

**From:** Committee on Rules 36GL <cor@guamlegislature.org>  
**Sent:** Monday, June 6, 2022 10:22 AM  
**To:** Clerks; Rennae Meno  
**Subject:** Messages and Communications Doc. No. for 36GL-22-2098.  
**Attachments:** 36GL-22-2098.pdf

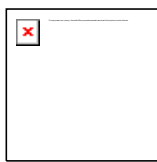
*Håfa Adai* Clerks,

Please see attached M&C Doc. No. 36GL-22-2098 for processing:

36GL-22-2098	Hydrogeological Map of the Northern Guam Lens Aquifer.	University of Guam - Water and Environmental Research Institute of the Western Pacific
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**Hard copy includes WERI Technical Report No. 142 - August 2014 booklet and state-of-the-art map (too large to be scanned).**

*Si Yu'os Ma'åse'*



## COMMITTEE ON RULES

Vice Speaker Tina Rose Muña Barnes  
36th Guam Legislature  
*I Mina'trentai Sais Na Liheslaturan Guåhan*  
163 Chalan Santo Papa Hågatña Guam 96910  
Email: [cor@guamlegislature.org](mailto:cor@guamlegislature.org)

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----- Forwarded message -----

**From:** Speaker Therese M. Terlaje <[speaker@guamlegislature.org](mailto:speaker@guamlegislature.org)>  
**Date:** Fri, Jun 3, 2022 at 1:45 PM  
**Subject:** Messages and Communications for 36GL-22-2098  
**To:** Legislative Secretary Amanda Shelton <[officeofsenatorsshelton@guamlegislature.org](mailto:officeofsenatorsshelton@guamlegislature.org)>, Committee on Rules 36GL <[cor@guamlegislature.org](mailto:cor@guamlegislature.org)>

*Håfa Adai,*

Please see attached M&C Doc. No. 36GL-22-2098.

36GL-22-2098	Hydrogeological Map of the Northern Guam Lens Aquifer.	University of Guam - Water and Environmental Research Institute of the Western Pacific
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*Note: Hard copy was hand delivered (includes WERI Technical Report No. 142 - August 2014 booklet and state-of-the-art map).*

*Si Yu'os Ma'åse',*

Marie Cruz  
Community Relations Liaison

Office of Speaker Therese M. Terlaje  
Committee on Health, Land, Justice and Culture  
I Mina'trentai Sais na Liheslaturan Guåhan  
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May 31, 2022

Doc Type 36GL-22-2098  
OFFICE OF THE SPEAKER  
THERESE M. TERLAJE

To: **Honorable Therese M. Terlaje, Speaker**  
Senator  
Guam Congress Building  
163 W. Chalan Santo Papa  
Hagatna, Guam 96910

-06- 02 2022

Time: 12:37pm  
Received: [Signature]

From: **Director, WERI, John W. Jenson, Ph.D.**

Subject: **Hydrogeological Map of the Northern Guam Lens Aquifer**

Dear Senator Terlaje:

We at WERI are pleased and proud to provide you with this state-of-the-art map of the Northern Guam Lens Aquifer. Comprehensive, accurate, up-to-date hydrogeological maps are the most basic and essential tools for managing aquifers everywhere. I frequently describe our aquifer as the World's Best Aquifer because of its exceptional capacities for capturing rainwater, storing groundwater, and releasing abundant high-quality freshwater to our production wells. We on Guam are truly blessed to have the entire northern half of our island underlain by this extraordinary aquifer. The future of our economy and quality of life depend on successful management of it.

This map of our island's aquifer is therefore one of WERI's flagship products. It combines information on the Northern Guam Lens Aquifer that WERI has collected, archived, analyzed, and produced in the 25 years since 1998, when the 24<sup>th</sup> Guam Legislature established the Guam Comprehensive Water Monitoring Program (CWMP) to collect the data and the Guam Hydrologic Survey (GHS) to provide Guam's water resources engineers, managers, regulators, policy makers, and citizens with reliable information, advice, and tools for sustainable development and management of Guam's freshwater resources.<sup>1</sup> With the data and funding from the CWMP and GHS, WERI maintains this map and provides technical support of it to every agency and individual who has a part to play in the development and management of the World's Best Aquifer. In addition to having this poster-sized hard-copy version to display on a wall or spread out on a table, you may use the QR codes below to download the PDF file to your computer hard-drive and to load an application to your smartphone.

The aquifer map was one of the first projects started in 1998 with funding from the newly established GHS program,<sup>2</sup> and it now reflects 25 years of investment in local talent of the students who built the databases, compiled the maps, and carried out the accompanying research, many of whom are now

<sup>1</sup> The epic El Nino of 1997-1998 brought both heavy storms and a prolonged severe drought, causing widespread concern about the vulnerability of the island's water supply and prompting decisive action by the Legislature to restore local data collection and analysis.

<sup>2</sup> The aquifer map began in 1998 as the thesis project for Mr. David Vann, one of the first students who had joined UOG's new graduate environmental science program. With funding from the new Guam Hydrologic Survey (GHS) Program, Mr. Vann set out to update the basement topographic map from the 1982 Northern Guam Lens Study, and spent the next two years tracking down and scanning drilling logs, water well as-builts, and other historical records stored in rusty old filing cabinets and dusty boxes stacked in the backs of containers at civilian and military agencies and residing in binders on shelves at engineering and environmental firms all across the island. What began as his thesis was expanded upon by others and eventually published as WERI Technical Report 142: Vann et al., 2014, *Topography of the Basement Rock beneath the Northern Guam Lens Aquifer and its Implications for Groundwater Exploration and Development*.

**WATER AND ENVIRONMENTAL RESEARCH INSTITUTE OF THE WESTERN PACIFIC**

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employed in local water resources technical and managerial positions.<sup>3</sup> The database from which it is built was another outcome of the early GHS projects, and now contains more than 4,000 historical records.<sup>4</sup> The most recent versions of the map have incorporated results from our ongoing groundwater modeling studies and the latest (2012) high-resolution LiDAR data of Guam's surface topography, along with an overlay of surface infrastructure, coastal bathymetry, and other state-of-the-art products and tools. We are now also working with the Kumisión I Na'an Lugåt Guåhan to incorporate historical local names in this and WERI's other maps of Guam's water resources.<sup>5</sup>

Detailed descriptions and explanations of the aquifer database and map are provided by WERI Technical Reports 141 and 142, respectively, which can be downloaded from our Guam Hydrologic Survey website at <https://guamhydrologicsurvey.uog.edu/index.php/library/sort-and-search-library/>. Besides providing background information, the technical reports can be regarded as user's manuals. WERI also provides formal orientation and training on the database and map at our annual professional workshops, for which the dates are posted on our website. We are, of course, available at any time to answer your questions or provide technical assistance. Please call us at 671-735-2685, or email us at [weri@triton.uog.edu](mailto:weri@triton.uog.edu) to be directed to the appropriate subject-matter expert.

QR codes:

[WERI WEBSITE](#)



[NGLA MAP \(MOBILE\)](#)



[GUAM HYDROLOGIC SURVEY WEBSITE](#)



[NGLA MAP \(PDF\)](#)



cc: Senior Vice President and Provost  
President

COMITTEE ON RULES  
RECEIVED:

June 3, 2022

1:45 P.M.

<sup>3</sup> Between 20 and 25 of about 70 alumni of the program have worked or are currently working in local public agencies and private firms.

<sup>4</sup> Published as WERI Technical Report 141: Bendixson, V.M., 2013, *The Northern Guam Lens Aquifer Database*. The original database was the product of Ms. Viviana Bendixson's graduate environmental science thesis.

<sup>5</sup> Dr. Nathan Habana, Associate Professor of Groundwater Hydrology, and WERI Senior Hydrologist, oversees the GHS database and website and leads WERI's groundwater modeling program. Has been the principal architect of the aquifer map as it has evolved from the original basement topographic map to its current form integrating the several elements beyond the basement topography. He is also a consultant to the Kumisión I Na'an Lugåt Guåhan, building maps and advising on water-related questions.