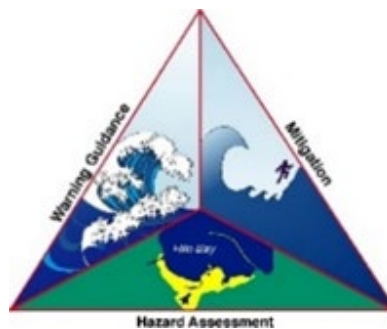# TsunamiReady® Program Recommendations

developed by the

National Tsunami Hazard Mitigation Program's

Mitigation and Education Subcommittee

as requested by the National Weather Service

July 2024

Introduction

The TsunamiReady Program provides a method for promoting tsunami preparedness in communities at risk and helps facilitate a "Whole Community" approach that engages scientific partners, policy makers, emergency mangers, and community members in tsunami risk reduction efforts.

At the request of the National Weather Service (NWS) in June 2023, the NTHMP Mitigation and Education Subcommittee (MES) was asked to review the TsunamiReady Program Guidelines and forms and provide recommendations for improvements prior to the next renewal scheduled for November 2024. The NTHMP MES reviewed TsunamiReady Program documents and discussed the TsunamiReady Program at meetings held in July 2023. During the MES meeting session at the 2023 NTHMP Summer Meeting, a recommendation was made for the formation of a work group to review the TsunamiReady Program and develop recommendations. An interdisciplinary work group (Tiger Team) was formed consisting of 13 MES members representing eight States and Territories and multiple NOAA offices. The work group met regularly between September 2023 and May 2024 to develop these TsunamiReady recommendations.

The work group presented their process and preliminary recommendations to the broader MES. Further, in April 2024 all NTMHP members were provided an opportunity to comment on the work group's recommendations. The work group addressed the NTHMP comments and made modifications, as needed.

The MES recognizes that the TsunamiReady Program has provided a blueprint for NTHMP Partners (e.g., States, Territories, communities, etc.) to develop a foundation for tsunami mitigation, preparedness, and response. The MES sees continued value in promoting and strengthening the TsunamiReady Program to maintain a minimum baseline for working towards tsunami resilience; hence, encouraging the adoption of TsunamiReady guidelines in more communities, as well as maintaining and strengthening tsunami activities in communities already recognized as TsunamiReady.

The TsunamiReady Program has succeeded in establishing a minimum baseline for tsunami mitigation, preparedness, and response; however, limitations in the program were identified by the MES reviewers. Some of these limitations were identified by previous Program reviews (documents listed in Attachment 5) and persist today. The MES recommendations address challenges including program administration, incentives, expansion, and modernization. In TsunamiReady communities, the MES believes a need exists for innovative approaches to risk communication and delivery of scientific knowledge in addressing tsunami hazard and protecting vulnerable populations. As such,

the TsunamiReady Program should continue to build upon the success of the program by expanding and strengthening guidelines and program oversight.

This document provides a summary of recommendations for the TsunamiReady Program and includes additional materials developed by the work group during review of the TsunamiReady Program.

Many of the TsunamiReady Program recommendations are general topics and suggested areas for improvement to the TsunamiReady program, and do not specify the specific actions or plan for implementation. The specific actions were beyond the scope and time available to this work group and can be the products of future coordination between the NWS and NTHMP Partners. The recommendations can be used as a guide to inform future NTHMP subcommittee workplans and grant activities.

The NTHMP appreciates the opportunity to be a partner with the NWS in development and delivery of the TsunamiReady Program and looks forward to continued collaboration and consultation as recommendations are considered for inclusion in the upcoming renewal and ongoing program improvements.

This document includes the following attachments:

1. TsunamiReady Tiger Team Contributors
2. List of NTHMP TsunamiReady Tiger Team Recommendations
3. FAQs for NTHMP TsunamiReady Tiger Team Recommendations
4. TsunamiReady Topics for Further Consideration
5. Summary of TsunamiReady related documents and supporting information reviewed by Tiger Team
6. TsunamiReady Tiger Team Comments Tracker

NTHMP TsunamiReady Tiger Team Contributors

Nic Arcos – NOAA National Centers for Environmental Information (NCEI), MES Chairperson

Ryan Aylward – National Weather Service (NWS), Eureka Weather Forecast Office (WFO)

Todd Becker – California Governor's Office of Emergency Services (Cal OES), Tiger Team Lead, MES Chairperson

Mark Benthien – Statewide California Earthquake Center (SCEC), TsunamiZone

Regina Browne – Virgin Islands Territorial Emergency Management Agency (VITEM), MES Chairperson

Ed Fratto – Northeast States Emergency Consortium (NESEC)

Wildaomaris Gonzales – Puerto Rico Emergency Management Bureau (PREMB)

Mario Kapiat – Commonwealth of the Northern Mariana Islands (CNMI) Homeland Security & Emergency Management

Matthew Palmer, California Governor's Office of Emergency Services (Cal OES

Althea Rizzo – Oregon Department of Emergency Management (OR OEM)

Dave Snider – National Tsunami Warning Center (NTWC)

Elyssa Tappero – Washington Emergency Management Division, (WA EMD)

Christa von Hillebrandt-Andrade- International Tsunami Information Center (ITIC)

List of NTHMP TsunamiReady Tiger Team Recommendations

List of NTHMP TsunamiReady Tiger Team Recommendations

A. TsunamiReady Guideline and Form Recommendations:

A1. TsunamiReady communities should annually document tsunami public education efforts.

A2. Include a checkbox on the TsunamiReady application acknowledging that Local Emergency Manger has informed Flood Plain Manager of TsunamiReady designation and available CRS Points.

A3. 24-hour warning point procedures relating to tsunamis should include specific response actions for all Tsunami Alert Levels from the Tsunami Warning Center (i.e. Information Statements, Watches, Advisories, and Warnings).

A4. Following TsunamiReady Recognition, the WCM or designee will work with TsunamiReady communities to identify and document goals and progress made in working towards elements of the TsunamiReady Tier 2 guidelines in the period between each TsunamiReady renewal.

A5. Update TsunamiReady application and renewal applications to include a place for a state/territory signatory to sign in confirmation that they have reviewed the application and can attest to the community's completion of all guidelines.

A6. Update TsunamiReady application and renewal applications to include a place for documenting that a state or territory tsunami program has been consulted regarding resources available from the state or territory to support attainment or completion of TsunamiReady Guidelines.

B. NWS Directive 10-704 (TsunamiReady Directive) Recommendations:

B1. Re-establish TsunamiReady Boards at the National and Local Levels. Establish terms of reference and responsibilities for TsunamiReady Boards.

B2. Strengthen language in NWS Directive 10-704 to support Local, State, Territory and Regional TsunamiReady Boards ability to tailor TsunamiReady guidelines based on locality needs.

B3. Evaluate the use of increases in Community Rating System (CRS) points as incentive for TsunamiReady and TsunamiReady Tier 2 Recognition.

B4. Include language in the TsunamiReady Guidelines and NWS Directive 10-704 that communicates that baseline TsunamiReady recognition does not mean that a community has identified reasonable access to high-ground or safe refuge for all populations. The TsunamiReady Application should document that the WCM or designee has communicated and discussed this concept with an applicant or representative of the TsunamiReady community.

B5. Update language in NWS Directive 10-704 to define terms for assignment of designee to serve in place of role of WCM. If WCM or WFO lack the time/resources to support the TsunamiReady Program, a designee should be formalized with a TsunamiReady Board. Need to assign who has accountability for implementation of TsunamiReady Program.

B6. Update language in NWS Directive 10-704 to provide clarification of staff and role of TsunamiReady Program Managers.

B7. Update language in NWS Directive 10-704 to reflect that all NTHMP sub-committees and work groups may provide recommendations to the NWS regarding the consistent application of TsunamiReady guidelines.

B8. Update language in NWS Directive 10-704 to reflect that the National TsunamiReady Board should include representation from all NTHMP sub-committees and work groups to ensure interdisciplinary and geographic representation from NTHMP partner states, territories, and entities.

B9. Update language in NWS Directive 10-704 to reflect that WCM and Local TsunamiReady Board will begin reminding a jurisdiction at appropriate time intervals prior to expiration of the TsunamiReady recognition. A schedule of expirations/renewals will be shared with the State Boards or State Tsunami Programs annually.

B10. Update language in NWS Directive 10-704 to reflect that the implementation of the TsunamiReady Supporter should not be determined exclusively by a WFO. All communities in all States and Territories should have the opportunity to participate in all TsunamiReady program elements.

B11. Continue TsunamiReady Hero and Champion Awards and encourage TsunamiReady Boards to work with WCM to implement this part of the program.

C. General TsunamiReady Program Recommendations:

C1. WFOs and TsunamiReady Boards should incorporate the Maritime Related Options/Strategies guidance and recommendations developed by NTHMP Partners for use with Ports and Harbors as part of the TsunamiReady Program. Prioritize high risk maritime communities such as ports, harbors, and marinas as TsunamiReady Supporters. Encourage TsunamiReady Supporters and provide flexibility and streamlined guidelines for small businesses to encourage involvement.

C2. Evaluate the Emergency Management Accreditation Program (EMAP) well established standardized accreditation process, and experience with the emergency management community for potential use as a model for the TsunamiReady Program.

C3. Use social science research study to evaluate if TsunamiReady recognition (the name itself) may promote a false sense of security in communities that do not have evacuation options.

C4. Conduct baseline assessments of readiness for all at-risk communities.

C5. Conduct an independent evaluation of TsunamiReady Tier 2, including objective and implementation/non implementation. Evaluate findings from Proposed and Existing Guidelines for Recognition in the NWS TsunamiReady Community Program (Greg and others, 2014) with respect to how TsunamiReady Tier 2 has been implemented.

C6. Develop full-time dedicated position for TsunamiReady management at NWS.

C7. Provide public access to the TsunamiReady database.

C8. Investigate the use of key performance indicators (KPIs) or other metrics for tracking accomplishments of elements of the TsunamiReady Program.

FAQs for NTHMP TsunamiReady Tiger Team Recommendations

FAQs - NTHMP TsunamiReady Tiger Team Recommendations

General FAQs:

What was the purpose of the NTHMP MES Tiger Team and why was it formed?

At the request of the NWS in June 2023, the NTHMP MES was asked to review the TsunamiReady Program Guidelines and forms and provide recommendations for improvements prior to the next renewal scheduled for November 2024. The NTHMP MES reviewed TsunamiReady Program documents and discussed the TsunamiReady Program at meetings held in July 2023. During the MES meeting session at the 2023 NTHMP Summer Meeting, a recommendation was made for the formation of a work group to review the TsunamiReady Program and develop recommendations.

Within a month, an interdisciplinary Tiger Team was formed consisting of 13 MES members representing eight States/Territories and various NOAA offices. The team has met regularly since September 2023 and will continue until Fall 2024.

What background information and documents were considered by the Tiger Team while developing TsunamiReady recommendations?

The NTHMP TsunamiReady Tiger Team reviewed comments noted during previous NTHMP meetings and reviewed the following documents:

- NWS Instruction 10-704 (TsunamiReady Directive, 2022).
- National Tsunami Hazard Mitigation Program's (NTHMP) 2024–2029 strategic plan
- Tsunami Science & Technology Advisory Panel (TSTAP) Annual Report to the SAB (2022).
- UNESCO Tsunami Ready Recognition Programme.
- Evaluation of Key Components of Draft Guidelines for the National Weather Service TsunamiReady Community Program (Scott 2014).
- Proposed and Existing Guidelines for Recognition in the NWS TsunamiReady® Community Program (Gregg and others 2014).
- National Academies Report, Tsunami Warning and Preparedness: An Assessment of the U.S. Tsunami Program and the Nation's Preparedness Efforts (2011)

How were the draft TsunamiReady recommendations developed by the Tiger Team?

- NWS Instruction 10-704 (TsunamiReady Directive) was used to guide Tiger Team discussion through the elements of the TsunamiReady Program.
- Tiger Team Members commented and discussed the TsunamiReady Program in a shared TsunamiReady Directive document.
- Comments and proposed TsunamiReady Program recommendations were organized in tracking spreadsheet and reviewed at Tiger Team Meetings.
- Proposed TsunamiReady Program recommendations were compiled from the tracking spreadsheet.

What is the expected timeframe and level of effort for implementing these draft TsunamiReady recommendations?

Many of the recommendations are general topics and a framework for improvement to the TsunamiReady program, but do not specify the specific actions that will need to be implemented. The specific actions are beyond the scope of this Tiger Team and can be the products of future coordination between the NWS and NTHMP Partners.

It is expected that the level of effort and time to implement these recommendations will vary. For example, some recommendations for updates to the TsunamiReady Guidelines and Forms are minor and could be completed with minimal resources prior to the renewal scheduled for November 2024. On the other end of the spectrum, some recommendations could require multi-year studies employing researchers and considerable coordination between interested parties and the public.

How are the draft TsunamiReady recommendations organized?

Proposed TsunamiReady Program Recommendations are organized into three categories:

A. TsunamiReady Guidelines and Forms Recommendations
B. NWS Directive 10-704 (TsunamiReady Directive, 2022) Recommendations
C. General TsunamiReady Program Recommendations

FAQs for TsunamiReady Tiger Team Recommendations:

A. TsunamiReady Guideline and Form Recommendations:

A1. TsunamiReady communities should annually document tsunami public education efforts.

- *What is the recommendation addressing?* TsunamiReady Program is lacking accountability measures to ensure recognized communities meet and continue to meet mandatory requirements.
  TsunamiReady Guidelines, Prep-2: Support an ongoing sustained tsunami public education effort. Prep-4: Hold at least one community-wide outreach or education activity annually.
- *What prompted the recommendation?* Findings from the 2011 National Academies Report, Tsunami Warning and Preparedness: An Assessment of the U.S. Tsunami Program and the Nation's Preparedness Efforts.

A2. Include a checkbox on the TsunamiReady application acknowledging that Local Emergency Manger has informed Flood Plain Manager of TsunamiReady designation and available CRS Points.

- *What is the recommendation addressing?* The TsunamiReady Program lacks incentive to motivate participation by communities. Tsunami activities are handled by emergency managers outside of community floodplain management programs, and potential CRS credit is going unaccounted in communities.
- *What prompted the recommendation?* FEMA Tsunami Preparedness & the Community Rating System Fact Sheet (2018). NTHMP MES Summer Meeting 2023 comments.

A3. 24-hour warning point procedures relating to tsunamis should include specific response actions for all Tsunami Alert Levels from the Tsunami Warning Center (i.e. Information Statements, Watches, Advisories, and Warnings).

- *What is the recommendation addressing?* TsunamiReady Guidelines, Resp-1: Detail 24-hour warning point procedures relating to tsunamis.
- *What prompted the recommendation?* Comments from NTHMP MES.

A4. Following TsunamiReady Recognition, the WCM or designee will work with TsunamiReady communities to identify and document goals and progress made in working towards elements of the TsunamiReady Tier 2 guidelines in the period between each TsunamiReady renewal.

- *What is the recommendation addressing?* Increase number of recognized TsunamiReady Tier 2 Communities. TsunamiReady recognition may promote a false sense of security in communities that do not have evacuation options.
- *What prompted the recommendation?* NTHMP Strategic Plan, Strategy 2.2.2 (2024-2029). Tsunami Science & Technology Advisory Panel (TSTAP) Annual Report to the SAB (2022). Recommendation updated based on NTHMP Partner Comments received following review of draft recommendations in May 2024.

A5. Update TsunamiReady application and renewal applications to include a place for a state/territory signatory to sign in confirmation that they have reviewed the application and can attest to the community's completion of all guidelines.

- *What is the recommendation addressing?* TsunamiReady Program oversight.
- *What prompted the recommendation?* Findings from the 2011 National Academies Report, Tsunami Warning and Preparedness: An Assessment of the U.S. Tsunami Program and the Nation's Preparedness Efforts.

A6. Update TsunamiReady application and renewal applications to include a place for documenting that a state or territory tsunami program has been consulted regarding resources available from the state or territory to support attainment or completion of TsunamiReady Guidelines.

- *What is the recommendation addressing?* TsunamiReady Program oversight.
- *What prompted the recommendation?* NTHMP Partner Comments received following review of draft recommendations in May 2024.

B. NWS Directive 10-704 (TsunamiReady Directive) Recommendations:

B1. Re-establish TsunamiReady Boards at the National and Local Levels. Establish terms of reference and responsibilities for TsunamiReady Boards.

- *What is the recommendation addressing?* Evaluate TsunamiReady criteria and re-establish TsunamiReady Boards. Determine and promote best practices for tsunami risk-reduction in TsunamiReady communities. Clarifying language in NWS Directive 10-704.
- *What prompted the recommendation?* NTHMP Strategic Plan, Strategy 2.2.5 (2024-2029). NTHMP Strategic Plan, Strategy 2.2.4. (2024-2029). NWS Directive 10-704 (2022).

B2. Strengthen language in NWS Directive 10-704 to support Local, State, Territory and Regional TsunamiReady Boards ability to tailor TsunamiReady guidelines based on locality needs.

- *What is the recommendation addressing?* Clarifying language in NWS Directive 10-704, Section 3.1.
- *What prompted the recommendation?* NTHMP MES TsunamiReady Tiger Team discussion from review of NWS Directive 10-704 (2022).

B3. Evaluate the use of increases in Community Rating System (CRS) points as incentive for TsunamiReady and TsunamiReady Tier 2 Recognition.

- *What is the recommendation addressing?* The TsunamiReady Program lacks incentive to motivate participation by communities. Tsunami activities are handled by emergency managers outside of community floodplain management programs, and potential CRS credit is going unaccounted in communities.
- *What prompted the recommendation?* FEMA Tsunami Preparedness & the Community Rating System Fact Sheet (2018). NTHMP MES Summer Meeting 2023 comments.

B4. Include language in the TsunamiReady Guidelines and NWS Directive 10-704 that communicates that baseline TsunamiReady recognition does not mean that a community has identified reasonable access to high-ground or safe refuge for all populations. The TsunamiReady Application should document that the WCM or designee has communicated and discussed this concept with an applicant or representative of the TsunamiReady community.

- *What is the recommendation addressing?* Clarifying language in NWS Directive 10-704, Section 1.
- *What prompted the recommendation?* NTHMP MES TsunamiReady Tiger Team discussion from review of NWS Directive 10-704 (2022). Recommendation updated based on NTHMP Partner Comments received following review of draft recommendations in May 2024.

B5. Update language in NWS Directive 10-704 to define terms for assignment of designee to serve in place of role of WCM. If WCM or WFO lack the time/resources to support the TsunamiReady Program, a designee should be formalized with a TsunamiReady Board. Need to assign who has accountability for implementation of TsunamiReady Program.

- *What is the recommendation addressing?* Clarifying language in NWS Directive 10-704, Section 2.1.
- *What prompted the recommendation?* NTHMP MES TsunamiReady Tiger Team discussion from review of NWS Directive 10-704 (2022).

B6. Update language in NWS Directive 10-704 to provide clarification of staff and role of TsunamiReady Program Managers.

- *What is the recommendation addressing?* Clarifying language in NWS Directive 10-704, Section 2.1.
- *What prompted the recommendation?* NTHMP MES TsunamiReady Tiger Team discussion from review of NWS Directive 10-704 (2022).

B7. Update language in NWS Directive 10-704 to reflect that all NTHMP sub-committees and work groups may provide recommendations to the NWS regarding the consistent application of TsunamiReady guidelines.

- *What is the recommendation addressing?* Clarifying language in NWS Directive 10-704, Section 2.8.
- *What prompted the recommendation?* NTHMP MES TsunamiReady Tiger Team discussion from review of NWS Directive 10-704 (2022). Recommendation updated based on NTHMP Partner Comments received following review of draft recommendations in May 2024.

B8. Update language in NWS Directive 10-704 to reflect that the National TsunamiReady Board should include representation from all NTHMP sub-committees and work groups to ensure interdisciplinary and geographic representation from NTHMP partner states, territories, and entities.

- *What is the recommendation addressing?* Clarifying language in NWS Directive 10-704, Section 2.9.1.
- *What prompted the recommendation?* NTHMP MES TsunamiReady Tiger Team discussion from review of NWS Directive 10-704 (2022). Recommendation updated based on NTHMP Partner Comments received following review of draft recommendations in May 2024.

B9. Update language in NWS Directive 10-704 to reflect that WCM and Local TsunamiReady Board will begin reminding a jurisdiction at appropriate time intervals prior to expiration of the TsunamiReady recognition. A schedule of expirations/renewals will be shared with the State Boards or State Tsunami Programs annually.

- *What is the recommendation addressing?* Clarifying language in NWS Directive 10-704, Section 4.3.
- *What prompted the recommendation?* NTHMP MES TsunamiReady Tiger Team discussion from review of NWS Directive 10-704 (2022).

B10. Update language in NWS Directive 10-704 to reflect that the implementation of the TsunamiReady Supporter should not be determined exclusively by a WFO. All communities in all States and Territories should have the opportunity to participate in all TsunamiReady program elements.

- *What is the recommendation is addressing?* Clarifying language in NWS Directive 10-704, Section 5.1.
- *What prompted the recommendation?* NTHMP MES TsunamiReady Tiger Team discussion from review of NWS Directive 10-704 (2022).

B11. Continue TsunamiReady Hero and Champion Awards and encourage TsunamiReady Boards to work with WCM to implement this part of the program.

- *What is the recommendation is addressing?* Clarifying language in NWS Directive 10-704, Section 6.2 and Section 6.3.
- *What prompted the recommendation?* NTHMP MES TsunamiReady Tiger Team discussion from review of NWS Directive 10-704 (2022).

C. General TsunamiReady Program Recommendations:

C1. WFOs and TsunamiReady Boards should incorporate the Maritime Related Options/Strategies guidance and recommendations developed by NTHMP Partners for use with Ports and Harbors as part of the TsunamiReady Program. Prioritize high risk maritime communities such as ports, harbors, and marinas as TsunamiReady Supporters. Encourage TsunamiReady Supporters and provide flexibility and streamlined guidelines for small businesses to encourage involvement.

- *What is the recommendation addressing?* Increase number of designated TsunamiReady Supporters. Maritime specific TsunamiReady guidelines for ports, harbors, and marinas.
- *What prompted the recommendation?* NTHMP Strategic Plan, Strategy 2.2.3 (2024-2029). Proposed NTHMP MES Work Plan Activity (2022-2023). NTHMP Strategic Plan, Strategy 2.1.2 (2024-2029).

C2. Evaluate the Emergency Management Accreditation Program (EMAP) well established standardized accreditation process, and experience with the emergency management community for potential use as a model for the TsunamiReady Program.

- *What is the recommendation is addressing?* TsunamiReady Program is lacking a professional standard to guide its development.
- *What prompted the recommendation?* Findings from the 2011 National Academies Report, Tsunami Warning and Preparedness: An Assessment of the U.S. Tsunami Program and the Nation's Preparedness Efforts. Comments from NTHMP MES.

C3. Use social science research study to evaluate if TsunamiReady recognition (the name itself) may promote a false sense of security in communities that do not have evacuation options.

- *What is the recommendation addressing?* TsunamiReady recognition may promote a false sense of security in communities that do not have evacuation options.
- *What prompted the recommendation?* Tsunami Science & Technology Advisory Panel (TSTAP) Annual Report to the SAB (2022).

C4. Conduct baseline assessments of readiness for all at-risk communities.

- *What is the recommendation is addressing?* TsunamiReady Program is lacking metrics to assess baseline readiness and community needs.
- *What prompted the recommendation*? Findings from the 2011 National Academies Report, Tsunami Warning and Preparedness: An Assessment of the U.S. Tsunami Program and the Nation's Preparedness Efforts. NTHMP Strategic Plan, Goal 1.2 (2024-2029). Comments from NTHMP MES.

C5. Conduct an independent evaluation of TsunamiReady Tier 2, including objective and implementation/non implementation. Evaluate findings from Proposed and Existing Guidelines for Recognition in the NWS TsunamiReady Community Program (Greg and others, 2014) with respect to how TsunamiReady Tier 2 has been implemented.

- *What is the recommendation is addressing?* Increase number of recognized TsunamiReady Tier 2 Communities. TsunamiReady recognition may promote a false sense of security in communities that do not have evacuation options. *What prompted the recommendation?*
- NTHMP Strategic Plan, Strategy 2.2.2 (2024-2029). Tsunami Science & Technology Advisory Panel (TSTAP) Annual Report to the SAB (2022). NTHMP MES TsunamiReady Tiger Team discussion from review of NWS Directive 10-704 (2022**).**

C6. Develop full-time dedicated position for TsunamiReady management at NWS.

- *What is the recommendation addressing?* Clarifying language in NWS Directive 10-704, Section 2.1.
- <u>What prompted the recommendation?</u> NTHMP MES TsunamiReady Tiger Team discussion from review of NWS Directive 10-704 (2022).

C7. Provide public access to the TsunamiReady database.

- *What is the recommendation addressing?* Clarifying language in NWS Directive 10-704, Section 2.1.
- *What prompted the recommendation?* NTHMP MES TsunamiReady Tiger Team discussion from review of NWS Directive 10-704 (2022).

C8. Investigate the use of key performance indicators (KPIs) or other metrics for tracking accomplishments of elements of the TsunamiReady Program.

- *What is the recommendation addressing?* TsunamiReady Program is lacking metrics to assess baseline readiness and community needs. TsunamiReady Program is lacking criteria and guidance on what constitutes effective public outreach and preparedness efforts.
- *What prompted the recommendation?* NTHMP Partner Comments received following review of draft recommendations in May 2024. Findings from the 2011 National Academies Report, Tsunami Warning and Preparedness: An Assessment of the U.S. Tsunami Program and the Nation's Preparedness Efforts.

TsunamiReady Topics for Further Consideration

List of TsunamiReady Topics for Further Consideration

Purpose of this list:

The National Tsunami Hazard Mitigation Program (NTHMP) Mitigation and Education Subcommittee (MES) work group that met between September 2023 through May 2024 to review the TsunamiReady Program discussed and considered many topics while developing suggested recommendations for the TsunamiReady Program. Not all topics discussed by the work group or comments received from others resulted in the formation of recommendations. Documenting these topics and comments can be useful for reference by National Weather Service (NWS) Staff or NTHMP Partners for future discussions or considerations while implementing or assessing the TsunamiReady Program.

List of TsunamiReady Topics for Further Consideration:

- More information is needed on the structure of proposed Tsunami Boards.
- Incentives to become TsunamiReady to help obtain mitigation funds from FEMA or improve a communities National Risk Index status from FEMA could be ways to incentivize TsunamiReady. Could the NTHMP and/or NWS work with FEMA to improve mitigation funding or other opportunities for TsunamiReady jurisdictions?
- TsunamiReady Program is lacking criteria and guidance on what constitutes effective public outreach and preparedness efforts.
- TsunamiReady Program is lacking criteria to assess community performance during a Tsunami Warning, Advisory, or Watch.
- The designation as a TsunamiReady Supporter should be phased out and replaced with the Proposed New Phased Approach to the Tsunami Ready Program Titled: Tsunami Awareness and Resilience Program (TARP) Empowering Coastal Communities Nationwide. Additional information on TARP was captured in notes from the NTHMP Tiger Team, 2023-2024

Summary of TsunamiReady related documents and supporting information reviewed by Tiger Team

These documents were reviewed by the NTHMP MES TsunamiReady Tiger Team between September 2023 and March 2024 to help inform and provide background on the TsunamiReady Program while working to develop recommendations for improvement.

NWS Instruction 10-704 (TsunamiReady Directive)
https://www.nws.noaa.gov/directives/sym/pd01007004curr.pdf

UNESCO Tsunami Ready Recognition Programme
http://itic.ioc-unesco.org/images/stories/TsunamiReady/MG74_381353eng.pdf

Evaluation of Key Components of Draft Guidelines for the National Weather Service TsunamiReady Community Program (Scott 2014)
https://dc.etsu.edu/cgi/viewcontent.cgi?article=3705&context=etd

Proposed and Existing Guidelines for Recognition in the NWS TsunamiReady® Community Program (Gregg and others 2014)
https://repository.library.noaa.gov/view/noaa/28924/noaa_28924_DS1.pdf

2022 Tsunami Science & Technology Advisory Panel (TSTAP) Annual Report to the SAB
https://sab.noaa.gov/wp-content/uploads/SAB_Report_Apr2023_TSTAP2022.pdf

National Tsunami Hazard Mitigation Program's (NTHMP) 2024–2029 strategic plan
https://nws.weather.gov/nthmp/documents/NTHMP-Strategic-Plan-2024-2029.pdf

National Academies Report, Tsunami Warning and Preparedness: An Assessment of the U.S. Tsunami Program and the Nation's Preparedness Efforts (2011)

https://nap.nationalacademies.org/catalog/12628/tsunami-warning-and-preparedness-an-assessment-of-the-us-tsunami

TsunamiReady Tiger Team Comments Tracker

This document was used to track suggested comments and potential recommendations by the NTHMP MES TsunamiReady Tiger Team developed between September 2023 and March 2024. This Comments Tracker provides additional background and details regarding proposed TsunamiReady program recommendations included in Attachment 2 and Attachment 3.

The TsunamiReady Recommendations included in Attachment 2 and also included in the FAQs in Attachment 3 are labeled with an alphanumeric (e.g. A1, B4, C2) that correspond with the first column (Recommendation Identifier) within the Comments Tracker.

Recommendation Identifier	Topic/Subject	Comments and Discussion	Preliminary recommendation	Estimated level of effort (time) to implement recommendation	Notes
Recommendations for TsunamiReady program based on comments and input from previous work groups, meetings and documents.					
A4	Increase number of recognized TsunamiReady Tier 2 Communities	NTHMP Strategic Plan, Strategy 2.2.2 (2024-2029)	Communicate that baseline TsunamiReady recognition does not mean that a community has identified reasonable access to high-ground or safe refuge for all populations. Evaluate and rework TsunamiReady Tier 2 Guidelines to include guidelines that require an assessment and identification of high-ground for Tsunami Ready Tier 2 recognition. Evaluate the use of Community Rating System (CRS) points as incentive for TsunamiReady Tier 2 Recognition.	Medium to High	Incentivize all communities to pursue Tier 2. Those that already have access to high-ground will have an easier time than those that need vertical evacuation, but it encourages those communities to complete the other elements of Tier 2 for CRS Points and the elevated recognition. Make Tier 2 TsunamiReady the next step of Guidelines that communities need to start working towards. For example, baseline TsunamiReady recognition is the first step/stage of the TsunamiReady process for a community. Once this has been achieved, progress must be made to work towards Tier 2 guidelines. This should be done during the period leading up to the renewal. For some communities, achieving Tier 2 will be simpler than others such as when you have adequate access to high ground versus the need for vertical evacuation structures. If at the renewal, a community has all the elements to meet Tier 2 requirements they are done, otherwise a plan to take steps toward the Tier 2 requirements should be reviewed between the community, the WFO, and TsunamiReady Boards.
C1	Increase number of designated TsunamiReady Supporters	NTHMP Strategic Plan, Strategy 2.2.3 (2024-2029)	Prioritize high risk maritime communities such as ports, harbors, and marinas as TsunamiReady Supporters. Provide flexibility or streamlined guidelines/requirements for small businesses (independent operators).	Medium	The TsunamiReady Supporter program really provides a great opportunity to engage more small business in the community. The requirements could be simple for small businesses, something like that they post some flyers and/or map and get a sticker or sign acknowledging their participation. This could be a great way to get some information in front of visitors by including small businesses in tourist areas.
B1	Determine and promote best practices for tsunami risk-reduction	NTHMP Strategic Plan, Strategy 2.2.4 (2024-2029)	Re-establish TsunamiReady Boards at the National and Local Levels. Incorporate outcomes of NTHMP Strategic Plan, Goal 1.2: Methods to characterize and communicate societal risks to tsunamis are developed and properly applied to support risk-reduction planning into TsunamiReady Program Guidelines and implementation.	Medium	
B1	Evaluate TsunamiReady criteria and re-establish TsunamiReady Boards	NTHMP Strategic Plan, Strategy 2.2.5 (2024-2029)	Re-establish TsunamiReady Boards at the National and Local Levels. Establish terms of reference and responsibilities for TsunamiReady Boards.	Medium	
B3	The TsunamiReady Program lacks incentive to motivate participation by communities	Comment from NTHMP MES Summer Meeting 2023	Evaluate the use of Community Rating System (CRS) points as incentive for TsunamiReady and TsunamiReady Tier 2 Recognition.	Medium to High	Unknow level or work to include TsunamiReady Tier 2 in CRS. Need to coordinate with FEMA.
C1	Include maritime specific TsunamiReady guidelines for ports, harbors, and marinas	NTHMP Strategic Plan, Strategy 2.1.2 (2024-2029). Proposed MES Work Plan Activity (2022-2023).	WFOs and TsunamiReady Boards should incorporate the Maritime Related Options/Strategies guidance and recommendations developed by NTHMP Partners for use with Ports and Harbors as part of the TsunamiReady Program.	Low	
C2	Connect TsunamiReady to Emergency Management Accreditation Program (EMAP) accreditation	Comment from NTMHP MES partners.	Evaluate the EMAP's well established standard, process, and experience with the emergency management community for potential use as a model for TsunamiReady Program.	High	This recommendation was included in the 2011 National Academies Report, *Tsunami Warning and Preparedness: An Assessment of the U.S. Tsunami Program and the Nation's Preparedness Efforts.* The committee noted that many of their recommendations for changes to strengthen the TsunamiReady Program could be accomplished by folding the TsunamiReady Program into the all-hazard EMAP instead of maintaining the separate TsunamiReady Program. A NOAA report to Congress in 2018 evaluated the TsunamiReady program to assess which authorities and activities would be needed to have the TsunamiReady Program accredited by EMAP. The 2018 report to Congress found that TsunamiReady Program is neither eligible nor appropriate for consideration for EMAP accreditation. I don't think this really addressed the National Academy suggestion of using the EMAP as a model for the TsunamiReady program. https://repository.library.noaa.gov/pdfjs/web/viewer.html?file=https://repository.library.noaa.gov/view/noaa/23643/noaa_23643_DS1.pdf

Recommendation Identifier	Topic/Subject	Comments and Discussion	Preliminary recommendation	Estimated level of effort (time) to implement recommendation	Notes
A4, C3	TsunamiReady recognition may promote a false sense of security in communities that do not have evacuation options.	2022 Tsunami Science & Technology Advisory Panel (TSTAP) Annual Report to the SAB	Use social science research study to evaluate if this is true.	High	*Proposed and Existing Guidelines for Recognition in the NWS TsunamiReady Community Program* (Greg and others, 2014) did not indicate that the communities had confusion about what TsunamiReady meant or that the term provided a false sense of security, though I am not sure if the question was directly asked in this way. What was provided as the results of the community focus groups was that communities were largely against a vertical evacuation requirement, even when no other means of access to safety was possible, and the majority of sites acknowledged that a community should not be recognized as TsunamiReady if it was unable to provide safe evacuation refuge for its population.
C2	TsunamiReady Program is lacking a professional standard to guide its development	Findings from the 2011 National Academies Report, *Tsunami Warning and Preparedness: An Assessment of the U.S. Tsunami Program and the Nation's Preparedness Efforts*	Evaluate the EMAP's well established standard, process, and experience with the emergency management community for potential use as a model for TsunamiReady Program.	High	Recommendation was included in 2011 National Academies Report, Tsunami Warning and Preparedness: An Assessment of the U.S. Tsunami Program and the Nation's Preparedness Efforts
C4, C8	TsunamiReady Program is lacking metrics to assess baseline readiness and community needs	Findings from the 2011 National Academies Report, *Tsunami Warning and Preparedness: An Assessment of the U.S. Tsunami Program and the Nation's Preparedness Efforts*	Conduct baseline assessments of readiness for all at-risk communities using the outcomes of NTHMP Strategic Plan, Goal 1.2: Methods to characterize and communicate societal risks to tsunamis are developed and properly applied to support risk-reduction planning into TsunamiReady Program Guidelines and implementation.	Medium to High	Recommendation was included in 2011 National Academies Report, Tsunami Warning and Preparedness: An Assessment of the U.S. Tsunami Program and the Nation's Preparedness Efforts.
None	TsunamiReady Program is lacking criteria to assess community performance during a Tsunami Warning, Advisory, or Watch.	Findings from the NTHMP MES Tiger Team Coordination; NWS WCM Meeting preparation;	NA	NA	This seems potentially unrealistic to study as tsunami happen infrequently.
A1	TsunamiReady Program is lacking accountability measures to ensure recognized communities meet and continue to meet mandatory requirements	Findings from the 2011 National Academies Report, *Tsunami Warning and Preparedness: An Assessment of the U.S. Tsunami Program and the Nation's Preparedness Efforts*	Re-establish TsunamiReady Boards at the National and Local Levels to provide oversight of the TsunamiReady Program. Evaluate the EMAP as a model for developing a TsunamiReady Program standard.	Medium	
C8	TsunamiReady Program is lacking criteria and guidance on what constitutes effective public outreach and preparedness efforts	Findings from the 2011 National Academies Report, *Tsunami Warning and Preparedness: An Assessment of the U.S. Tsunami Program and the Nation's Preparedness Efforts*	NA	NA	The existing TsunamiReady Program Guidelines were informed by findings from *Proposed and Existing Guidelines for Recognition in the NWS TsunamiReady Community Program* (Greg and others, 2014).
Comments and recommendations associated with Section 1 of NWS Instruction 10-704.					
B4	TsunamiReady Program Objective	This section should be called introduction. It should make a compelling case for why such a program is needed and can help save lives. The "recognition" aspect should be emphasized more and also what the program does not do. The international program includes the following statement: "TsunamiReady recognition does not imply approval or confirmation that a community can or will perform at a certain level in case of a tsunami. TsunamiReady recognition does not mean that a community is tsunami proof; it is rather an acknowledgement and recognition of the measure adopted by the community to cope with their tsunami risk	Include updated Introduction, Goals, and Objectives language that communicates the baseline TsunamiReady recognition does not mean that a community has identified reasonable access to high-ground or safe refuge for all populations.	Low	See the draft Intro-Goals-Objectives language crafted by the TsunamiReady Tiger Team.
C3	TsunamiReady Program Objective	There was an edit to the Section Title that suggested changing TsunamiReady to TsunamiResilient	Use social science to determine if TsunamiReady (name) and recognition may promote a false sense of security in communities that do not have evacuation options.\n\nCommunicate that baseline TsunamiReady recognition does not mean that a community has identified reasonable access to high-ground or safe refuge for all populations	High to Low	High level of effort for a social science study.\nLow level of effort to communicate limitations of TsunamiReady recognition.\n\nProposed and Existing Guidelines for Recognition in the NWS TsunamiReady Community Program (Greg and others, 2014) did not indicate that the communities had confusion about what TsunamiReady meant and that the term provided a false sense of security, though I am not sure if the question was directly asked in this way. What was provided as the results of the community focus groups was that communities were largely against a vertical evacuation requirement, even when no other means of access to safety was possible, and the majority of sites acknowledged that a community should not be recognized as TsunamiReady if it was unable to provide safe evacuation refuge for its population.

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C5	TsunamiReady Tier 2	TsunamiReady Tier 2 needs to be evaluated, its objective and implementation/non implementation.	Conduct an independent evaluation of TsunamiReady Tier 2, including objective and implementation/non implementation. Evaluate findings from *Proposed and Existing Guidelines for Recognition in the NWS TsunamiReady Community Program* (Greg and others, 2014) with respect to how TsunamiReady Tier 2 has been implemented.	Low to High	Level of effort depends on what kind of evaluation is desired; could just look at how many communities have gone for TsunamiReady Tier 2 status, how many were successful, etc.
A4, C5	TsunamiReady Tier 2	I don't think TsunamiReady Tier 2 should be seen as, for lack of a better term, extra work higher risk communities need to put in to gain the same recognition as TsunamiReady Tier 1 communities. What if TsunamiReady Tier 2 were actually a second tier, as in everyone can go for TsunamiReady Tier 1 and then communities that feel they need to do more, or want to do more, can go for TsunamiReady Tier 2? And maybe TsunamiReady Tier 2 comes with additional recognition or accolades, who knows - but this way it might seem like less of a punishment or like sticking some communities with extra regulations and hoops to jump through than others.	Establish TsunamiReady Tier 2 as a second tier pathway for all communities. Evaluate and rework TsunamiReady Tier 2 Guidelines to include guidelines that require an assessment and identification of high-ground for Tsunami Ready Tier 2 recognition. Evaluate the use of Community Rating System (CRS) points as incentive for TsunamiReady Tier 2 Recognition.	Medium to High	
B2	TsunamiReady Tier 2 and TsunamiReady Boards	TsunamiReady Tier 2 could potentially address concerns for communities lacking natural high ground (i.e., or inland safe zone) prior to wave arrival. Maybe a local/regional TsunamiReady Board could make TsunamiReady Tier 2 required for these communities? That was the original intention, I believe. It gets tricky, though, because some communities are decades away from that goal. Do we deny them the ability to become TsunamiReady completely until then?	Strengthen language to support Local, State, Territory and Regional TsunamiReady Boards ability to tailor TsunamiReady requirements based on locality needs. Re-establish TsunamiReady Boards at the National and Local Levels. Establish terms of reference and responsibilities for TsunamiReady Boards.	Medium	Requires reinstatement of local/regional TsunamiReady Boards, which then require staffing and additional time commitments.
Comments and Recommendations associated with Section 2 of NWS Instruction 10-704.					
B5	2.1, It is the responsibility of each Weather Forecast Office's (WFO) Warning Coordination Meteorologist (WCM) or designee, to implement and manage the TsunamiReady Program within their county warning and forecast area (CWFA).	Provide more guidance on who can serve the roll of the 'designee'.	Define terms for assignment of designee to serve in place of role of WCM. If WCM or WFO lack the time/resources to support the TsunamiReady Program, a designee should be formalized with the TsunamiReady Board. Need to assign who has accountability for implementation of TsunamiReady Program.	Low	The designee is someone in an NWS office. Could be the tsunami program leader or any other employee working on TsunamiReady.
B6, C6	2.1, Coordinates TsunamiReady activities with state National Tsunami Hazard Mitigation Program (NTHMP) representatives and TsunamiReady Program Managers in NWS regions.	Are there NOAA/NWS staff that have the title or serve in the role as "TsunamiReady Program Manager"	Provide clarification of staff and role of TsunamiReady Program Managers. Develop full-time dedicated position for TsunamiReady management at NWS.	Low to Medium	Yes. For instance, in Western Region it is Jeff Lorens. TsunamiReady program could benefit from accounting and managing of the program. This could be a paid/full-time position, not just something tacked onto someone who already has a lot going on. Maybe this is shared with the StormReady program.
C7	2.1, Adds recognitions to the NWS Headquarters Analyze, Forecast, and Support Office TsunamiReady database.	Is the TsunamiReady database in existence and accessible to the public? If not, provide public access.	Provide public access to the TsunamiReady database.	Medium	This website should be kept up to date, it's the same city/community list: https://www.weather.gov/tsunamiready/communities

However, the database has a bit more information like city size, when last renewed, number of renewals, and when the communities will need to be renewed. |
B7	2.8, NTHMP Mitigation and Education Subcommittee	Should MMS have a similar coordination role, as MIT-1 guideline discussing mapping and modeling; MIT-2 hazard profile is included...etc.? This is a good point and something to consider with regards to the TsunamiReady Boards. Maybe NTHMP involvement with the TsunamiReady Program should just be more generally listed as NTHMP and not specify a specific sub-committee. This provides access to more NTHMP members and expertise.	The NTHMP sub-committees may provide recommendations to the NWS regarding the consistent application of "recognition" guidelines nationwide.	Low/Medium	
B1	2.9.1, National TsunamiReady Board	Establish a terms a reference. Including number of times should meet per year. Also, improve transparency by having meeting notes and membership archived on a public website. IF this Board is needed, we need to make sure it empowers States/Territories and communities to implement and improve TR program, not just create a layer of bureaucracy.	Re-establish TsunamiReady Boards at the National and Local Levels. Establish terms of reference and responsibilities for TsunamiReady Boards.	Medium	
B8	2.9.1, National TsunamiReady Board	Consider adding an NTHMP MMS representative in addition to the NTHMP MES representative	Consider inclusion of NTHMP MMS representation on the National TsunamiReady board while establish terms of reference and responsibilities for TsunamiReady Boards.	Medium	
B1	2.9.3, Local, State, Territory and Regional TsunamiReady Boards	Establish a terms of reference and guidelines.	Re-establish TsunamiReady Boards at the National and Local Levels. National Board to establish terms of reference and responsibilities for Local, State, Territory and Regional TsunamiReady Boards TsunamiReady Boards.	Medium	

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Comments and Recommendations associated with Section 3 of NWS Instruction 10-704.					
None	3.1, Note: Communities that apply for TsunamiReady recognition may also satisfy many of the requirements for becoming StormReady, and are therefore strongly encouraged to jointly apply for StormReady recognition as well. More information about the NWS StormReady Program is here: https://www.weather.gov/StormReady	Confirm references to StormReady are consistent with those guidelines and any recent changes.	Confirm references or mention of StormReady Program in NWS Directive are consistent with current guidelines.	Low	New StormReady Directive states that a TsunamiReady community is automatically StormReady too. Recommendation is not needed.
B2	3.1, The State/Territory Tsunami Steering Committee or TsunamiReady Board coordinates how unique TsunamiReady recognitions are implemented	If we decide to remove reference to the local boards due to lack of use, maybe we replace this with a reference to the NTHMP partner programs, or other local emergency management working in tandem with local NWS?	1/16/2024: Discussion at Tiger Team Meeting: "NWS approved/recognized alternative" to a local TR Board.	Low	NTHMP Strategic Plan, Strategy 2.2.5 (2024-2029): Evaluate TsunamiReady criteria and re-establish TsunamiReady Boards 1/16/2024: Discussion at Tiger Team Meeting: existing groups within a State/Territory could serve same functions as State/Territory TR Boards. In other words, no need to create a new group.
Comments and Recommendations associated with Section 4 of NWS Instruction 10-704.					
A5	4.2, A formal plan to monitor a recognized jurisdiction is not necessary;	Recommendations from the 2011 National Academies Report, *Tsunami Warning and Preparedness: An Assessment of the U.S. Tsunami Program and the Nation's Preparedness Efforts,* include: TsunamiReady Program is lacking accountability measures to ensure recognized communities meet and continue to meet mandatory requirements	Update TsunamiReady application and renewal applications to include a place for a state/territory signatory to sign in confirmation that they have reviewed the application and can attest to the community's completion of all requirements; would	Low	Could add on last page in section titled "Signature in Renewal Year" where NWS official signs
B9	4.3, Three months prior to the expiration of the recognition, the TsunamiReady/StormReady database automatically sends a renewal reminder to the local WCM/designee.	Consider sending renewal notice at 1-year, 6-months, and 3-months. 1/16/2024: Discussion at Tiger Team Meeting: Consider making this more flexible and not so specific as the intervals suggested as the 1-year, 6-month intervals suggested. A schedule of expirations/renewals could be shared with the State Boards or State Tsunami Programs yearly.	WCM and Local TsunamiReady Board will begin reminding a jurisdiction at appropriate time intervals prior to the ~~1-year, 6-months, and 3-months prior to~~ expiration of the TsunamiReady recognition. A schedule of expirations/renewals will be shared with the State Boards or State Tsunami Programs annually.	Low	
None	4.3, After the initial four-year renewal, the subsequent renewal will require the community to renew the full application process (Section 3). This process helps ensure required equipment is in place, contact information is accurate, and technological advances in communications and warning dissemination are applied and documented as needed. Additional renewals will repeat the interval outlined above: after twelve years, a contact renewal, after sixteen years, a full application review, etc.	Consider going through the application process every time. With staff changeover and rapidly changing technology, 4-years is a lot of time. The TsunamiReady program is already too much work for the NWS. This would only add more.	Complete full TsunamiReady application process every 4-years.	Medium	1/16/2024: Discussion at Tiger Team Meeting: This is not necessary. Existing methods are sufficient.
A2	4, TsunamiReady Recognition Process	The TsunamiReady site will receive Information concerning possible adjustment to insurance rates under the National Flood Insurance Program (section 6.1).	See number 5 and 35	Low to High	
Comments and Recommendations associated with Section 5 of NWS Instruction 10-704.					
None	5. The designation as a TsunamiReady Supporter should be phased out and replaced with the Proposed New Phased Approach to the Tsunami Ready Program Titled: Tsunami Awareness and Resilience Program (TARP) Empowering Coastal Communities Nationwide	This is a very interesting approach but do not know enough about it to recommend and think is out of the scope of our mandate. I think the discussion should be if there should or should not be a Supporter program under TsunamiReady recognizing that there could be other efforts that fill this space more effectively. Need to discuss at the next meeting - this recommendation requires a complete overhaul of the TsunamiReady program.	NA	High	
None	5. TsunamiReady recognition of the county or community in which the entity resides is not a requirement to achieve the Supporter designation.	Term County is not used in Puerto Rico, consider another way to rephrase this.	NA		
B10	5.1 If the local WFO participates and supports the optional TsunamiReady Supporter Program, then entities should complete the Supporter application on the national TsunamiReady website and submit it to their local WCM/designee for review	Are their cases where WFO doesn't participate/support? If so, why?	Remove this sentence. The TsunamiReady Supporter should not be optional based on the WFO. All communities in all States and Territories should have access to the full TsunamiReady program.	Low	
Comments and Recommendations associated with Section 6 of NWS Instruction 10-704.					
A2	6.1 National Flood Insurance Program	From a FEMA Tsunami Preparedness & the Community Rating System Fact Sheet (2018) Notes that most tsunami activities are handled by emergency managers outside of community floodplain management programs, and potential CRS credit is going unaccounted in communities.	Include checkbox on TsunamiReady application Local Emergency Manger to inform Flood Plain Manager of TsunamiReady designation and available CRS Points. Consider adding as a new "Prep-" guideline.	Low	Links to the CRS Manual also need to be updated.

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B11	6.2 TsunamiReady Hero Award 6.3 TsunamiReady Champion Award	All text was deleted with comment: NWS has already made a determination about the TsunamiReady Hero and Champion Awards. Why did the NWS already make a decision to delete this? The awards seem like they could be a great way to recognize and inspire community action. If these have been underutilized, maybe it would be better to look at what obstacles were preventing use as opposed to just removing this element of the program.	Continue TsunamiReady Hero and Champion Awards and encourage TsunamiReady Boards to work with WCM to implement this part of the program.	Low	
Comments and Recommendations associated with Appendix A of NWS Instruction 10-704.					
A1	Prep-2. Support an ongoing sustained tsunami public education effort. and Prep-4. Hold at least one community-wide outreach or education activity annually	TsunamiReady communities could be encouraged to register their annual activities through TsunamiZone. A special form could be created on TsunamiZone.	TsunamiReady communities should annually document tsunami public education efforts.	Low	Combined the comments from Prep-2 and Prep-4 as they were similar.
A2, B3	Prep-"New"	From a FEMA Tsunami Preparedness & the Community Rating System Fact Sheet (2018), Notes that most tsunami activities are handled by emergency managers outside of community floodplain management programs, and potential CRS credit is going unaccounted in communities.	Include checkbox on TsunamiReady application Local Emergency Manger to inform Flood Plain Manager of TsunamiReady designation and available CRS Points. Consider adding as a new "Prep-" guideline.	Low	
None	Resp-"New"	A new "Resp-" element could be added similar to Resp-3 for Harbors, Marinas, Ports. "Address tsunami hazards in the emergency operations plans (EOP) for harbors, marinas, and ports or have a section in community's emergency operations plan (EOP), from Resp-1, that addresses emergency operations for Harbors, Marinas, and Ports."	Address tsunami hazards in the emergency operations plans (EOP) for harbors, marinas, and ports or have a section in community's emergency operations plan (EOP), from Resp-1, that addresses emergency operations for Harbors, Marinas, and Ports. Consider adding as a new "Resp-" guideline.	Low	
A3	Resp-1	Procedures should include details for specific response actions for all Tsunami Alert Levels from the Tsunami Warning Center (i.e. Watches, Advisories, and Warning)	add text to Resp-1, second bullet so it reads: "Detail 24-hour warning point procedures relating to tsunamis that include specific response actions for all Tsunami Alert Levels from the Tsunami Warning Center (i.e. Watches, Advisories, and Warning)"	Low	
A4	Tier 2	Make Tier 2 TsunamiReady the next step of Guidelines that communities need to start working towards. For example, baseline TsunamiReady recognition is the first step/stage of the TsunamiReady process for a community. Once this has been achieved, progress must be made to work towards Tier 2 guidelines. This should be done during the period leading up to the renewal. For some communities, achieving Tier 2 will be simpler than others such as when you have adequate access to high ground versus the need for vertical evacuation structures. If at the renewal, a community has all the elements to meet Tier 2 requirements they are done, otherwise a plan to take steps toward the Tier 2 requirements should be reviewed between the community, the WFO, and TsunamiReady Boards supported by the WCMs, State Programs, and TsunamiReady Boards.	Following TsunamiReady Recognition, a community will work towards TsunamiReady Tier 2 requirements during the period leading to the TsunamiReady renewal.	Medium	