Emergency and Disaster Management using GIS

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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
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

- Length: 125.9 m
- STREET NAME: RAILROAD ST
- CLOSED: YES

Survey Results
- Location: Lat: 43.68393000° Long: -79.76029000°
- Edited by BramptonMaps 34 minutes ago

- Type:
- Follow Up Required?
- Details: Apartment Building being evacuated
- Number of New Citizens:
- Water on Property?
- Require Sandbags?
- Number of Sandbags required?
- Road Closure Required?
- Level of Severity?
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