Fast and Furious - Geospatial Damage Assessments

What?

- Categorize damage impact for "structures" in event area

How?

- Integrate geospatial data
- Use technology to automate process

Where?

- Anywhere data exists

When?

- As fast as possible

Why?

- Understand event magnitude
- Assist with recovery and mitigation efforts

Geospatial Damage Assessments

Inputs & Output

Structure + **Ground Elevation** (H) + **Flood Impacts** + **Imagery**

⬇

Damage Assessments

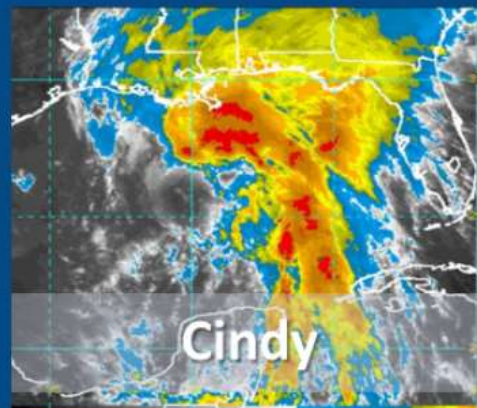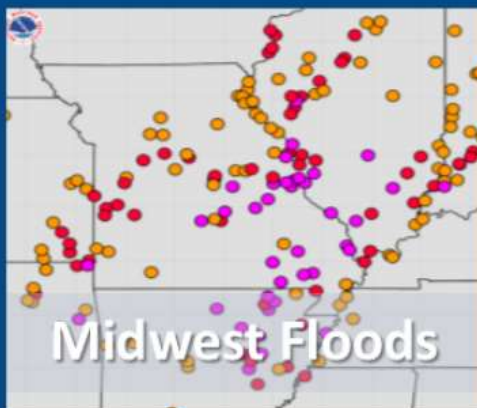**Damage Classifications**

▪ **Affected (>0 to <=2 ft)**

▪ **Minor (>2 to <=5 ft)**

▪ **Major (>5 to <=8 ft)**

▪ **Destroyed (>8 ft)**

City of Baton Rouge, Parish of East Baton Rouge, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA

POWERED BY esri

Our Process

EVENT → Determine AOI → Obtain Data → Create Flood Depth Grid → Create Damage Assessments → Validate with Imagery → Produce Reports/Updates

Matthew

Hawaii Hurricanes

Hermine

CA/NV Floods

Midwest Floods

Cindy

Harvey

Irma

Maria

Nate

CA Wildfires

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Our Process

EVENT → Determine AOI → **Obtain Data** → Create Flood Depth Grid → Create Damage Assessments → Validate with Imagery → Produce Reports/Updates
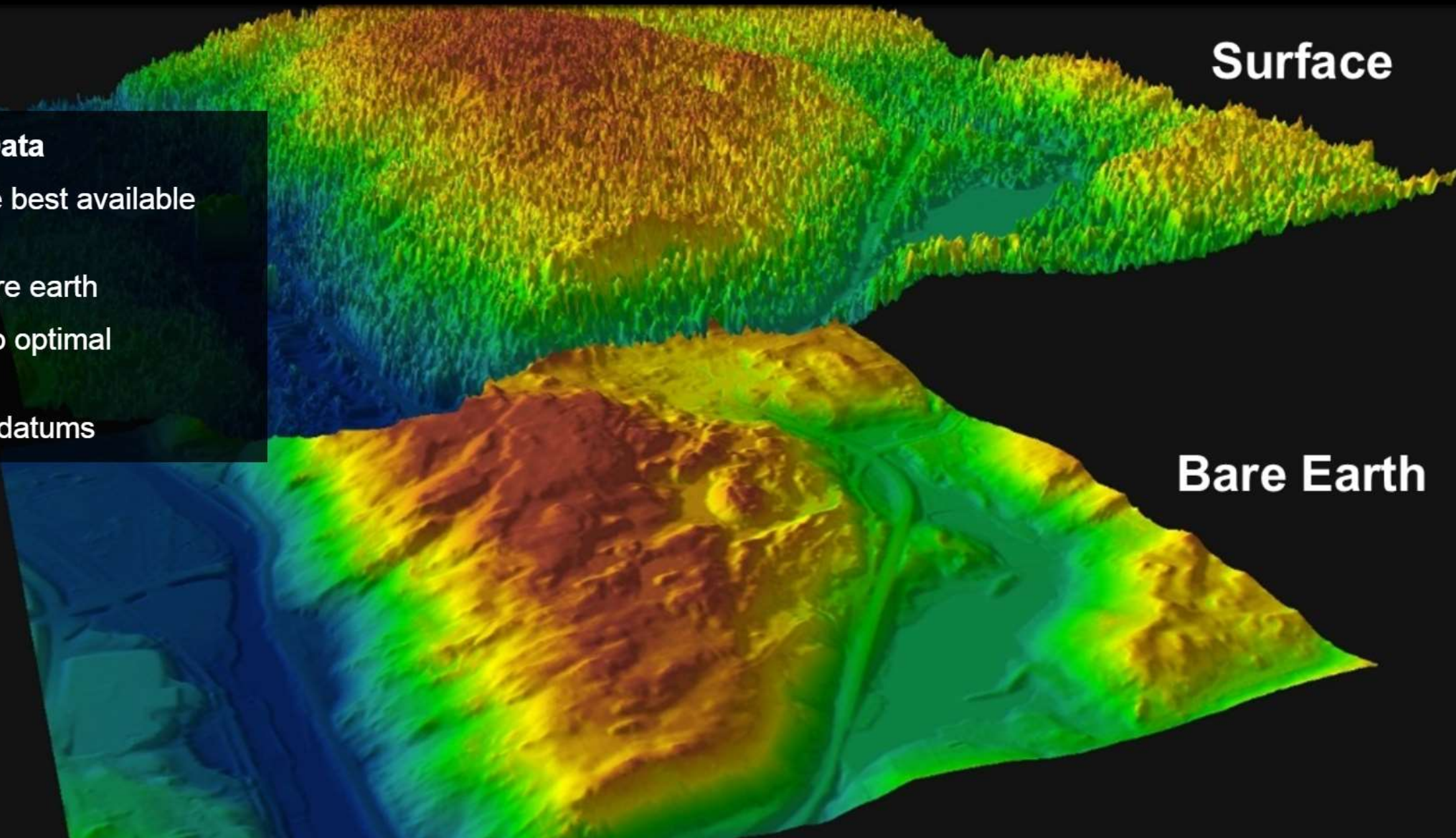
Surface

Bare Earth

Elevation Data

- Determine best available source

- Obtain bare earth

- Process to optimal resolution

- Translate datums

Our Process

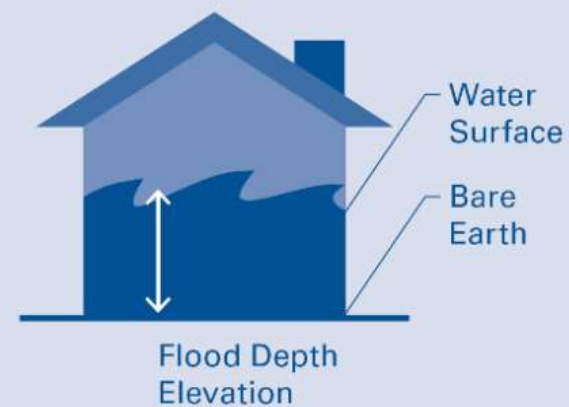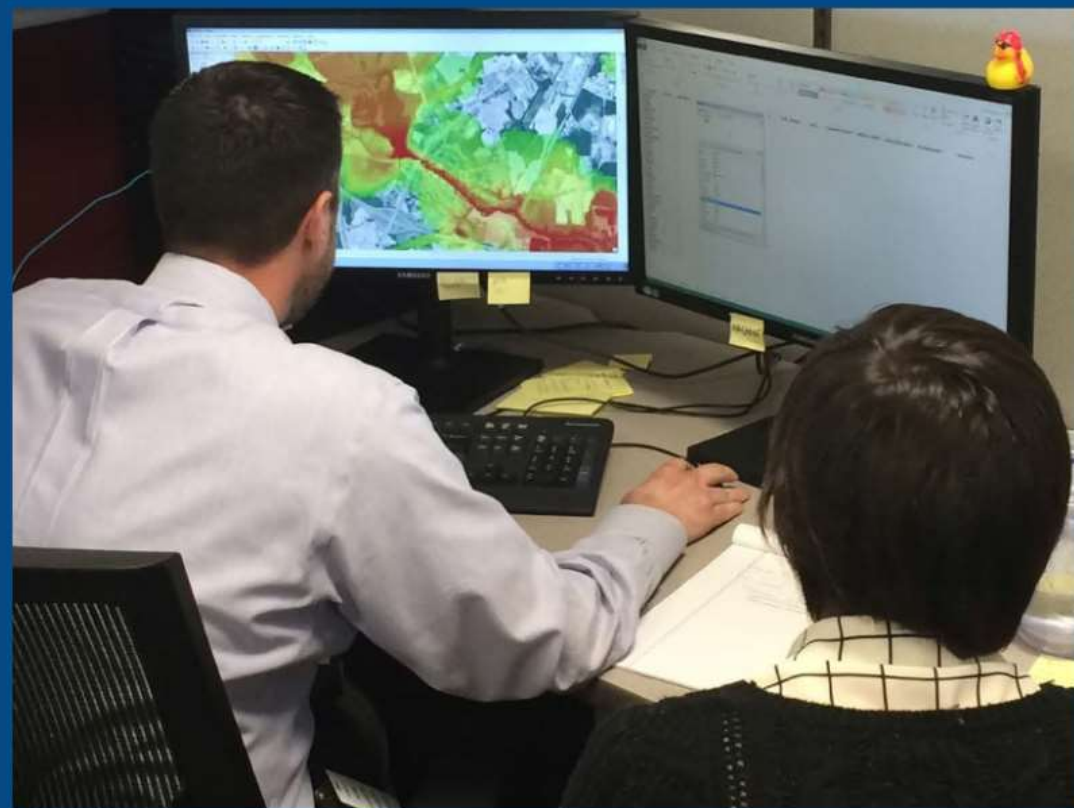EVENT → Determine AOI → Obtain Data → Create Flood Depth Grid → Create Damage Assessments → Validate with Imagery → Produce Reports/Updates

Our Process

EVENT → Determine AOI → Obtain Data → Create Flood Depth Grid → **Create Damage Assessments** → Validate with Imagery → Produce Reports/Updates

FEMA_Damage_Assessemnts_Public_clip:
Hurricane Harvey

OBJECTID	1024
Damage Level	Destroyed
Inundation Depth (feet)	8.03

Zoom to   ○○○

Hurricane Harvey Damage

☰   ⬙   ⛶ Explore

POWERED BY
esri

USDA FSA, DigitalGlobe, GeoEye

GEOSPATIAL DAMAGE ASSESSMENTS were completed within 5 DAYS while traditional housing inspections took 73 DAYS to complete

Our Process

EVENT → Determine AOI → Obtain Data → Create Flood Depth Grid → Create Damage Assessments → **Validate with Imagery** → Produce Reports/Updates

Civil Air Patrol

Pleiades

NOAA

Harvey Damage Assessment

CAP Image

Our Process

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Parish	# Affected Structures (<2' depth)	# Minor Structures (2'-5' depth)	# Major Structure (>5' depth)	Total Impacted Structures	Total Structures
Acadia	4,008	553	84	4,645	25,152
Ascension	12,160	5,691	1,496	19,347	56,273
East Baton Rouge	40,481	21,390	5,997	67,868	176,384
Iberia	101	90	—	191	27,576
Iberville	208	—	—	208	12,361
Jefferson Davis	1,238	595	169	2,000	13,956
Lafayette	3,999	697	107	4803	87,220
Livingston	21,124	15,408	4,120	40,652	62,898
Pointe Coupee	647	626	183	1,456	22,916
St. Martin	893	399	22	1,314	22,994
Tangipahoa	11,136	4,014	1,235	16,385	42,552
Vermillion	7,672	2,249	95	10,016	25,910
Total	**103,655**	**51,712**	**13,508**	**168,885**	**576,192**

More than

$10.5 MILLION in EXPEDITED RENTAL ASSISTANCE GRANTS

provided to more than **12,500 DISASTER SURVIVORS**

Remote sensing

Outreach

Debris

Shelter locations

Substantial damage

Resource needs

High water marks

Mitigation

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