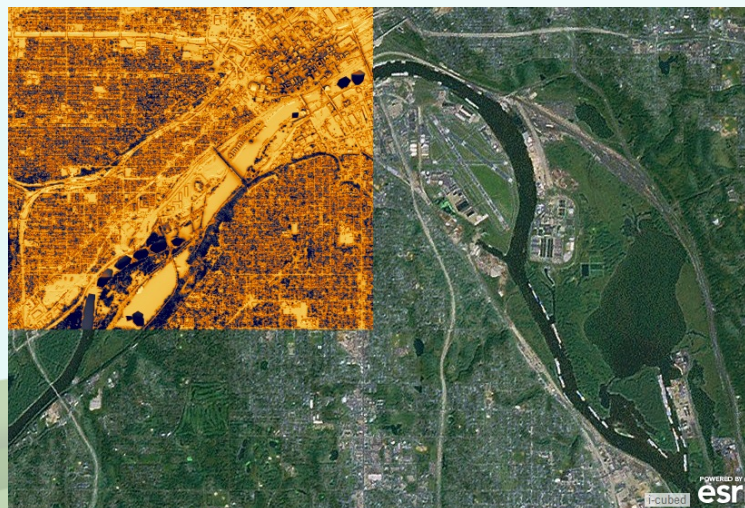
Second Place

Flood Forecast



First Place

Minnesota Solar Suitability Analysis



What made Top Submissions?

Clearly defined audience

Incentives for use – value proposition

Incentives to change behavior

Simple to use, not too complicated

Innovative use of data/technology – beyond configuration and display

Transferable, replicable

So Now What?...

Promote

- Highlight Apps Esri would encourage you to use

Resilience Portal

- Get Started

Spotlight

- Press and Conference Releases

Integration

- Inquiry into integration with Esri Products/Marketplace

Questions?

