Queensland Tsunami Notification

Manual – M.1.183

Contents

CHAPTER 1: INTRODUCTION

Queensland is vulnerable to natural disasters, particularly cyclones, floods, severe weather events and bushfires. Effective community warnings and alert systems are a key component in managing disasters or emergencies and can assist in preventing the loss of life. Community warnings and alerts provide the community with appropriate information, advice and steps to be taken in responding to a disaster or emergency situation. It is important any warning issued is timely, tailored and relevant to the community.

The Queensland Tsunami Notification Manual (the Manual) provides guidance to all persons and roles involved in the use of tsunami warning products at local, district and state government levels as a community warning messaging tool within Queensland and operating under the *Disaster Management Act 2003, Fire and Emergency Services Act 1990* and the *Public Safety Preservation Act 1986.*

1.1. Community Warnings, Alerts and Information

Community warnings, alerts and information support community resilience. When combined with the community's understanding of environmental risks, strong community education and engagement and effective disaster or emergency preparedness, warnings, alerts and information can have the potential to reduce the impacts of disasters or emergencies on communities and protect lives, properties and the environment.[1]

The National Emergency Warning Framework[2] endorsed by States and Territories covers the following stages of community warnings and alerts for disasters or emergencies:

1. Community and jurisdictional preparedness;
2. Situational awareness and analysis;
3. Decision to warn;
4. Message construction, authorisation and dissemination;
5. Management of warning consequences; and
6. Monitoring, closure and review.

Community warnings provide the community with appropriate advice on disaster and emergency situations to enable the community to make informed decisions about preparedness and safety and/or the steps to be taken in responding to a disaster or emergency situation[3].

Alerts are a method of community warning, however in the context of the Manual, it is defined as local and state agency level notification methods and arrangements which are applied concurrently with the use of community warning systems such as tsunami notifications.

Community information is one of five elements of community engagement and its goal is sharing information with and between communities and agencies to come to a mutual understanding. The underpinning principle that everyone is informed and able to take responsibility for decisions and actions.[4]

A transparent and consistent approach is required when determining what is the most appropriate community warning or alert delivery method to use, then managing the consequences of the community warning and/or alert.

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[1] Best Practice Guide for Warning Originators, page 1
[2] Attorney-General's Department, Australian Emergency Warning Arrangements
[3] Best Practice Guide for Warning Originators, page 4
[4] AIDR Handbook 6 National Strategy for Disaster Resilience

Community warnings, alerts and information can be issued or sourced by a number of methods depending on the type of disaster or emergency situation and/or agency. Queensland's primary community warning, alert and information methods are:

- Information through local government or agency websites and disaster information boards, local events and activities.
- Opt-in alerts from local government which provide SMS, landline, email and social media community messaging.
- Agency specific warnings and/or alerts, for example SunWater, Seqwater, Energex.
- Alerts and information from media outlet broadcasts.
- Bureau of Meteorology weather warnings for tropical cyclones, severe thunderstorms, severe weather, tsunami and bushfires.
- QFES fire ban alerts and/or warnings under the *Fire and Emergency Services Act 1990* (Qld).
- QFES bushfire warnings (Advice: monitor conditions, Watch and Act: conditions are changing and Emergency Warning: you are in danger).
- Emergency Alert (EA) (Warning, Watch and Act or Advice).

Community warnings should be timely and to the greatest extent possible, be issued as soon as the appropriate recommendation for protective action can be made. It is important to know when to use a community warning, alert or information.

1.2.   Australian Tsunami Warning Authority

The Joint Australian Tsunami Warning Centre (JATWC), operated by the Bureau of Meteorology (BoM) and GeoScience Australia, is the issuing authority for tsunami warning products for Australia. All warning information is publicly accessible through the BoM website (http://www.bom.gov.au/tsunami/).

Note: information and warnings released by other International Tsunami Warning Centres such as the Pacific Tsunami Warning Centre and Japan Meteorological Agency should not be relied upon or referenced as the information is not applicable to the Australian coastline.

1.3.   Warning Products

A description of the JATWC warning product suite issued is listed below:

- **National No Threat Bulletin**: To advise people that the earthquake has been assessed and that no tsunami threat exists to Australia or its Territories.
- **National or State/Territory Watch**: To advise people that a tsunami threat to Australia or its Territories may exist and that they should look out for further updates.
- **State/Territory Warning**: To advise people that a tsunami threat to their State/Territory does exist and to advise them of the level of threat (marine or land) and action they should take.
- **Tsunami Watch or Warning Cancellation**: to advise when the main threat to Australia and its Territories has passed or a tsunami fails to eventuate.
- **National Warning Summary**: To provide the public, media and emergency authorities with the status of tsunami warnings nationally.
- **Event Summary**: To provide the public, media, emergency authorities and government with summary information that can be used in post-event analysis.

JATWC will make these available:

- through the BoM website (www.bom.gov.au/tsunami) and through the 1300 TSUNAMI automated recording number; and
- directly by email and/or fax through the BoM to media outlets (for broadcast), state government departments, local government, other Australian Government agencies and other key recipients (including Queensland Fire and Emergency Services (QFES) and Queensland Police Service (QPS)).

In addition, the JATWC will notify the BoM's Queensland Regional Office by telephone before issuing a tsunami warning. The BoM's Queensland Regional Office will in turn contact the State Disaster Coordination Centre (SDCC) Watch Desk by telephone call to confirm receipt of warning products.

While not responsible for passing warning products to the public, QFES, through the SDCC Watch Desk is responsible for ensuring that warning products are passed on to specified entities (see Appendix 1) and that those entities are aware of the arrangements and meaning of the warning products and the accompanying safety messages. Local and District Disaster Management Groups should have arrangements in place to ensure the community are aware of the meaning of these warning products and accompanying safety messages.

1.4.   Principles

Redundancy of communication channels. Redundancy in communication channels for passing tsunami warning products to organisations and the community is highly desirable and underpins the Manual. Broadcast media provides one element of this redundancy. Government agencies at state, district and local levels provide the other.

Timeliness for action and communication. The Manual is based on the assumption of a minimum of 90 minutes warning of a tsunami's arrival in accordance with JATWC protocols. Activities during this period, therefore, may occur concurrently and warnings must be passed on rapidly.

Staged approach to information dissemination. Some warning products can include detailed information regarding locations and the level of threat. Due to technological constraints, it may not be possible to immediately disseminate complete warning products containing all information.

Sources of reliable information. Reliable information regarding any tsunami threat is essential for organisations and members of the community. Reliable sources of information in Queensland regarding tsunami warning products are:

JATWC website: http://www.bom.gov.au/tsunami/

1300 TSUNAMI (1300 878 6264)

Facility plans for action. It is recommended that tsunami warning communication and response plans be integrated with other site/facility emergency response and evacuation protocols. Agencies should consider recording their arrangements in site/facility emergency response and evacuation plans or disaster management plans (as applicable) and share them with other stakeholders at the relevant level.

Shared responsibility, clear arrangements and mutual understanding. All agencies shown in this Manual share responsibility for passing on warning products to their communities of interest. They should familiarise themselves with what actions others covered by this Manual are taking to avoid repetition and confusion during the transmission of warning products. This requires individual agencies to identify, within their area of responsibility, those facilities, organisations or hubs where provision of warning products is in the public interest and how such warning products will be provided. Those agencies should inform others at local, district and state coordination centres of what will be done and when.

CHAPTER 2: ROLES AND RESPONSIBILITIES

2.1. Australian Government

This Manual is based on Australian Government authorities undertaking the following:

- issuing tsunami warning products from the JATWC;
- ensuring signage and other aspects of the warning system are common across Australia;
- being responsible for the transmission of warning products from JATWC to Australian Maritime Safety Authority (AMSA) for onward passage to larger ships;
- being responsible for the transmission of warning products from JATWC to the Australian Government's Crisis Coordination Centre;
- being responsible for the transmission of warning products from JATWC to Airservices Australia for onward passage to commercial aircraft approaching affected airports; and
- being responsible for the transmission of warning products to any other Australian Government agencies in at-risk areas within Queensland, including Defence establishments.

2.2. State Government

Notifications distributed by the SDCC Watch Desk will be disseminated using the Emergency Management System (EMS) in accordance with the SDCC Watch Desk Weather Notifications Matrix and Appendix 1 Queensland government agencies have particular responsibilities for passing on warning products to those within their areas of responsibility.

The ability to send large numbers of messages in a state-wide or national event such as a tsunami warning is constrained by the EA system's capacity limits. EAs should not be relied on by local government as the sole method of passing tsunami warnings. Further information is contained in the Queensland Emergency Alert Manual, available at www.disaster.qld.gov.au.

2.3. District Disaster Management Groups

The planning phase includes close cooperation between the District Disaster Management Group (DDMG) and local government agencies through formal arrangements, including routine DDMG meetings and informal networks.

The District Disaster Coordinator (DDC) is responsible for contacting vulnerable Local Disaster Management Groups (LDMGs) within the district in accordance with the district protocols to ensure the LDMG have received disseminated warnings.

It is recommended that DDMGs detail district notification processes in disaster management plans.

2.4.   Local Government

Local governments, where appropriate, should ensure they are registered to receive tsunami warning products from the BoM and the SDCC. Local governments should identify vulnerable areas within their boundaries. In consultation with the SDCC and DDMG, local governments should consider passing warning products to:

- o   local government outlets;
- o   LDMGs;
- o   local government managed facilities and camp sites; and
- o   other vulnerable land and marine based elements of the community.

It is recommended that local plans contain a communications strategy with pre-scripted messages based on established JATWC messages to be delivered by identified local leaders, usually the Mayor or other designated LDMG representative.

2.5.   Training

Section 16A of the DM Act provides a legislative requirement for the Commissioner, QFES to ensure that persons involved in disaster operations are appropriately trained to maintain or enhance capability under Queensland's disaster management arrangements. Training in Queensland is undertaken by disaster management stakeholders in accordance with the Queensland Disaster Management Training Framework (QDMTF) and includes training relating to community messaging through Module 1 "Introduction to Warning and Alert Systems" and Module 2 "Working with Warning and Alert Systems".

In accordance with the Queensland Disaster Management Training Handbook, it is the responsibility of all disaster management stakeholders to undertake the training relevant to their role. The competency gained through the completion of training has been designed to ensure situational awareness and intelligence inform all relevant decision making associated with warning and alert systems.

For further information around tsunami notifications, contact your local Emergency Management Coordinator, QFES.

CHAPTER 3: TSUNAMI NOTIFICATIONS

The use of tsunami notifications in Queensland can be categorised in six stages, which align with the National Emergency Warning Framework:

1. Community and jurisdictional preparedness;
2. Situational awareness and analysis;
3. Decision to warn;
4. Message construction, authorisation and dissemination;
5. Monitoring and closure; and
6. Review.

However, Stage 5 of the National Emergency Warning Framework "Management of Warning Consequence" has been reflected and is described across Stages 3-4 (refer to Figure 1: Stages of tsunami notifications).

The stages of tsunami notifications are also underpinned by the four key components of systematic people-centred early warning systems[5]:

1. Risk knowledge;
2. Monitoring and warning service;
3. Dissemination and communication; and
4. Response capability.

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[5] UNESCO Plans and Procedures for Tsunami Warning and Emergency Management

PPRR DM GUIDELINE – SUPPORT TOOLKIT
Last Updated: 10 August 2018

1 COMMUNITY AND JURISDICTIONAL PREPAREDNESS

Consider:

- Collecting knowledge of the hazards and risks to a community from tsunami inundation, and planning for them.
- Undertaking risk assessments
- Are the hazards and vulnerabilities well known?
- Promoting community and agency collaboration and shared responsibility
- Community engagement and preparedness programmes and/or activities
- Communities vulnerable to tsunami inundation should understand the risks in their environment.

TSUNAMI THREAT DETECTED

- The Australian Tsunami Warning System which comprises the JATWC providing a comprehensive tsunami monitoring and warning system; delivering timely and effective tsunami warnings to the Australian population.

2 SITUATIONAL AWARENESS AND ANALYSIS

- Timeliness of a notification and community warning is intrinsic to the effectiveness of the notification and community warning messages.
- Initiation of the Queensland Tsunami Notification Process
- If applicable, activate all relevant response plans for example Tsunami Response Plan, Evacuation Plan, Community Warning Plan etc.

3 DECISION TO WARN

- Community warnings aim to support effective public decision and action to a tsunami in partnership with timely, authoritative and quality information and arrangements.
- The SDCC Watch Desk ensures notification and onward communication of the Tsunami warning as per the Notification Process
- Initiate use of EA - Pre-prepared messaging and polygons

4 MESSAGE CONSTRUCTION, AUTHORISATION AND DISSEMINATION

- Delivery of pre-prepared messages and polygons recommend for use.
- Delivery through multiple mechanisms for community warnings and alerts such as television, radio, social etc. to maximise saturation and penetration
- Keep message simple, clear and brief, suited to the needs of the community, worded in advice from the relevant agency, utilise appropriate templates

5 MONITORING AND CLOSURE

Continue:

- monitoring and coordinating response
- maintaining situational awareness
- Reporting
- Communication of information
- Ensure the communication of the "All Clear" when the threat is over.

6 REVIEW

- Tsunami Notification processes and all associated response plans require regular exercising and review
- Exercising Tsunami notifications, response plans and procedures across local, district, state and commonwealth agencies.

> **Time Critical Action**

> **Consequence Management**

THE FOUR KEY COMPONENTS OF SYSTEMATIC PEOPLE-CENTRED EARLY WARNING SYSTEMS.
SOURCE: ISDR PLATFORM FOR THE PROMOTION OF EARLY WARNING (UN-ISDR. N.D.)

- RISK KNOWLEDGE   • MONITORING AND WARNING SERVICE   • DISSEMINATION AND COMMUNICATION   • RESPONSE CAPABILITY
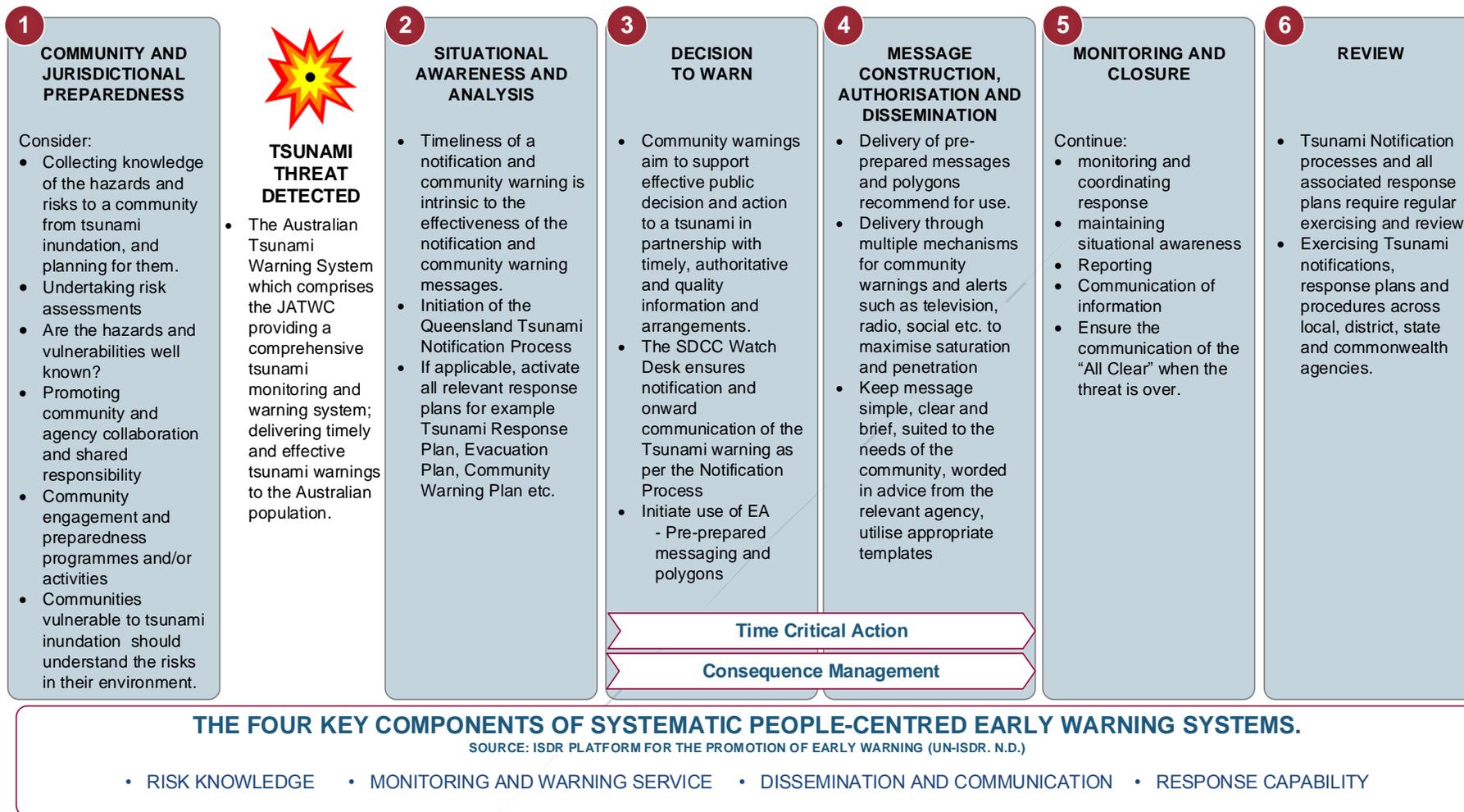
Figure 1 Stages of Tsunami Notifications

3.1.   Management of Warning Consequences

The management of consequences for community warnings, particularly tsunami notifications, needs to be specifically considered across Stages 3 and 4, refer Figure 1 above.

Consequence management considerations for - Stage 3: Decision to Warn and Stage 4: Message Construction, Authorisation and Dissemination are discussed in Sections 3.4 and 3.5 of this Chapter and describe the considerations which need to be taken into account around the impacts of the decision to issue tsunami notifications.

When determining the most appropriate community warning to use, consideration must be given to the management of warning consequences. Under the National Emergency Warning Framework, the Best Practice Guide focuses on the following considerations:

- why warn;
- what to warn about;
- when to warn;
- who to warn;
- how to warn; and
- monitoring and closure.

3.2.   Community and Jurisdictional Preparedness

Prior to and during likely or actual disaster or emergency situations, preparation of communities, particularly around community warning messaging is key in helping to anticipate and manage risks and potentially reduce panic and uninformed decision making. In collaboration with relevant agencies, disaster management groups should ensure community warning preparedness arrangements are considered in relevant plans (e.g. disaster management plans or community engagement plans).

Refer to the Best Practice Guide for Warning Originators for further guidance and considerations on why warn and what to warn about.

Key considerations:
- ☐ Do you have arrangements to ensure vulnerable groups in the community and/or transitory members understand tsunami notifications?
- ☐ Have you developed pre-prepared tsunami notifications based on risk assessments?
- ☐ Have pre-prepared EA Message and Polygons been tested by the SDCC Watch Desk?
- ☐ Do documents describe community warnings and tsunami notifications processes and triggers?
- ☐ Are agencies exercised in community warnings and processes?
- ☐ Is there effective and ongoing community engagement and preparedness programs on community warnings?
- ☐ Do arrangements and programs promote shared responsibility and resilience?
- ☐ Does the community understand risks in their environment?

3.3.   Situational Awareness and Analysis

The intent of the community warning is to ensure timely and accurate information on a disaster or emergency situation is provided, enabling the community to make an informed decision about preparedness and safety. The timeliness of preparing to issue a tsunami notification as a community warning method is intrinsic to the success of the process. Triggers and pre-prepared warning messages need to be considered when undertaking disaster or emergency situation risk based planning.

Ongoing situational awareness and analysis is required to ensure information about an event informs timely decision-making to issue a tsunami notification. The outcome of situational awareness and analysis ensures the person making the decision has the necessary and relevant information about an event.

Queensland agencies can obtain information about disaster or emergency situations through various methods, including but not limited to:

- situation briefings;
- monitoring systems;
- forecasts and predictions;
- community;
- media;
- social media; and
- other agencies.

When analysing the situation and information being received, consideration needs to be given in the decision to issue tsunami notifications, about how those affected should be most effectively warned.

Further information and guidance on who and how to warn is detailed in the Best Practice Guide for Warning Originators.

Key considerations:
- What communities are at risk?
- Have other delivery methods of community warning, alert or information been initiated?
- Is it likely community warnings will be required?
- Are there any actions or directions for the community to follow, are there any language barriers?
- Consider how will the community respond to the tsunami notification?
- Will the tsunami notification cause flow on impacts, such as congestion to the traffic or telephone network?
- Can websites support an increase in their user load, will there be an impact upon emergency numbers such as triple zero?
- Is there sufficient time to warn the community?

3.4.   Decision to Warn

LDMGs considering issuing tsunami notifications should also continue to use a range of other community warnings, alerts and/or information to inform the community, such as social media, local disaster dashboards, radio, etc.

Broadcast media will carry messages distributed directly by the JATWC. Radio and television broadcasts may be preceded by the SEWS if authorised by the BoM. Local broadcast media may be used to carry messages tailored by LDMGs to their local communities.

Telephone is the most appropriate alert, particularly at night. The use of local or agency mass phone dialling message systems for alerting such as EA should be used, commensurate with the risk.

Use of radio, public address systems, sirens, variable messaging signs, social media and door knocking should be used, as appropriate.

Tsunami notification consequence management considerations:
- ☐ Have other agencies (LDMG, DDMG, QPS, SDCC etc.) been informed?
- ☐ Will the decision to issue a tsunami notification activate our evacuation plans or processes?
- ☐ Are evacuation routes impacted by the situation?
- ☐ Have call centres been briefed?
- ☐ Have you considered the delivery of community warnings which cross jurisdictional borders?
- ☐ Are there neighbouring boundary/s also issuing tsunami notifications? Is there the potential for communities within neighbouring boundary/s receiving duplicated or conflicting community warnings?

3.5. Message Construction and Dissemination

The BoM's Queensland Regional Office will arrange transmission of warning products pertaining to Queensland to other agencies. The BoM will directly transmit warning products free of charge via email or fax to:

- broadcast Media;
- the SDCC Watch Desk;
- State Government departments/authorities/agencies, local governments and other Australian Government;
- agencies, including port and airport authorities, on request; and
- any other public interest agencies, on request.

On request, the BoM will make warning products available to other private or commercial bodies or agencies, under cost recovery arrangements.

In order to avoid any possible misunderstandings arising from paraphrasing, when passing on messages, agencies with dissemination responsibilities are to use the following abbreviated message format:

> **SDCC Advises: The Bureau of Meteorology has issued a no threat bulletin / watch / updated watch / warning / updated warning / cancellation / summary*Tsunami Warning for ***Coastal Warning Area*** Please call 1300 Tsunami, that is 1300 8786 264, or log on to www.bom.gov.au/tsunami for the full text of the message.**

3.6. Monitoring, Closure and Review

3.6.1. Monitoring and Testing

The BoM, the SDCC and other agencies with responsibilities for the transmission of warning products will review and update details of recipients of the warning service quarterly.

The tsunami notification process is tested annually at the National level. Agencies can be involved through the promulgation of 'No Threat' warnings as part of testing the standard dissemination system to all stakeholders.

3.6.2.   Closure

The agency responsible for notification may issue a final communication of "All Clear" when the threat is over e.g. Tsunami No Threat Bulletin or cancellation of Tsunami Watch or Warning.

3.6.3.   Review: Evidence Based Improvements

At the end of each emergency or disaster situation where a tsunami notification was issued, it is the responsibility of all agencies to conduct debriefs and capture feedback and improvements on their respective experiences of the process and the community response. These findings are to be shared with the relevant federal and state agencies, local and regional staff so lessons identified can be reported and implemented through the improvement of this Manual and relevant agency plans, process and training. Additionally, reviews and learnings from other states can also provide opportunities to improve Queensland's use tsunami notifications and associated processes.

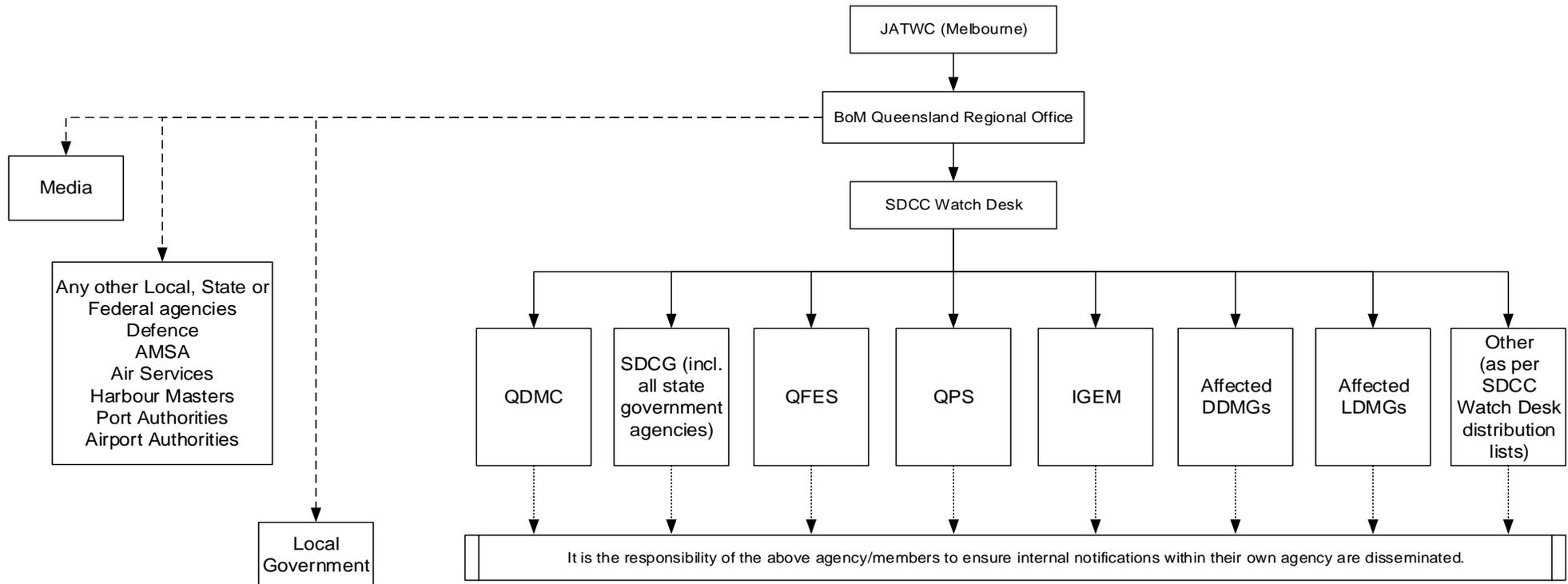The Manual and relevant documentation and training is to be reviewed annually.

Key considerations:
☐   What improvements can be made to the process of issuing tsunami notifications?

APPENDIX 1: QUEENSLAND TSUNAMI NOTIFICATION RESPONSIBILITIES

JATWC (Melbourne)

BoM Queensland Regional Office

Media

SDCC Watch Desk

Any other Local, State or Federal agencies
Defence
AMSA
Air Services
Harbour Masters
Port Authorities
Airport Authorities

| QDMC | SDCG (incl. all state government agencies) | QFES | QPS | IGEM | Affected DDMGs | Affected LDMGs | Other (as per SDCC Watch Desk distribution lists) |

Local Government

It is the responsibility of the above agency/members to ensure internal notifications within their own agency are disseminated.

Notifications based on

A risk-based collaborative approach   Complementary & existing plans   Encouraging community resilience   Defining own responsibilities

→ Active link. Systems(s) used to transmit messages must create an auditable trail that confirms receipt of the messages.

⋯⋯> Message Confirmation: Follow-up message to confirm organisation has received warning.

– – –> Passive link. No requirement for confirmation of receipt.