



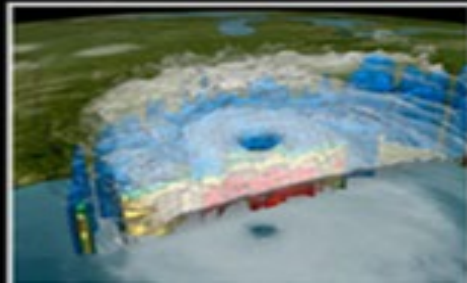
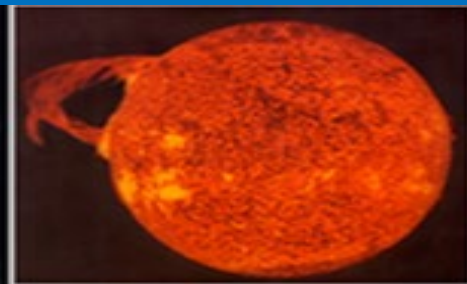
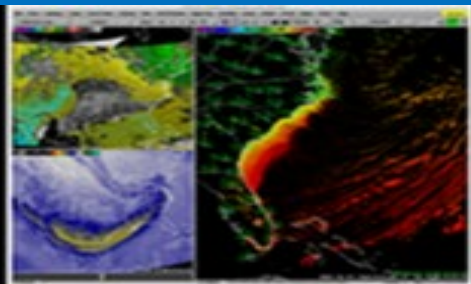
NOAA

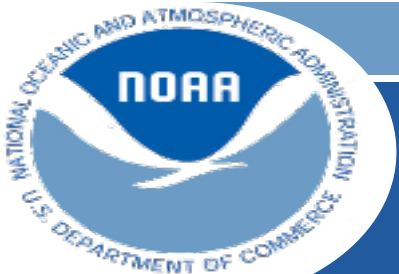
National Weather
Service

NOAA/NWS Tsunami Program Update

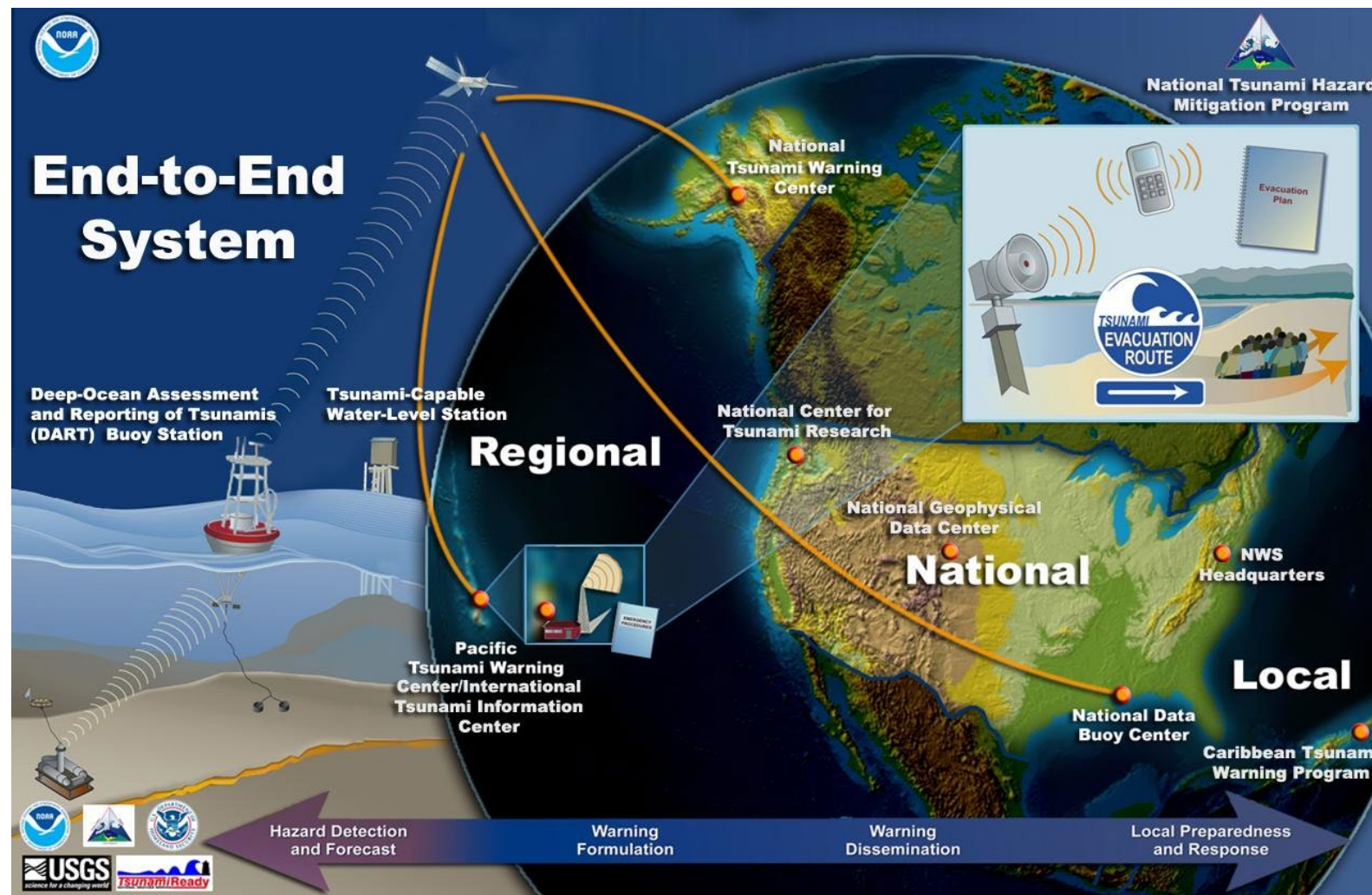
July 31, 2023

Mike Angove, NWS Tsunami Program Lead

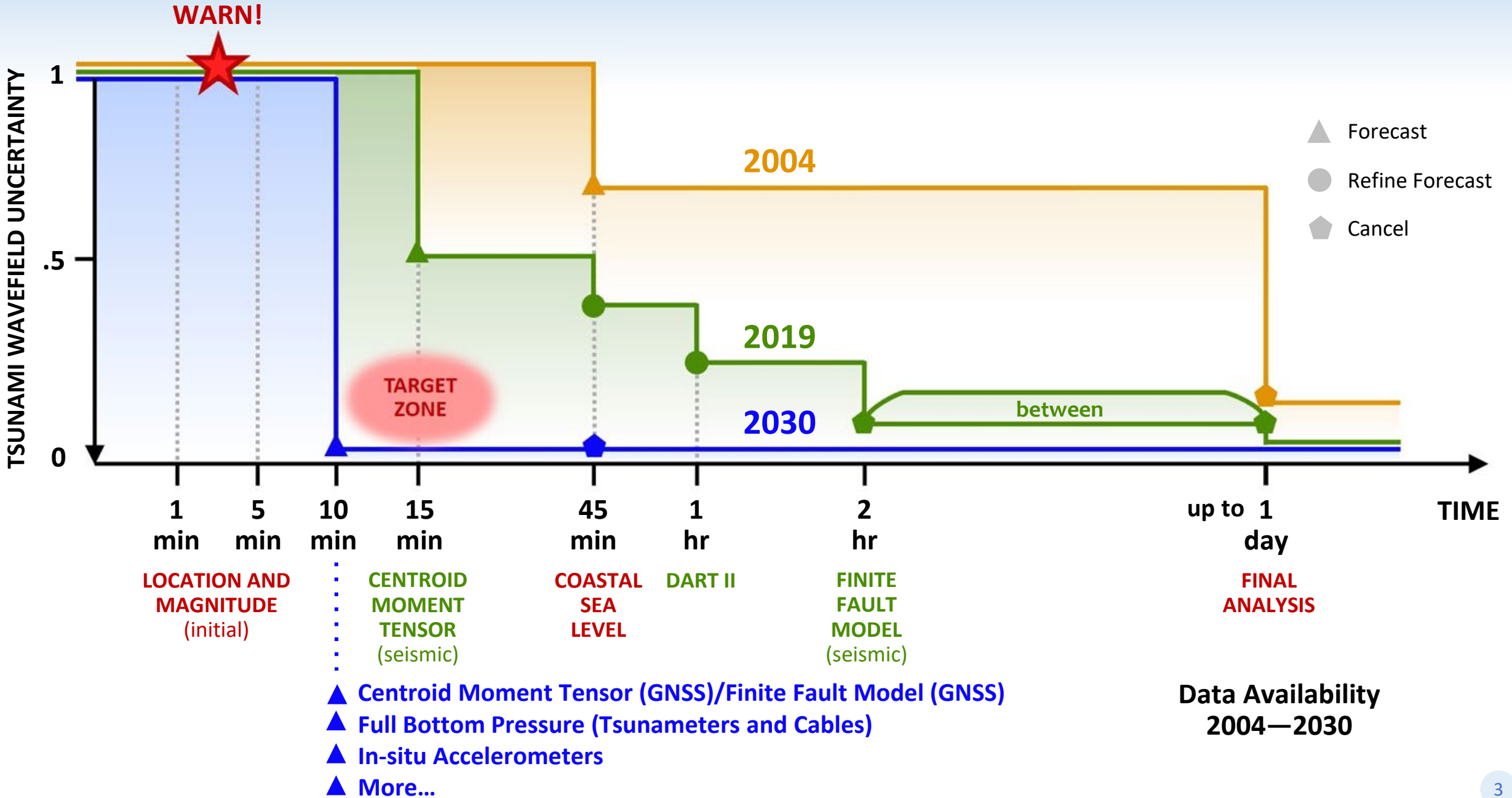




U.S. Tsunami Warning System

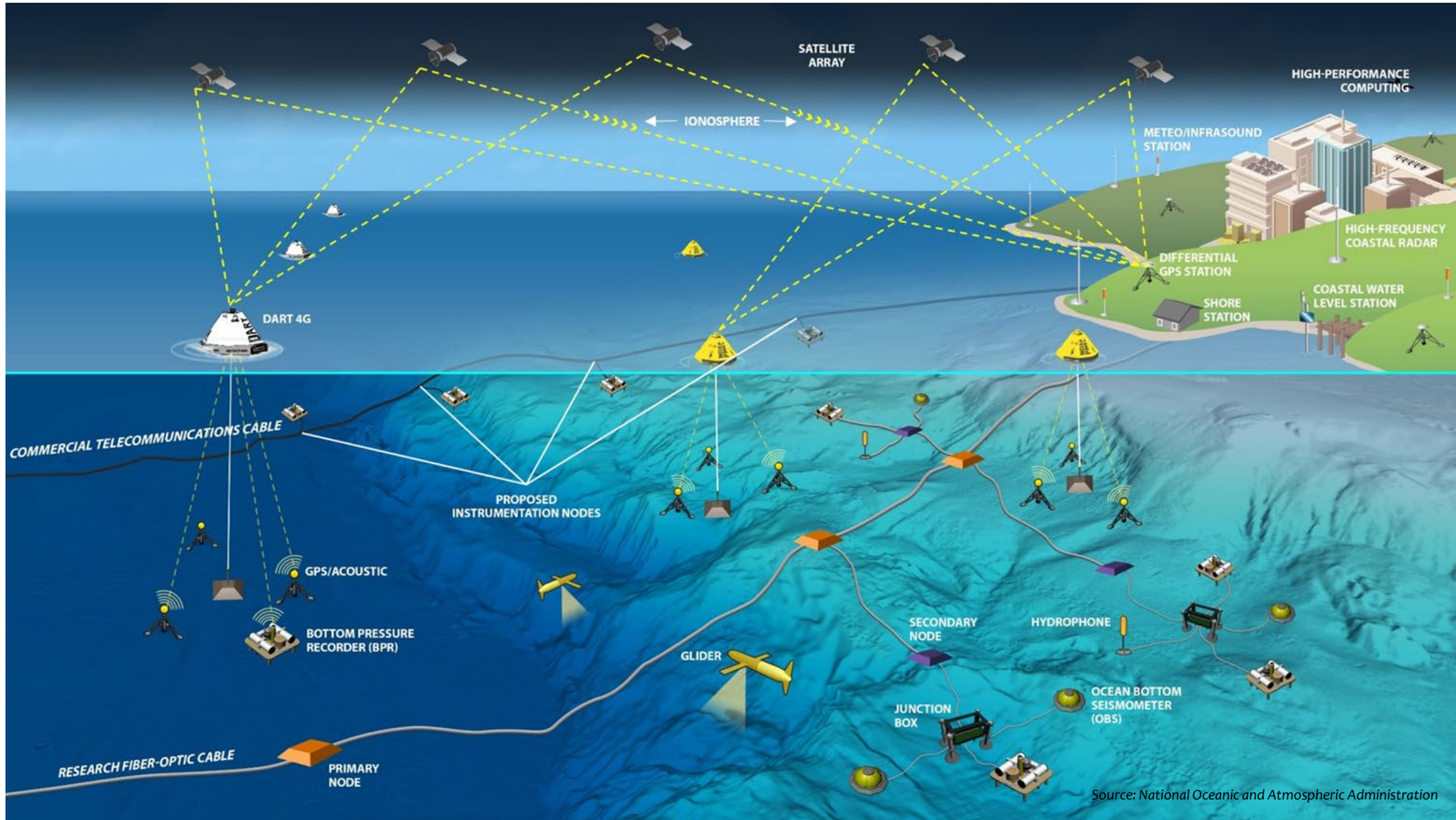


IMPROVING FORECASTS: TSUNAMI PROGRAM STRATEGY



Rethinking Ocean Observations:

Reducing Uncertainty in Global Tsunami Forecasts



Source: National Oceanic and Atmospheric Administration

Overview—TSTAP findings

URGENT ISSUES RAISED BY NOAA SCIENCE ADVISORY BOARD:

1. Addressing Risks associated with TWC operations.

“By operating the Tsunami Warning System as two independent regionalized components, instead of as a single national capability, the NWS introduces and accepts the risk of systemic inconsistency in warning products and resulting response when a tsunami event occurs. While this is not a “single point of failure,” as there is latent back up capacity, it is rather a “failover failure,” a symptom of not being unified. This situation raises grave concerns on the part of the SAB”


1. End-to-End alerting system.

“It is not a matter of if, but when the next tsunami will strike the U.S. coastline. The Tsunami Science and Technology Advisory Panel (TSTAP) sees an urgent need for action to ensure our nation is doing more to mitigate this risk and also doing everything possible to prepare and equip the end-to-end tsunami program with the tools and staff necessary to detect, forecast, and alert the public in a clear and timely fashion.”

Source: Letter of 06Jan2022 from NOAA SAB Chair John Kreider to NOAA Administrator



NOAA Assessment




Independent operation of the Tsunami Warning Centers (TWC) presents challenges. It should be noted that each of NOAA's Tsunami Warning Centers (the Pacific Tsunami Warning Center in Honolulu, HI, and the National Tsunami Warning Center in Palmer, Alaska) trace their roots to specific catastrophic tsunami events that primarily impacted the States of Hawaii and Alaska, respectively. This legacy carries through to the present day, as is stipulated in Public Law 15-125 Section 504 (Weather Act), which states:



The Centers shall include—

“(A) the National Tsunami Warning Center, located in Alaska, which is primarily responsible for Alaska and the continental United States;

“(B) the Pacific Tsunami Warning Center, located in Hawaii, which is primarily responsible for Hawaii, the Caribbean, and other areas of the Pacific not covered by the National Center;



With the current tools and procedures available to each TWC, they perform an independent analysis of the underlying tsunami event to serve their assigned section of coastline. This has historically hindered efforts to increase operational consistency between the TWCs, and this constraint also severely limits the ability of each Center to serve as real-time failover for the other.



Two years prior to this report being released, NOAA began a comprehensive internal effort to unify TWC operations.



TWC UNIFICATION



NOAA has identified merging current TWC Operations into a **Joint Operation** as necessary to address this finding.






















To **UNIFY** the TWCs and align with the NWS Strategic Plan we will:

- Incorporate tsunami product generation, messaging and dissemination **within NWS supported infrastructure: (In development)**
- Establish modern, **Common Analytic System** between TWCs establishes the technical piece needed for One Event, One Forecast. **(Requirements gathering)**
- Establish **Single Chain of Command** and Office Functions to Support and Sustain Operations and ensure One Event, One Forecast. **(TBD)**



TSTAP Findings / Recommendations



<p>Improve unification and capabilities of the Tsunami Forecast System</p>	
<p>Improve tsunami detection and observation systems</p>	   
<p>Provide more extensive, consistent, and accurate tsunami messages and products</p>	
<p>Develop enhancements to Tsunami Warning Center forecasts and alert systems</p>	 
<p>Improve consistency in tsunami preparedness and mitigation products for communities</p>	 
<p>Produce guidance for improving long-term community resilience to tsunami hazards</p>	 
<p>Improve tsunami hydrodynamic modeling</p>	 
<p>Develop tsunami research priorities and leverage research opportunities</p>	    

Other Discussion/Q&A

- ***HAZSIMP***
- ***WEA***
- ***TsunamiReady***
- ***NRI***
- ***Strategic Plan***
- ***NTHMP Grants***



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