

## **Not My Fault: Manila first-in-the-nation Tier Two TsunamiReady Community**

Lori Dengler/For the Times-Standard  
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Manila is the first in the nation! Manila leads the country! Manila is the first US community to achieve TsunamiReady Tier Two status.

TsunamiReady, developed by NOAA in 2001, encourages basic community tsunami preparedness. Originally, the program focused on hazard assessment and receiving/disseminating warnings from the tsunami warning centers. Communities worked with their regional National Weather Service (NWS) Office and State Emergency officials to assure compliance with the program standards.

Crescent City achieved TsunamiReady status in 2003, the first in the State to do so. Since then, Samoa, Orick, the Yurok tribe, Redwood National & State Parks, Big Lagoon Park & Rancheria, and King Salmon have all achieved recognition. They join 46 other TsunamiReady entities in California that include counties, tribes, universities and other organizational structures.

The initial focus of TsunamiReady, nationally, was on tsunamis coming from far away. TsunamiReady status meant having a 24/7 warning point to receive warnings and demonstrating the ability to mobilize emergency personnel to conduct an organized evacuation. But the great tsunamis of the past 15 years have drawn attention to the local or near-source tsunami where the most important warning is feeling the shaking and the imperative is for people to self-evacuate without benefit of official guidance.

In 2015, NOAA recognized that some communities are at much higher risk of near-source tsunamis and proposed modifications to the TsunamiReady program. Our own Meteorologist-in-charge Troy Nicolini of the Eureka NWS Forecast Office was part of the group that revamped requirements and helped to develop a two-tiered approach. The original TsunamiReady status still has a primary focus on distant tsunamis, although does include outreach that addresses near-source events, something we've always done on the North Coast.

The Tier Two program was established for communities at high risk of large, local tsunamis. The greatest risk in Tier Two communities is a major regional earthquake causing shaking damage, disrupting roads and communication and followed in as little as ten minutes by a series of very large tsunami surges. The official lines of communication won't work in this case so Tier Two emphasizes developing and enhancing evacuation routes and considering additional "hard" mitigation solutions such as berms and vertical evacuation.

To achieve Tier Two recognition, a community must not only have clearly defined hazard zones, they must identify evacuation sites and work to eliminate any barriers to evacuation. Tier Two communities are likely to experience significant damage in a tsunami and must also meet response and recovery requirements, such as debris removal and recovery plans.

An important part of Tier Two is recognizing that additional resources may be needed to make a community safe from a major near-source tsunami. The original TsunamiReady program had a drawback. If a community had received such recognition, then some granting agencies assumed they should be ok and wouldn't need additional grants to improve their preparedness. Tier Two can actually highlight vulnerabilities and helps build a case for additional support.

The NWS and the Redwood Coast Tsunami Work Group (RCTWG) began working with Manila Community members and organizations in 2012. Possible evacuation routes were defined based on the State tsunami hazard mapping. All evidence supported the high dunes as places of safety. Two potential barriers immediately became clear. First, Hwy 255 (New Navy Base Road) had a fence that separated much of Manila from the high dunes. We are fortunate that Caltrans District 1 representatives are members of the RCTWG and came up with a creative solution – install gates in the fence.

The second problem was the high-tension power lines that cross over many of the evacuation routes. These lines are very dangerous on the ground and we didn't want anyone getting within ten feet of them. We have a good relationship with PG&E's seismic hazard group and they sent a group to assess the engineering stability of the line support towers. I spent a day in the field with them expressing our concerns. They are designed to withstand 100+ mph winds, stresses in excess of what even a large earthquake will produce. The team looked carefully at all

the supports and were willing to sign off on a letter about their likely ability to remain in place.

In 2013, Manila held a community-wide evacuation drill, preceded by community meetings and door-to-door flyers and information. Unlike Samoa where the whole community can make it to a single evacuation area, Manila is spread out with five separate high dunes defined as areas of safe haven. The hardest sell is to convince residents and visitors to head to the dunes and not to their cars. Trying to drive out of the hazard zone puts you in the worst possible spot at the time the waves are likely to arrive. Plus roads are likely to have been damaged by shaking and snarled with traffic jams.

For the past year, Manila community members and organizations have been working with the NWS to check off all the Tsunami Tier Two requirements and last month, they made the grade – the first in the nation to be so recognized. Of course that doesn't mean Manila residents and visitors can now sit back and assume they are "Tsunami Safe." It means continuing the work of education, outreach, communication and drilling, drilling, drilling and being an example for the rest of the country.

Note: Take additional care to be aware of your surroundings this holiday season. If you are out of town, pay attention to what emergencies could arise and what to do about them. If you have out of town visitors, tell them what to do if an earthquake interrupts your festivities. Point out the tsunami and other beach hazard signs and remind everyone never to turn their back on the ocean. Enjoy holiday concerts and gatherings but take a moment to check out the exit routes – even in places you think you are familiar with. And it's always a good idea to carry a flashlight, water, warm clothing and food in your car. You never know when you might be stranded.

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Lori Dengler is an emeritus professor of geology at Humboldt State University, an expert in tsunami and earthquake hazards. Questions or comments about this column, or want a free copy of the preparedness magazine "Living on Shaky Ground"? Leave a message at (707) 826-6019 or email [Kamome@humboldt.edu](mailto:Kamome@humboldt.edu)

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