

**NATIONAL WEATHER SERVICE INSTRUCTION 10-703**

**FEBRUARY 16, 2017**

**Operations and Services**

**TSUNAMI WARNING SERVICES, NWSPD 10-7**

**POST-TSUNAMI AND WARNING EFFECTIVENESS SURVEYS**

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**SUMMARY OF REVISIONS:** This supersedes NWS Instruction 10-703, “*Post-Tsunami Surveys*,” dated December 22, 2010. Changes made to reflect the NWS Headquarters reorganization effective April 1, 2015. This instruction includes the following changes:

1. Changed document title to “Post-Tsunami and Warning Effectiveness Surveys” since this document addresses both types of surveys.
2. Corrected the link to Intergovernmental Oceanographic Commission’s (IOC) *Post-Tsunami Field Guide*, paragraph 2.3.
3. Revised to include the updated IOC manual, now called *International Tsunami Survey Team (ITST) Post Tsunami Survey Field Guide*.
4. Updated the name change of (former) National Geophysical Data Center (NGDC) to the National Centers for Environmental Information (NCEI), paragraph 2.3.
5. Explained role and relationship of the Office of the Federal Coordinator for Meteorology (OFCM).
6. Now designates the Warning Effectiveness Survey (WES) Coordinator to be one of the NOAA NTHMP Warning Coordination Subcommittee Co-Chairs or a representative from one of the two U.S. Tsunami Warning Centers.

Signed

2/2/2017

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Director

Date

Analyze, Forecast and Support Office

**Post-Tsunami Surveys and Tsunami Warning Effectiveness Surveys**

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**1. Introduction**

This instruction describes domestic and international Post-Tsunami Surveys (PTS) as well as Warning/advisory Effectiveness Surveys (WES).

A PTS is an investigation to determine the physical extent of tsunami inundation and damage and to capture eyewitness accounts of the impact. A PTS follows a different process from the National Weather Service (NWS) Service Assessments. NWS Service Assessments are conducted after unusually destructive and significant hydrometeorological, oceanographic, or geologic events resulting in warning and/or other operational activities by the NWS. See National Weather Service Instruction (NWSI) [10-1606](#) for the policies and procedures associated with Local, Regional, and National Service Assessments within the NWS.

A domestic Post-Tsunami Warning/advisory Effectiveness Survey (WES) is an assessment of the U.S. tsunami warning system. A WES is conducted after a tsunami warning and/or advisory has been issued for a location within the United States (U.S.) and impact occurred or was expected. The tsunami warning system includes NWS Tsunami Warning Centers (TWCs), Weather Forecast Offices, NWS Impact-based Decision Support Services (IDSS) staff, National Tsunami Hazard Mitigation Program (NTHMP) partners, and local warning capabilities. A WES is conducted in conjunction with NTHMP partners of jurisdiction, and consists of surveys provided to emergency management personnel.

**2. Post-Tsunami Surveys**

The purpose of a PTS is to observe and document the effects of tsunamis, especially through tsunami eyewitness reports, and to collect perishable data on tsunami impacts, in order to: a) learn about the nature and impact of the tsunami; and b) be able to make recommendations on the need for further research, planning, mitigation, and preparedness. In the case of a U.S. event, these data are immediately made available and shared with the affected U.S. state or territory. In the event of an international event, these data are shared with the appropriate country(ies). Data

sharing will facilitate damage assessment needs and enable more informed disaster response decision-making.

## **2.1 Criteria**

A PTS is triggered by the occurrence of a domestic destructive tsunami and/or request for assistance through the United Nations Educational, Scientific and Cultural Organization (UNESCO) International Oceanographic Commission (IOC) as described below.

## **2.2 Authority**

The National Oceanic and Atmospheric Administration (NOAA) Office of the Federal Coordinator for Meteorology (OFCM) maintains the National Plan for Disaster Impact Assessments (NPDIA), coordinates inter-agency post-storm damage assessment efforts, and oversees implementation of activities in the Memorandum of Understanding between the National Weather Service and the Civil Air Patrol. The International Tsunami Information Center (ITIC) is the NWS lead for coordinating and facilitating post-tsunami science surveys and disaster impact assessments in coordination with the OFCM.

A domestic PTS is initiated by the Director of the Analyze, Forecast, and Support Office (AFSO) (or designee), or by the affected NTHMP state or territory. Once initiated, the ITIC will coordinate and facilitate the PTS with NWS units and may engage the Caribbean Tsunami Warning Program as appropriate for an Atlantic Ocean event. Any U.S. PTS should be coordinated with the appropriate NTHMP federal / state / territory / commonwealth partner agency. NWS personnel who are approached by outside agencies to serve on a survey team should notify the ITIC Director and their first-line supervisor as soon as possible to let him/her know a request was made.

Upon request, an international PTS is conducted under the auspices of the UNESCO IOC, following a destructive tsunami to assist authorities in other countries. A PTS is organized and facilitated by ITIC with the corresponding Tsunami Information Center (TIC) at the request of the country and/or the UNESCO/IOC. ITIC will work with the U.S. Tsunami National Contact and NWS International Affairs Office to coordinate the participation of NWS staff in the international PTS.

Additional coordination efforts are required for an international PTS. The IOC generally initiates an international PTS on request from the country and may request the ITIC to lead or support the survey. A formal request may also be submitted to the Department of State (DOS) by the affected country. When requested by the IOC to lead or support a survey, the ITIC will organize a survey team to investigate tsunami damage and inundation in the affected foreign country(ies). The Director of the NWS Pacific Region, the NOAA Tsunami Program Manager, and the NWS International Affairs Office will be notified by the ITIC Director when any international PTS team is being formed, whether the team includes U.S. Government personnel or not. International PTS involving U.S. Government personnel are approved by the DOS.

### **2.3 Process**

The ITIC conducts, facilitates, and coordinates domestic and international PTSs. These multi-sectoral surveys may document marine and terrestrial environmental, geological, seismological, tectonic, geotechnical, structural, human, social, and economic impacts, in addition to tsunami runup and inundation. Refer to the IOC's [\*International Tsunami Survey Team \(ITST\) Post Tsunami Survey Field Guide 2nd Edition, IOC Manuals and Guides No. 37, Paris: UNESCO 2014 \(English\)\*](#) for procedures and guidance on conducting national and international surveys, and a summary of the technologies and methods used. Standardized PTS instructions, procedures, and guidance will be made available to all participating nations by the ITIC to enable them to conduct their own surveys.

The ITIC will coordinate with PTS team members to develop a summary report immediately following their survey(s). The summary report will include the data collected, preliminary results, and any recommendations for improving mitigation and preparedness. In the case of an International PTS, the ITIC in coordination with the UNESCO IOC, will compile the reports and make them available to the affected countries.

ITIC and the World Data System's World Data Service (WDS) for Geophysics (co-located at the NOAA National Centers for Environmental Information, formerly National Geophysical Data Center) hosts a PTS data repository. The ITIC will coordinate with PTS leaders to obtain quality-controlled data in a timely manner for permanent archiving of the essential tsunami event information at WDS-Geophysics/NCEI.

## **3. Domestic Post-Tsunami Warning/Advisory Effectiveness Surveys (WES)**

### **3.1 Criteria**

A domestic post-tsunami WES is an assessment of the US tsunami warning system and may be conducted following a tsunami warning or advisory along the U.S. coastline.

### **3.2 Authority**

The Chair of the NTHMP, with input from the NTHMP Program Administrator or a NOAA NTHMP Warning Coordination Subcommittee Co-Chair, will initiate the domestic post-tsunami WES.

### **3.3 Process**

The Director of the ITIC will facilitate a post-tsunami WES working with the WES Coordinator. The WES Coordinator is one of the NOAA NTHMP Warning Coordination Subcommittee Co-Chairs or a representative from the National Tsunami Warning Center (NTWC) or Pacific Tsunami Warning Center (PTWC) as appropriate. Emergency Management is the target for a post-tsunami WES. Following the issuance of a tsunami warning or advisory, the ITIC will conduct an emergency management and public survey using the questionnaires and procedures developed and approved by the NTHMP Warning Coordination Subcommittee. The ITIC will use the following procedure to conduct the surveys.

### **3.3.1 Conducting the Emergency Management Survey**

- Within one week of the warning or advisory for a U.S. coastline, the WES Coordinator will contact affected state or territory emergency management agency representatives and provide the questionnaire with basic instructions concerning who to contact, timeline, and reporting procedures.
- State or territory representatives will forward the questionnaire to emergency management representatives in their jurisdiction, providing instructions and requested timelines for completion. This may involve in-state travel for direct interaction with emergency management leaders.
- Within six weeks of the warning or advisory, state or territory representatives will return questionnaires to the WES Coordinator for compilation of results.
- Within ten weeks of the warning or advisory, the WES Coordinator will compile the questionnaire results, and assemble a report on the results. The results should be compared with previous events to identify trends, best practices, and problems.
- The final report will be provided to the NTHMP Administrator to publish on the NTHMP web site.

### **3.3.2 Conducting the Public Feedback Survey**

- Within one day of the warning or advisory, a prominent link to the public feedback questionnaire on the NTHMP web site will be displayed on U.S. NTWC and ITIC websites.
- Two weeks after the warning or advisory, the link will be removed.
- Within ten weeks of the warning or advisory, the WES Coordinator will collect and assemble a report on the public questionnaire results. The results should be compared to previous events to identify trends, best practices, and problems.
- The final report will be provided to the NTHMP Administrator to publish on the NTHMP web site.