



Hohonu

**Building resilience
through
communities**

200+ Sites • 18 States • 3M+ Hours of Data

**Turnkey flooding
intelligence**

USED BY

- Emergency Management
- Public Works
- DOTs
- Scientists
- Consultants
and others

Brian T. Glazer CEO, Hohonu, Inc. glazer@hohonu.io

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Agenda

- Background & Intro to Hohonu*
- Boston, MA Emergency Management Case Study*
- Lee County, FL Public Safety Case Study*
- 2026 Kona lows, Hawaii*

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MISC. COM. 169(26)
EM

Article | Published: 26 June 2024

Unintended consequences of using maps to communicate sea-level rise

[Matto Mildenberger](#) , [Alexander Sahn](#), [Chris Miljanich](#), [Michelle A. Hummel](#), [Mark Lubell](#) & [Jennifer R. Marlon](#)

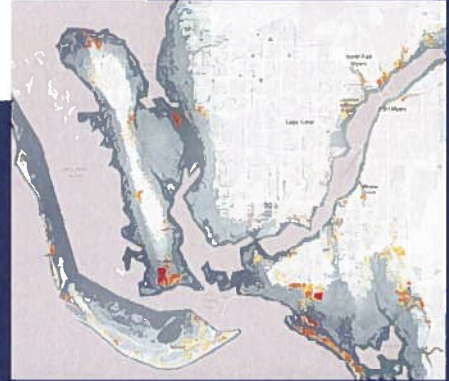
Nature Sustainability 7, 1018–1026 (2024) | [Cite this article](#)

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Coastal residents, even those facing future flooding, can become *less concerned when shown sea-level rise projections*

Coastal residents became more concerned about flood risks when told *how flooding will affect their commute*

Risk communicators should test different *data visualization* strategies before launching outreach campaigns.



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The Only Full-Stack Flood Insights Platform

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Proprietary data across
2.5 million hours from 200+ sites
Powers smarter forecasting



Modular Hardware Design

Integrate any off-the-shelf water sensor



Full-Stack Software Platform

Data QA/QC



Urban Real-Time Monitoring

Satellites cannot monitor dense environments



Data Ownership

Customers own data, Hohonu curates & analyzes



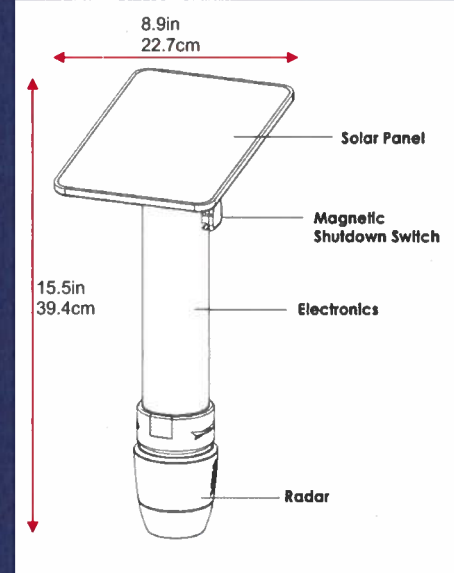
Expansion Opportunities

Proprietary dataset = competitive advantage for forecasting and other services

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Ultrasonic or Radar, same sleek design

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Simple, discrete installations

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Pinellas Co, FL



Keawanui, Molokai



Boston, MA

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Platform
Beyond Observations: *Actionable Intelligence*

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Ultra-compact sensors and predictive software
Provide actionable insights for every flood scenario

Sensors + **Machine Learning** =

- Easy to Install
- Compact
- Solar-Powered
- NOAA-Grade QA/QC
- Data Aggregation
- Forecasting

Hyperlocal Alerts

King Tides are projected for Tenean Beach, Boston, MA on Thursday. Expect high tides of 1.7-ft above MHHW between 13:00 and 17:00

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Some examples from the field

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Data-driven actions for important flooding questions

Routed emergency response during flooding <i>Localized flooding not detected by NOAA gauge</i>	Weather & Research <i>Is our forecasting correct for areas where modeling is heavily relied on?</i>	Insurance <i>How should we price our policies? Did flooding get bad enough to trigger a parametric payout?</i>
Engineering <i>Will our flood control designs be effective? Are our maintenance schedules sufficient? What data can we show our customer as rationale?</i>	Ports, Marinas, Harbors <i>Is there enough or too little water to allow traffic right now? How does clearance vary seasonally? Is shoreline stabilization needed?</i>	Commercial Real Estate <i>Should we evacuate our properties? Do our investments properly reflect flood risk?</i>

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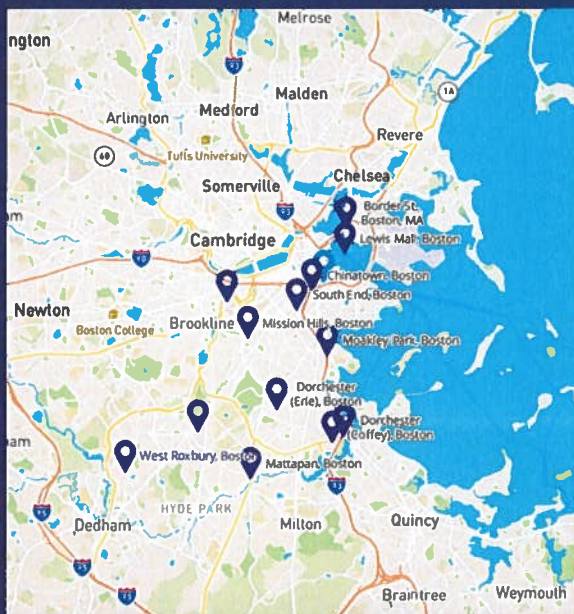


Compound Flooding in Boston

Hardware & AI...Aloha Intelligence

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Flood Analyses – Real-time spatial variability



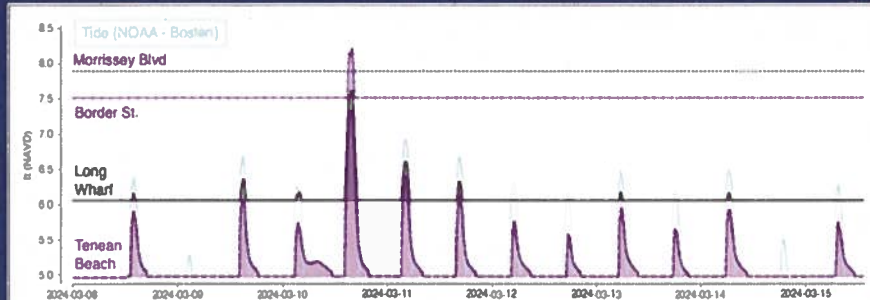
Boston, MA
March 2024 King Tide

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Flood Analyses – Real-time spatial variability

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Station	Individual Floods	Max Inundation (ft)	Total Duration (min)	Avg. Time to Peak (min)	Avg. Time to Drain (min)	Avg. Tide at Onset (ft NAVD)
Tenean Beach	12	2.35 (3/10)	3512	50	242	6.01
Long Wharf	8	1.55 (3/10)	574	35	36	6.40
Border St.	1	0.70 (3/10)	106	77	29	7.28
Morrissey Blvd.	0	-	-	-	-	-

CITY of BOSTON

"Really excited about this work and what Hohonu is already doing in Boston and how we might have pathways to expand the network"

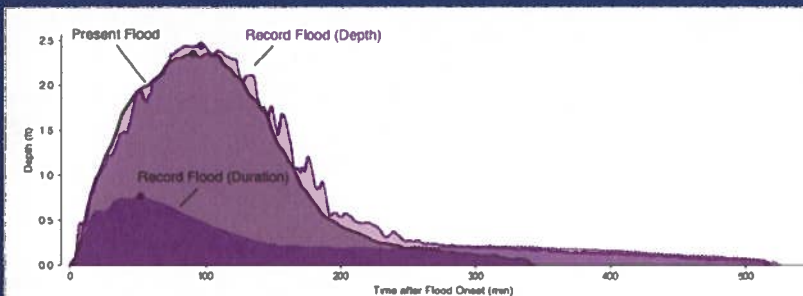
- Deputy Chief,
Office of Emergency
Management

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Flood Analyses – No two floods are the same

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Flood	Peak Inundation (ft)	Flood Duration (min)	Time to Peak (min)	Time to Drain (min)	Tide at Onset (ft NAVD)
Present	2.35	343	90	253	6.21
Record Flood (Depth)	2.45	519	96	423	7.23
Record Flood (Duration)	0.76	526	52	474	5.99
Average (N=20)	1.15	297	54	243	6.09



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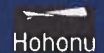


Hurricanes and rain bombs in Florida

*Robust sensors
and turning hyperlocal real-time data
into hyperlocal predictions*

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Lee County, FL: storms & compound flooding



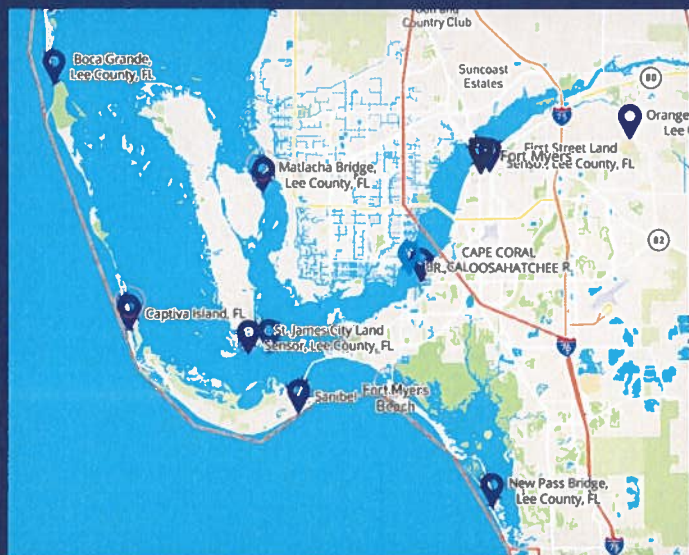
11 new Hohonu gauges

Installed summer 2024

(expanded to 19)

Maximum residual with the nearest
NOAA observations was about 3.5'

Maximum residual with the NOAA
harmonic prediction about 7'



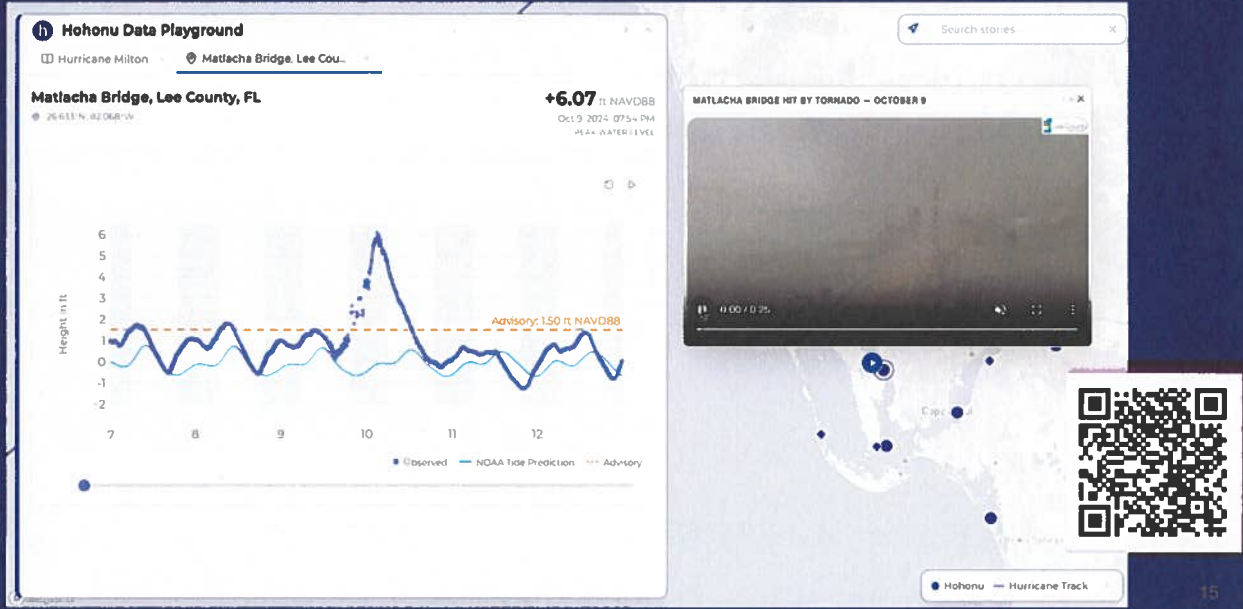
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Hurricane Milton, Matlacha Bridge Tornado

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<https://www.linkedin.com/feed/update/urn:li:activity:7254237348685590528/>



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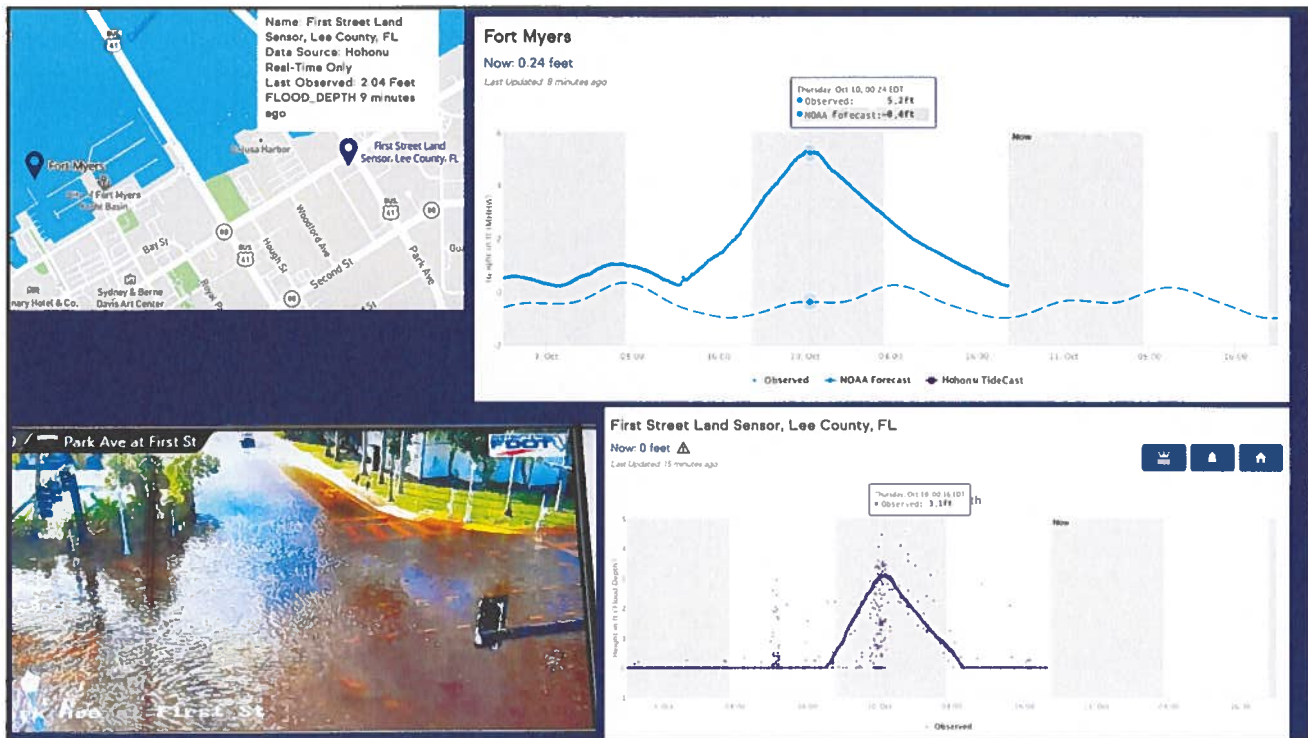
Hurricanes Helene & Milton: Fort Myers

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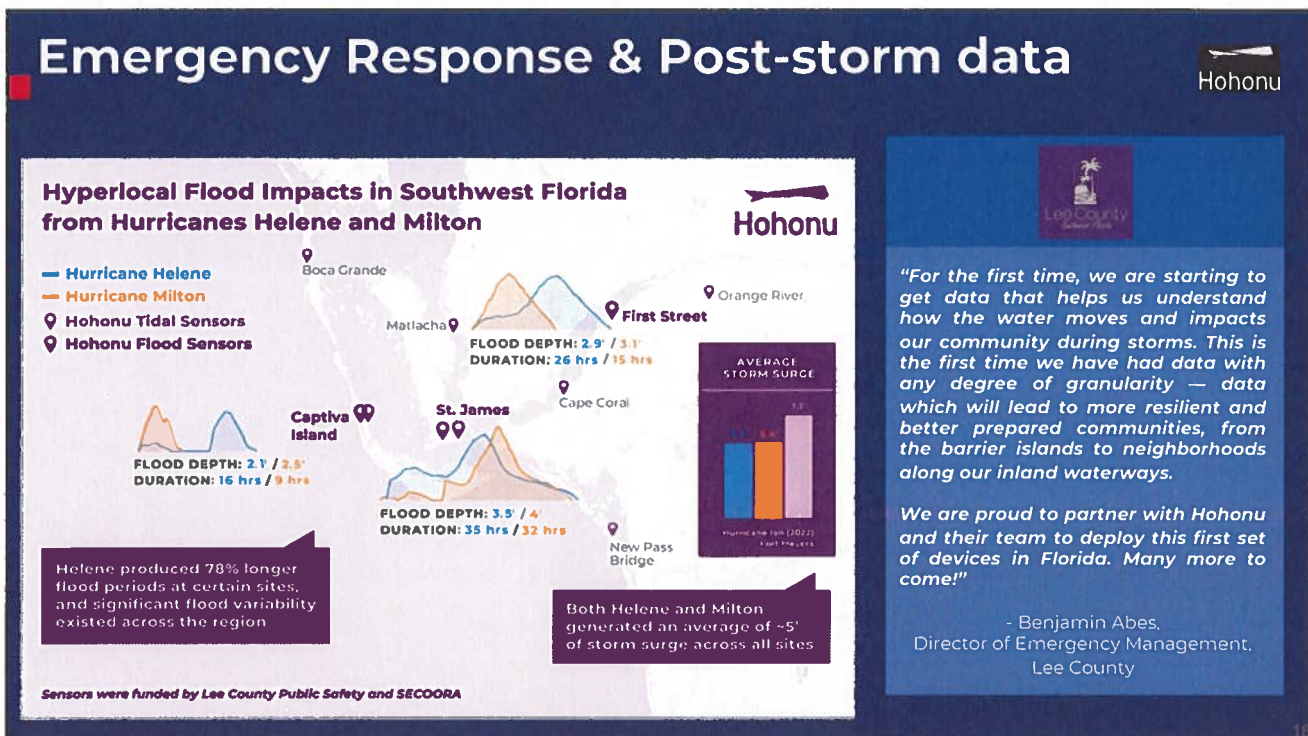


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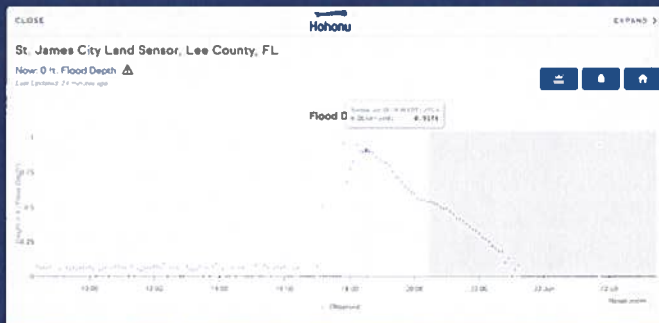
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...June 2025, Lee County...

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WINK News visited the community to gather early feedback. Mayleni Alfanzo, a Cape Coral homeowner, shared her recent experience with flooding.

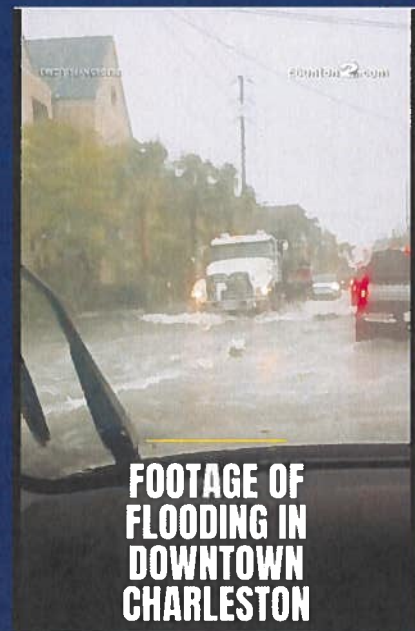
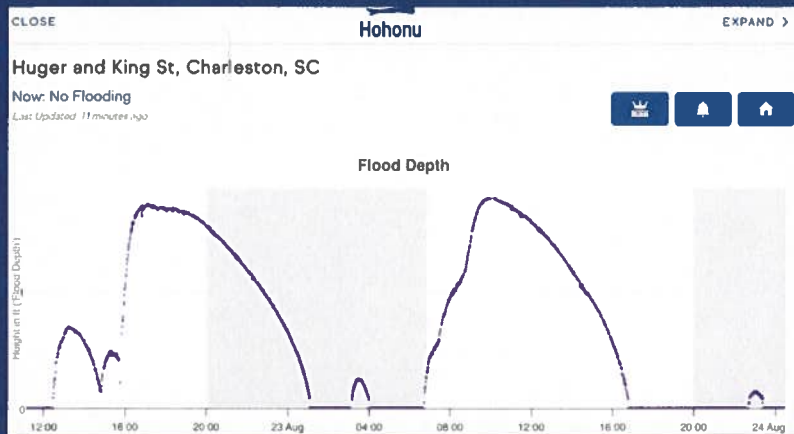
"My whole neighborhood was flooding last night," said Alfanzo.

When asked how quickly the flooding occurred, Alfanzo said, "...maybe take 15 minutes. They start raining, and the whole street was flooding."

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Huger & King St, Charleston, SC

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FOOTAGE OF
FLOODING IN
DOWNTOWN
CHARLESTON

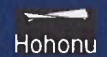
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Kona lows, March 2026

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Kona Low Flooding March 2026

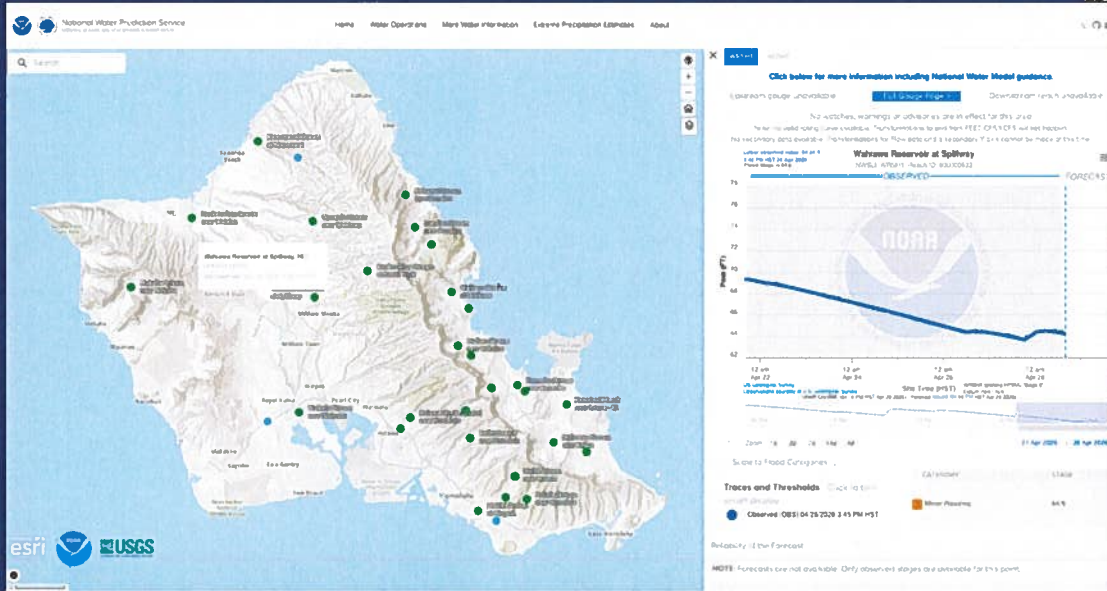


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Kona Low Flooding March 2026

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Kona Storms, March 2026

HDOT has identified multi-billion-dollar flood vulnerabilities. But static hazard maps and sparse real-time data still leave key operational questions unanswered:

- > How often do roads flood?
- > How deep does flooding get?
- > How long does it last?



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Flood reports from the Kona storms show:

150+

public flood reports
across two storm weekends

> 60%

of reported floods were
over 1 mile from a public
gauge

~2 miles

average distance from
reported flooding to the
nearest public gauge

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Kona Low Flooding March 2026

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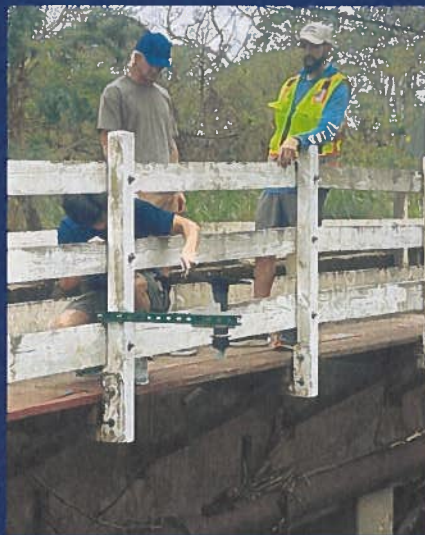
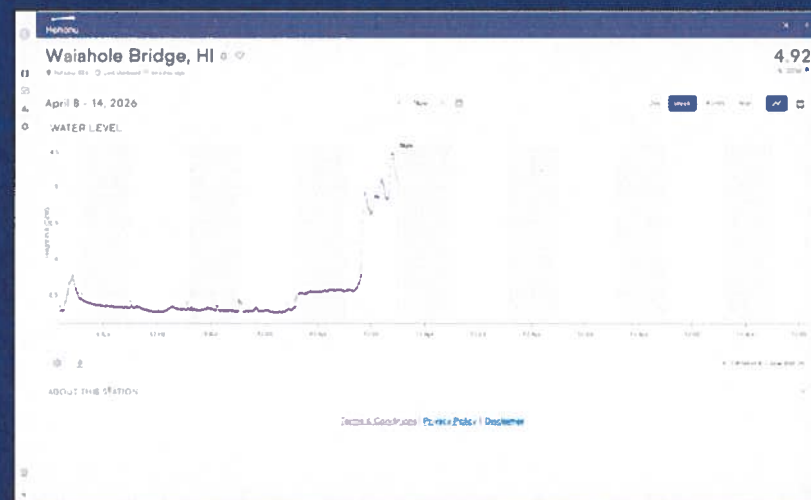


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Kona Low Flooding April 2026

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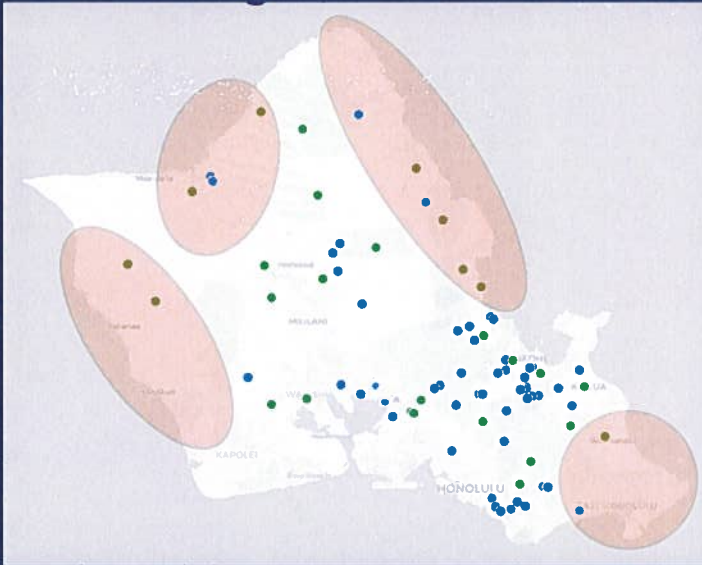


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Existing sensors on Oahu are insufficient

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● 38 sites currently collect data

● 48 sites no longer collect data

● Regions of sparse coverage

150+ public floods reported in March

60% > 1 mile from nearest gauge

~\$300k annually establishes appropriate network

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Objectives & Outcomes

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Improve real-time road safety & enhance coordination: real-time water-level information at critical highway segments, culverts, bridges, and stormwater structures helps inform when to close, detour, and reopen roads during storms, king tides, and nuisance flooding

Prioritize and scope capital projects: quantifying characteristics of repeated flooding events provides evidence to guide major infrastructure investments

Provide scientifically rigorous, publicly transparent evidence for adaptation decisions: high-quality, QA/QC'ed flooding data, alerting, and predictions that complement hazard maps and design criteria so that decisions to protect, realign, or decommission assets—and future design standards—can be clearly explained to leadership, legislators, regulators, and the public.

Operations & Traffic Management: real-time data and alerts when water reaches pre-closure, closure, and reopening levels on lifeline routes, reducing guesswork during storms and King Tides

Planning, Design & Project Prioritization: observed flood frequency, depth, and duration provides designers with accurate water-level histories to validate and improve hydraulic model assumptions and rank proposed mitigation actions

Emergency Management & Risk

Communication: interoperability of data streams for sharing observations and analyses with NWS, EM, HDOT, and counties to align messaging on roadway impacts

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Free Data App



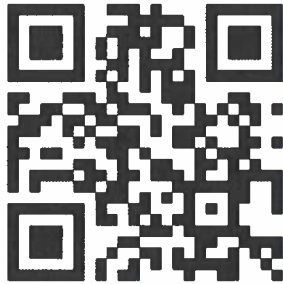
Frequently Asked Questions

Hohonu blends **scientific rigor with community value** and access

Read the most common questions in building **water monitoring programs** for a **single town** and/or at a **national scale**

What customers has Hohonu worked with?

Where have Hohonu instruments been deployed?



Hohonu FAQs

Brian T. Glazer
CEO, Hohonu, Inc.
glazer@hohonu.io