

Testimony for the US Senate Committee on Commerce, Science, and Transportation

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On July 12, 2017, Racine County was hit by record flooding, with the Fox River in Burlington cresting 3ft higher than in recorded history (the river is usually at 4ft; flood stage is 11ft). Power went out at 4,478 properties and a state of emergency was declared.

When the flooding happened, I was attending a major international conference for geographic information systems users in San Diego, CA, held by Esri (Environmental Systems Research Institute), a Digital Coast contributing partner and the organization that supplies GIS/mapping technology for almost all government agencies. I attended the conference in my capacity as Register of Deeds, along with our Real Property Lister. We had received an award at the conference in 2016, and were invited back to give a presentation on the award-winning project in 2017.

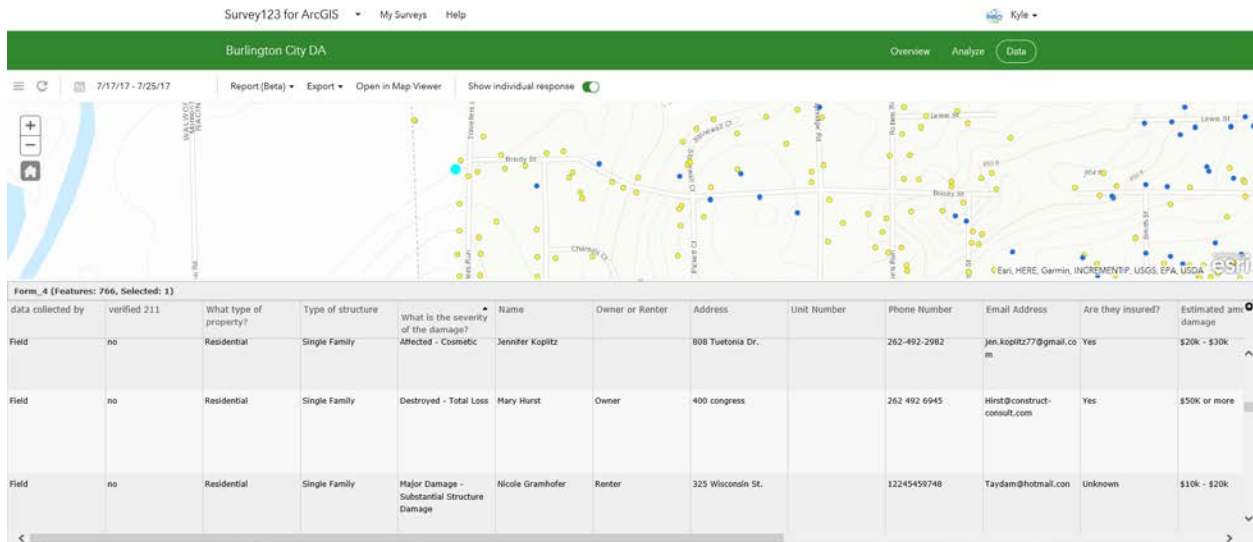
As the flooding was hitting Racine County, I discussed it with Esri's Director of Global Sales & Business Development (now Director of Strategic Alliances), Chris Cappelli, who connected me with Esri's Disaster Response Team. That team worked with us while we were at the conference, at no cost, to develop and deploy a damage assessment application based on GIS technology that would allow us to start to spatially record, monitor and update damage assessment and clean-up in real time using smart phones or tablets. The application was designed to be used by field crews to submit information in the form of responses to a set of standardized questions, attaching photos, and categorizing damage according to FEMA classifications – affected, minor, major, or destroyed. Information received via self-reporting by the public was also incorporated, including updates and photographs of damage submitted via social media. All of this information, as well as sandbag and water resource areas, was laid out on a map, making it easy exactly what was happening at any given time.

Flood level data aggregated and made available through NOAA's Digital Coast Program was integrated into the application, and the map automatically updated this information as it changed over time.

When I returned to Racine County from California, I worked with the Emergency Operations Center (EOC) and the Fire Chief to ensure the adoption of the app rather than relying on paper-based recording of damage information. The application provided an easy way of keeping information organized despite coming from many different sources in different formats and large volumes, all within a very short period of time. This also contributed significantly to our ability to submit the information required by FEMA and the State of WI extremely efficiently with a negligible amount of additional work, since it was collected and organized on the front end in the manner that FEMA and the State required it.

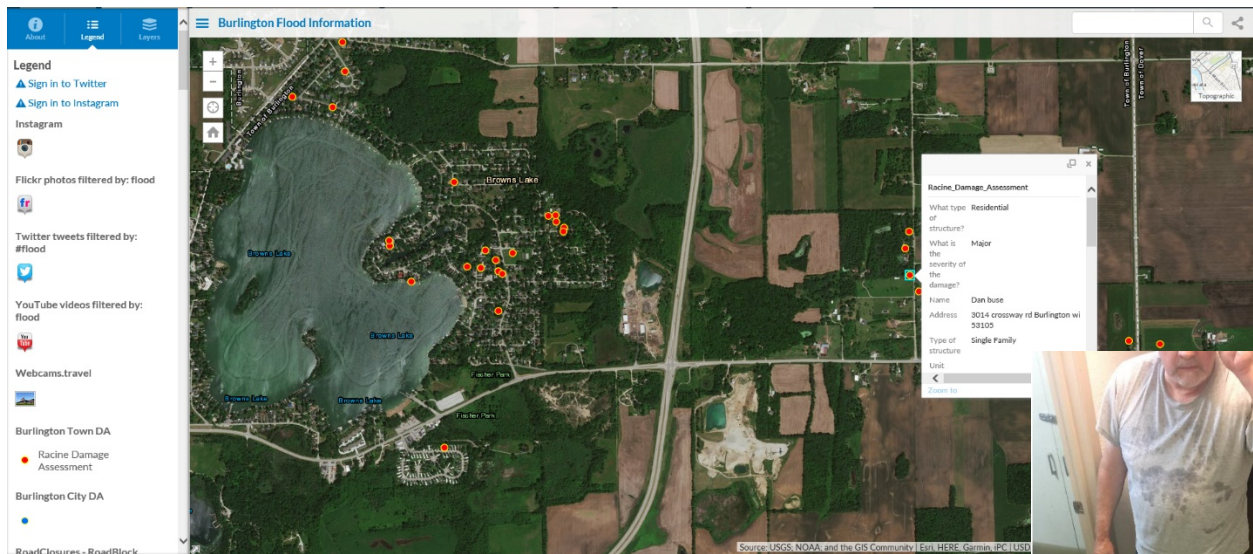
In all, 900 damage assessments were conducted across the City of Burlington and the Town of Burlington in Racine County using the application. Together, the application and the integration of Digital Coast flood level data were extremely powerful tools that made it possible to deliver a confident and effective disaster response effort for the citizens of Racine County.

City of Burlington Damage Assessment Application:



Information about locations and levels of damage could be viewed spatially, with full data available by clicking on a point on the map.

Burlington Flood Information Map



Citizens self-reported information about their location, damage incurred, and could attach photographs for damage assessment crews to evaluate.



Survey Questions

The following questions were used when entering damage assessment data using the app, ensuring that assessment used standardized categories that could easily be submitted to FEMA and the State of Wisconsin.

Burlington City Damage Assessment

What type of property? *
Residential

Type of structure *
Single Family

What is the severity of the damage? *

Name
Enter the property owner or resident name (or business name)

Owner or Renter
 Owner
 Renter

Burlington City Damage Assessment

Address *
House number and street name only

Phone Number

Email Address

Are they insured?
Yes

Estimated amount of damage
\$10K or less

Location

Burlington City Damage Assessment

Location
No Location
Press to capture location using a map

Photo

Photo

Any additional remarks?

Burlington City Damage Assessment

Any additional remarks?

When was this assesment created? *
3/2/2018 12:52 PM

Latitude

Longitude