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APPLICABLE TO NWSI 10-701
May 26, 2009***

***Operations and Services
Tsunami Warning Services, NWSPD 10-7
Tsunami Warning Center Operations, NWSI 10-701***

ALASKA REGION TSUNAMI WARNING OPERATIONS

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SUMMARY OF REVISIONS: This supplement supersedes Alaska Region Supplement 08-2004, Alaska Region Tsunami Warning Operations, dated June 22, 2004. Updated with revised tsunami warning, watch, advisory, and information statement definitions. All Alaska Region with coastal areas-of-responsibility are now included in this supplement.

_____/Signed/Acting Regional Director for _____ May 12, 2009
Frank P. Kelly Date
Regional Director

Alaska Region Tsunami Warning Operations

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1.0 General Responsibilities. This supplement describes responsibilities and provides guidance to NWS offices in Alaska for responding to tsunami information messages from the West Coast and Alaska Tsunami Warning Center (WCATWC). WCATWC responsibilities are described in greater detail in NWSPD 10-7 and NWSI 10-701.

The WCATWC, located in Palmer, Alaska, is the official source of all tsunami watches, warnings, advisories and information bulletins for Alaska. The Pacific Tsunami Warning Center in Ewa Beach, Hawaii, has backup responsibility for the WCATWC.

The following Alaska Region Weather Forecast Offices (WFO) and Weather Service Offices (WSO) have dissemination responsibility when tsunami warnings, watches, or advisories are issued for their Area of Responsibility (AOR) as described in this supplement:

WFO Anchorage
WFO Fairbanks
WFO Juneau
WSO Annette
WSO Barrow
WSO Bethel
WSO Cold Bay
WSO King Salmon
WSO Kodiak
WSO Kotzebue
WSO Nome

WSO St. Paul
WSO Valdez
WSO Yakutat

These offices are also responsible for ensuring the readiness of office systems and staff through routine operational drills, coordination of activities to raise community awareness and preparedness for tsunami events, and promotion of the TsunamiReady Program (<http://www.stormready.noaa.gov/tsunamiready/index.htm>).

Alaska's Division of Homeland Security and Emergency Management (DHS&EM) has the responsibility to develop warning procedures, plans, and evacuations for local communities. The Alaska Region NWS offices should cooperate with the DHS&EM and, when possible, aid in warning dissemination. Dissemination procedures will necessarily vary with location, and the responsible office manager should coordinate with local officials. Established procedures will be included in the Station Duty Manual.

2.0 Tsunami Product Dissemination. Tsunami warnings, watches, and advisories for Alaska, British Columbia, and the west coast of the United States are issued under Advanced Weather Interactive Processing System (AWIPS) heading TSUWCA. The WCATWC also issues information statements under the AWIPS heading TIBWCA, EQIAKX and EQIWOC. Easy-to-read public versions of the TSU and TIB products are issued under the AWIPS headers TSUAK1 and TIBAK1. Examples of all products are provided at: <http://wcatwc.arh.noaa.gov/Products/product.htm>.

Specific message definitions for these products are provided at: <http://wcatwc.arh.noaa.gov/Products/msgdefs.htm>.

Communications paths for these messages are described at: <http://wcatwc.arh.noaa.gov/Products/messagesumm-nolink.htm>.

Criteria which dictate the product issued by WCATWC are given in bar chart form at: <http://wcatwc.arh.noaa.gov/Procedures/ProcedureChart.gif>

2.1 Tsunami Warnings and Watches. Tsunami warnings and watches will be relayed from the WCATWC to the WFOs by voice announcement on the National Warning System (NAWAS), and via AWIPS. If the NAWAS system is inoperative, commercial telephone should be used as back up.

Note: Within Alaska Region the WCATWC only issues tsunami warnings and watches for the Aleutian Islands, Pribilof Islands, Alaska Peninsula, southern Alaska, and southeastern Alaska coasts. Only information statements and/or advisories are issued for the Bering Sea and Arctic Ocean coasts of western and northern Alaska. The procedures given in sections 2.1.x and 2.2 do not apply to WFO Fairbanks, and WSOs Barrow, Kotzebue, Nome, and Bethel.

Tsunami warnings and watches will be handled and disseminated by NWS offices with the highest possible priority. The following procedures will be followed upon receipt of a tsunami warning or watch from the WCATWC. (Dissemination paths are summarized in Appendix A.)

2.1.1 Telephone Fan-Out. When a tsunami warning is issued by the WCATWC, WFOs will notify the WSOs by telephone. The WSO has NOAA Weather Radio, High Frequency (HF), and/or Very High Frequency (VHF) broadcast responsibility in their AOR, and/or a listening area that is within the tsunami watch/warning area for which a tsunami watch/warning has been issued. WFO Anchorage will notify WSOs Kodiak, King Salmon, Cold Bay, St. Paul, and Valdez. WFO Juneau will notify WSOs Annette and Yakutat. Since WFO Anchorage disseminates the warning message statewide, the message must be read verbatim.

2.1.2 NOAA Weather Radio (NWR). Tsunami products will be distributed over the NWR in Alaska according to the following procedures:

- a. Edit the TSUWCA product for information specific to tsunami watches and/or warnings effective in the WFO/WSO AOR. Be sure to include the “RECOMMENDED ACTIONS” paragraph as this paragraph provides “call-to-action” information.
- b. Tsunami warnings and watches may be manually recorded; however, watches and warnings should be broadcast without delay using appropriate SAME codes and the 1050 Hz warning alarm on NWR transmitters with coastal public and marine zone coverage. This action will activate the Emergency Alert System (EAS) where available, as defined by the State EAS Plan.

Special instructions for WFO Anchorage: WFO Anchorage is responsible for activating EAS statewide during tsunami warnings as instructed by the Alaska DHS&EM. This means programming the Anchorage NWR transmitter to use the “all Alaska” Federal Information Processing System (FIPS) code (i.e., 02000) rather than the code for the Anchorage Municipality.

- c. The final message from the WCATWC canceling the tsunami warning or watch should be recorded and transmitted for approximately 15 minutes. Normal programming should then be resumed.

2.1.3 High Frequency (HF) and Very High Frequency (VHF) Marine Radio. The offices at Annette, Cold Bay, King Salmon, Kodiak, and Yakutat will disseminate tsunami warnings and watches via HF and VHF marine radio. St. Paul and Valdez will disseminate tsunami warnings and watches via VHF marine radio.

2.2 Updates to Tsunami Watches/Warnings. Tsunami warning and watch updates (also issued using AWIPS product heading TSUWCA) may be issued by the WCATWC to further refine watch/warning areas and forecast times of arrival. Similar procedures are to be followed as outlined in section 2.1 above.

2.3 Tsunami Advisories. The WCATWC may issue tsunami advisories (AWIPS heading TSUWCA) for tsunamis. These tsunamis may produce strong currents in some coastal regions but are not expected to produce significant inundation. Upon receipt of a tsunami advisory from the WCATWC, WFOs and WSOs may broadcast this information over NWR and/or VHF/HF, based upon local customer requirements.

2.4 “ALL CLEAR”. The WCATWC is responsible for issuing tsunami watch/ warning/ advisory cancellation bulletins (TSUWCA). However, local emergency management authorities are responsible for determining the final “ALL CLEAR”.

2.5 Tsunami Information Statements. The WCATWC may issue tsunami information statements (TIBWCA, EQIAKX or EQIWOC) for earthquakes that may have been felt near the coast but are unlikely to trigger a tsunami. Upon receipt of an information statement from the WCATWC, WFOs and WSOs may broadcast this information over NWR and/or VHF/HF, based upon local customer requirements.

3.0 Acknowledgment of Tsunami Bulletins. Rapid dissemination of tsunami information is a top priority. WFOs and WSOs will acknowledge actual tsunami warnings, watches and advisories by using the AWIPS header TMAXXX (where “XXX” = WFO/WSO identifier). In the acknowledgment message, provide the time of receipt (Z), WFO/WSO name (or 3-letter ID), time of fan-out calls to WSOs where applicable, and last name of the responding individual.

4.0 Communication Tests. Test of the communications system between WCATWC, WFOs, WSOs, and other government entities such as DHS&EM and the U.S. Coast Guard, will be conducted monthly without prior notification. The procedures for these tests are in Appendix B. Offices participating in the monthly communications test as outlined in Appendix B will transmit a reply to the WCATWC.

Reply to Test: WFOs will report test results via AWIPS following the procedure outlined in Section 3.0 after completing all telephone calls to designated WSOs and after confirming message receipt. WSOs at Annette and Kodiak may also receive a call from the Federal Aviation Administration (FAA) verifying receipt. Acknowledgment that the calls were made and time the message was received should be included in the response. WSOs should respond to the test via WSONet using the Forecast Prep Program after receiving call(s) and the message. If the WSONet is inoperative, Aeronautical Information System Replacement (AISR) should be used as a backup.

Acknowledgment by WSOs should contain the time the telephone call was received from the WFO, and the Federal Aviation Administration (FAA) if they receive one, and the time the message was received. After a reasonable time, if no call or message has been received, a negative reply should be sent. If a call is received after a negative report has been filed, send another acknowledgment giving the time of receipt and reason for delay if known.

4.1 Monthly Communication Tests. Monthly dissemination tests will be conducted for tsunami products. WCATWC will disseminate a test TIB and/or test TSU product roughly once a month to WFO, FAA, Federal and State Emergency Managers.

4.2 Tsunami Acknowledgement Message. After receipt of the WCATWC tsunami test product(s), WFOs will respond immediately by disseminating a Tsunami Acknowledgement Message (TMA) as stated below. Add “THIS IS A TEST” to the TMA product because some customers can receive the product and may get confused.

EXAMPLE of a TMA message sent back to WCATWC from a WFO:

XXXXXX PANC 231500
TMAAFC

THIS IS A TEST.

WEXX20 PAAQ RCVD AT 231455

Or

WEXX22 PAAQ NOT RCVD

Appendix A – Dissemination Plan

Office	Transmitters	Source of Initial Notification	Source of Warning/Watch Messages and Cancellation
Anchorage	Anchorage Dutch Harbor Homer Seward Kenai/Soldotna Whittier	Received from WCATWC	AWIPS
Juneau	Juneau Haines/Skagway Sitka Wrangell Ketchikan Craig Manleyville	Received from WCATWC	AWIPS
Kodiak	Kodiak NWR HF and VHF	Received from WCATWC	WSO Net, AISR
Yakutat	Yakutat NWR HF and VHF	Received from WCATWC	WSO Net, AISR
Annette	HF and VHF	Received from WCATWC	WSO Net, AISR
Valdez	None	Received from WCATWC	WSO Net, AISR
Cold Bay	HF and VHF	Received from WCATWC	WSO Net, AISR
King Salmon	HF and VHF	Received from WCATWC	WSO Net, AISR
St. Paul	VHF	Received from WCATWC	WSO Net, AISR

Appendix B – Monthly Tsunami Communications Test Procedures Plan

Test Initiation: The WCATWC will initiate the test with calls to the WFOs over the Alaska Warning System (AKWAS) system giving the following message:

.....8 second bell.....

THIS IS THE WEST COAST AND ALASKA TSUNAMI WARNING CENTER.

THIS BELL IS FOR THE ANCHORAGE, JUNEAU, AND FAIRBANKS WEATHER FORECAST OFFICES, U.S. COAST GUARD JUNEAU ALASKA, AND ALASKA DEPARTMENT OF HOMELAND SECURITY AND EMERGENCY MANAGEMENT - ALL OTHERS DISREGARD.

THIS IS A TEST OF THE ALASKA WARNING SYSTEM FOR DISSEMINATING TSUNAMI WARNING INFORMATION. DURING AN ACTUAL TSUNAMI WARNING ALL STATIONS ON THIS NETWORK WILL BE ALERTED TO IMMINANT VOICE AND HARD COPY BROADCAST OF TSUNAMI WATCH AND WARNING INFORMATION. PLEASE INITIATE YOUR LOCAL PROCEDURES FOR THIS TEST. I repeat, **THIS IS A TEST**

ANCHORAGE WEATHER - acknowledge?

JUNEAU WEATHER - acknowledge?

FAIRBANKS WEATHER - acknowledge?

COAST GUARD JUNEAU - acknowledge?

ALASKA DIVISION OF HOMELAND SECURITY AND EMERGENCY MANAGEMENT - acknowledge?

WFOs should telephone the test message to the WSOs in their AOR. Under normal circumstances, no test message should be transmitted on NWR, or will the warning alarm be activated. On occasion, tests of the entire Tsunami Warning System will be invoked. However, Alaska Region Headquarters will direct WFOs and WSOs to test the warning alarms after coordination with DHS&EM and the State EAS Committee.

After the transmission of the test message over AKWAS, WCATWC will send the following messages via AWIPS and the FAA NADIN2 system.

WEPA41 PAAQ 260942
TSUWCA

TEST...TSUNAMI MESSAGE NUMBER 1...TEST
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
142 AM PST SAT JAN 26 2008

...THIS IS A TEST TO DETERMINE TRANSMISSION TIMES INVOLVED IN THE
DISSEMINATION OF TSUNAMI INFORMATION...

RESPONSES ARE REQUIRED FROM

1. ALL NATIONAL WEATHER SERVICE FORECAST OFFICES IN ALASKA AND ALL COASTAL FORECAST OFFICES IN WASHINGTON
- OREGON AND CALIFORNIA.

2. ALASKA WEATHER SERVICE OFFICES AT KING SALMON - COLD BAY -
KODIAK - VALDEZ - YAKUTAT - ANNETTE - BETHEL - NOME -
KOTZEBUE - BARROW AND ST. PAUL AND USAF
11TH RESCUE COORDINATION CENTER AT FORT RICHARDSON.
3. STATE WARNING POINTS OR EOC AT FORT RICHARDSON AK -
CAMP MURRAY WA - SALEM OR - SACRAMENTO CA AND THE PROVINCIAL
EMERGENCY PREPAREDNESS PROGRAMME BC.
4. FNMOC MONTEREY, U.S. COAST GUARD 11TH - 13TH - 17TH DISTRICT OFFICES
KODIAK COMMSTA AND CAMSPAC POINT REYES CA.
5. FAA REGIONAL OPERATIONS CENTERS AT ANCHORAGE - LOS ANGELES
AND SEATTLE.
6. ALL TSUNAMIREADY COMMUNITY WARNING POINTS.

RESPONSES SHOULD INCLUDE

- A. TIME-OF-RECEIPT
- B. AGENCY NAME
- C. EMAIL ADDRESS
- D. PHONE NUMBER

WEATHER SERVICE OFFICES SHOULD RESPOND IN ACCORDANCE WITH LOCAL
DIRECTIVES. ALL OTHERS SHOULD REPLY BY ONE OF THE AVAILABLE METHODS
BELOW

EMAIL ADDRESS - WCATWC-AT SIGN-NOAA.GOV
AFTN ADDRESS - PAAQYQYX
FAX - 907-745-6071

PKZ176-175-170>172-155-150-132-136>138-141-140-120-121-125>130-
051>053-041>043-011>013-021-022-031>036-PZZ130>135-150-153-156-
110-250-210-255-350-353-356-450-455-550-530-535-555-670-673-650-
655-750-AKZ191-187-185-181-171-145-111-101-121-125-131-135-
017>029-WAZ001-503-506>511-514>517-021-ORZ001-002-021-022-
CAZ001-002-505-506-006-508-509-514-515-009-034-035-039>046-
087-261042-
ALASKA/ BRITISH COLUMBIA/ WASHINGTON/ OREGON/ AND CALIFORNIA
COASTAL AREAS
142 AM PST SAT JAN 26 2008

...THIS IS A TEST TO DETERMINE TRANSMISSION TIMES INVOLVED IN THE
DISSEMINATION OF TSUNAMI INFORMATION...

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