



# SCIENCE ADVISORY BOARD

12 May 2022

Dr. Richard W. Spinrad  
Under Secretary of Commerce for Oceans and  
Atmosphere & NOAA Administrator  
Herbert C. Hoover Building, Room 6811  
14th Street & Constitution Avenue, NW  
Washington, DC 20230

Dear Dr. Spinrad:

***Subject: Transmittal of the SAB Tsunami Science and Technology Advisory Panel Post-Tsunami Review Report***

On behalf of the NOAA Science Advisory Board (SAB), I am pleased to transmit to you the Tsunami Science and Technology Advisory Panel (TSTAP) *Post-Tsunami Review Report*. In December 2021, the SAB approved the TSTAP's first quadrennial Report to Congress. Just over a month later, there was a volcanic eruption in Hunga Tonga-Hunga Ha'apai resulting in a tsunami affecting the entire Pacific Ocean and causing atmospheric pressure waves that circled the Earth several times. This *Post-Tsunami Review Report* serves to underscore and amplify many of the recommendations made in the December 2021 quadrennial report, using observations made from a real-time event. Despite the uncertainties of this uncommon non-seismic source event, the TSTAP and SAB commend NOAA for their ability to provide an accurate forecast with the resources they had available. The SAB also commends TSTAP for preparing a very thorough analysis of the tsunami in the attached report.

The TSTAP has determined that at least 15 of the 22 recommendations made in the December 2021 quadrennial report were fully or partially substantiated by the outcomes from the Tonga event. While the findings and observations were not ranked, the following represent the four of highest priority:

- Expand Tsunami Warner Center capabilities to include volcanic and other non-seismic sources.
- Send out earlier decision-support information about potential Advisories and/or threats to give emergency managers more time to implement response activities and inform local officials who authorize actions such as closing beaches and harbors.
- Update notification and messaging system to address confusion, particularly caused by the limitations of the Tsunami Warning Center software to handle non-seismic source tsunamis.
- Given confusion over the term "advisory," NOAA should evaluate messaging and impacts of this Tonga event in more detail prior to any changes to tsunami alert terminology.

As this report is considered an addendum to the December 2021 quadrennial report and does not offer any new recommendations, a separate response from NOAA is not required beyond the response to the quadrennial report. The SAB greatly appreciates the opportunity to provide these comments to NOAA, and we welcome the opportunity to further engage NOAA on this topic if desired.

Very Respectfully,

A handwritten signature in black ink, appearing to read "John R. Kreider". The signature is fluid and cursive, with the first name "John" being the most prominent.

John R. Kreider  
SAB Chair

Cc: Karen Hyun  
Michael Weiss  
Cisco Werner  
Mary Erickson  
Andrea Bleistein  
Mike Angove  
Emma Kelley  
Cynthia Decker  
Rocky Lopes  
Rick Wilson  
Courtney Edwards  
Andrew Peck

Attachment: SAB Tsunami Science and Technology Advisory Panel Post-Tsunami Review Report