



**International Union of Geodesy and Geophysics
Commission on Geophysical Risk and Sustainability**

**Report of IUGG Grants 2020-2023 entitled:
*Implementing IUGG 2015 Resolution #4: Organization of the GNSS Tsunami Early Warning (GTEWS) Consortium.***

April 4, 2024

In 2020 the Commission on Geophysical Risk and Sustainability was granted an IUGG grant entitled ***Implementing IUGG 2015 Resolution #4: Organization of the GNSS Tsunami Early Warning (GTEWS) Consortium.*** The proposal was to implement IUGG 2015 Resolution #4. The GTEWS 2017 workshop reported that several western Pacific nations were reticent to share of real time GNSS data needed for regional tsunami tsunami early warning. The proposal sought to bring together a “Meeting of Principals” to discuss and to hopefully solve this reticence in accordance with 2015 Resolution #4.

Unfortunately, these first efforts were hampered by the global pandemic that created high stress and poor funding, and dangerous or prohibited travel amongst likely participants interactions difficult. Because of these difficulties the GRC never requested the transfer of the \$10,000 funding to its treasury. Despite these difficulties the GRC did vote to make the GTEWS Oceania as a high priority initiative for the Commission. The GRC in collaboration with the IAG/GGOS initiated contact with the Disaster Risk Reduction task forces of the Group on Earth Observation (GEO) as well as conducting dialogue with representatives of the 18 member 20 nation GGOS working group for GNSS Augmentation for Tsunami Early Warning. No grants funds were received by the GRC.

In 2022, [the GRC resubmitted the 2020 proposal](#) for the 2022 IUGG grant offering. The GRC resubmission was reviewed the \$10,000 grant was renewed in 2020. The first step under the renewed grant was to build collaboration amongst institutions influential in disaster risk reduction.

The IAG and the GGOS Geohazards Focus Area support for the proposed Meeting of Principals was endorsed by the GGOS Coordinating Committee and approved by the IAG President.

Allison Craddock the Director of the iGS Central Bureau, John LaBrecque and John Rundle promoted the recognition of a [Geodesy4Sendai activity](#) of the GEO work programme 2020-2026 to demonstrate the utility of Geodetic Science and Applications in Disaster Risk Reduction. The concept of GTEWS contribution to Disaster Risk Reduction was included as a program of the Geodesy4Sendai program. The activity of the GRC GTEWS Oceania Initiative is a program within the GEO work program 2022-2026.



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The collaboration between the GRC, the IAG/GGOS and the IAG/IGS provided the opportunity to present the developing concept of a GTEWS Oceania geospatial array to enhance existing tsunami warning capabilities in accord with 2015 IUGG Resolution #4. [The GRC presented a report on the GTEWS Oceania Initiative for the Tour d'IGS](#), available on YouTube. The need for improved GTEWS in the Oceania region was amply demonstrated by the JPL presentation of their newly initiated real time Guardian TEC measurement of Ionospheric response to the the largest volcanic eruption in recorded history [Hunga Tonga–Hunga Ha‘apai on January 19, 2023](#).

These and other interactions led to ten monthly virtual meetings of the GTEWS Oceania Working Group with several intervening splinter meetings. The purpose of these meetings was to formulate the development of the GTEWS Oceania Initiative. All ten monthly (Feb 28,2023-Feb 20, 2024) [meeting recordings can be accessed here](#). Some of the items

- the launch of GTEWS Oceania; [Meeting 1](#)
- the decision for a GTEWS_Oceania workshop; [Meeting 5](#)
- Consideration of a [draft charter for the GTEWS Oceania Council](#) similar to the recommendation #1 by the GTEWS 2017 workshop.
- organization and a future Suva, FIJI workshop. (Folau and D'Anastasio)
- Presented to the UNGGIM-AP Plenary on the concept of a regional GTEWS
- [The following items were reported on in Mtg 10](#):
 - Planning began the installation of multiple GTEWS stations on the FIJI islands to augment programs by Australia, NZ and Fiji
 - presentation to the PGSC Sydney Plenary on GTEWS Oceania Initiative and an invitations to the PGSC to host the GeTEWS Oceania 2024 workshop.
 - formation of a GTEWS Oceania 2024 workshop organizing committee tWorkshop;
 - The venue for the GTEWS Oceania 2024 workshop was offered by the PGSC during the week of Nov 4-8, 2024.

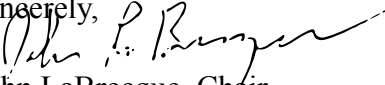
Representatives of twelve organizations participated in the work of the GTEWS Oceania Initiative during 2023. Most prominent among these organizations is the Joint Tsunami Commission following discussions facilitated by Yuhe Song the GRC-JTC liaison.

Budget: The GRC received \$10,000 stipend from this grant. These funds are precious and will be needed to the support the broad participation for Oceania nations and other experts.of the GTEWS Oceania Workshop, Therefore the contributors to the GeTEWS Oceania Working group donated their efforts to increase the support for a successful GeTEWS Oceania workshop.**Note: The PGSC is the lead applicant and the Joint Tsunami Commission is the Lead Supporting application for the 2024 IUGG Grant program.**



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We hope that you agree that the GRC its members and colleagues have achieved significant advances in the implementation of IUGG 2015 Resolution #4 proposed in the IUGG 2022-2023 grant.

Sincerely,


John LaBrecque, Chair
Union Commission on Geophysical Risk and Sustainability