



Emergency and Disaster Management using GIS

Aaron de Boer

City of Brampton

Emergency Management

- GIS can help with all phases of emergency management, from developing mitigation plans to managing limited resources in the midst of chaos and prioritizing recovery efforts once the dust settles
- The Location Intelligence & Data Visualization (GIS) team can offer many different tools to aid in gathering and relaying information to emergency responders and the public

Tools for all Phases of Emergency Management

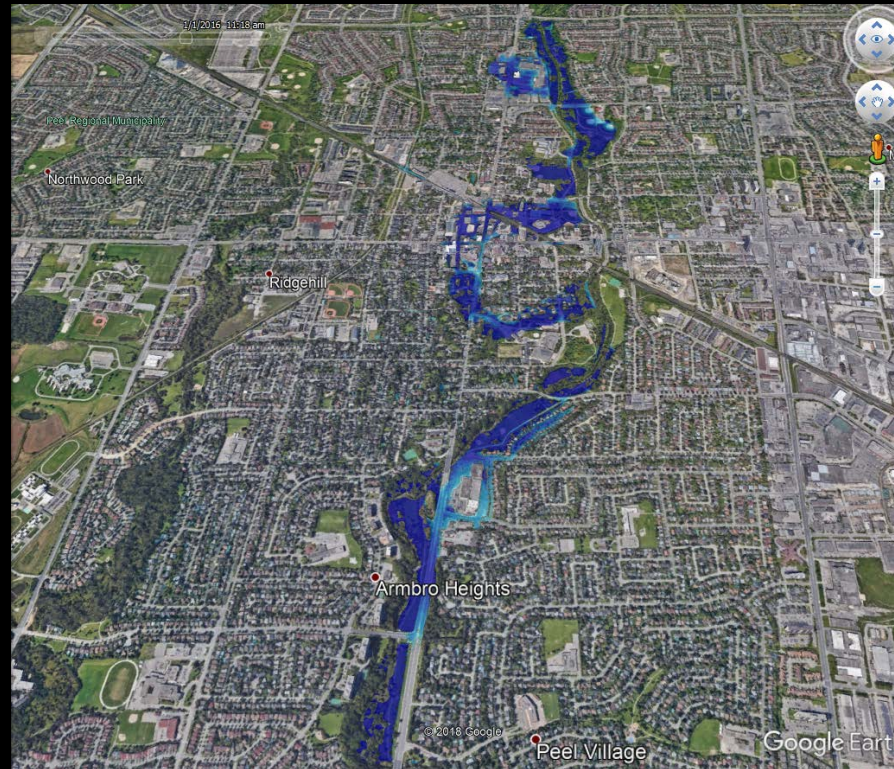
- ***Planning*** - identify and model potential threats and develop plans for evacuations and containment
- ***Response*** – collect initial information from the field and direct resources to critical areas
- ***Recovery*** - map damaged infrastructure, affected households, and resources to efficiently coordinate recovery efforts

Planning

- Map and model potential plans and hazards to determine possible impacts
- Create and maintain data to support disaster response and recovery

Planning Phase – Modeling Events

- Modeling disaster events before they happen can identify areas of concern



Response

- Deliver situational awareness and help understand the impact of an event with the ability to immediately collect information from the field
- Provide tools that can supply important information to the public, such as shelter locations



Response Phase – Survey123 & Dashboard

- Collect data from the field using Survey123
- Display critical data using Dashboard

EMO - Flood Survey

Location:*

Find Address or Intersection

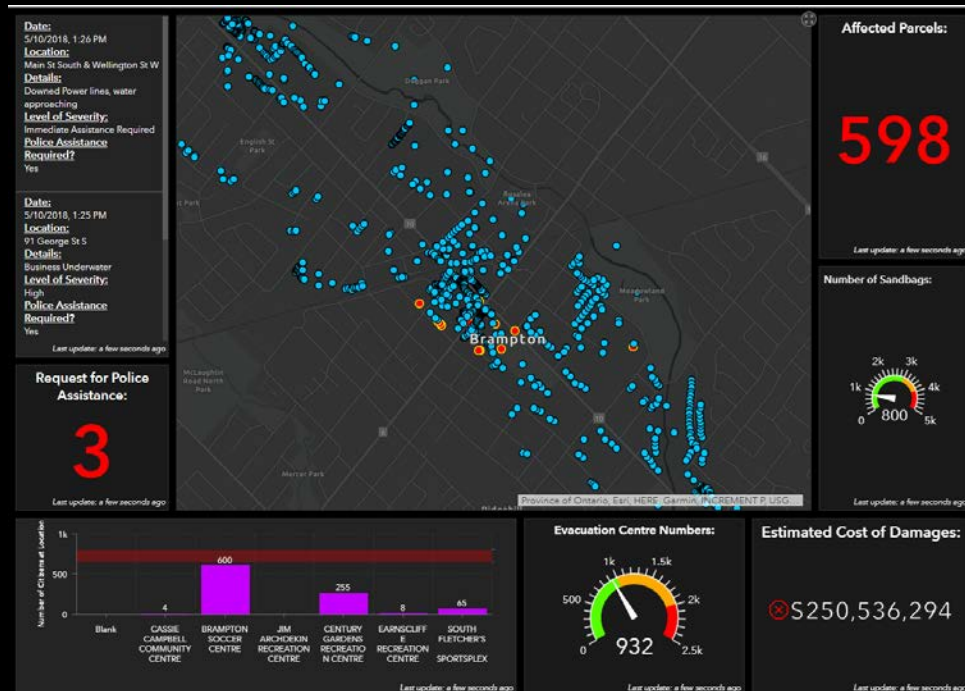
City of Toronto, City of Brampton, Regional Municipality of Peel, Region of Peel, Province of Ontario, Ont. Powered by Esri

Lat: 43.68471 Lon: -79.76076

Civic Address:

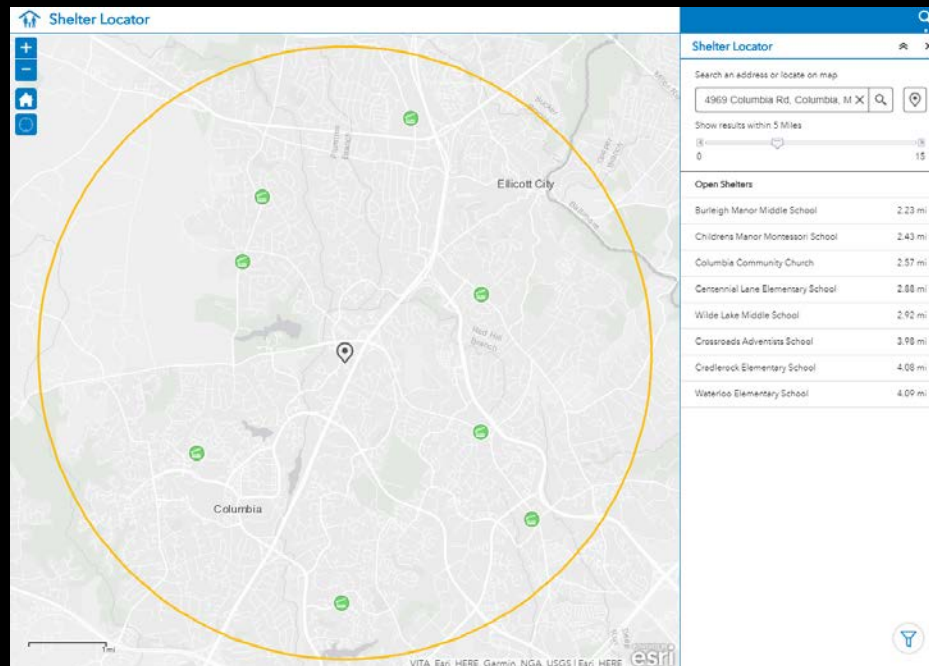
Details:

Water on Property?



Response Phase - Tools for the Public

- Shelter Locator
- Helps citizens identify shelter locations & capacity



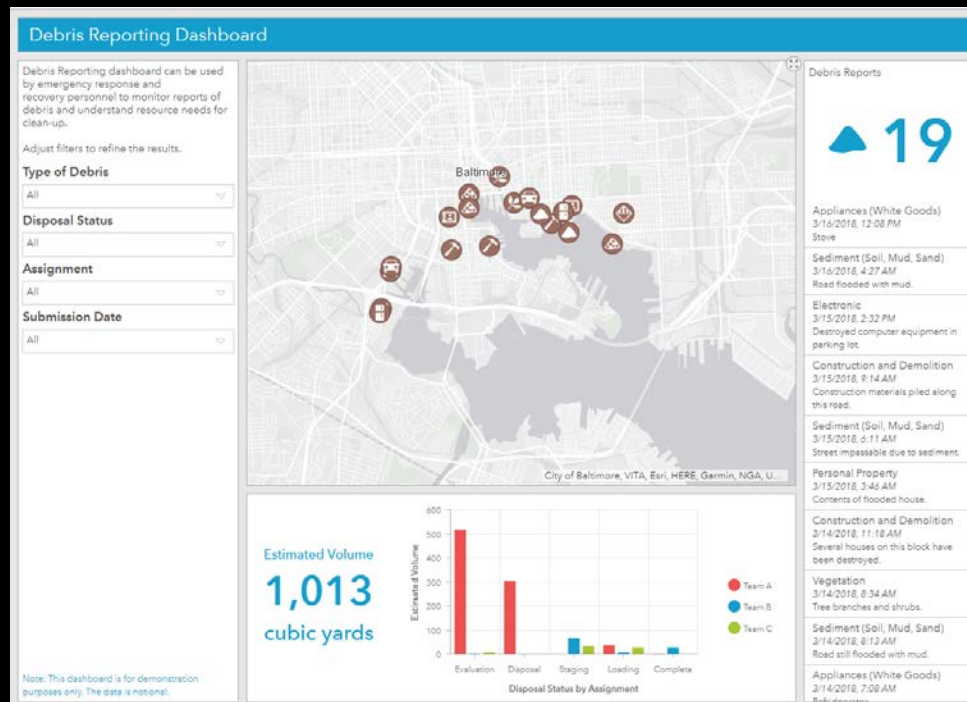
Recovery

- Use Collector to collect information from the field and assess the aftermath of an event
- Identify damaged infrastructure, affected populations and the total impact of incidents
- Monitor recovery efforts in support of the community



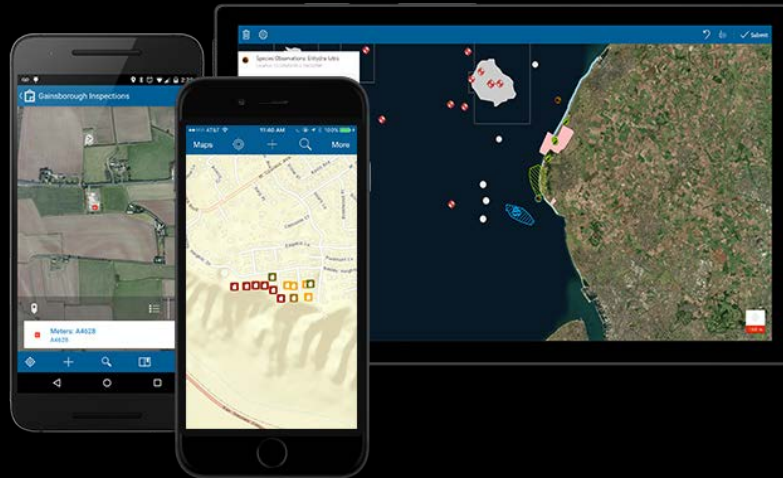
Recovery Phase

- Monitor clean up status by collecting data from the field
- Progress can be displayed on a dashboard





Update Data in the Field or Office



Collector for ArcGIS

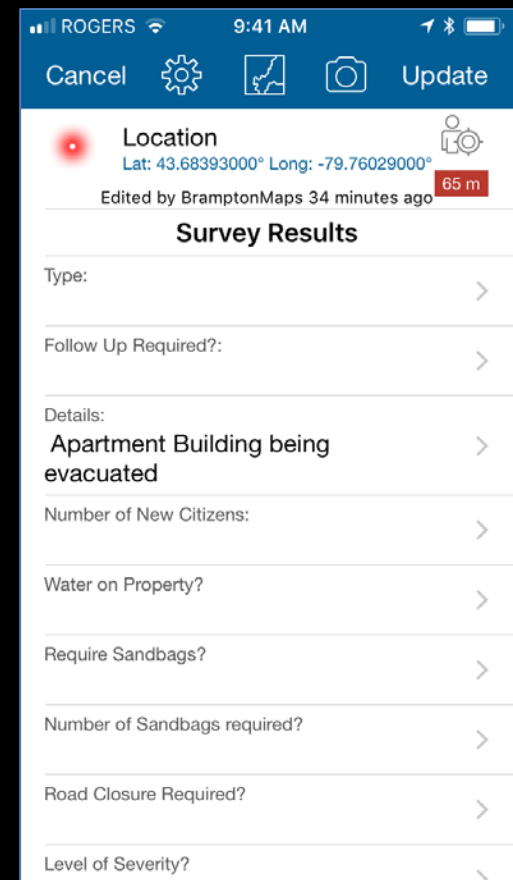
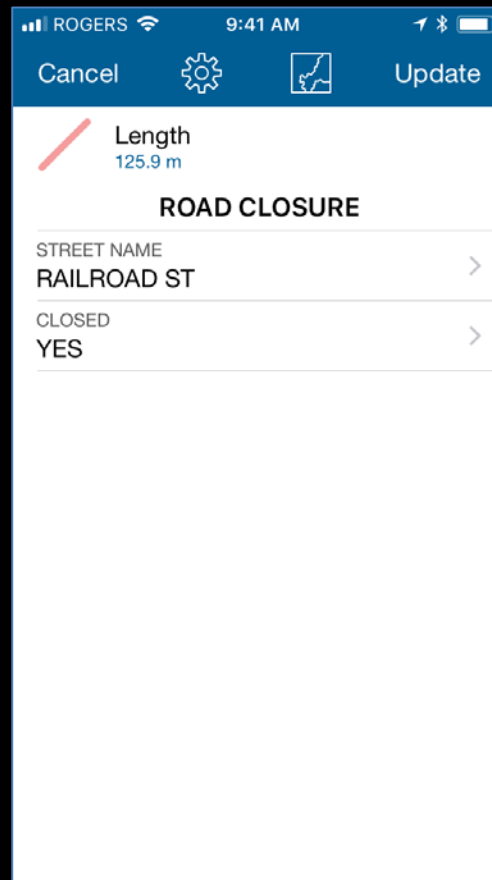
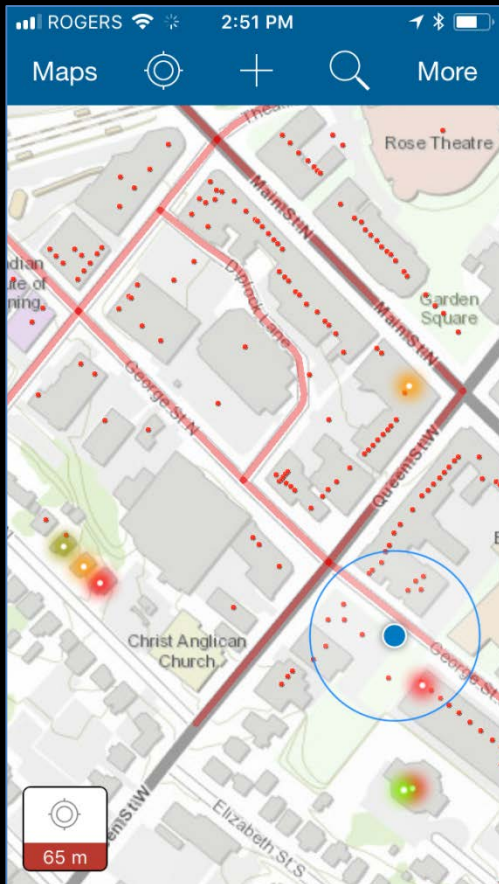
Update in the field with a mobile device

ESRI Web Map Application

View and update data in the office



Collector for ArcGIS



Review

- Many GIS tools for emergency management, including:
 - Map and model potential disaster events
 - Collect information from the field during a disaster and relay that information to those who need it
 - Monitor recovery progress through data collection



Questions