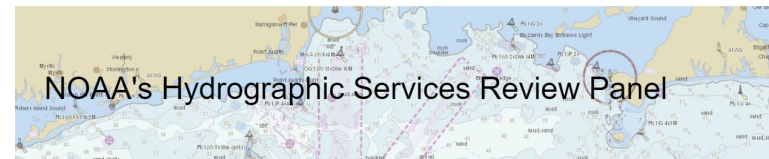


National Geodetic Survey in the Pacific

**NOAA Hydrographic Services Review Panel
September 22, 2022**



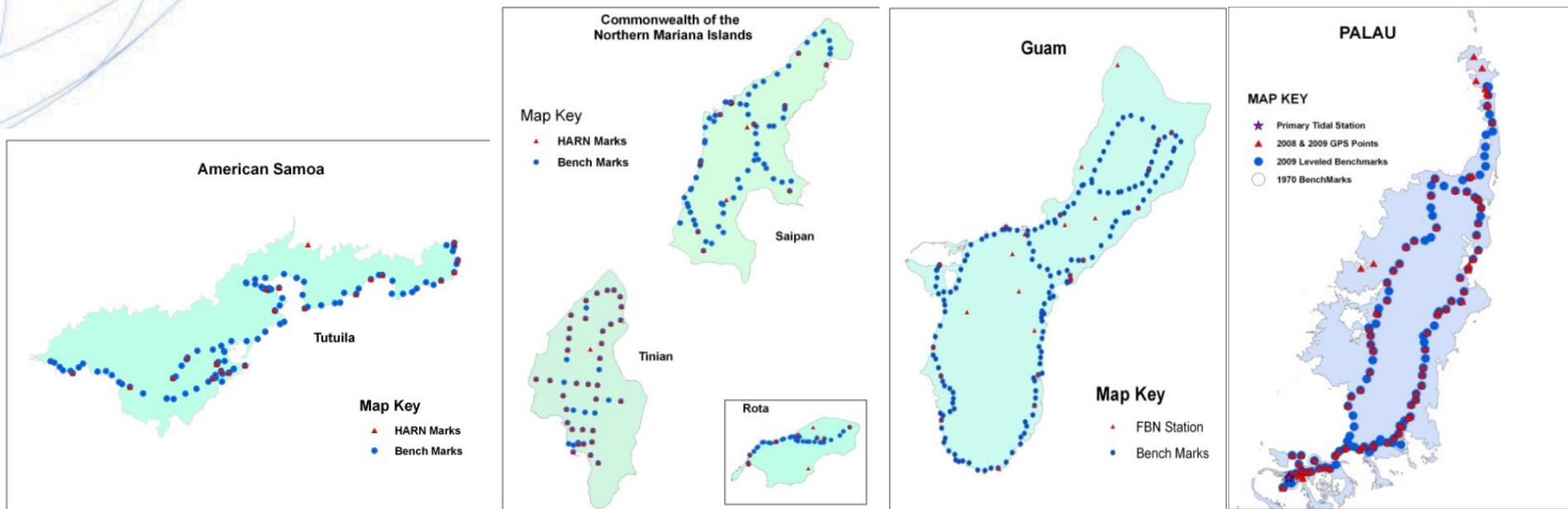
***Edward Carlson
NOAA's National Geodetic Survey
Pacific Region Geodetic Advisor***



Upgrading Geodetic Control

(Hawaii, American Samoa, CNMI, Guam, Palau, Pohnpei)

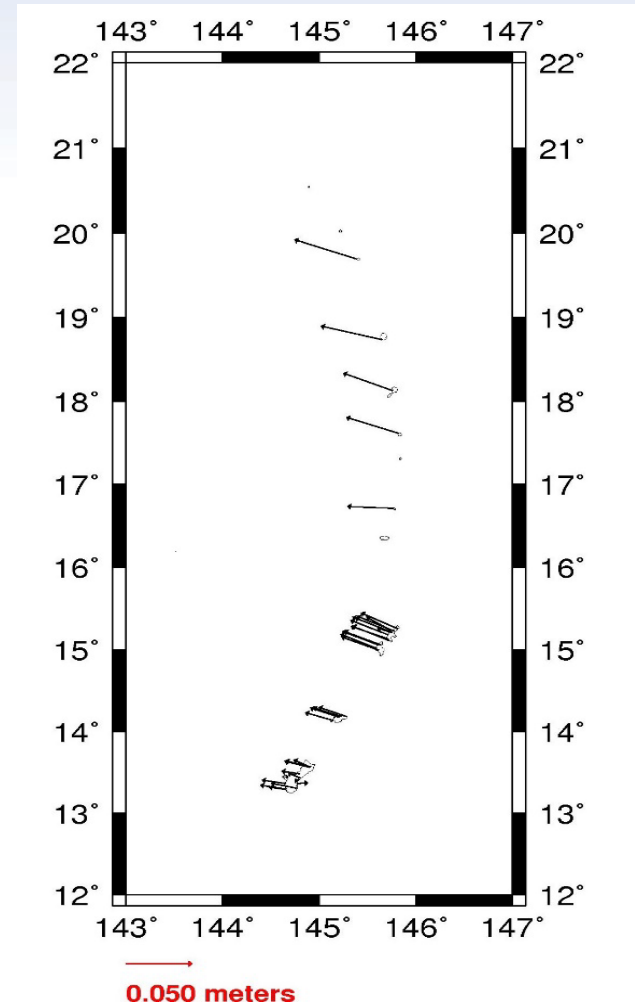
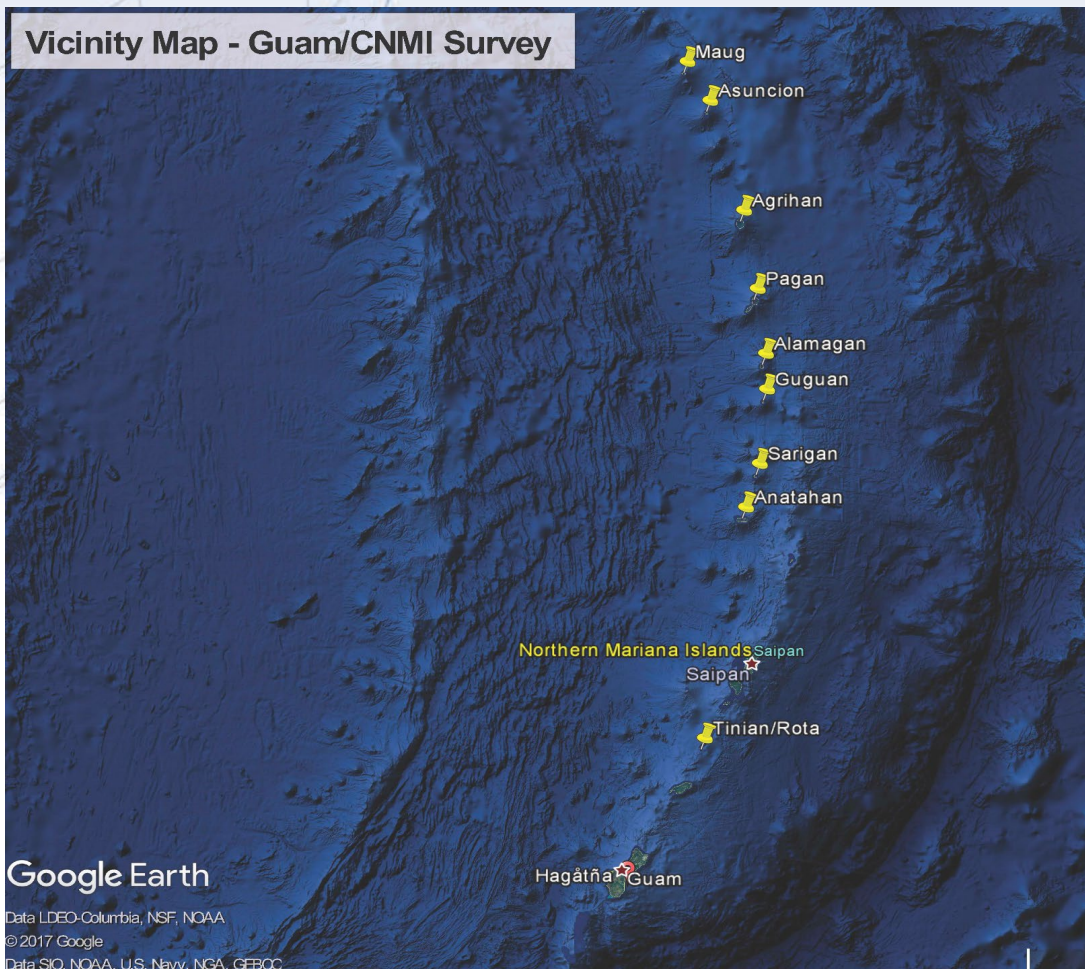
1. ***Establish a High Accuracy Spatial Reference Network (HASRN) – NAD83 Datum***
2. ***Establish a Geodetic Quality Leveling Network – Local Mean Sea Level***
3. ***Train island personnel in high accuracy GPS techniques and geodetic leveling***



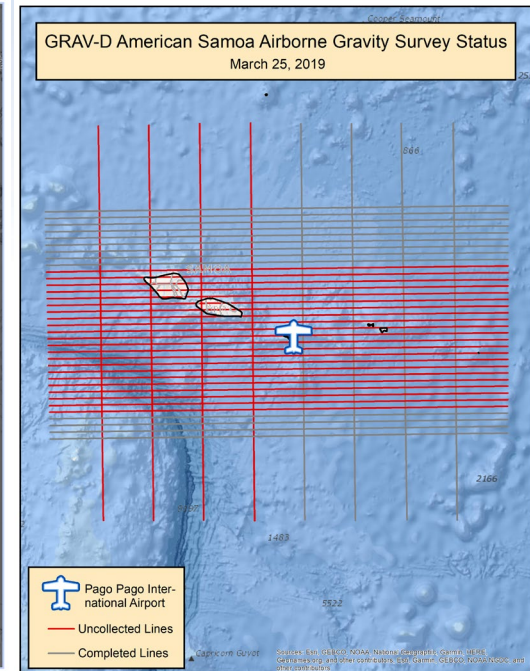
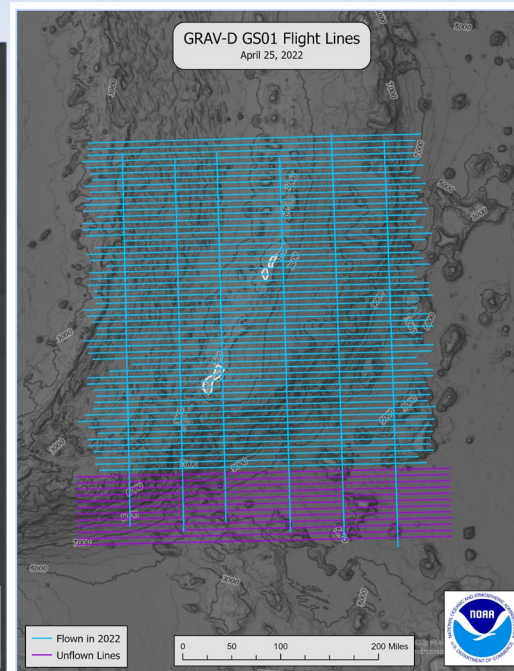
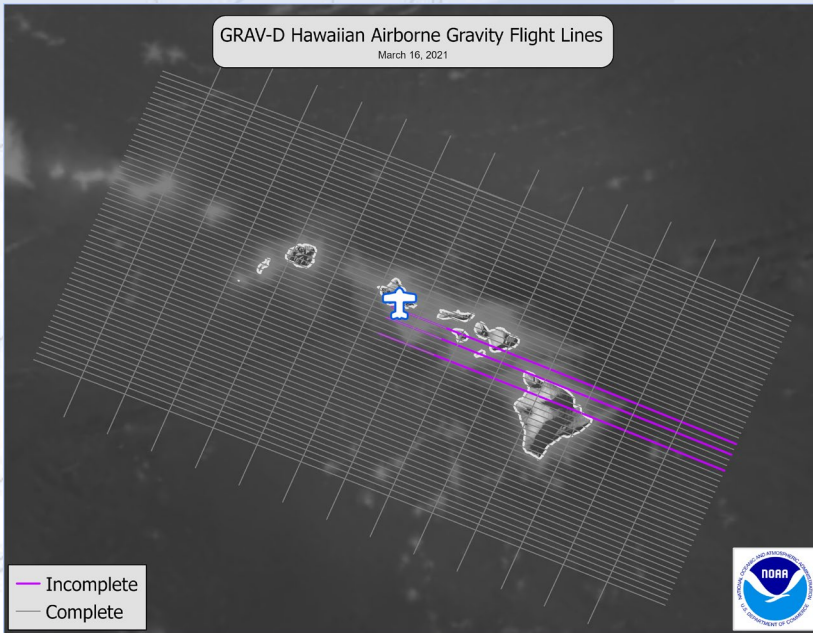
Guam/CNMI Survey

(2003 and 2017)

Improving the geospatial infrastructure of the territories of Guam and the Commonwealth of the Northern Mariana Islands



GRAV-D in the Pacific



- Hawaiian collection is ~97% complete
- Complete American Samoa (40% Complete) in 2023 or 2024.
- Guam (82% Complete) flying as of 04/25/2022.

Future Work

Improving the geospatial infrastructure for American Samoa

- CO-OPs installed a new tide gauge -2021
- USACE installed temporary gauge on Ta'u and working with CO-OPs.
- Lidar is being done in FY23.
- NGS plans to re-level the ASVD02 network in FY 23 or FY24.

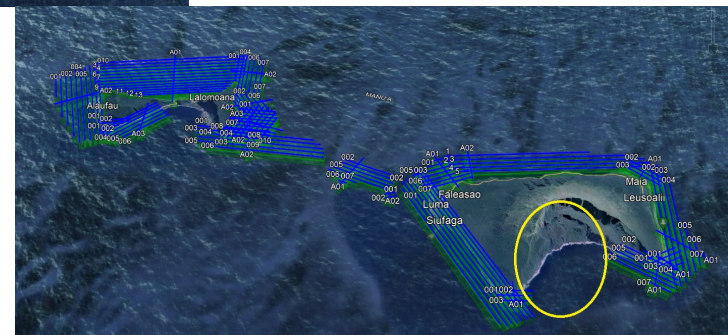
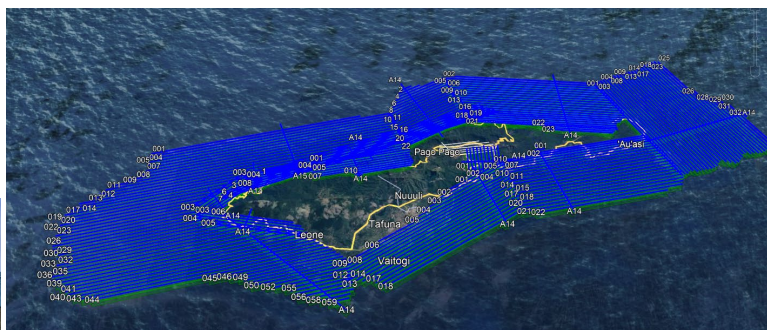
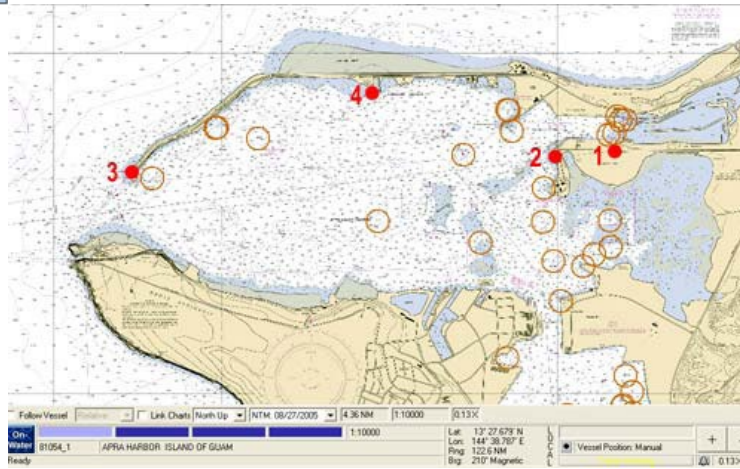
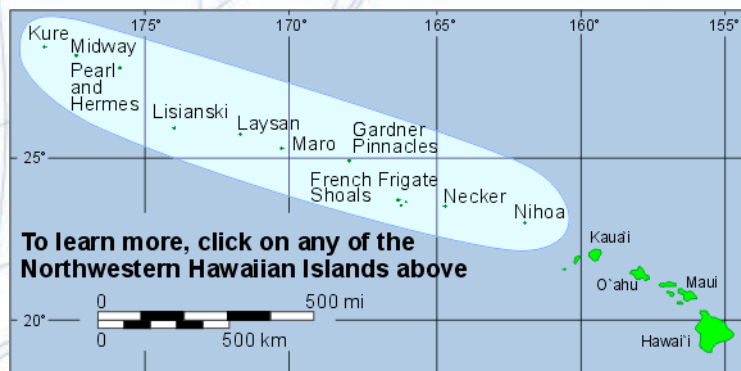


Chart Updates

- Northwest Hawaiian Islands
- American Samoa
- Guam and CNMI
- Palmyra Atoll, Jarvis Island, Howland & Baker Island, and Swains Island

Updates – NAD83 Datum, Features, Coast Pilot



CO-OPs

National Water Level Observation Network

Harbors:

Pago Pago - America Samoa

Tanapag – Saipan, CNMI

Apra – Guam

Kwajalein, RMI

Nawiliwili, Kauai

Honolulu, Oahu

Mokuole, Oahu

Kahului, Maui

Kawaihae, Hawaii

Hilo, Hawaii

Sand Island, Midway



Height Modernization Projects

- **Oahu (HIDOT)**
 - Ewa Plain
 - Downtown Area
 - Honolulu International Airport
- **Guam Shoreline**
 - Tumon Bay area
 - Agat Harbor area
- **US Army Corps of Engineers (EC 1110-2-6070)**
 - Guam Levees, Harbor, and Shore Protection
 - Saipan Levees, and Shoreline Protection
 - Hawaii Harbors
 - American Samoa Harbors



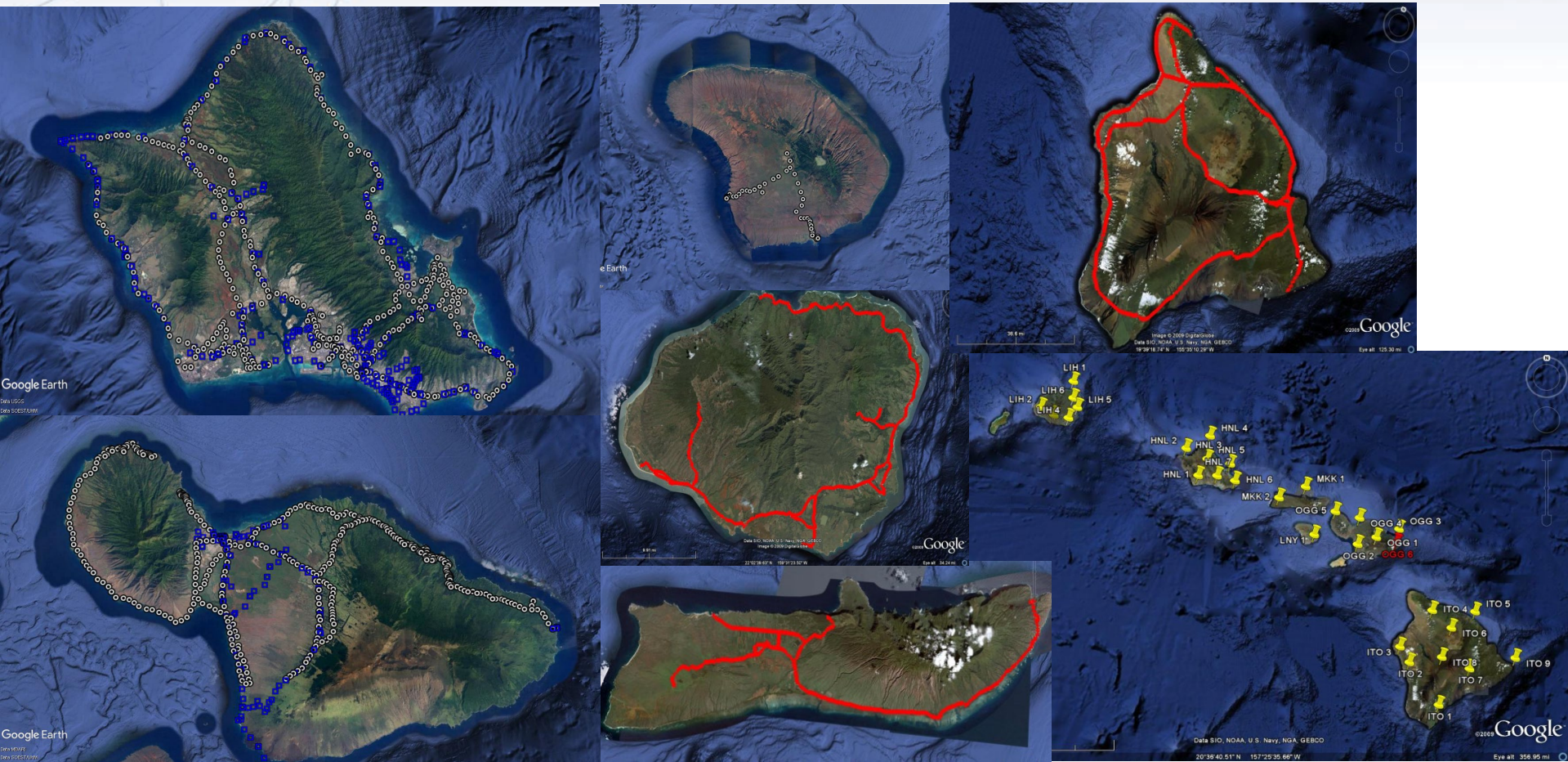
Height Modernization Projects

- **USGS (Pacific Islands Water Science Center)**
 - **Maui Wells**
 - **Hawaii Wells**
 - **Molokai Wells**
 - **Pearl Harbor Plane**
 - **Red Hill**
 - **Kauai Wells**
 - **Guam Wells**
 - **Saipan Wells**
- **Other**
 - **Sentinel Site at Kiholo and South Kohala**
 - **NERRs Site at He'eia**
 - **Republic of the Marshall Islands**

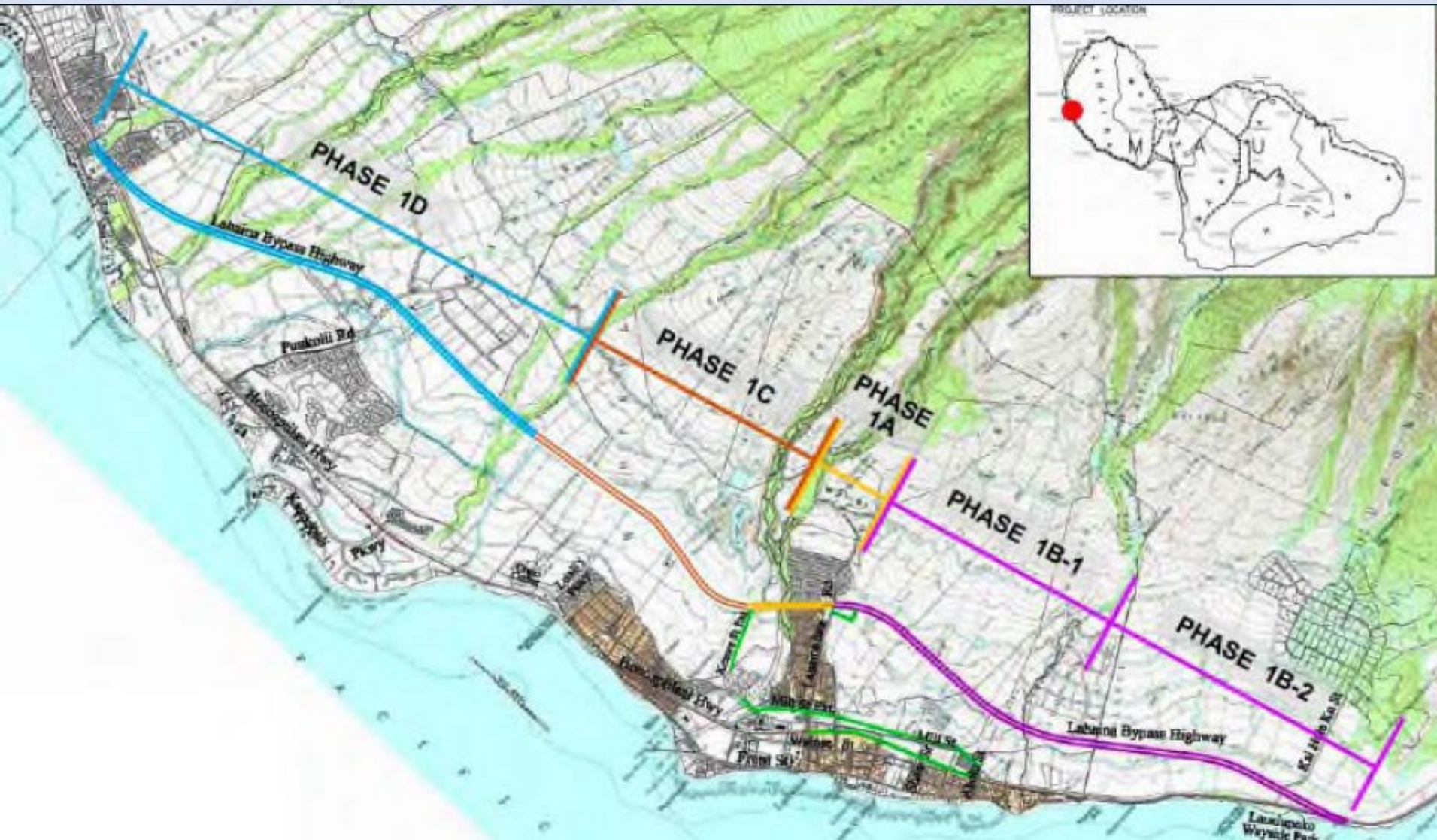


Hawaii DOT Projects

- About 1000 miles of Second Order Class II leveling on the islands.
- Virtual Reference Network

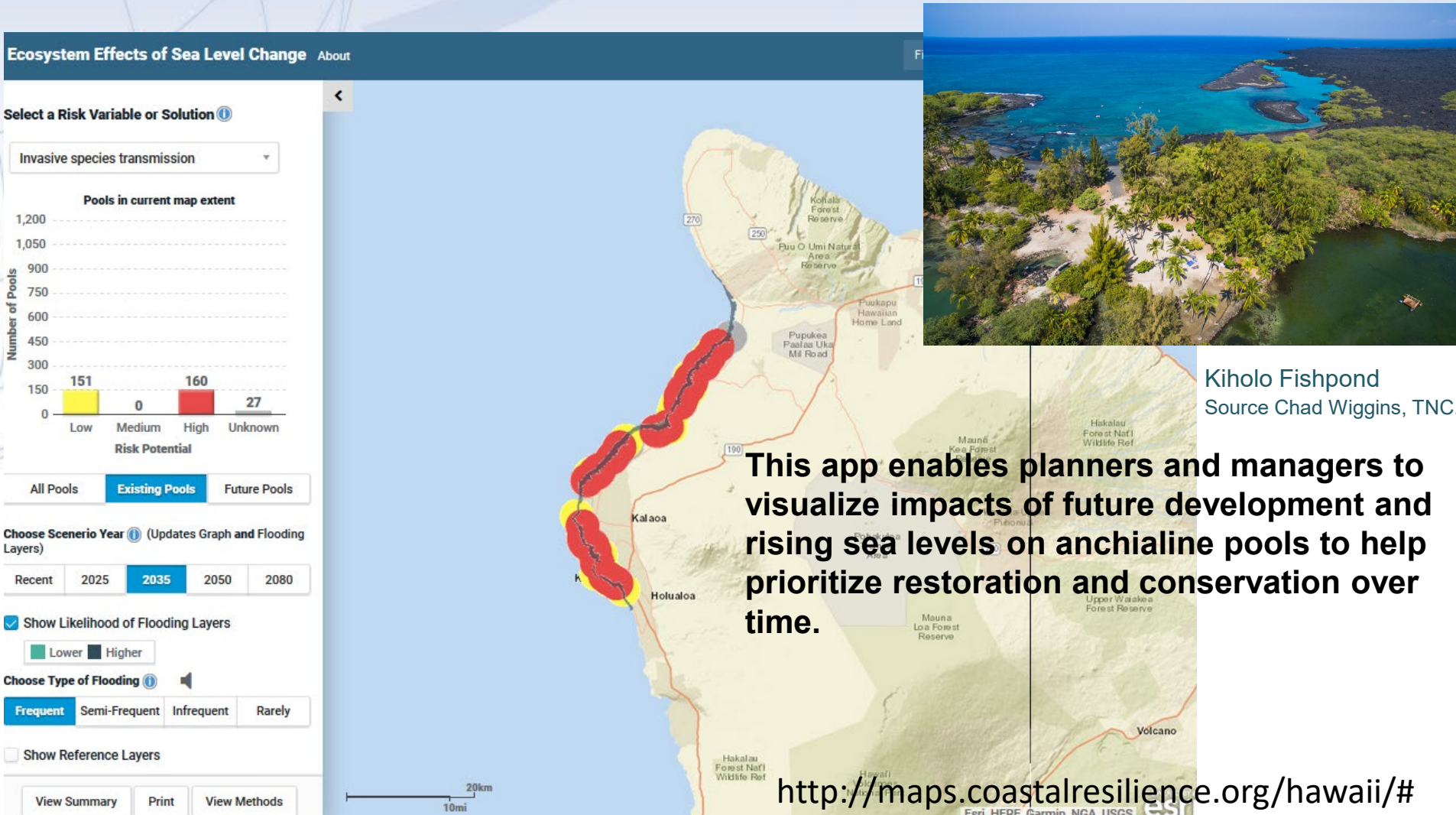


Realignment of Lihaina Bypass



Management Applications

TNC Tool: Ecosystem Effects of Sea Level Change



Management Applications

**Determining the Mean High Water
for Guam Department of Planning
for construction setbacks**

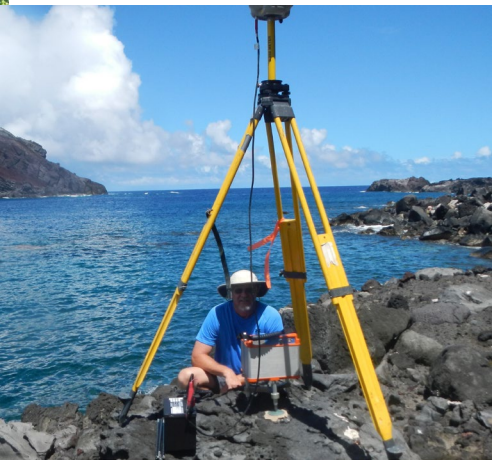
Tumon Bay, Guam



Summary

National Geodetic Survey builds the geospatial foundation for all charting, mapping, and modeling.

Starting with a consistent spatial framework, accurate elevations, and water levels enables users to turn data into information for planners and decision makers, supporting the blue economy and increasing our resilience.



Finally

All the great work being done by the presenters is **moot** if sea level rises to what these people are expecting.

