

BUILDING RESILIENCE WITH ADVANCED AERIAL IMAGERY

PLAN-RESPOND-RECOVER

DISASTER IS ON THE RISE

UNITED STATES NATURAL CATASTROPHE LOSSES

2019: \$39.1 billion

2020: \$75.1 billion

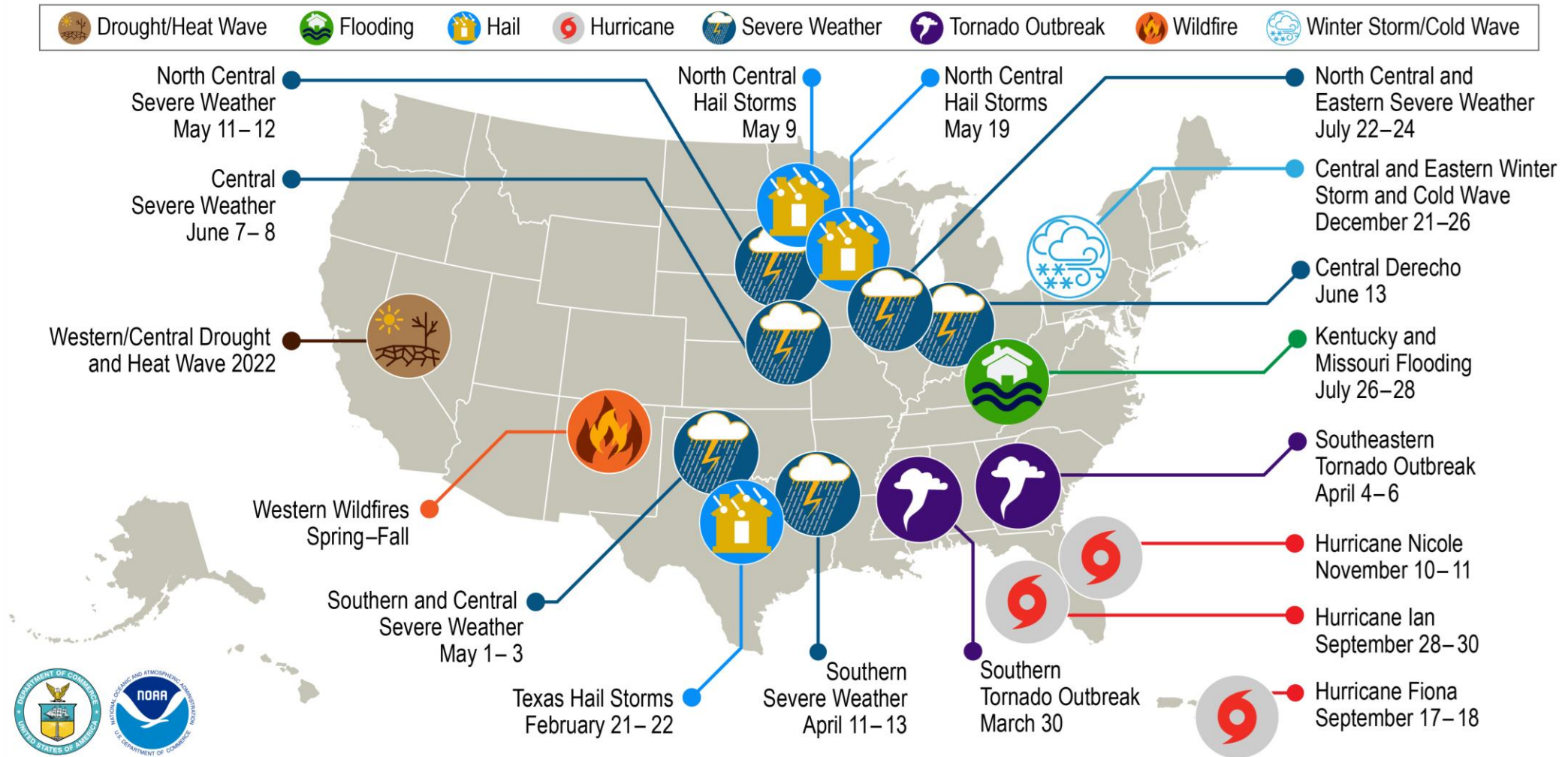
2021: \$92.0 billion

2022: \$99.9 billion



ONE DAY AFTER TORNADO - APRIL 2022 | LOUISVILLE, KY U.S.

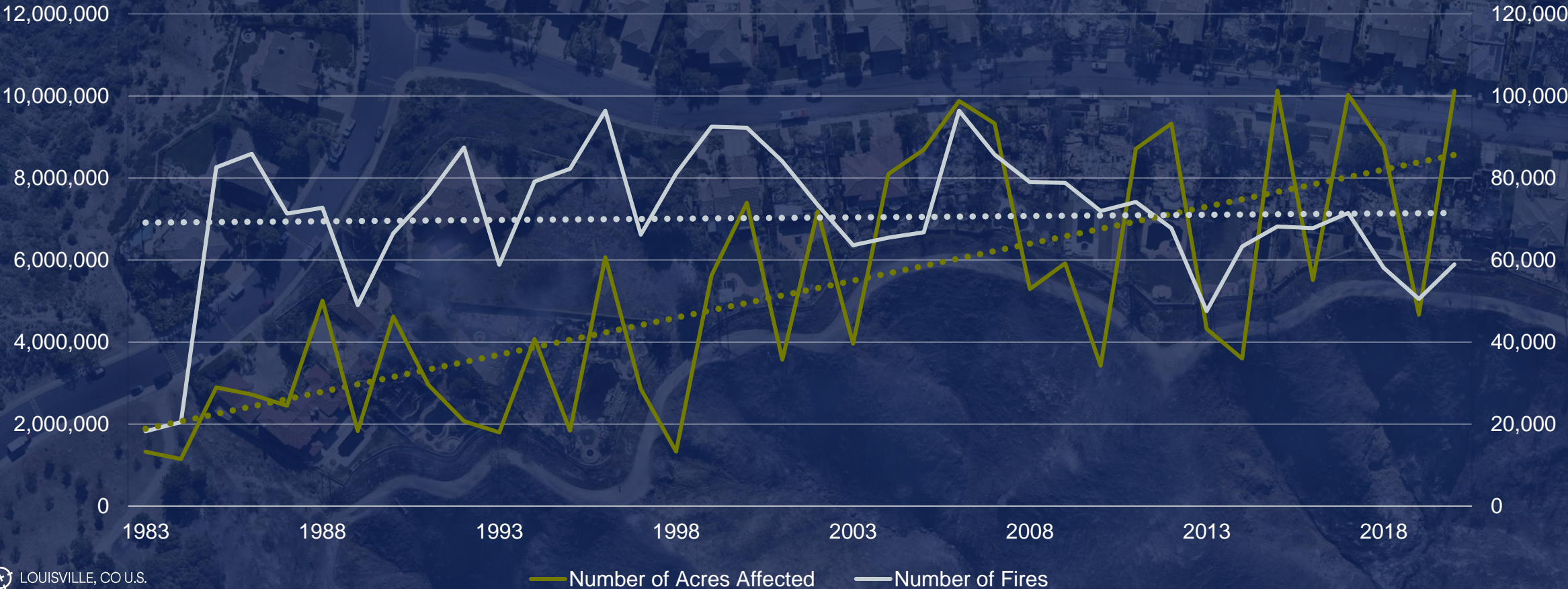
U.S. 2022 BILLION-DOLLAR WEATHER & CLIMATE DISASTERS



This map denotes the approximate location for each of the 18 separate billion-dollar weather and climate disasters that impacted the United States in 2022.

MORE SEVERE WILDFIRES

US Wildfires



LOUISVILLE, CO U.S.

— Number of Acres Affected — Number of Fires

THE NEARMAP UNIQUE PHILOSOPHY FOR DELIVERING SUPERIOR POST- CATASTROPHE SOLUTIONS



Rapid high-
quality content



Actionable
insights



Workflow
enablement



OUR TECHNOLOGY



PATENTED CAMERA SYSTEMS

Patented, airplane-mounted camera systems allow us to cover wide land areas in a short amount of time, while capturing imagery at an extremely high resolution.



DESIGNED FOR THE CLOUD

Our photogrammetric processing pipeline enables accuracy, speed, and recency, so the imagery is in your hands and ready to use within a few weeks of capture.



MORE THAN AERIAL IMAGERY

When combined with machine learning algorithms, our imagery delivers deep insights and automated location intelligence.

WHAT MAKES NEARMAP UNIQUE?



HIGH DEFINITION

All Imagery Provided in Industry Leading sub 3" Detail. Allowing for Deeper Discovery of the Truth on the Ground.



COVERAGE

All Global Imagery Updated at Least Once a Year. Top Markets Updated Multiple Times a Year. History going back to 2014.



FULL DATASET

Different Use Cases Require Different Data. Nearmap Offers Vertical, Multi-Angle, and Leading 3D for Fire and Flood Modelling



RICH ANALYSIS

All Historical and Current Imagery is Stored, Maintained, and Accessible Now for Visual and Machine Analysis.



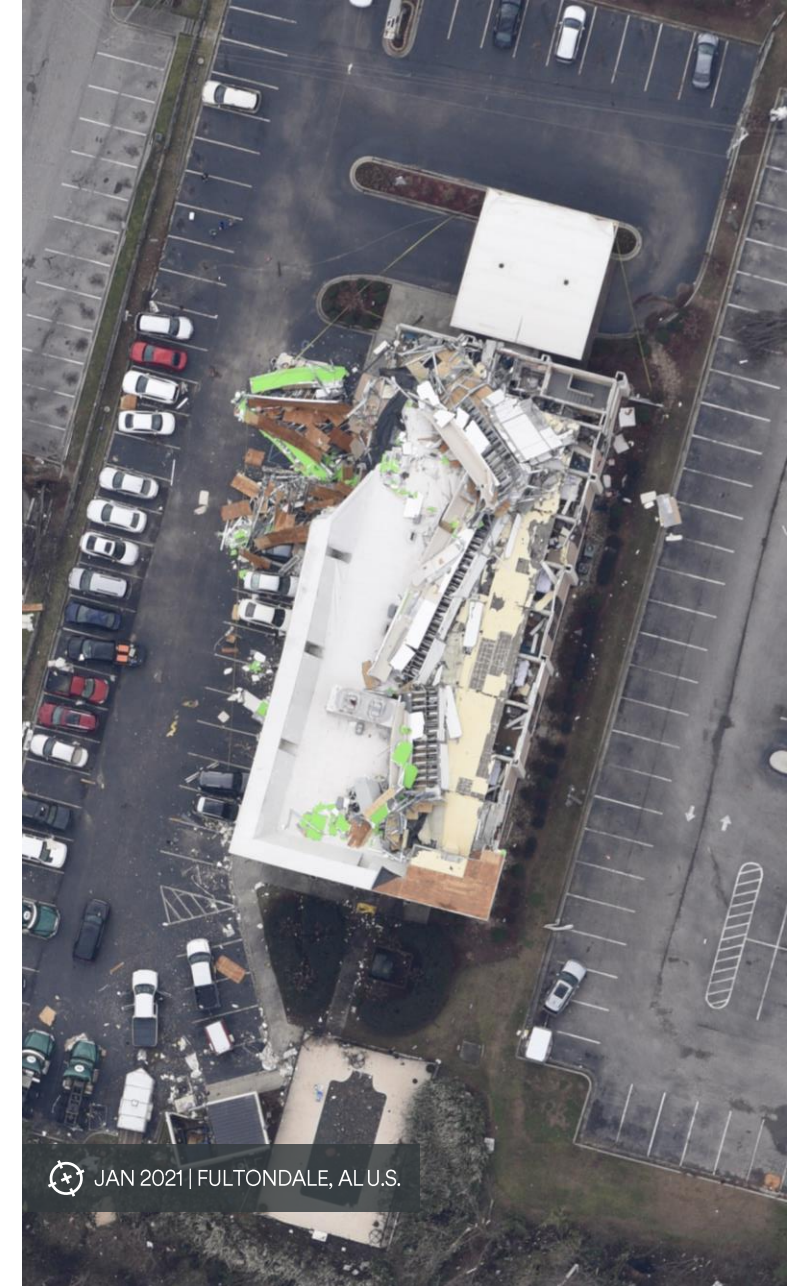
INSTANT ACCESS

High Definition Aerial Maps are Accessible Anywhere Instantly Via our Enterprise Scale Cloud Service and API's



CONSISTENT

All Forms of Nearmap Imagery are Captured and Provided at the Same High Definition Spec Across All Locations



JAN 2021 | FULTONDALE, AL U.S.

AVAILABLE CONTENT



Vertical



Panorama



Oblique



3D - DSM



AI



Post-Cat

IMAGERY UPDATES




ONCE WE FLY, PROCESS THE DATA, AND UPLOAD IMAGERY TO THE CLOUD, YOU CAN VIEW THE AERIAL IMAGERY DATA ON MAPBROWSER AS WELL AS WHILE USING ANY OF OUR INTEGRATION APPLICATIONS.

- **Notification:** Using [MapBrowser](#), you can [create a watchlist](#) (right click + drop a pin, “Add to Watchlist”). This feature is a great way to get an email alert when new imagery is available on the cloud.
- **Coverage:** You can review our latest coverage map here: <https://www.nearmap.com/us/en/current-aerial-maps-coverage>



INTRODUCING ENHANCED POST-CATASTROPHE RESPONSE SOLUTIONS FROM NEARMAP

 LOUISVILLE, CO U.S.

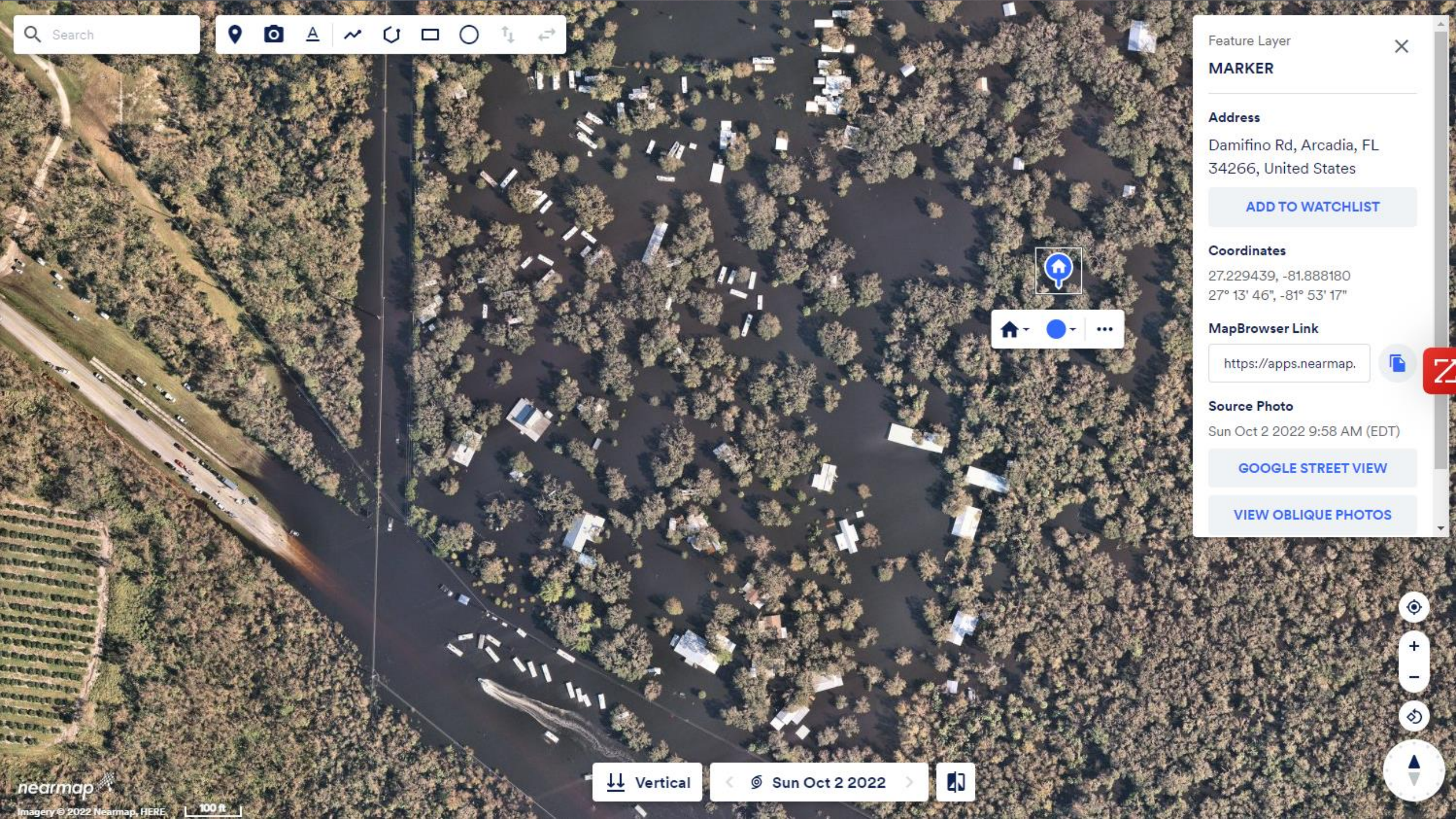
ELEVATE YOUR DISASTER RESPONSE





 HARVEY, LA U.S.

Search



Feature Layer X

MARKER

Address

Damifino Rd, Arcadia, FL
34266, United States

[ADD TO WATCHLIST](#)

Coordinates

27.229439, -81.888180
27° 13' 46", -81° 53' 17"

MapBrowser Link

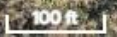
<https://apps.nearmap.>

Source Photo

Sun Oct 2 2022 9:58 AM (EDT)

[GOOGLE STREET VIEW](#)

[VIEW OBLIQUE PHOTOS](#)



TRIGGERING EVENTS



HURRICANE

- **Severity:** Category 2 or above hurricane during declared hurricane season (June to November)
- **Area:** Minimum of 1000 sq km
- **Population:** Over 10,000 in accordance with U.S. 2020 Census data



WILDFIRE

- **Severity:** Areas where there is a significant impact on infrastructure, property, or community interests
- **Area:** Minimum of 200 sq km
- **Population:** over 10,000 in accordance with U.S. 2020 Census data



TORNADO & EXTREME WIND EVENTS

- **Severity:** Tornado EF2 or above on the Enhanced Fujita Scale, during declared tornado season (April to June) by the National Weather Service
- **Area:** at least 50 square kilometres
- **Population:** Over 10,000 in accordance with U.S. 2020 Census data

NEARMAP IMPACTRESPONSE

RESPOND MORE EFFECTIVELY

with sharper and faster property intelligence and insights.

When disasters happen...



Speed matters



Access matters



Details matter



NEARMAP IMPACTRESPONSE

API AND MAPBROWSER



5.5-7.5cm resolution
Vertical and Oblique
imagery



Oblique imagery
where available



Typically delivered
within 24 hours

>50 Events captured
since 2021



Wildfire



Hurricane



Tornados
& severe wind



NEARMAP IMPACTRESPONSE



Assess the severity and scale of damage and zoom into the critical areas

Assess impact on your local government area in mere hours, including hard-to-access locations. Use imagery to understand road blockages and infrastructure damage, plan search and rescue missions, identify best locations for shelters, and plan safe routes for emergency personnel to distribute food, clothing and other supplies.



Triage your response to streamline resource allocation

When ground access is limited and inspection resources are stretched, assess the scope and severity of damage with our imagery to effectively triage your response. And when it is time to deploy field crews, plot vehicle access routes to keep workers safe and send resources where they're most critically needed.



Inspect pre-event conditions to inform impact assessment

Without knowing what was on the ground before a disaster, it's difficult to understand exactly what's changed. Nearmap ImpactResponse comes with our standard Vertical imagery subscription, refreshed across the U.S. up to three times annually and covering more than 308,059 square miles and 108.8 million parcels — so you can confidently compare pre- and post-catastrophe surveys to measure the true impact.

NEARMAP IMPACT RESPONSE



Confidently estimate repair costs

All post-catastrophe surveys are captured at a consistent 2.2" - 3" GSD, so you can quantify damage with confidence. Measure line, area, and radius for reliable estimates to inform your rebuilding efforts.



Plan and prepare for future disasters

With historical post-catastrophe imagery dating back as far as 2014, as well as proactive captures of new events, you have a rich dataset to inform your risk mitigation and resilience strategy planning.



Support decisions with a visual source of truth

When regulators come knocking, paper — and imagery — trails can substantiate your decisions. Use imagery to drive grant program application outcomes, and support tax relief determinations with precisely dated imagery to document true property conditions.

USE CASES



BENEFIT OF HINDSIGHT





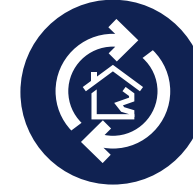
NEARMAP IMPACTTRIAGE AI



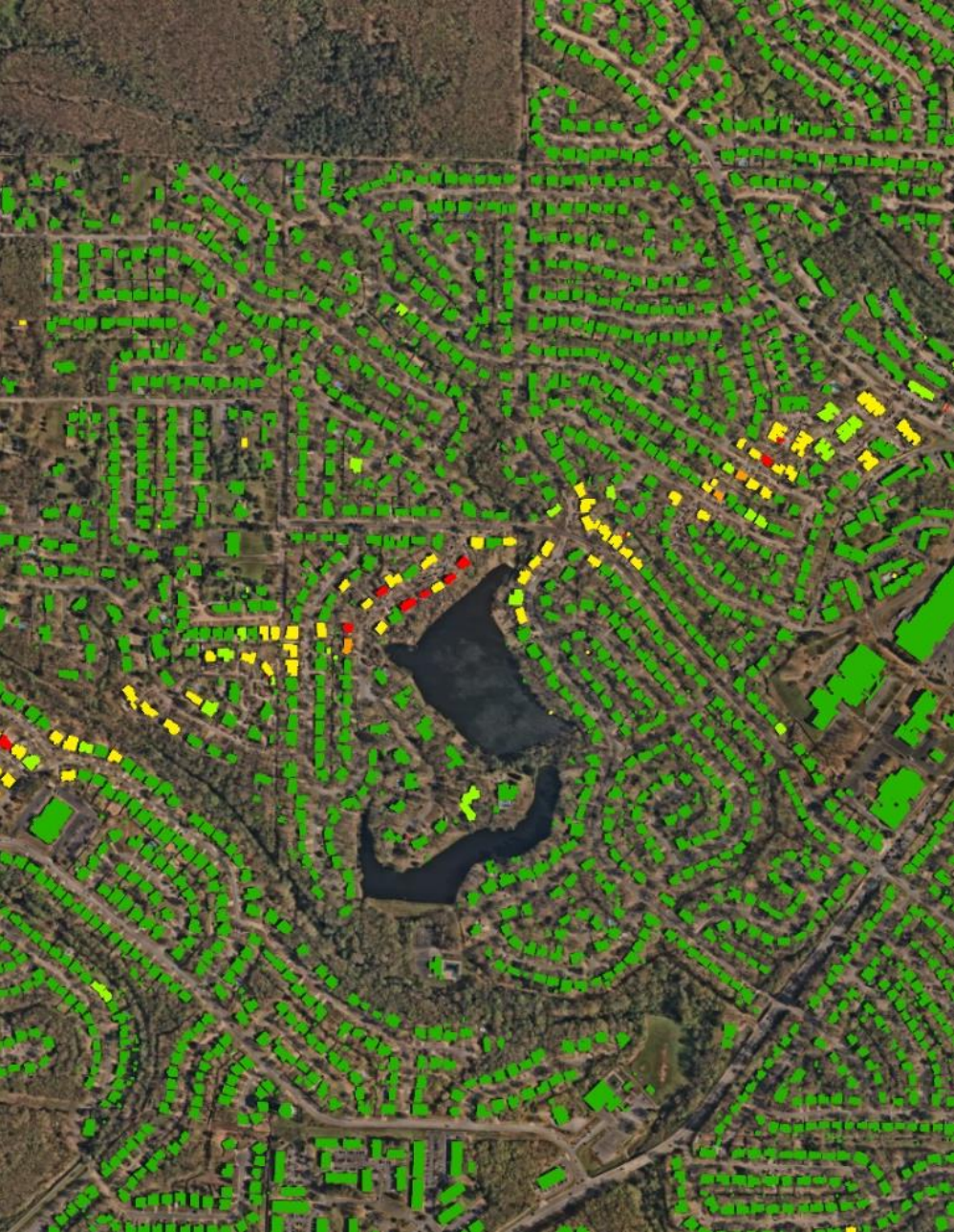
Automate
workflows



Prioritize field
resources



Jumpstart
recovery efforts



NEARMAP IMPACTTRIAGE AI

API AND OFFLINE

DAMAGE CLASSIFICATION



Three-tier

- No Damage
- Partial Loss
- Total Loss



Five-tier FEMA-based

- No Damage
- Affected
- Minor
- Major
- Destroyed

NEARMAP IMPACTASSESSMENT AI



LIST OF ATTRIBUTES

- Roof
- Building Under Construction
- Unmaintained swimming pool
- Roof rusting
- Roof with temp repair
- Roof tile/shingle discoloration
- Roof ponding
- Structurally damaged roof
- Missing tiles and shingles
- Permanent repair
- Zinc Staining
- Water body
- Vegetation debris
- Junk and wreckage
- Damaged asphalt

COMMONWEALTH OF KENTUCKY



Kentucky Emergency Management (KYEM) assembled a team of GIS professionals to respond rapidly to the December 2021 Quad-State tornado. Using Nearmap imagery as a base map in Esri's ArcGIS Enterprise, the team leveraged Kentucky's wealth of GIS data to help first responders and expedite disaster declaration status.

CHALLENGE

When the 2021 Quad-State tornado struck the Commonwealth of Kentucky, the KYEM GIS team needed to interpret geographic data from disparate sources to formulate a clear picture of the tornado's impact on the built and natural environment — and time was not on their side. The ability to quickly assess the scale and severity of damage was critical in triaging emergency response and state-level recovery efforts.

SOLUTION

Nearmap ImpactResponse captured and delivered high-resolution imagery of the Quad-State tornado — covering over 877 square miles across six locations in the Commonwealth of Kentucky — in about 24 hours. The spatially accurate imagery also meant that data from disparate sources aligned with the base map, enabling key personnel to assess the damage and impact in context, and effectively plan and triage recovery effort for citizens.

BUSINESS IMPACT

Nearmap ImpactResponse imagery clearly identified structures destroyed in the various counties, and helped quickly attain state of emergency declaration by the Federal Emergency Management Agency. The ArcGIS Enterprise-

based Response Portal, with data resources curated by the GIS team, enabled 200+ professionals from local, state and federal agencies to collaborate and allocate much-needed resources for debris removal, employ emergency protective measures, and restore damaged infrastructure.

"Nearmap post-tornado imagery gave Kentucky's response team its first ortho-based view of the storm's impact. The imagery has been used for determining disaster declaration status, damage assessment, and for general situational awareness."

Kent Anness, Acting Director, Division of Geographic Information, Commonwealth of Kentucky

 **RAPID RESPONSE**
DAMAGE IMPACT ASSESSMENT

 **EASY ESRI INTEGRATION**
FACILITATED BY WMS APIs

 **SITUATIONAL CONTEXT**
QUICK RESPONSE MOBILIZATION



TRANSFORM THE WAY YOU WORK:

To learn more about how ImpactResponse can help response and recovery after catastrophic events, visit: www.nearmap.com/impactresponse

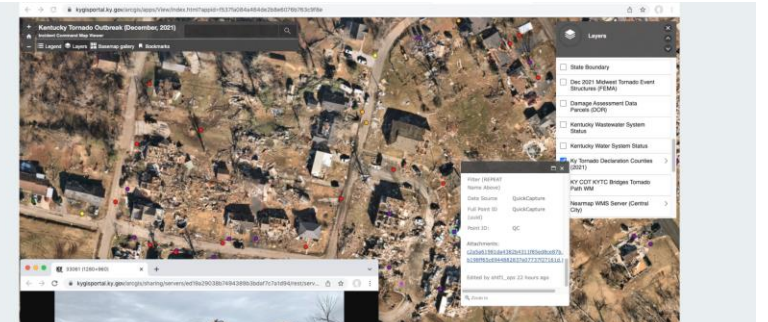


FEMA Urban Search & Rescue Data Feed

Note the colored dots on the map... structures were searched for survivors and documented accordingly using the ArcGIS QuickCapture app. Many data points included ground-level photos.

Regular updates to this feed provided EOC staff with an unprecedented view of the damage.

(Nearmap Imagery)



Muhlenberg County - Before & After

KyFromAbove imagery from April of 2021 is on the left and post-tornado imagery from Nearmap is shown on the right. The devastation is widespread in this area.

Use the slider tool to swipe back and forth across the imagery.

(KyFromAbove & Nearmap Imagery)



The Role of GIS in Kentucky's Tornado Response

The GIS team assembled by Kentucky Emergency Management



HURRICANE IDALIA

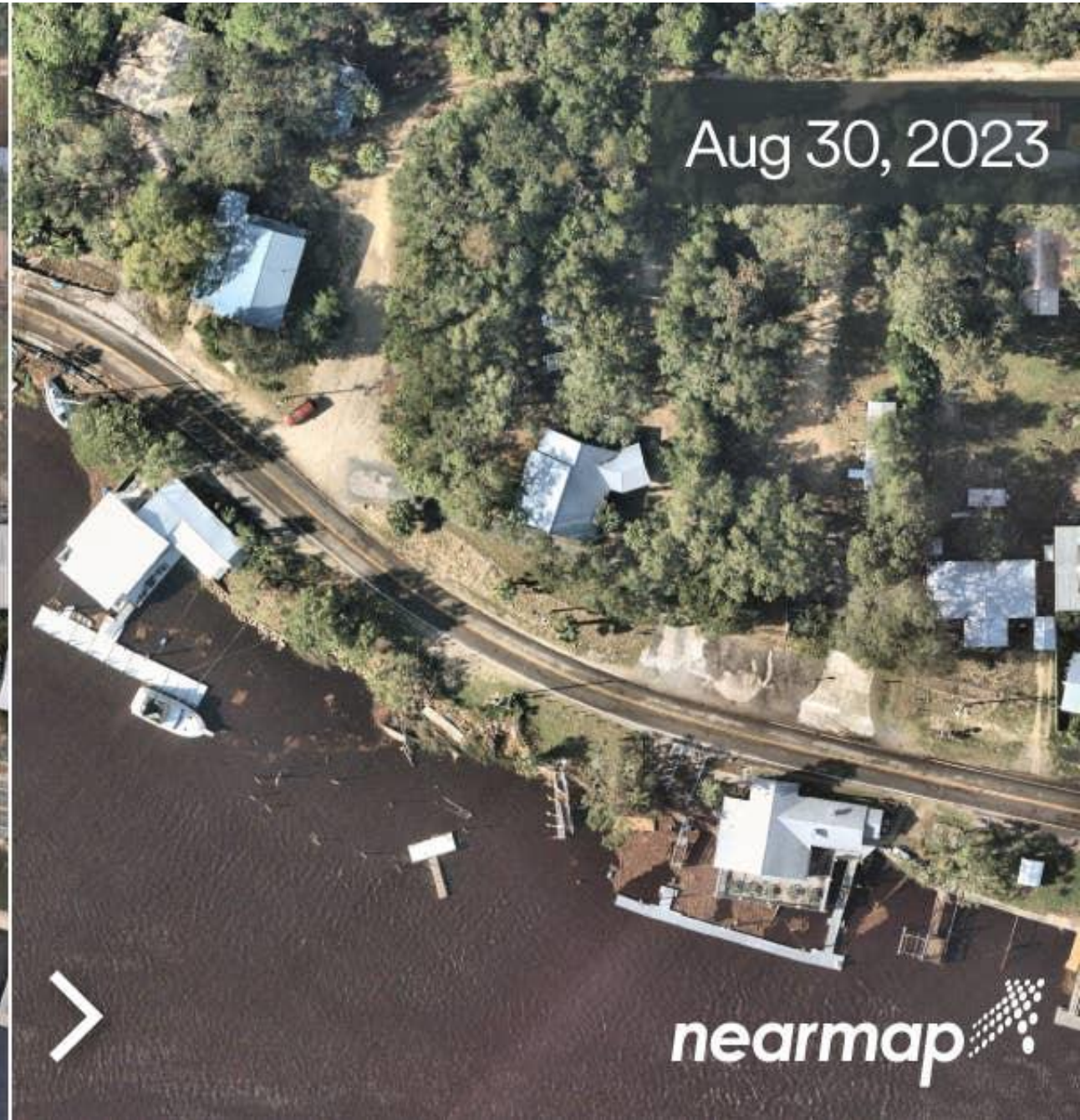
Keaton Beach Landfall
September 30, 2022



Sep 27, 2022



Aug 30, 2023

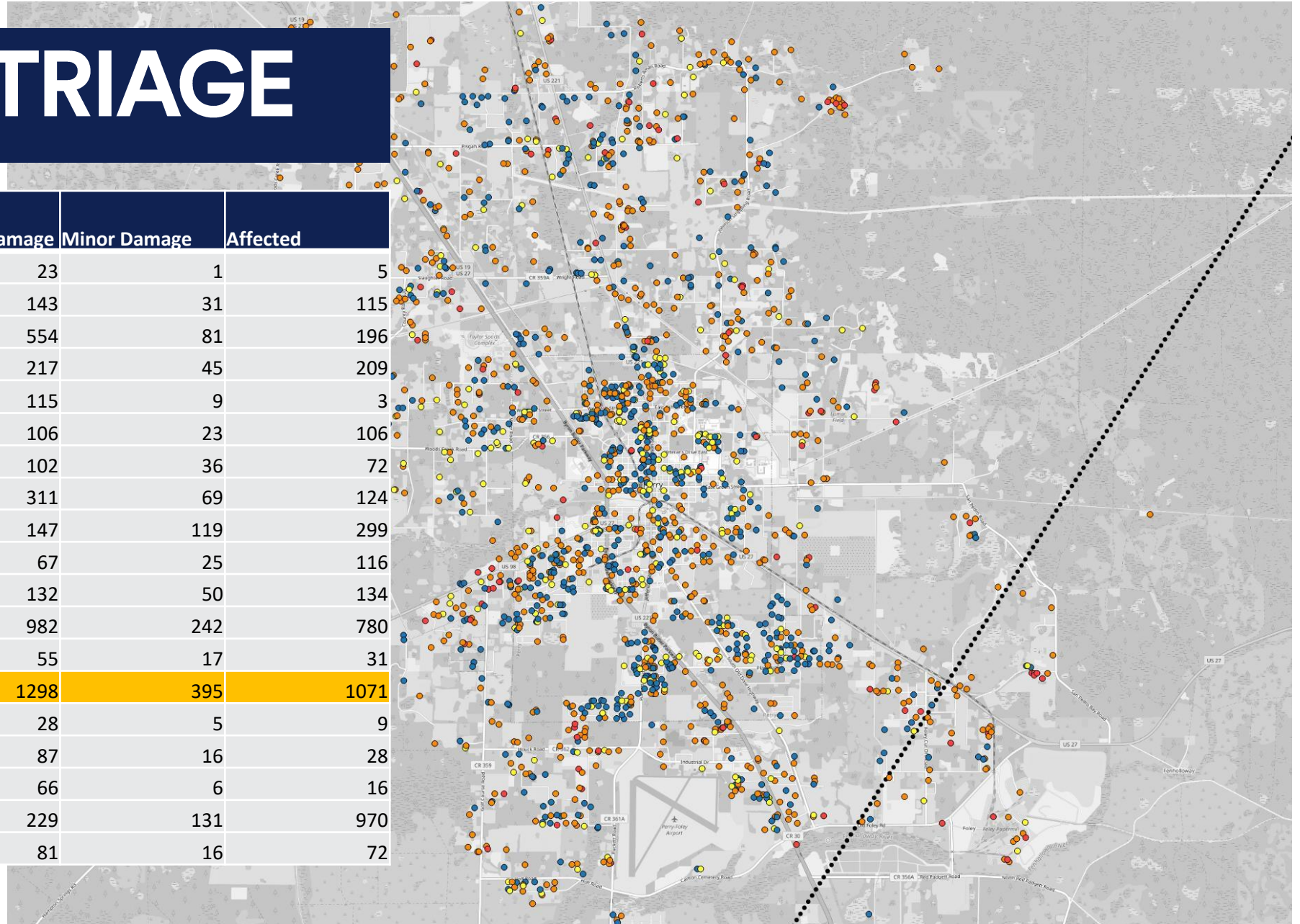


nearmap

HURRICANE IDALIA | STEINHATCHEE, FL U.S.

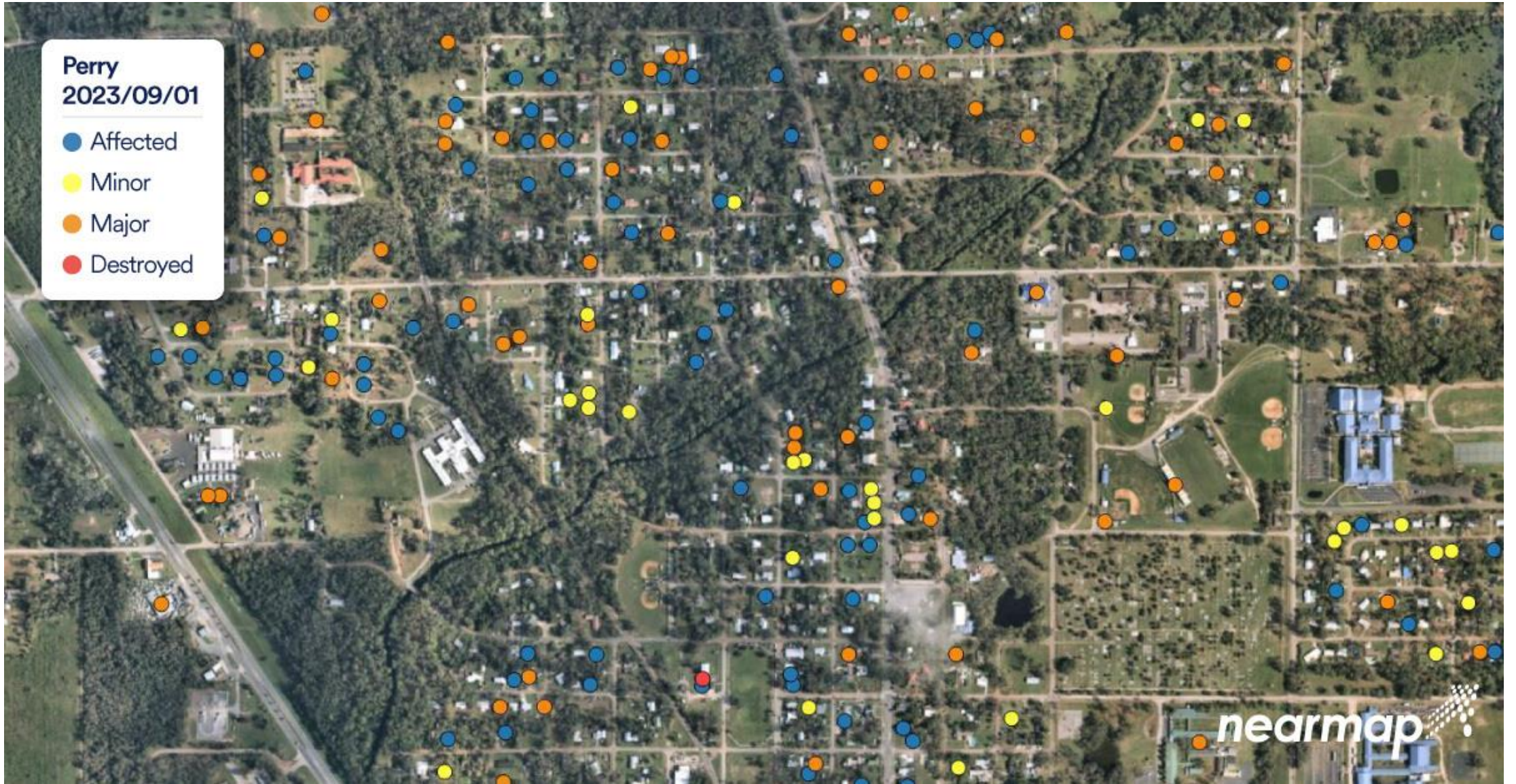
IMPACT TRIAGE

Region	Destroyed	Major Damage	Minor Damage	Affected
CedarKey	2	23	1	5
Chiefland	15	143	31	115
CrossCity	39	554	81	196
CrystalRiver	12	217	45	209
HorseShoeBeach	35	115	9	3
Inglis	10	106	23	106
Jasper	14	102	36	72
KeatonBeach	42	311	69	124
LakeCity	12	147	119	299
LakePark	6	67	25	116
LiveOak	5	132	50	134
Madison	149	982	242	780
Mayo	3	55	17	31
Perry	156	1298	395	1071
Rosewood	6	28	5	9
Steinhatchee	10	87	16	28
Suwannee	2	66	6	16
Valdosta	10	229	131	970
Waycross	7	81	16	72



Perry
2023/09/01

- Affected
- Minor
- Major
- Destroyed







MARSHALL FIRE

December 30, 2021
Louisville, Colorado



📍 JAN 2022 | LOUISVILLE, CO, US



📍 SEPT 2021 | LOUISVILLE, CO, US



84%
MED TO HIGH VEG

📍 SEPT 2021 | LOUISVILLE, CO, US

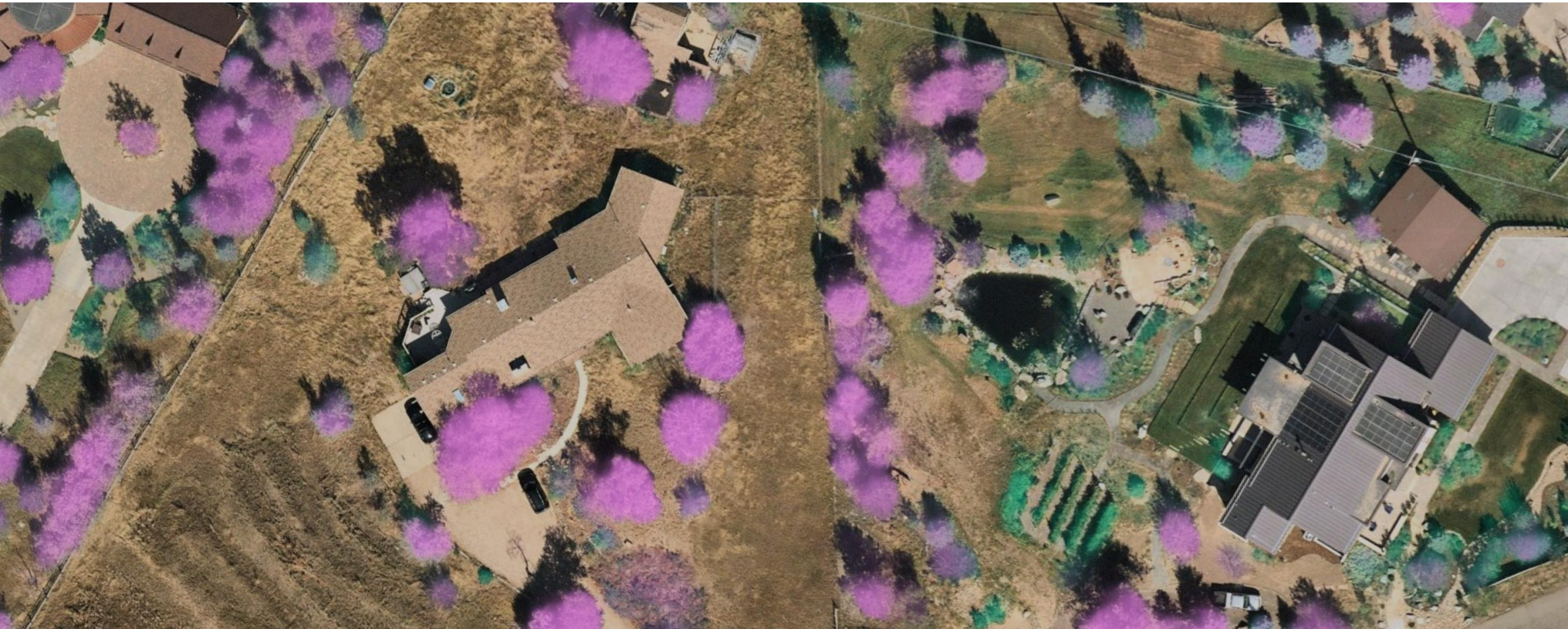


\$500 MIL
IN DAMAGE

📍 MAR 2022 | LOUISVILLE, CO, US

BEFORE – SEPT 2021

PINK: MED TO HIGH VEGETATION | GREEN: LOW VEGETATION



AFTER – MARCH 2022

PINK: MED TO HIGH VEGETATION | **GREEN: LOW VEGETATION**



BY THE NUMBERS

An assessment of 162 homes before and after the fire.



ATTRIBUTE	PRE CAT	POST CAT
Building Present	162	8
Tree Overhang	76	0
Medium Vegetation	131	2