



FEMA Damage Assessment Tools



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Camp Fire
California
2018

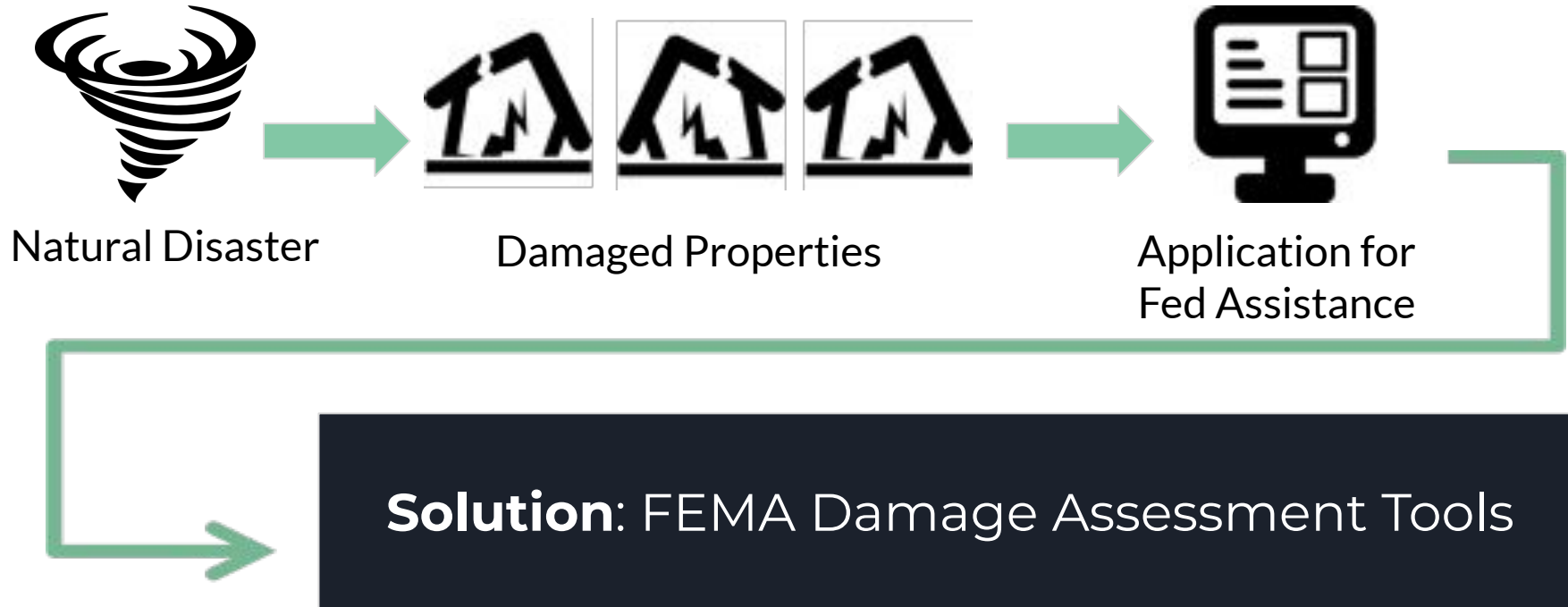


Hurricane Sandy
New Jersey
2012



Hurricane Matthew
South Carolina
2016

Context





Solution: FEMA Damage Assessment Tools

Web app designed to streamline the damage assessment process for FEMA employees

Retrieve
Satellite Imagery

File a Damage
Assessment Report



Product Demo

[Live web app](#)

Summary Report for 3324 Dent Pl NW, Washington, DC 20007:



Before

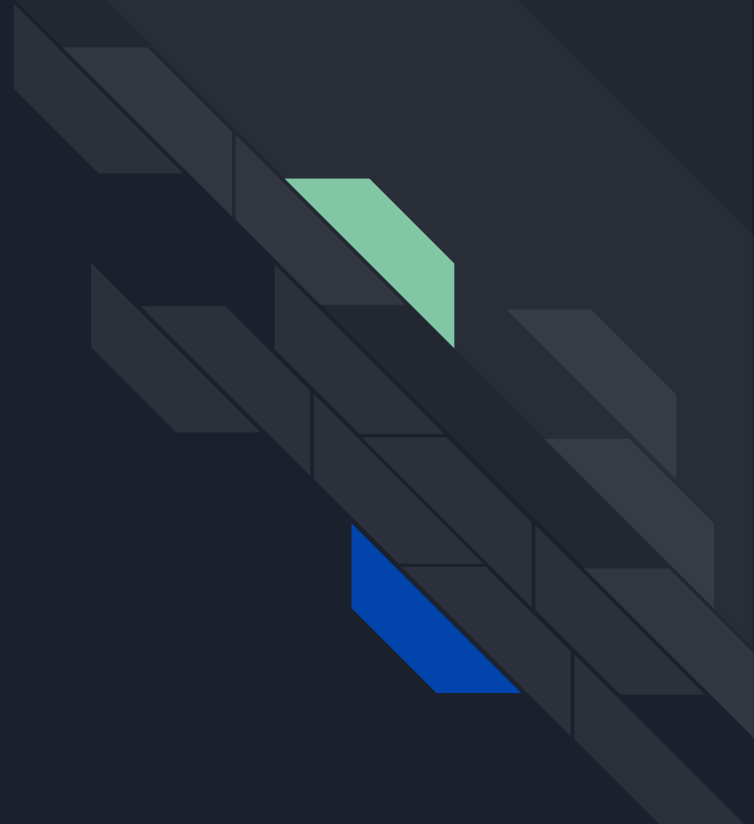


After

The zillow id for the unit:	430854	Property type:	SingleFamily
Living area:	1463 sqft	Lot Size:	2560 sqft
Bedrooms:	2	Bathrooms:	1.0
Last Sold Price:	\$275000	Last time sold:	01/02/1997
Year Built:	1926	Zestimate price:	\$1124358

Retrieve Satellite Imagery

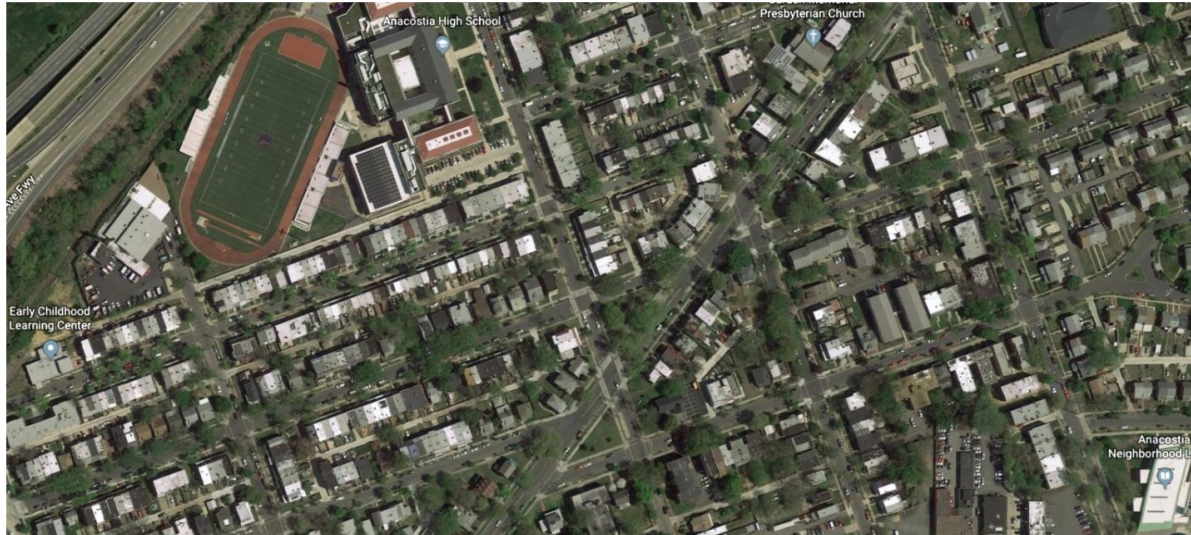
How it works



Retrieve Satellite Imagery

Select neighborhood to retrieve most recent satellite imagery

Anacostia



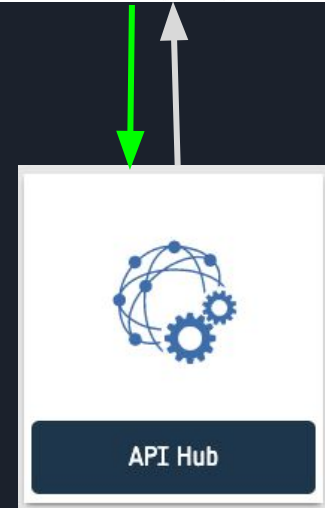
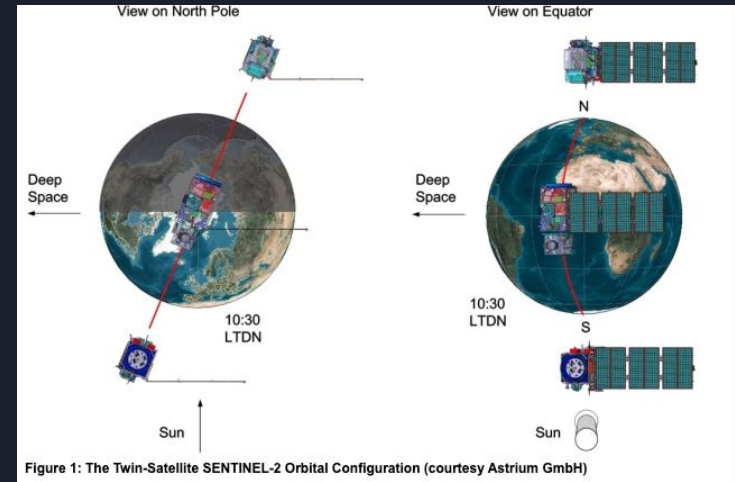
Visual assessment of:

Safety

Accessibility

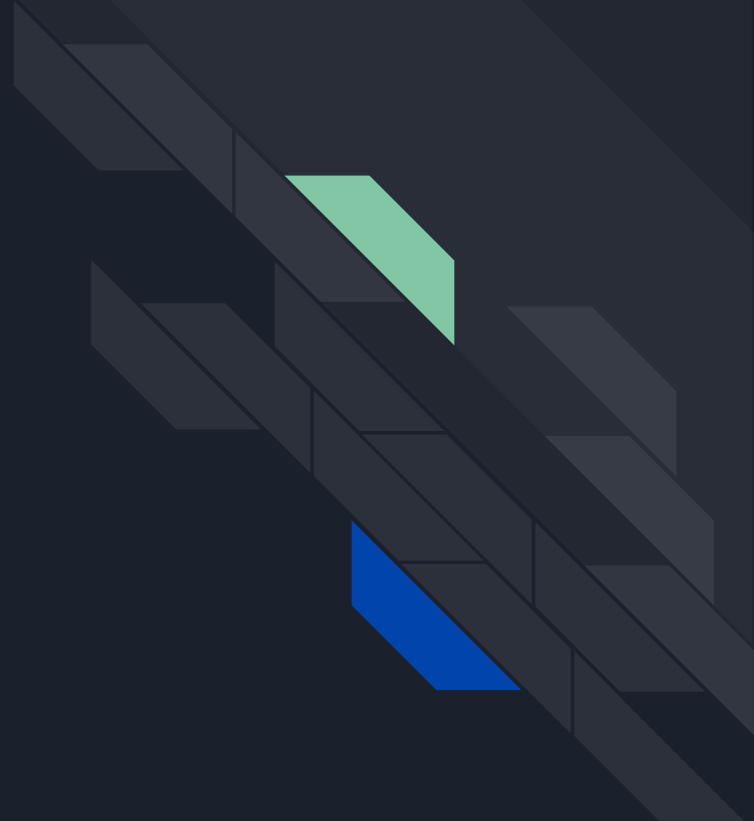
Priority

- SentinelAPI interfaces with Sentinel2 satellite
- Provide coordinates of desired area
- Provide date for time period of interest
- Satellite returns image



File a Damage Assessment Report

How it works



Upload a photo

Take a photo of the damaged property on your mobile device. Location services must be enabled. You may also use an existing photo of the structure.

Choose File No file chosen

Submit

Make sure you are using .jpg or .png files. Photos that have been transferred using messaging apps are compressed and will not include the geographical information.

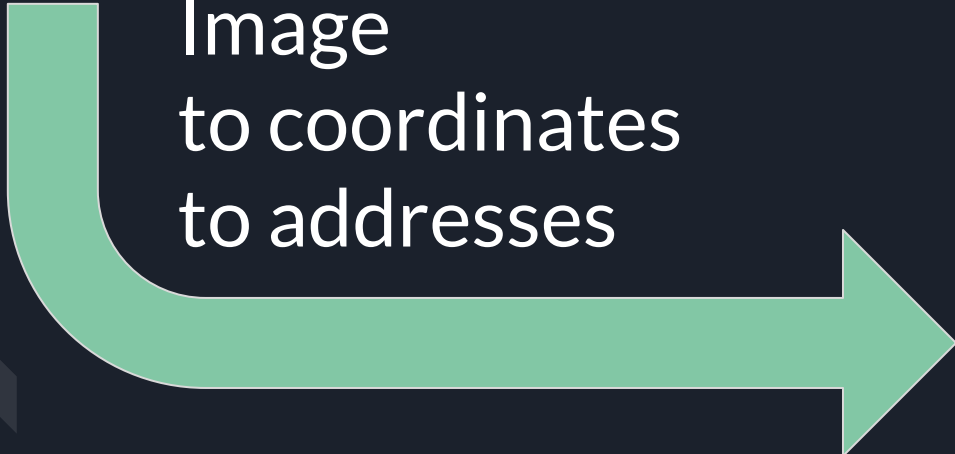


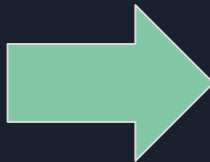
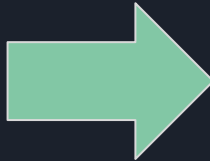
Image
to coordinates
to addresses

Verify Address

3324 Dent Pl NW, Washington, DC 20007, USA ▼

Submit

Address



Summary Report for 3324 Dent Pl NW, Washington, DC 20007:



Before

The zillow id for the unit:	430854
Living area:	1463 sqft
Bedrooms:	2
Last Sold Price:	\$275000
Year Built:	1926



After

Property type:	SingleFamily
Lot Size:	2550 sqft
Bathrooms:	1.0
Last time sold:	01/02/1997
Zestimate price:	\$1124358

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After

Disaster Type

Accessible

Extend of the damage

Occupancy Status

Ownership





Database

- MySQL instance running in AWS RDS
- Cost effective
- Can be accessed on-demand
- Highly secure
- Infrastructure can be quickly deployed
- Can run reports and analysis on past assessments



Other Product Features



Flask

- Flask is mobile responsive
 - Damage assessors can use phones, tablets, laptops
- Flask app is running on EC2 instance in AWS



Limitations

- Functionality and connectivity of web app
- Limitations inherent to Google Street View
- Limitations inherent to Zillow
- Only one user photo per report



Future Exploration

- Multiple user photos per report
- Increase breadth of data sources
- Image processing on satellite images
- Non-residential properties

Thank you

- New Light Technologies and General Assembly
- DSI-DC(3) for concept and guidance
 - Sade Ekulona, Nick Minaie, Jeremy Opacich, Andrew Picart
- DSI-LA for Flask framework assistance
 - Vala Rahmani, Blake Franey, John Kim
- DSI-SF for initial functions
 - Mikhail Lenko, Ryan Leyba, Kai Zhao





Image Sources

GA logo: <https://seeklogo.com/vector-logo/306598/general-assembly>

NLT logo: <https://spatialnetworks.com/partners/>

Camp Fire: https://github.com/wkarney/street_viewing_for_FEMA/tree/master/sightvisit/app/static

Hurricane Matthew: Christie Palmer, personal photo

Hurricane Sandy: https://github.com/wkarney/street_viewing_for_FEMA/tree/master/sightvisit/app/static

Tornado clip art: <https://www.pinterest.com/pin/107453141082554324/>

Context infographic adapted from DSI-DC(3)

Google street view logo: <https://seeklogo.com/vector-logo/333332/google-street-view>

Zillow logo: <https://worldvectorlogo.com/logo/zillow>

MySQL logo: <https://worldvectorlogo.com/logo/mysql>

Flask logo: <https://seeklogo.com/vector-logo/273085/flask>

