COVID-19 and Location Technology

Cindy Elliott, Esri

Yasaman Kazemi, Esri

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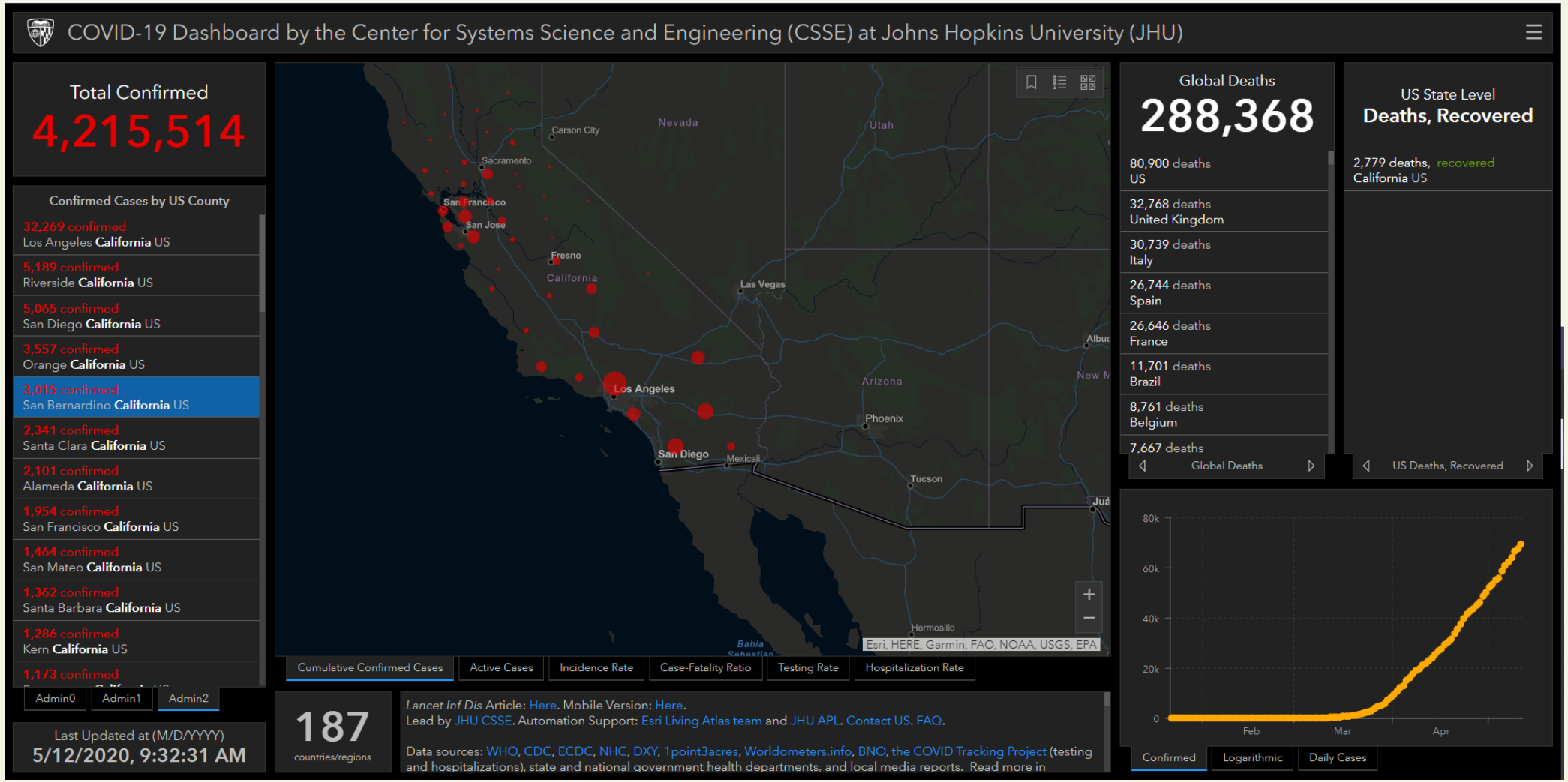
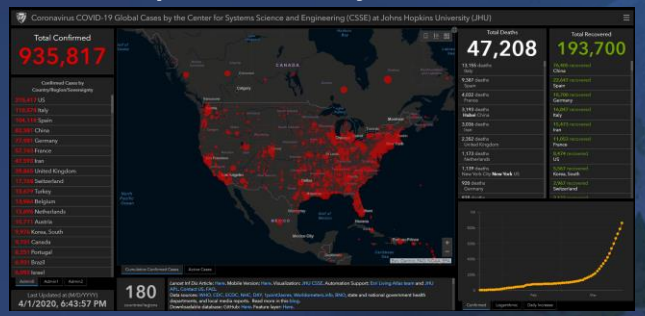
JHU Dashboard



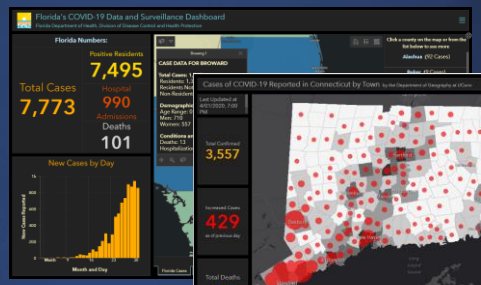
Location Technology For Pandemic Response

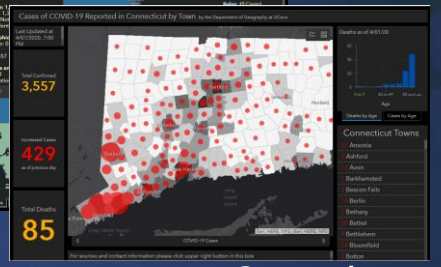
Johns Hopkins University



FEMA

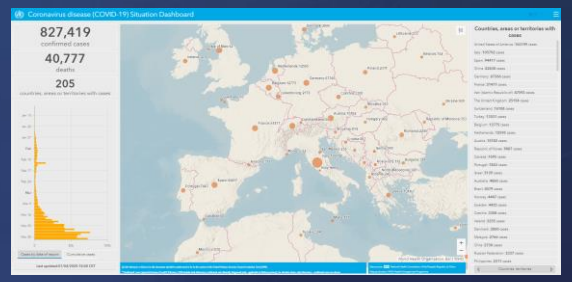
State of Florida





Connecticut

WHO



Apps

Portal

Visualization and Analytic Services

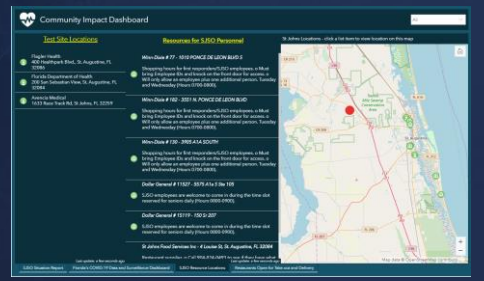
Case Data

Movement Data

Facilities

Population, Demographics & Basemaps

US Military

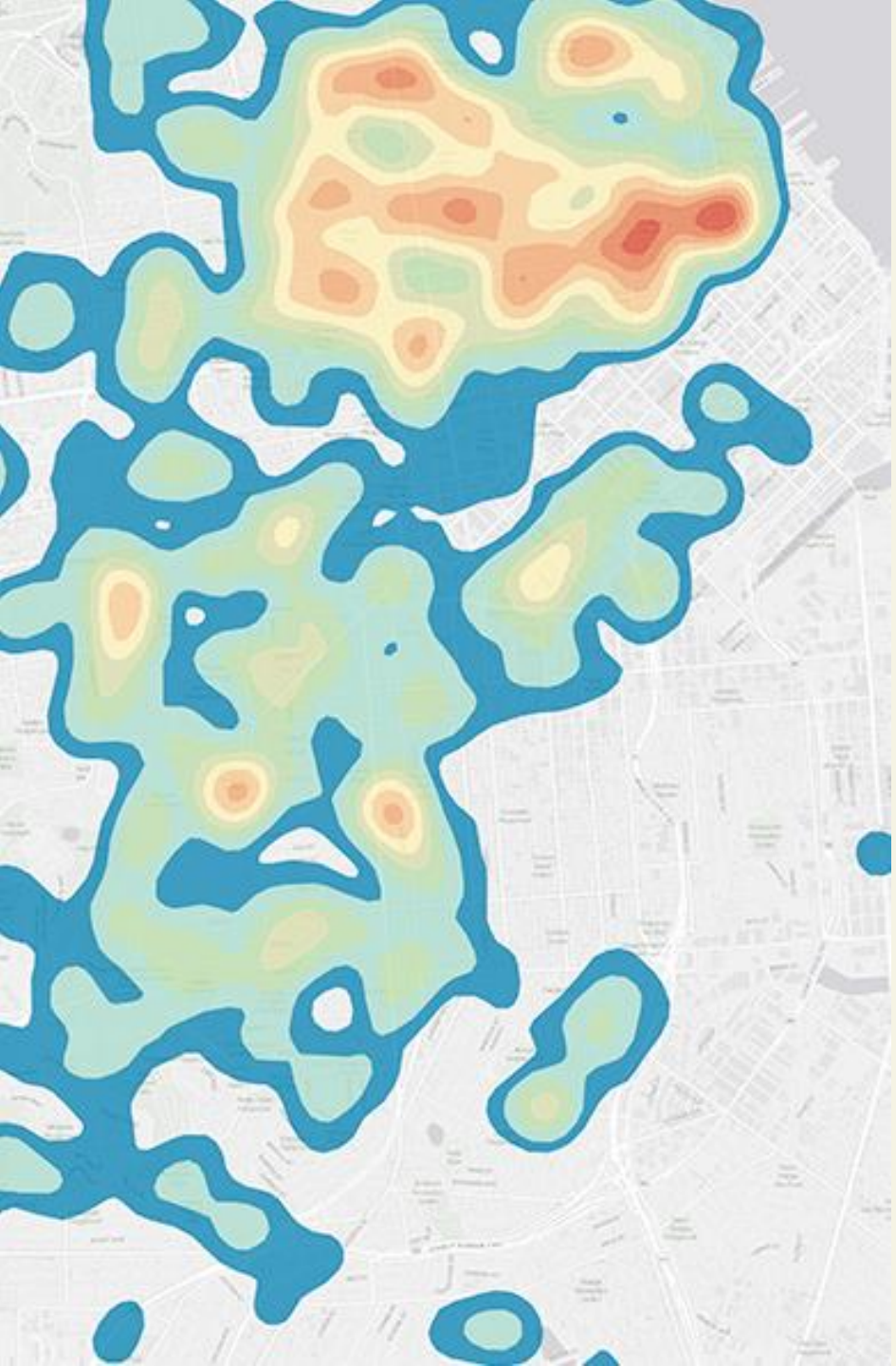


St Johns County, FL

Organizing Content and Applications
. . . Providing Mapping and Analysis
. . . Enabling Sharing and Better Decision Making

Geography Unifies Data and Systems

Public Health and Safety



Addressing Business Continuity & Recovery

"There's no light switch here. It's more like a dimmer," toggling back and forth between more and fewer rules.

- Governor Newsom, State of California

Recovery won't be a rebound but a climb. Successful reopening must have a data driven scientific approach.

- US Labor Secretary Scalia

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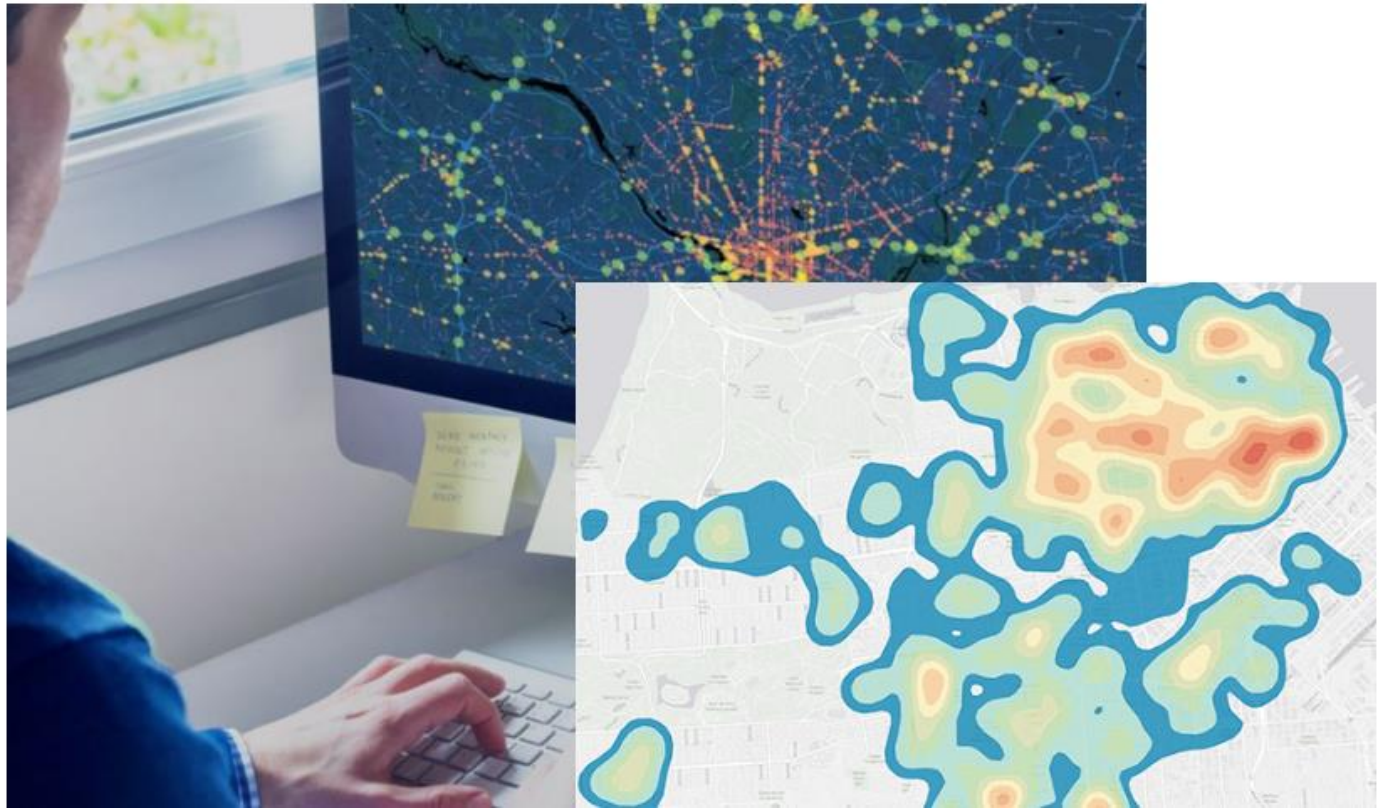
Geography Unifies Data and Systems

Business Continuity and Recovery

Business Continuity and Recovery

Operational awareness for COVID-19

Protect, stabilize, and reestablish with location intelligence



Monitor, manage, and communicate the impact of COVID-19

Governments and businesses alike are facing unprecedented challenges related to COVID-19. To enhance business resilience, organizations can leverage location intelligence to understand the impact of the crisis and make data-driven decisions to enhance recovery efforts.

Location Intelligence for COVID-19 Response and Recovery

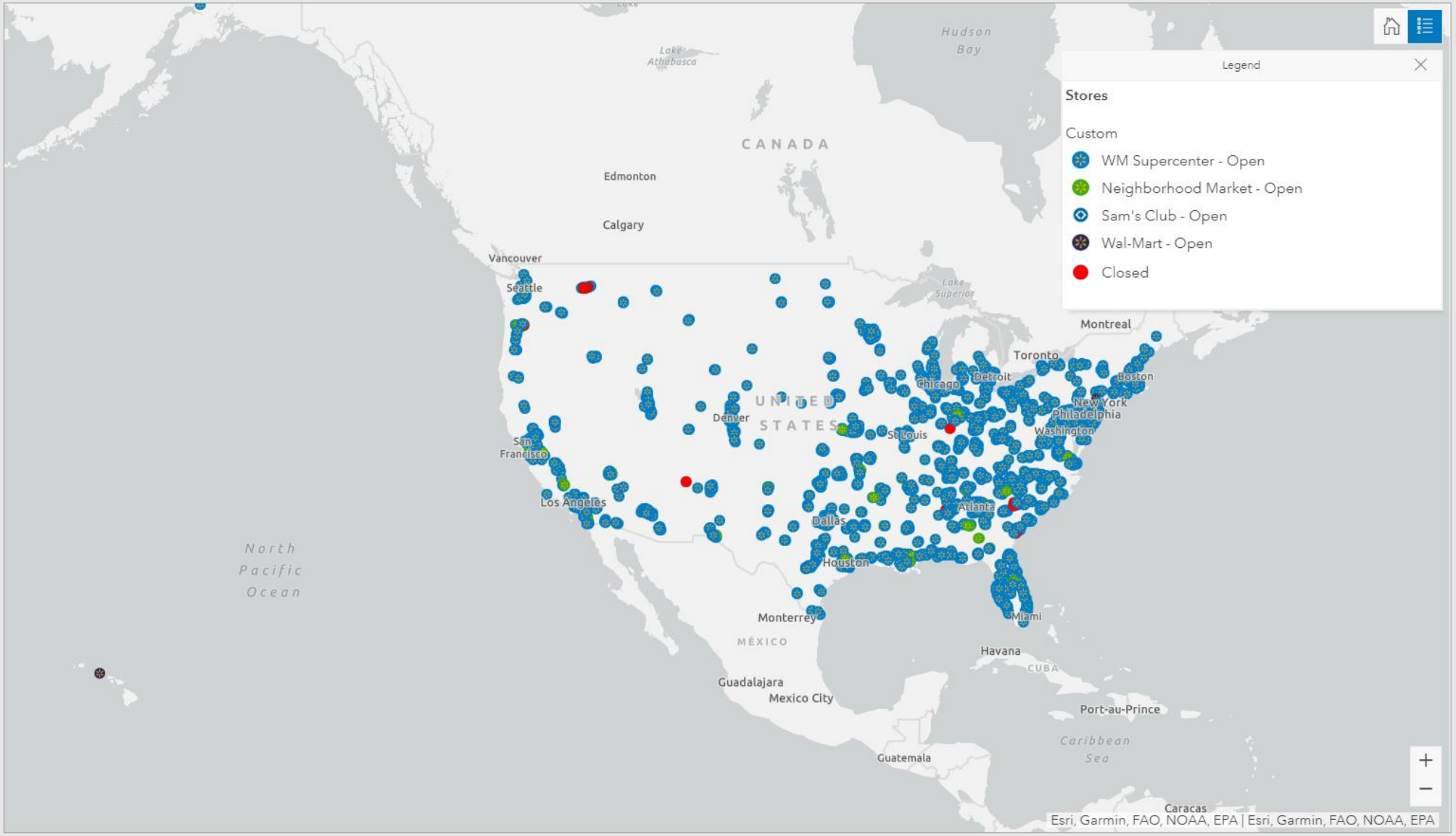
Store Status

Open/Closed: All | Open-Partial | Open | Closed

Pharmacy Status: All | Open | Closed

Online Grocery Pickup Status: All | Available | Not Available

Grocery Delivery Status: All | Available | Not Available



Grocery Delivery Available at

1,813

Stores

Last update: a few seconds ago

Online Grocery Pickup Available at

3,191

Stores

Last update: a few seconds ago

Pharmacy Open at

5,286

Stores

Last update: a few seconds ago

Central Arkansas Water

"We use the dashboard in our daily Pandemic Response Team meetings as the first order of the agenda to quickly see the health of our workforce; who are obviously the lifeblood of our organization and are essential to our core mission of the constant supply of safe drinking water to the communities we serve."

- Blake F. Weindorf, P.E., BCEE, Chief Operating Officer

Location Intelligence

For Business Continuity & Recovery

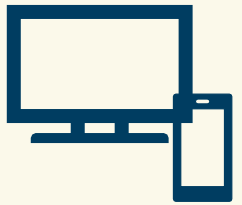
Stabilizing Organizations Through a Crisis

Workforce Capacity

Facility Status

Business Recovery

Supply Network Resilience



Business Continuity Hub

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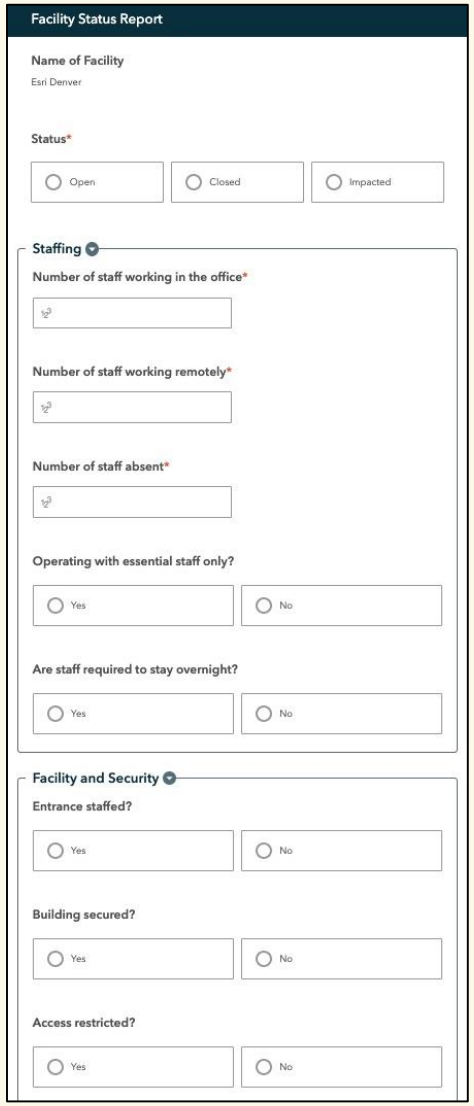
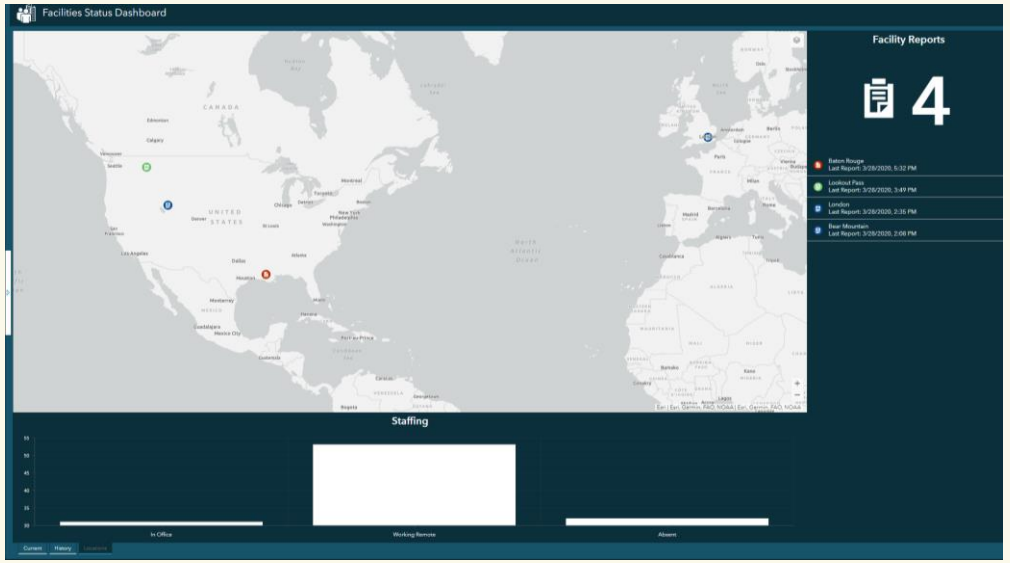
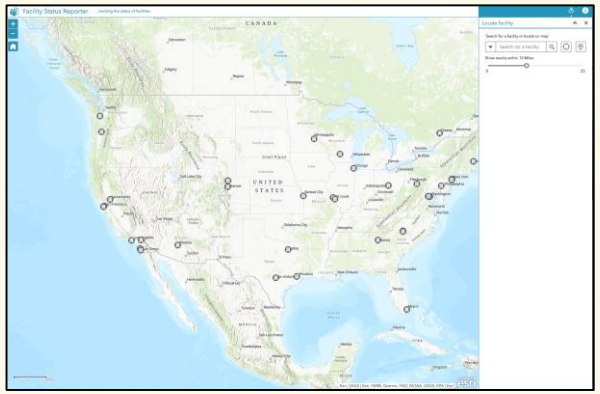
Facility Status



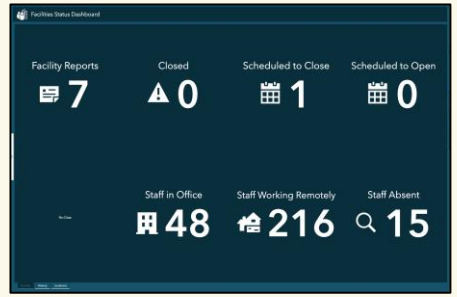
Facility Status Report



Facilities Status Dashboard



Facility Status Reporter



Facilities Status Dashboard

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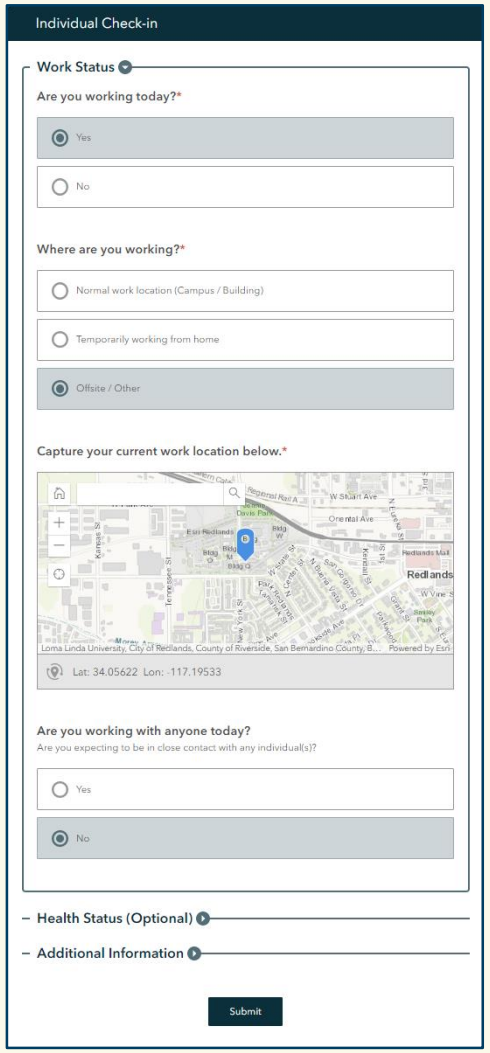
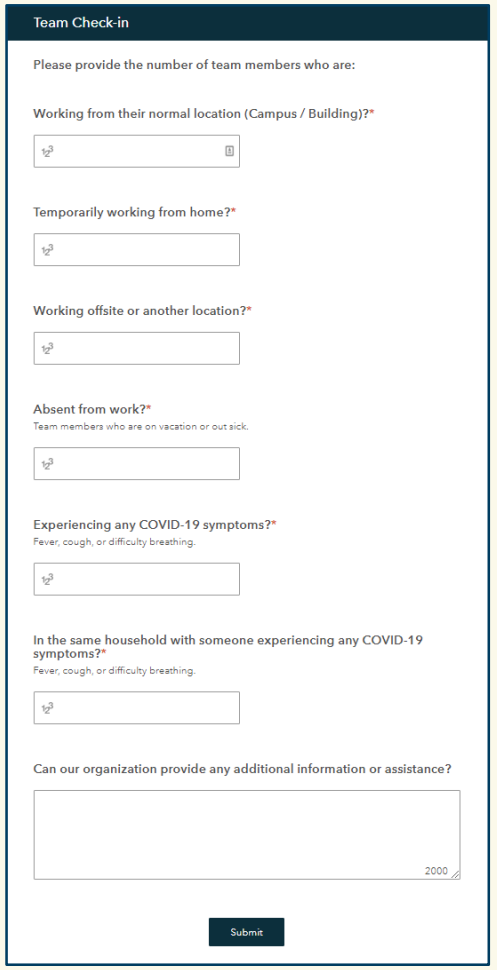
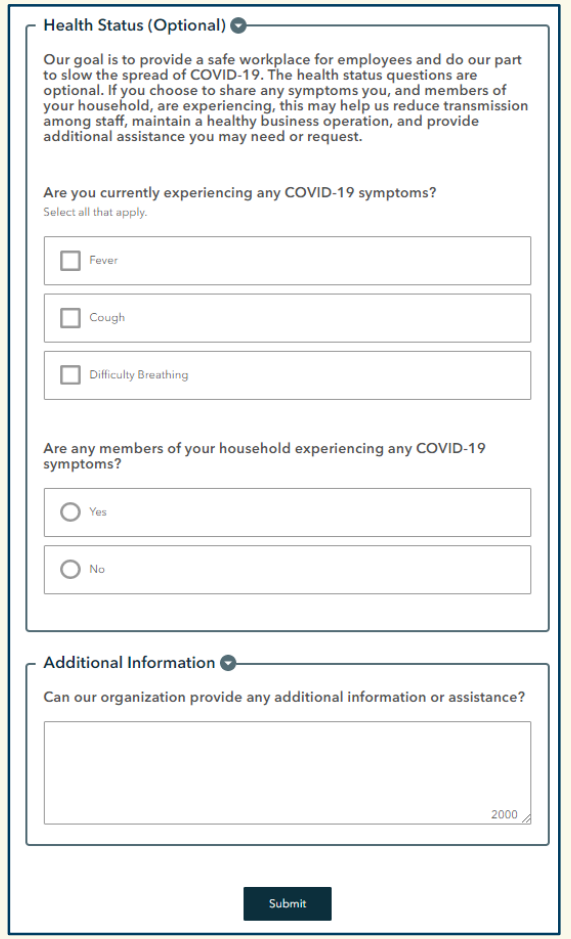
Workforce Capacity



Individual Check-in Survey



Team Check-in Survey



Health Status Check-in (optional)

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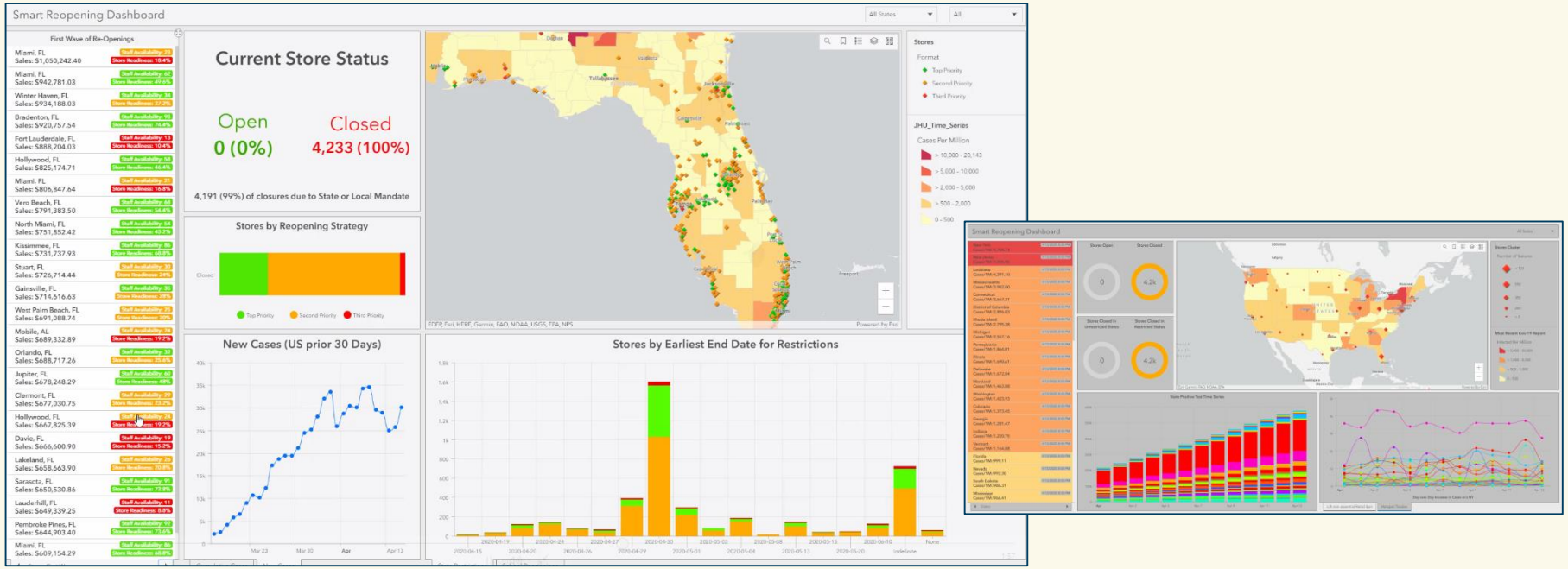
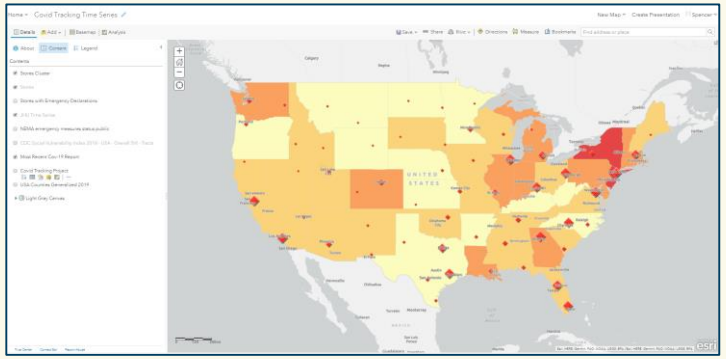
Business Recovery



Business Site Reopening Dashboard



Site Location Map Overlay with Incident Data

Suitability Analysis

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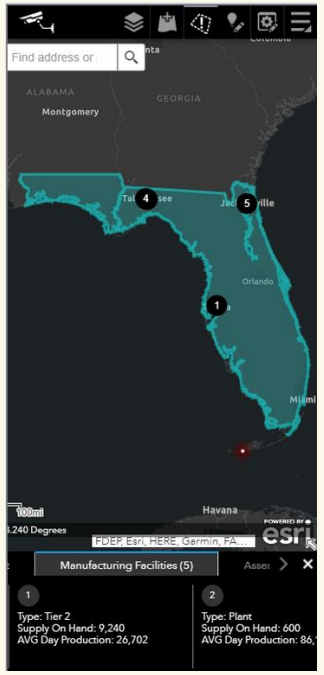
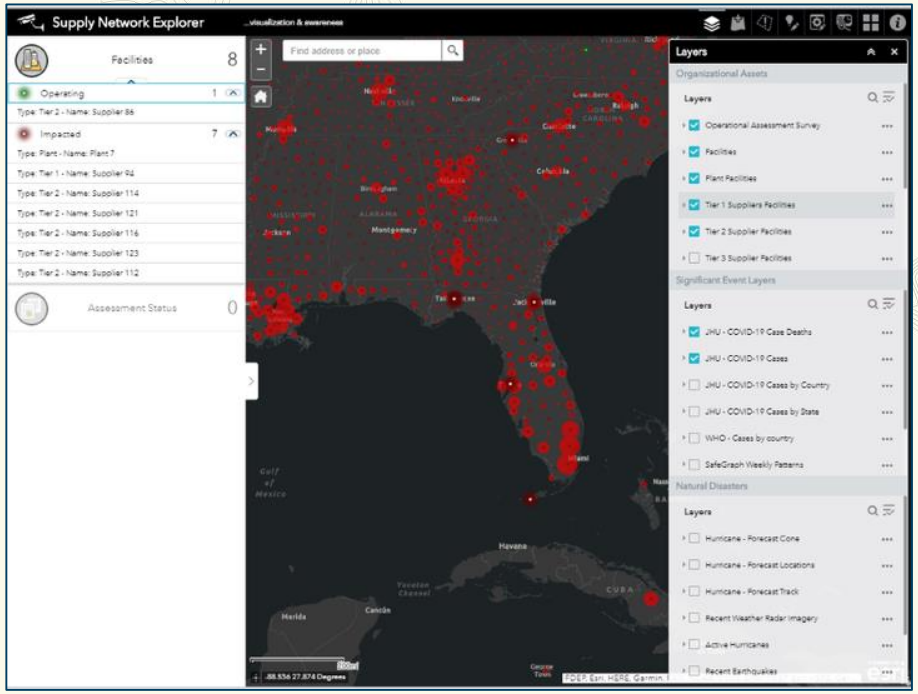
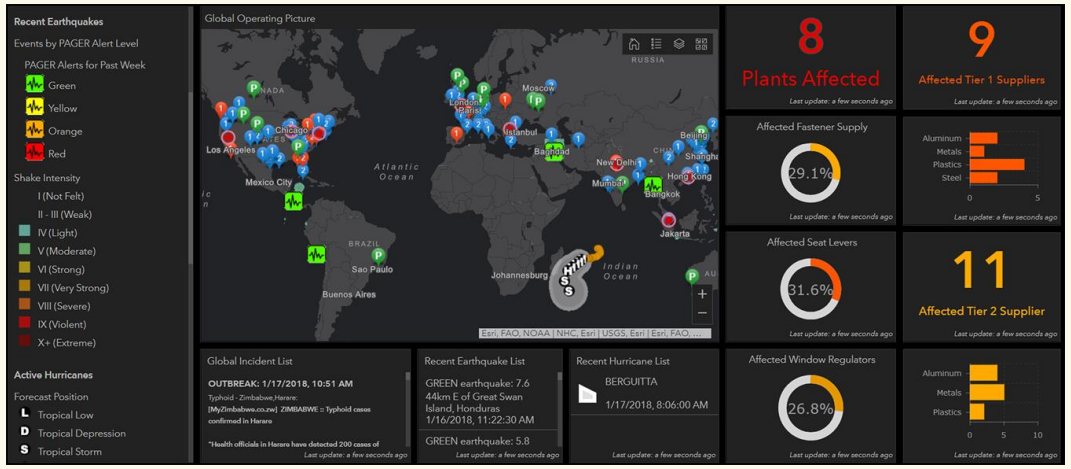
Supply Network Resilience



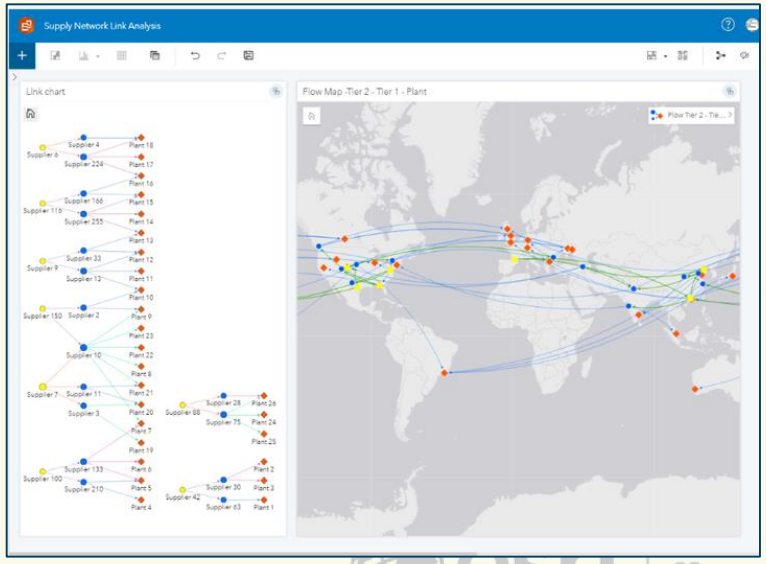
Network Explorer - Mobile



Incident Viewer

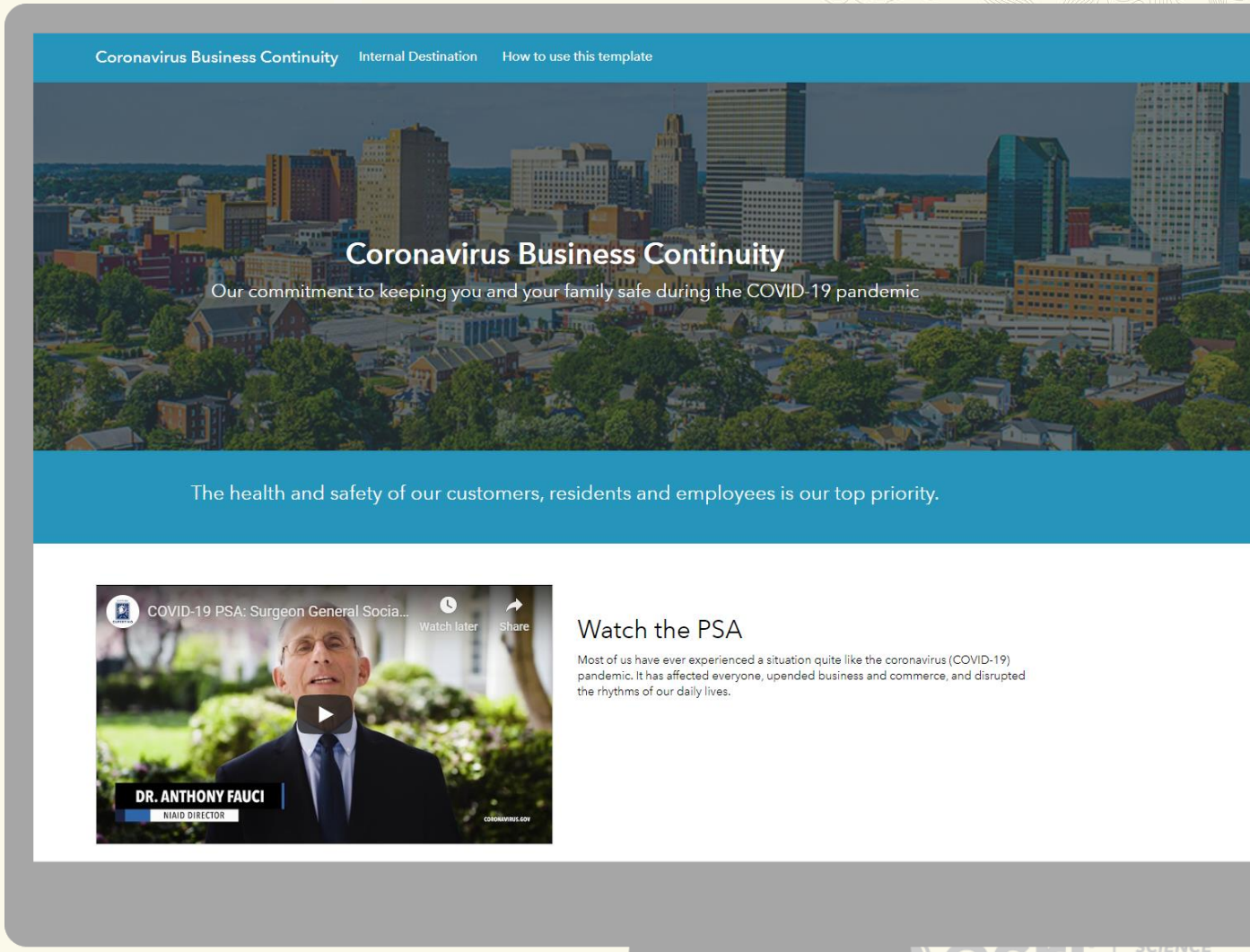


Global Operations Dashboard



Network Dependencies and Flow of Goods

Coronavirus Business Continuity Hub



COVID-19

Supply Network Resilience

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COVID-19 Challenge, Impact and Mitigation

Challenge

- COVID-19 has forced businesses to close stores and plants or reduce production

Impact

- Inventory shortages and threatened production capacity
- Shift in priorities and demand to produce and deliver products or services
- Companies have furloughed thousands of employees throughout all business areas

Mid-term risk mitigation

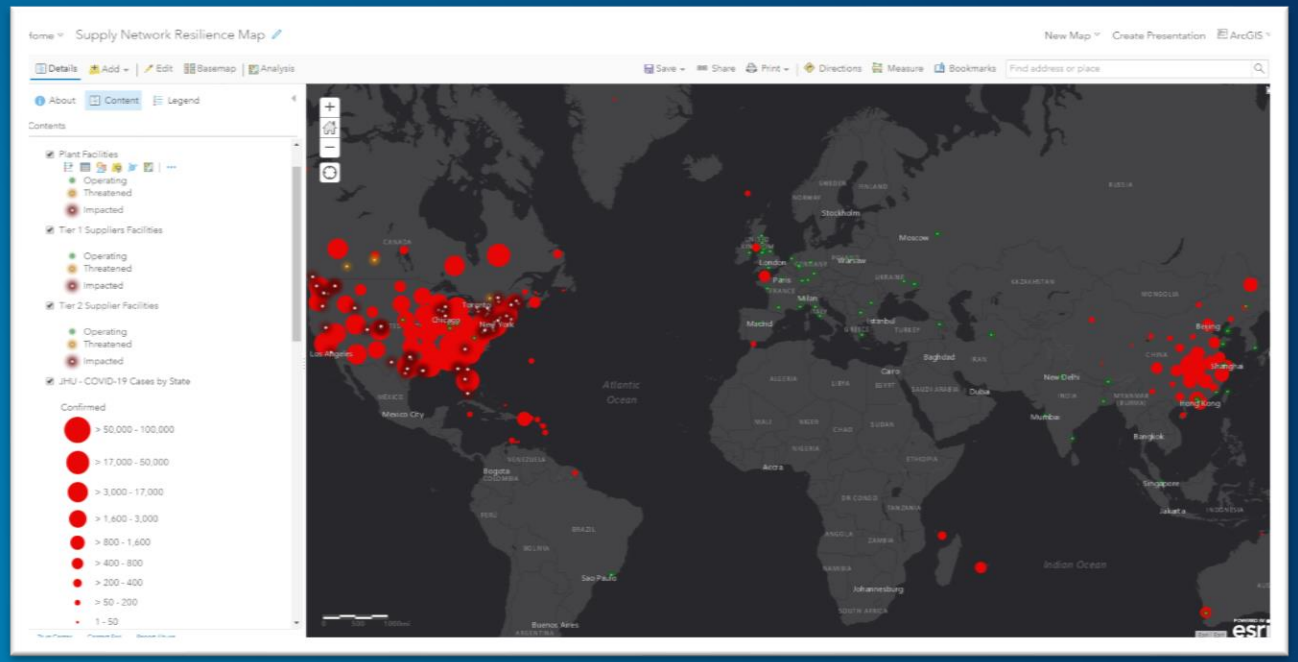
- How to identify and mitigate emerging supply network threats?
- When and where can we begin to start and continue operations safely and effectively?
- What should our optimal distribution network look like during and after COVID-19?

COVID-19 Supply Network Awareness & Recovery
Five Steps

Step 1	Step 2	Step 3	Step 4	Step 5
Map your data and overlay with COVID-19 data	Visualize Supply Network, Identify Risks	Assess Supply Network Dependencies	Communicate with Maps, Dashboards and Mobile Apps	Risk Analysis, Mitigation & Response

Step 1: Map

- Populate supply network information model
  - Load your supply network locations
  - Load your business data
- Activate Esri relevant risk layers (COVID-19 cases, natural disasters, incidents, …)
- Create a webmap, define symbology and configure pop-ups



Build A Business Information Model for Supply Network Resilience

Minimal Data Requirements

Facilities / Infrastructure

- Facility Data
- Offices
- Plants
- Suppliers (Tier 1 and sub-tier)
- Distribution Centers
- Warehouses / Customers
- Distribution network (Rail Yards, Ports, etc..)

Conditions / Incidents

- Weather
- Traffic (Live, Closures)
- Natural Disasters

COVID-19 specific

- COVID-19 cases
- State & county restrictions
- School status

Additional Contextual Content

Workforce

- Employee Status
- Availability by Task and Site

Commerce Sites

- Stores
- Restaurants
- Banks
- Hospitals
- Schools
- Delivery Services

Customers / Markets

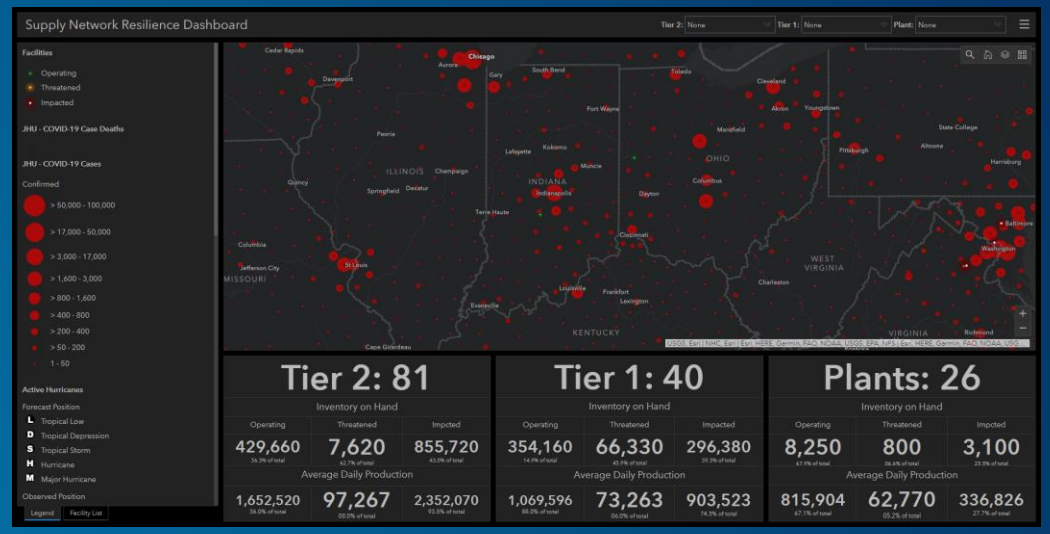
- Demographics
- Revenues
- Category Mix
- Trade Areas
- Service Areas
- Performance
- Competition

Optional Data

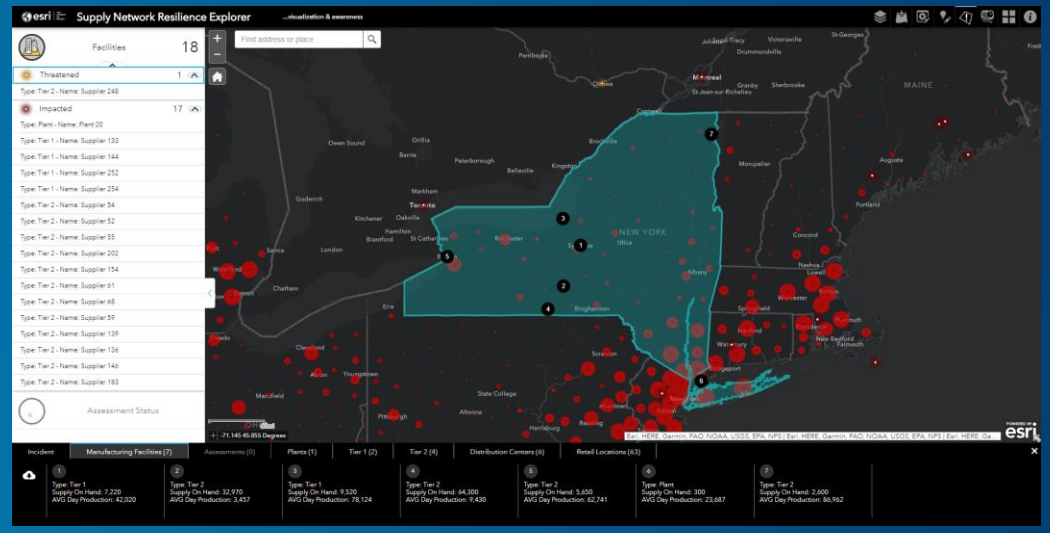
- Street Maps
- Parcels
- Labor
- Global Risk Incidents

Step 2: Visualize the Supply Network

- Configure Dashboards
  - Configure Global Incident Dashboard with metric indicators
  - Configure Supply Chain Risk Explorer
- Identify risk to supply network based on current risk factors (heat map, restricted movement)
- Display status and capacity of plants, supplier, logistics hubs
- Identify potential disruptions



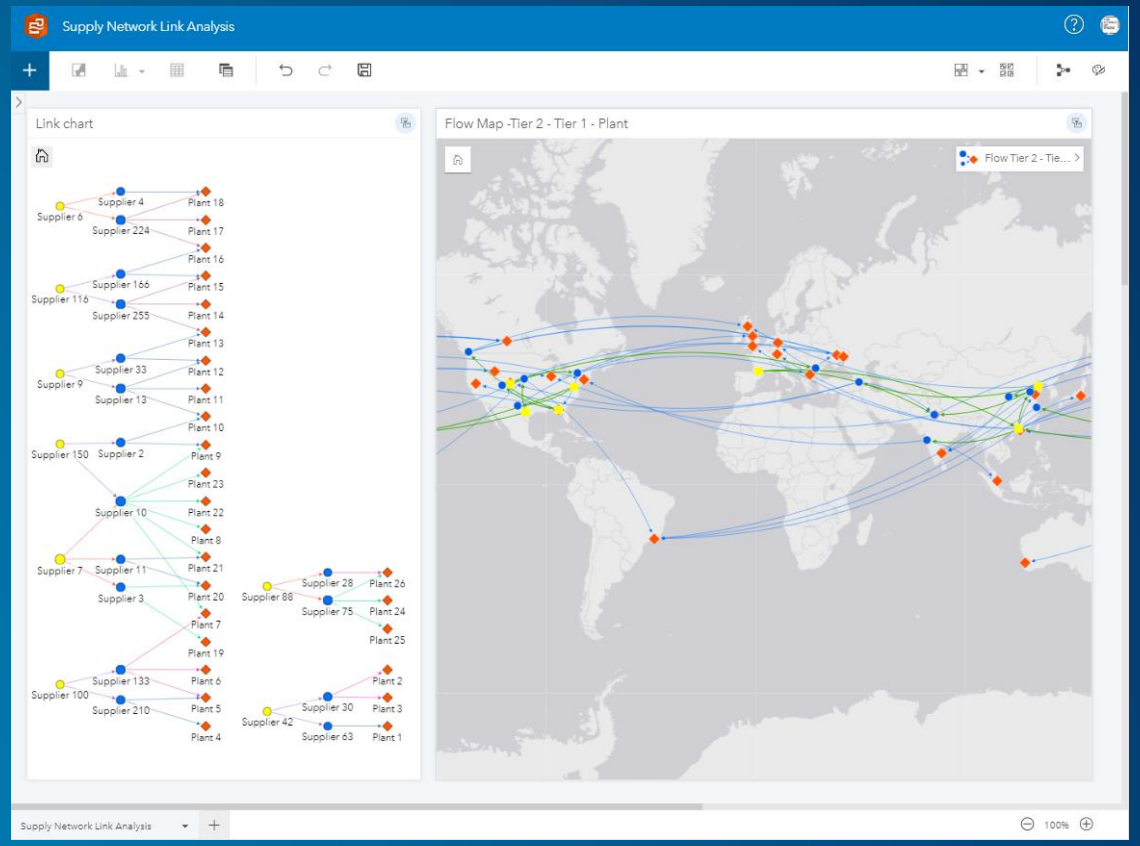
Supply Network Dashboard



Supply Network WebApp

Step 3: Assess Dependencies

- Set up Supply Network Connections app
- Visualize upstream and downstream flow of material
- Isolate supplier and plants affected by disruption and identify impact on downstream channels



Supply Network Connections Explorer

Step 4: Communicate

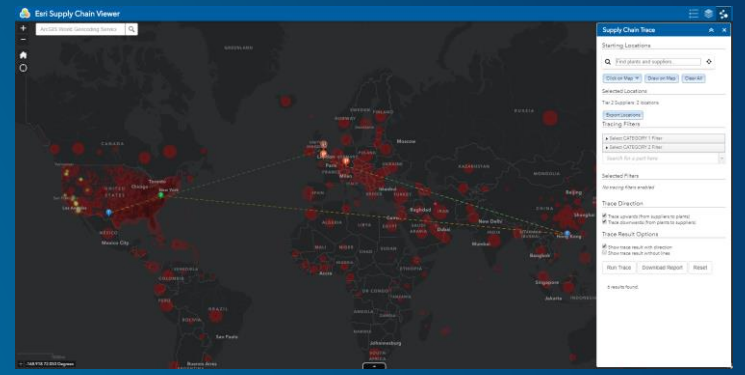
- Share and collaborate with stakeholders
- Common Operating Picture showing COVID-19 impact on supply network
- Briefing and Presentation Material

Step 5: Risk Mitigation & Response

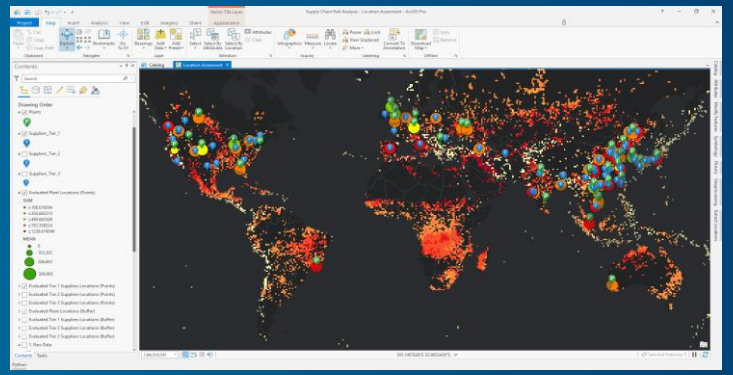
Advanced analytics based on needs

- Assign risk scores to plant & suppliers
- Allocate demand to supply with location allocation
- Determine alternatives
- Visual alerts
- Notification
- Product and parts tracing

Global Risk Awareness Dashboard



Supply Network Tracing App



Risk Mitigation Analysis Tools

Email any questions to: bizteam@esri.com