Carpentaria Shire

Local Disaster Management Plan 2022-24

EVACUATION PLAN

Forward

The Carpentaria Local Disaster Management Group is committed to ensuring the safety of the community in times of natural disaster. The decision to evacuate members of the community will not be a decision made lightly, the group is committed to ensuring that any decision is made using all of the information available to them at the time.

The disaster management group will provide the community with everything at its disposal to ensure that any evacuation is conducted safely; it does however acknowledge that final decision to evacuate remains with the individual.

Endorsement

This plan has been endorsed by the Carpentaria Local Disaster Management Group

Chairperson
Local Disaster Management Group
Date: / / 2023

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Authority to plan

This plan is written under the authority of the Disaster Management Act 2003.

Distribution List

The distribution list will be as per the LDMP Principal Plan

Amendment Schedule

Date	Amendment	Amendment Number
May 2023	Review and renew	1

Definitions and abbreviations

Abbreviation	Full meaning
Act	Disaster Management Act 2003
AIIMS	Australasian Inter-service Incident Management System
CSC	Carpentaria Shire Council
CEO	Chief Executive Officer
COAG	Council of Australian Governments
Community	A group of people with a commonality of association and generally defined by location, shared experiences, culture or function.
DDC	District Disaster Coordinator
DDMG	District Disaster Management Group
Disaster	A serious disruption in a community, caused by the impact of an event that requires a significant coordinated response by the state government and other entities to help the community to recover from the disruption. "Serious disruption" means: • Loss of human life, or illness or injury to human • Widespread or severe property loss or damage Widespread or severe damage to the environment
Disaster Management	Means arrangements about managing the potential adverse effects of an event including for example, arrangements for mitigating, preventing, preparing for, responding to and recovering from a disaster
Disaster Operations	Activities undertaken before, during or after an event happens to help reduce loss of human life, illness or injury to humans, property loss or damage, or damage to the environment, including, for example, activities to mitigate the adverse effects of an event.
Disaster response capability	The ability to provide equipment and a suitable number of people, using the resources available to the local government, to effectively deal with, or help another entity to deal with an emergency situation or a disaster in the local government's area.
District Disaster Coordinator	A Police Officer appointed by the Commissioner of the Queensland Police Service as a District Disaster Coordinator under Section 25 of the Disaster Management Act 2003.
DRFA	Disaster Recovery Funding Arrangements (Superseded NDRRA)
EA	Emergency alert
Evacuation	The Planned relocation of people from dangerous or potentially dangerous areas to safer areas and eventual return.
Evacuation centre	Group shelter provided for affected people in a community hall or similar. It is part of emergency relief and is different from temporary accommodation.
Emergency management	A range of measures to manage risks to communities and the environment. In relation to this plan the terms disaster management and emergency management are inter-changeable.
EMAF	Emergency Management Assurance Framework

Aim

The aim of this plan is to detail the evacuation process the Carpentaria Local Disaster Management Group (LDMG) will follow during an event that threatens the safety of residents in the shire.

Objectives

The objective of this plan is to detail the actions and considerations that the local disaster management group must undertake to complete a safe and timely evacuation of residents in the Carpentaria Shire.

This plan is a risk management strategy of the Carpentaria LDMG that is used to mitigate some of the effects of an emergency or disaster on the Carpentaria community.

Scope

This plan details the actions required for three distinctly different scenarios:

- Complete evacuation of Karumba from Storm Tide.
- Significant evacuation of Karumba due to flooding
- Significant evacuation of Normanton due to flooding.

Each of the above threats will have distinctly different impacts on the community, therefore a separate evacuation plan is required for each.

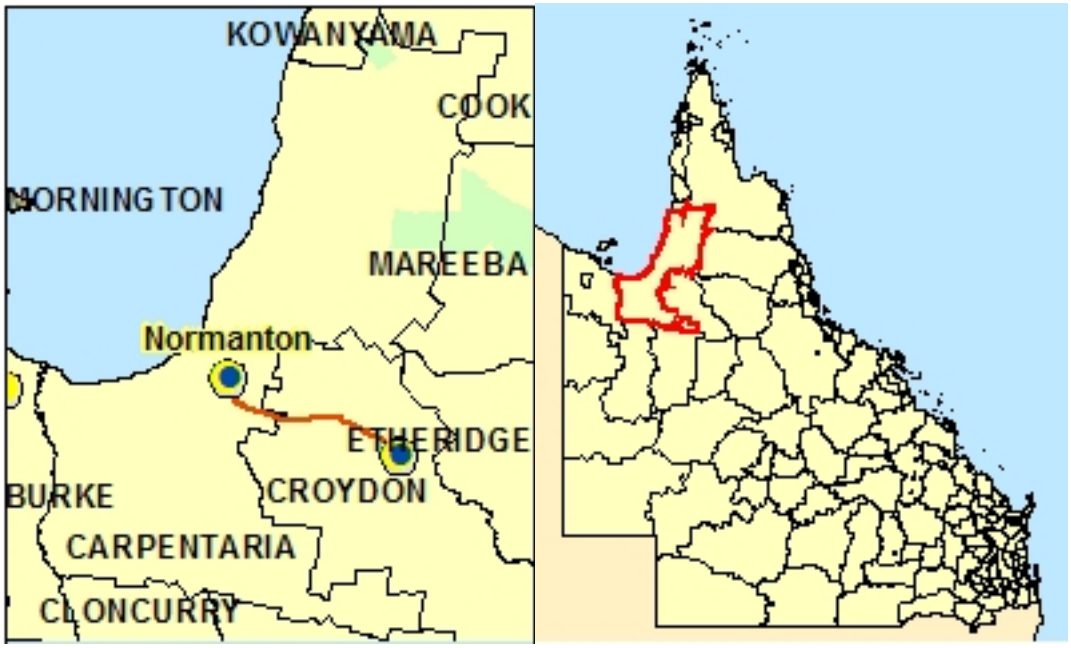
Whilst the specific threat plans are written to mitigate against the most likely threats to the community parts or all of these plans may be used to evacuate persons at risk from any other threat.

This plan forms part of and is supported by the Local Disaster Management Plan for the Carpentaria Shire.

Geographic Information

The Shire of Carpentaria stretches from Kowanyama in the North around the Gulf of Carpentaria to the Leichardt River in the west, and follows the Norman River to Trenton Station in the south-east.

With no major mountain ranges and seven major river systems, much of the Shire is covered by flood plains. Land types vary within the Shire from eucalyptus forests, sand ridges, alluvial flood plains and scrubby ironstone ridges.



The town of Normanton is located at -17.674073 Lat and 141.075919 Lon. The town is situated on the Norman River and is predominately flat. The highest area of the town is the hospital.

The township of Karumba is a coastal community situated on the mouth of the Norman River. The town is in two separate parts located at Lat -17.4561S Long 140.8319E (airport) and Lat -17.484 Long 140.841 (library)

The elevation of Karumba is considered low with the coastal banks being at 4m, these drop off rapidly and much of the township ranges from 2-3.5m in elevation.

Karumba point

Flood plains between Normanton and Karumba

Normanton Town (2009 flooding)

Population

The population of the shire is estimated at 2090 (2023 census) with the following breakdown.

People	**2,090**
Male	52.9%
Female	47.1%
Median age	36

Families	**468**
Average number of children per family	null
for families with children	2
for all households (a)	0.7

All private dwellings	**1,592**
Average number of people per household	2.5
Median weekly household income	$1,469
Median monthly mortgage repayments	$1,128
Median weekly rent (b)	$173
Average number of motor vehicles per dwelling	1.7

Transport

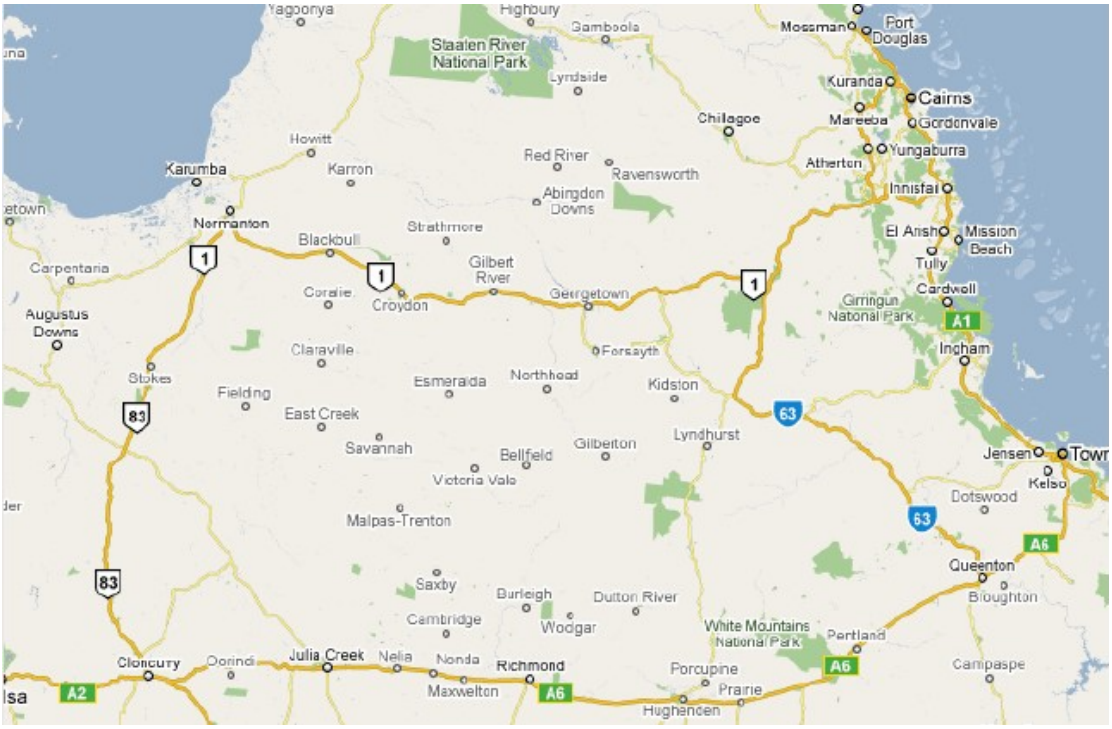
Road Network

Because of its size and shape, Carpentaria Shire has an extensive road network. State controlled roads which link Normanton with Karumba, Croydon and Cloncurry are bitumen sealed, while the road to the Mareeba Shire boundary (and to Chillagoe); is formed only. Because these roads run predominantly north/south, they cross the major river systems which flow through the Shire and are regularly closed during the wet season.

Shire controlled roads link these roads to other through roads and all properties in the Shire. There is a total length of 1606 kms of unsealed roads in the Shire, with a total of 58 kms of sealed and unsealed streets in the township of Normanton and Karumba.

Most rural roads are inundated and closed during the wet season.

There are two major supply routes to Normanton. One from Cairns via Croydon and Georgetown and the other to Cloncurry. The majority of supplies are sourced from Cairns.



The following map shows the sections of the main supply roads that are normally impassable during moderate to major flooding

Road to Karumba from Normanton

Road from Normanton to Croydon (through to Cairns)

Typical inundation of unsealed roads in shire

Airport

Normanton – 1676m sealed runway. Hercules capacity (with concession) Night Lighting.

Karumba – 1271m sealed runway. Hercules capacity. (with concession) Night Lighting.

Stations within the Shire also have their own airstrips. Helicopters and light aircraft are used for various purposes from these strips.

Rail:

The rail network runs from Normaton to Croydon only. This service is a commercial/Tourist service only.

Ports

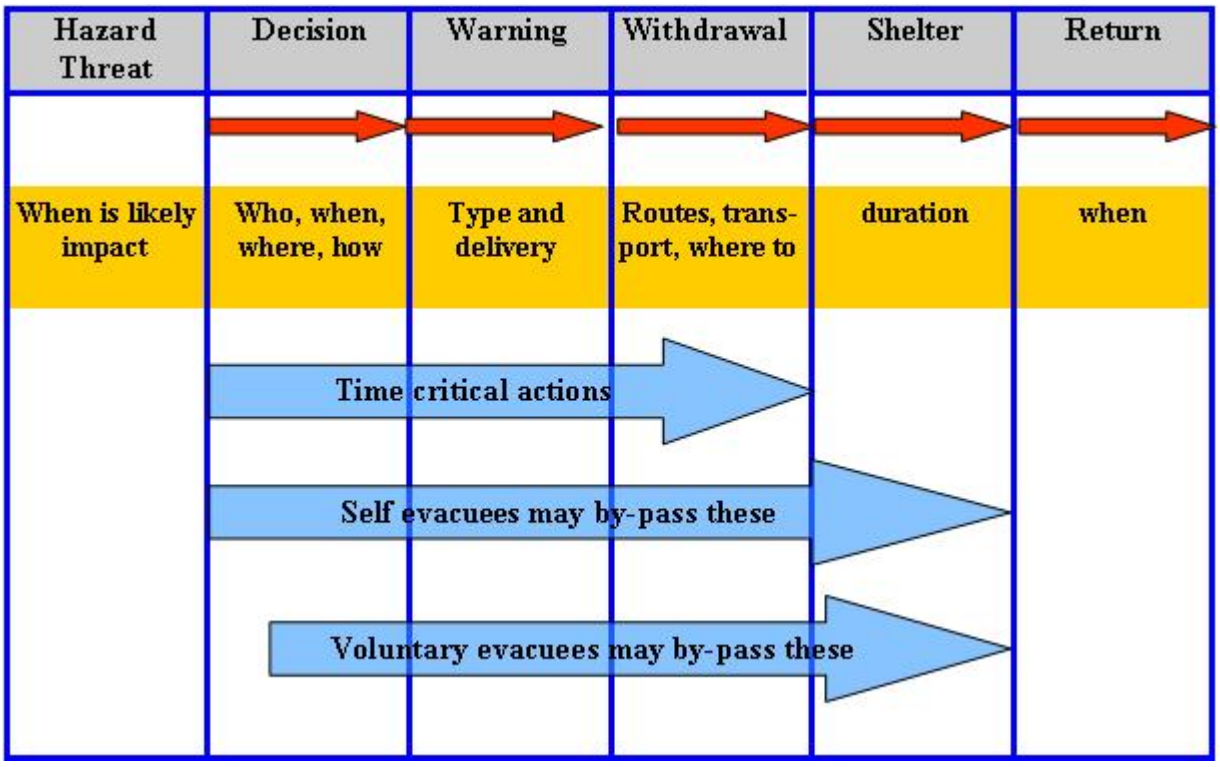
The port of Karumba services the commercial fishing industry as well as vessels transferring mining product. The port is controlled by Maratime Safety Queensland.

The Evacuation Strategy

The overarching evacuation strategy of the Carpentaria LDMG is to move people to a safer area as early as possible. The LDMG will ensure that the community is well informed of the threat and the LDMGs intent.

The Carpentaria LDMG acknowledges the complications and ramifications of unnecessary evacuations and will utilise the data available to them in the decision making process.

Whilst the LDMG will do everything within its capability to ensure the safety of the community it recognises that individuals must take responsibility for their own safety, the LDMG will provide sufficient information so that individuals may make an informed decision.



Planning Considerations

The general considerations that will influence the planning and conduct of an evacuation in the Carpentaria Shire are not limited to but include:

- The anticipated scale of the event and the number of persons likely to be affected,
- The expected time of the event, this will influence the warning phase as well as the withdrawal phase.
- The number of persons to be moved,
- The number of persons requiring shelter,
- The condition of the roads in the shire,
- The availability of transport,
- The authority of the LDMG to conduct effective evacuation (voluntary or managed)

Activation of the plan

This plan will be activated when the chair of the Carpentaria LDMG believes the threat to the community warrants the movement of residents away from the threat area. The plan will only be activated to preserve life and prevent injury to members of the community.

The District Disaster Coordinator (DDC) may direct the chair of the Carpentaria LDMG to activate the plan.

Certain aspects of the plan may be activated prior to the receipt of a storm tide or flood warning if the Chair or Deputy Chair believes that these measures are warranted to reduce the time required to effect evacuation.

The Chair of the Carpentaria LDMG does NOT have the authority to issue an evacuation order. This must come from the DDC. The Chair of the Carpentaria LDMG will make a request for an evacuation order to the DDC, following consultation the DDC may issue such an order.

Roles and responsibilities

Agency	Roles	Agency Coordinator
LDMG	Overall coordination of the Evacuation. Coordination of resources Reporting activities to the DDMG Establishment of the evacuation centres Requesting assistance form the DDMG Issue of voluntary evacuation order Request DDC for Managed Evacuation Order	Chair LDMG
QFES	Provide advice to the LDMG Exercise the evacuation plan through normal exercise regime.	QFES EMC
QPS	Management of Traffic Assist in delivering the warning message. Coordination of group movement	OIC
QFES-SES	Assist in the issue of warnings Establishment of the evacuation centre Assist in movement through vehicles/boats Assist QPS in traffic management Provide assistance to at risk persons Provide communications throughout the evacuation.	Local Controller
QFES-RFS	Assisting the SES in the roles listed above Assisting in the cleanup prior following return	First Officer
QAS	With Queensland Health transport at risk persons. Provide response capability through all phases of movement. With Queensland Heath provide basic primary care at the evacuation centre.	OIC
Council	Provide equipment as required Provide manpower as required Close and open roads at the direction of the QPS. Other tasks as required.	Works Manager
Welfare Agencies	Provide catering at the evacuation centre. Provide emotional support to evacuees. Maintain a log of evacuees.	Nominated officer
DDMG	Issue of the Managed evacuation order. Provide assistance to the LDMG as required Provide information to the SDMG.	DDC

Warnings

Standard Emergency Warning System (SEWS) is a nationally recognised warning system managed by the State Disaster Management Group.

Media warning system is an extension of the SEWS, with radio and television assisting with initial warnings and regular updates. This is issued by the CSLDMG.

Public announcement systems (mobile loud hailer) can be utilised to reach specific areas of communities that may not be reached by other methods.

Door knocks provide a means of delivery of warnings directly to community members and will also assist in determining special needs.

Pastoral properties requiring warning will be reached via telephone, email, facsimile and/or radio broadcast.

Voluntary evacuation request may be issued by the chair of the Carpentaria LDMG at a time they decide is appropriate.

Managed evacuation orders can only be issued by the Chair following receipt of authority from the DDC.

The delivery of the warnings will be dependant on the time available before the impact. The Carpentaria LDMG will endeavour to provide warnings as early as possible and with sufficient information to allow individuals to make informed decisions.

Withdrawal

The withdrawal phase of the evacuation will differ based on the type and location of the threat.

Management of the withdrawal is detailed in the areas of this plan dealing with specific threats.

Coordination of the withdrawal will be conducted by the LDMG, the actual withdrawal will be conducted by the emergency services available to the Carpentaria LDMG.

The duration of the withdrawal phase will again be dependant on the threat.

Flooding of the Norman river will allow the LDMG to conduct the withdrawal phase over period of days with detailed information on the areas that will be inundated. A tropical cyclone with an associated storm tide of significant magnitude threatening the Karumba Coast may require the withdrawal phase to be conducted quickly.

Shelter

The Carpentaria LDMG has identified shelters based on the following criteria:

- Short term shelter for the duration of the event (hours)
- Longer term shelter required until minor damage may be repaired and/or waters recede (days)
- Long term shelter after significant damage (weeks - months)

These shelters may be commercial premises (hotels/motels) or larger commercial (or government) buildings.

The locations, capacities and facilities available at different shelters are detailed in this document under the threat specific plans and the local disaster management plan as well as the individual standard operating procedures attached to this document.

Animals

The LDMG will make arrangements for the accommodation of domestic animals. Evacuees should be informed they may bring pets, this is a major influence for some when making the decision to evacuate.

Return

The return phase of the evacuation process consists of the following aspects:

- Safety assessments to be conducted on damaged houses and businesses.
- Health and electrical inspections conducted on houses and businesses.
- Essential services restored (power, water, sewage and access).
- Cleaning of houses conducted if required.
- Residents assisted to return to their home.

The return process will be a controlled move under the coordination of the LDMG. Before the movement back to dwellings the LDMG thought the CSC will ensure that essential services are established and can be maintained.

The LDMG may request assistance from the DDMG for a representative from the insurance council of Australia and additional trade persons if required.

Procedures for the evacuation of Karumba due to flooding from the Norman River.

Background

The township of Karumba is divided into two separate populated areas both located on the banks of the Norman River.

The threat to the township of Karumba from the Norman River is due to the River breaking its banks south of the town. Rising waters in the flood plain can inundate populated areas of the town.

The Risk to the town is greatly increased if the Norman River is at peak flood levels and the wave run up is increased by Westerly winds.

Flooding Levels

Norman River at Karumba

Table 38 details all relevant features of Norman River Flood maps at Karumba.

Table 38
Norman River at Karumba – Flood Mapping Features

2 year	▪ The inundation on the right back of the river is limited to the salt flat area between the main Karumba township and Karumba Point.
10 year	▪ Levels in the river are beginning to back up the local drainage systems and fill low lying areas east of Yappar Street ▪ Salt flat inundation extends to Karumba Point Road.
20 year	▪ Overland flows begin to approach township from east. ▪ Dunal system east of Pasminco Shed is overtopped. ▪ Inundation beginning to affect Clarina Street residents.
50 year	▪ Southern most community cut off by flood waters. ▪ Significant overtopping of Yappar Street in similar pattern to that observed in 1974. ▪ Col Kitching Drive overtopped near Karumba Point turnoff.
100 year	▪ Main town cut-off as water approached from the south, overtopping Walker Street. ▪ Pasminco Shed isolated. ▪ Col Kitching Drive overtopped for much of its length.
200 year	▪ Significant inundation of the Henry Street subdivision evident. ▪ Widespread inundation of Col Kitching Drive and Karumba Development Road. ▪ Southern community completely inundated.
PMF	▪ Majority of flood plain inundated in excess of 2m. ▪ Karumba Point dunal ridge is the only land in the local area which is free from flood waters. ▪ Karumba air-strip is completely inundated.

Aims and Objectives

Aim

The Aim of this strategy is to conduct precautionary movement of persons from low lying areas of Karumba that are likely to become uninhabitable due to flood waters.

Objective

The objective of this strategy is to enable the deliberate, controlled movement of persons away from areas that are known to flood. There persons can be accommodated in the Karumba township.

Scope

This evacuation procedure is limited to the populated areas of Karumba, this area falls under the jurisdiction of the Carpentaria Local Disaster Management Group. Due to geographical isolation the Local Disaster Management Group may request the OIC Police and the SES in Karumba to assist in effecting this plan, at no stage should this plan (or elements of it) be evoked without direction from the LDMG.

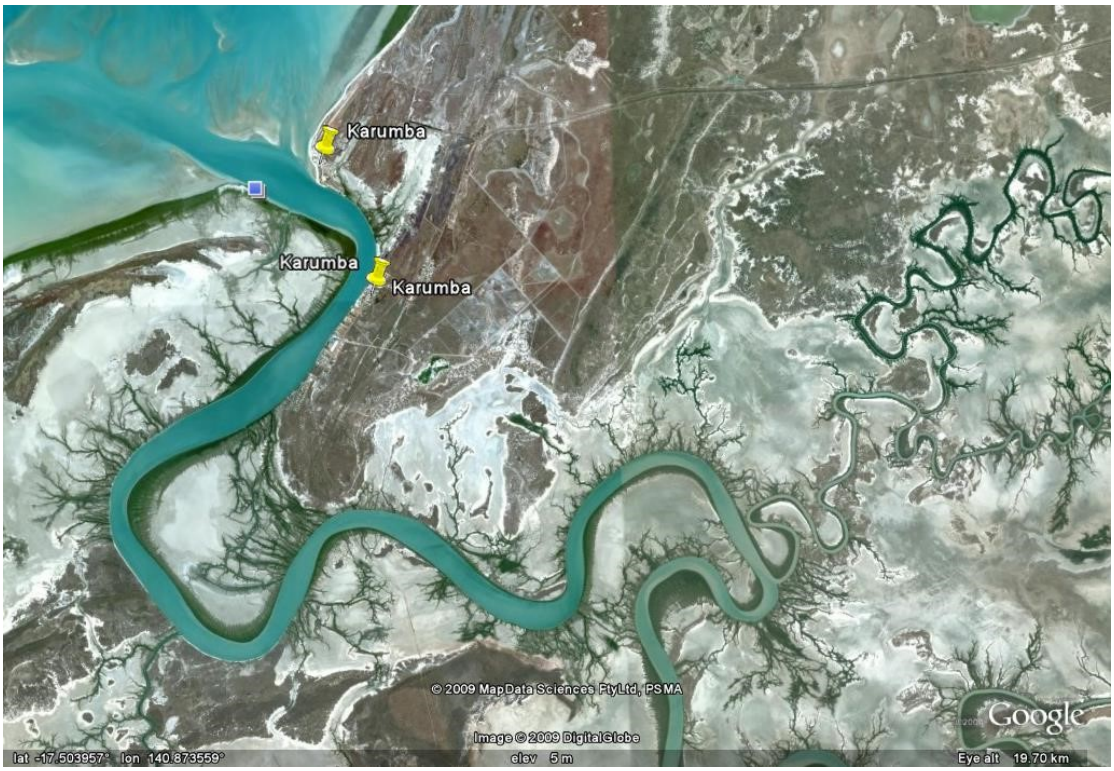
This plan is specific to flooding in Karumba as a result of the Norman River, it may be used in the event that local rain in the catchment area south of Karumba is significant enough to result in flooding.

This plan is supported by the Carpentaria Disaster Management Plan.

Geographic and Topographic Description

Karumba located at lat -17.485995 Lon 140.838087 (Town) and lat -17.461911 Lon 140.829049 (Point). The majority of the town is at 3-4m above sea level.

Both areas of the town are boarded by the Norman River to the west and tidal salt flats to the east.



Population

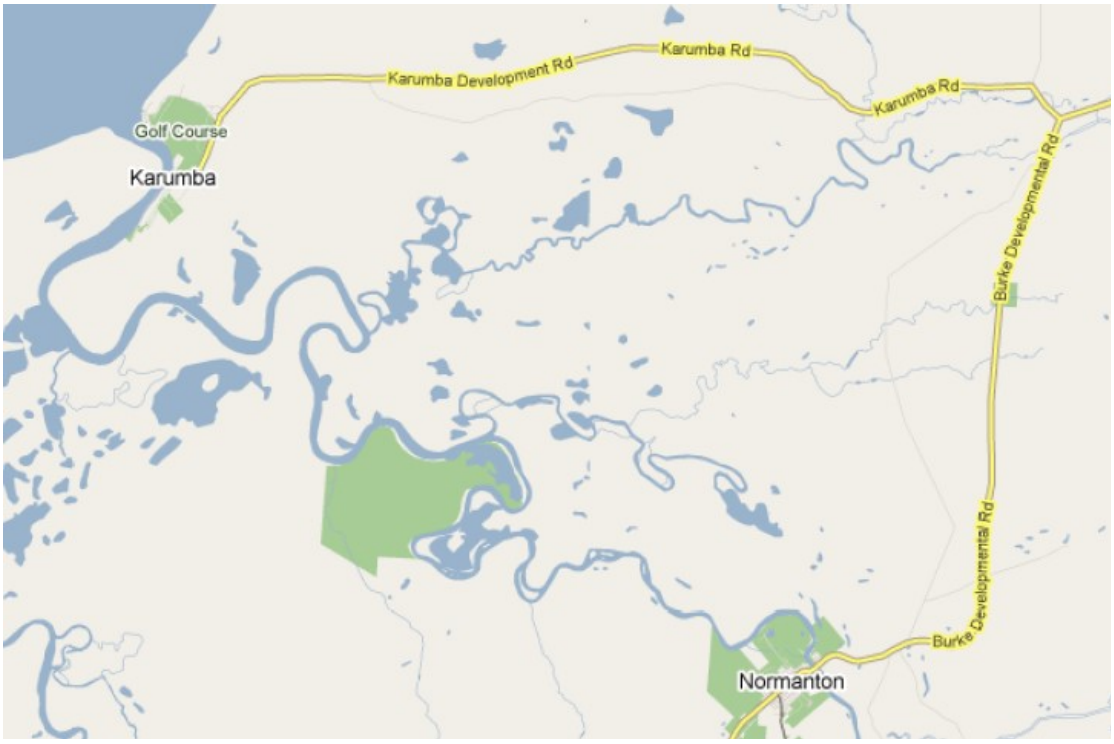
The population of Karumba is 487 (2023 census data) with the following breakdown:

Age	Karumba
Median age	55
0-4 years	11
5-9 years	11
10-14 years	19
15-19 years	13
20-24 years	15
25-29 years	20
30-34 years	21
35-39 years	12
40-44 years	31
45-49 years	28
50-54 years	53
55-59 years	58
60-64 years	63
65-69 years	37
70-74 years	42
75-79 years	30
80-84 years	9
85 years and over	6

The population figures can change dramatically if an event were to occur between April and October. This however, is less likely.

Transport

There is one road out of Karumba to Normanton (70km), this road is frequently impassable due to water during the wet season.



There is a sealed airstrip at Karumba.

The port of Karumba is only closed infrequently due to high winds from offshore storms or cyclones.

The road connecting the Northern and southern parts of the township may be impassable during a 1:50 yr event. There is sufficient accommodation for isolated flooding in either areas of the township to accommodate evacuated residents.

The Evacuation Strategy

The strategy for the evacuation of sections of Karumba due to flooding of the Norman River is that at risk persons will be moved to higher areas. It is not anticipated that this type of flooding would necessitate a large-scale evacuation.

The LDMG will have accurate data available to them well ahead of the arrival of flood waters, this will allow for a slow staged evacuation based on known data.

Due to the size and catchment of the Norman River flash flooding will not occur.

Planning Considerations

Evacuation of sections of the township of Karumba because of the Norman River flooding will be influenced by the following:

Flood heights at Normanton (flood indicators at Karumba are not useful for Norman River flooding)
Historical Data on previous flood levels (the most recent being 2009)
Expected time of the peak,
Tourist population,
Special needs persons in effected areas,
Height of the tide and its correlation with the flood peak,
Prevailing winds and wave run up,

Significant flooding

Rivers close to the towns may threaten the low lying areas. There may be a need to evacuate and relocate people that may experience water inundation to their houses.

The areas that are likely to be flooded are detailed in the flood mapping of both Normanton and Karumba. The Chair will need to take into consideration the following:

- The current levels of rivers that may threaten the town/s
- Rainfall received in the catchment areas of these rivers.
- Advice from the BoM hydrology section.
- The time of expected peaking of flood waters
- The level of flooding expected in relation to the flood map.

Information on the potential for flooding

NORMAN RIVER CATCHMENT - ASSESSMENT OF THE FLOOD POTENTIAL

Major flooding requires a large scale rainfall situation over the Norman River catchment. The following can be used as a rough guide to the likelihood of flooding in the catchment :

100mm in 24 hours in isolated areas, with lesser rains of 50mm over more extensive areas will cause stream rises and the possibility of minor flooding. If similar rainfalls have been recorded in the previous 2-3 days, then moderate to major flooding may develop.

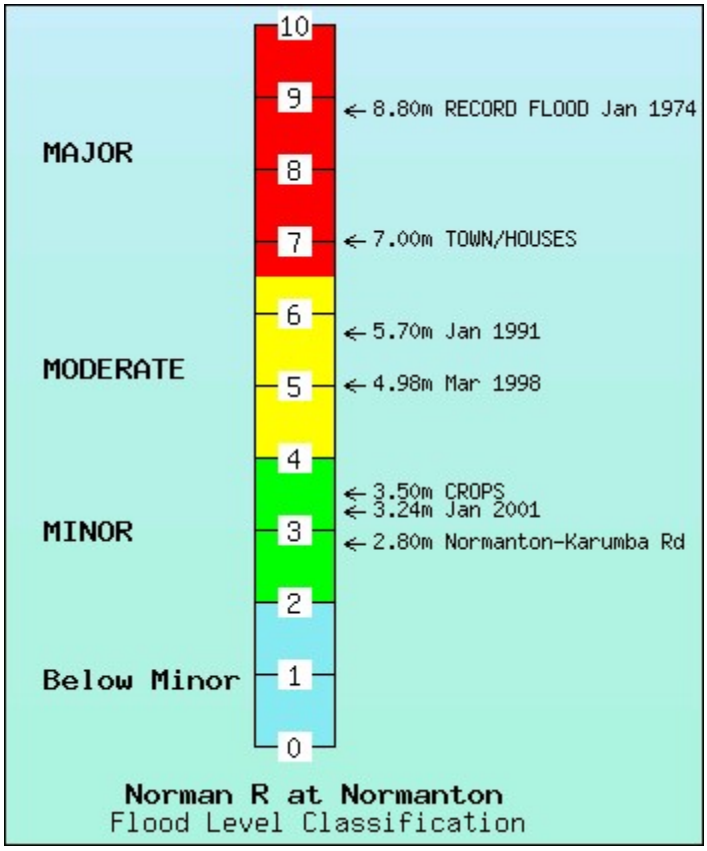
100mm in 24 hours will cause isolated flooding in the immediate area of the heavy rain.

General 100mm or heavier falls in 24 hours over a wide area will most likely cause major flooding, particularly in the middle to lower reaches of the Norman, Clara and Yappar Rivers.

Major Flooding : This causes inundation of large areas, isolating towns and cities. Major disruptions occur to road and rail links. Evacuation of many houses and business premises may be required. In rural areas widespread flooding of farmland is likely.

Moderate Flooding : This causes the inundation of low lying areas requiring the removal of stock and/or the evacuation of some houses. Main traffic bridges may be closed by floodwaters.

Minor Flooding : This causes inconvenience such as closing of minor roads and the submergence of low level bridges and makes the removal of pumps located adjacent to the river necessary.



River Height Station	First Report Height	Crossing Height	Minor Flood Level	Crops & Grazing	Moderate Flood Level	Towns and Houses	Major Flood Level
Yappar River	1.6	0.0 (X)	1.6	2.0	2.5	3.8	3.8
Glenore Weir	-	9.64 (B)	9.0	-	12.0	-	15.0
Normanton	2.0	2.83 (A)	2.0	3.5	4.0	6.0	6.5

All heights are in metres on flood gauges.
(B) = Bridge (A) = Approaches (C) = Causeway (X) = Crossing (d/s) = Downstream

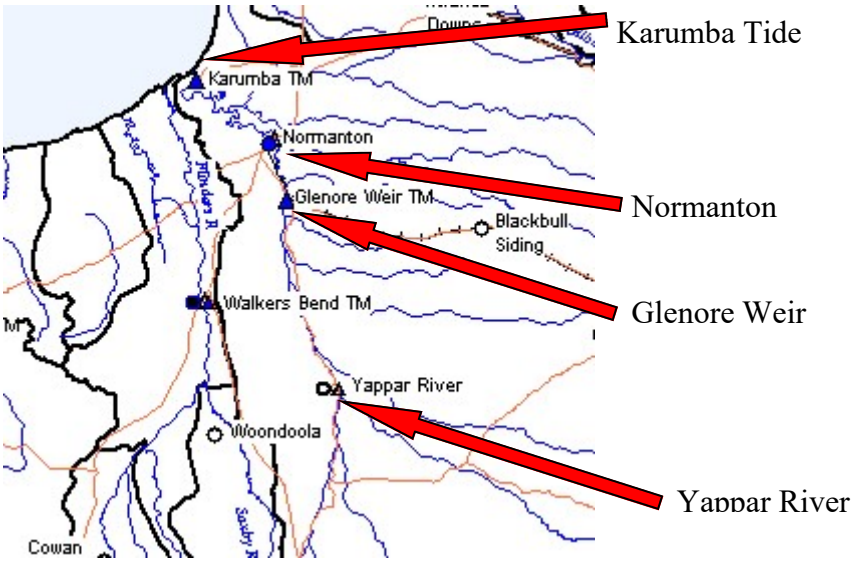
The following data can be used as a rough guide only. No action will be taken by the LDMG without consulting the BoM hydrology section.

The river heights along the Norman River are calculated by data gathered from the telemetry systems along the river.

It is important to note that there are minimal rainfall sensors in the area, any rainfall data the LDMG has from stations in the various catchment areas should be discussed with the BoM hydrology section.

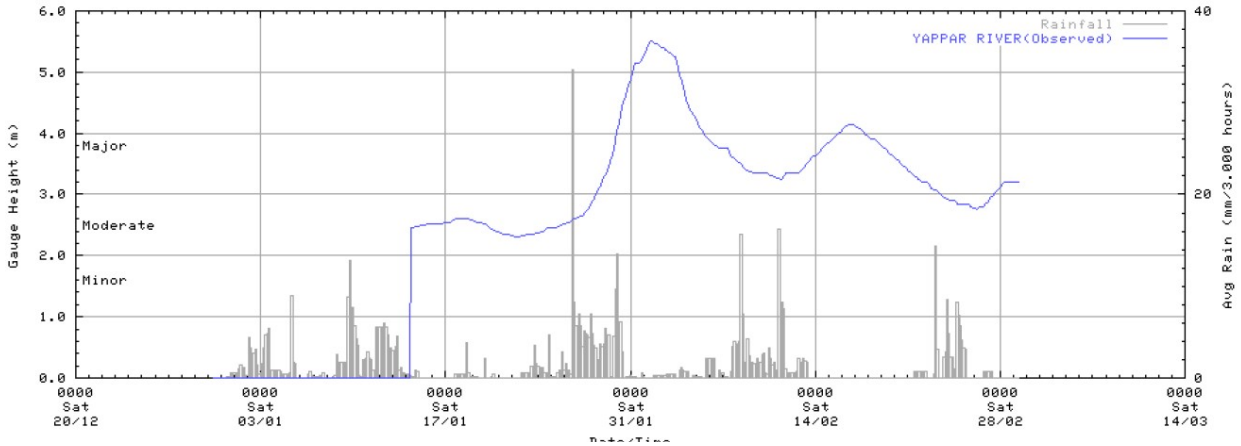
The following flood warning stations are located along the Norman River:

Station Name	Stream	River Basin	Lat	Long
Yappar River	Norman River	Norman	182600	1411612
Glenore	Norman River	Norman	175136	1410743
Normanton	Norman River	Norman	174000	1410512
Karumba Tide	Norman River	Norman	172917	1405004

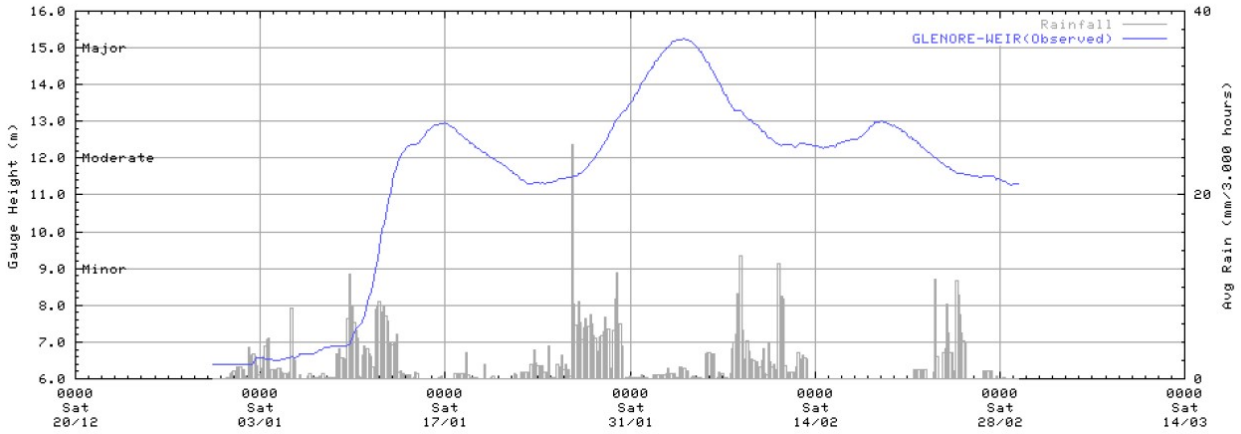


The correlation between the river heights and times can be seen in the following graphs. Again it must be stressed that local rainfall plays a significant role in this and no planning should be conducted without discussing predictions with the BoM.

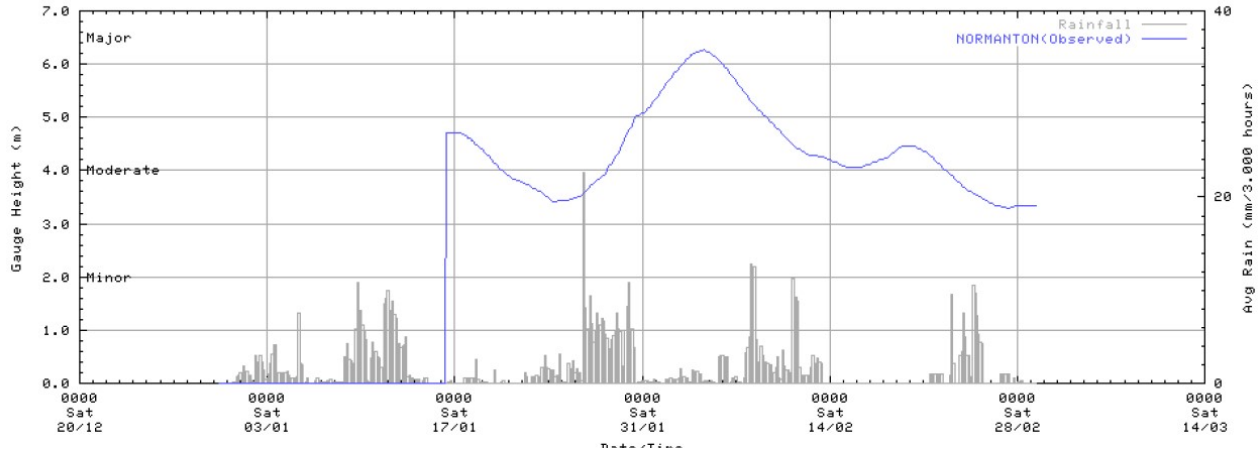
029154 Yappar River



529012 Glenore Weir TM



029155 Normanton



Streets and houses likely to be impacted

During the 2009 floods the Norman river peaked at 6.29m. The Karumba tide gauge is not an effective measure of flooding as it is affected by the tide and is located after the section of the river that leads to the flooding.

The peak of Norman river was 6.29m at Normanton on the 4/2/09 at 14:30hrs and the peak flooding was experienced at Karumba on the 5/2/09 – 24 hours after the peal in Normanton..

Karumba	Henry St Anderson St Karumba tourist park Delta Dawn Fishing charters Sunset caravan park Awesome Annie's	5x residents 2x resident	Yard only Yard only Yard only Yard only Yard only		2x people evacuation to town accommodation 2 x people evacuated to town accommodation Occupiers remain in place Occupiers remain in place Occupiers remain in place

Activation of the Plan

The Chair of the Carpentaria LDMG will activate the plan when they believe that the threat to the community of Karumba is significant enough to warrant the evacuation of persons to safer areas.

The plan will be activated by the Carpentaria LDMG based on the predicted height of flood waters in Karumba. The group will take into consideration the time of the expected peak and the prevailing weather conditions.

Roles and Responsibilities

Agency	Roles	Agency Coordinator
LDMG	Overall coordination of the Evacuation. Coordination of resources Reporting activities to the DDMG Establishment of the evacuation centres Requesting assistance form the DDMG Issue of voluntary evacuation order Request DDC for Managed Evacuation Order	Chair LDMG
QFES	Provide advice to the LDMG Exercise the evacuation plan through normal exercise regime.	QFES-EMC
QPS	Management of Traffic Assist in delivering the warning message. Coordination of group movement	OIC
SES	Assist in the issue of warnings Establishment of the evacuation centre Assist in movement through vehicles/boats Assist QPS in traffic management Provide assistance to at risk persons Provide communications throughout the evacuation.	Local Controller
RFS	Assisting the SES in the roles listed above Assisting in the cleanup prior following return	First Officer
QAS	With Queensland Health transport at risk persons. Provide response capability through all phases of movement. With Queensland Heath provide basic primary care at the evacuation centre.	OIC
Council	Prove equipment as required Provide manpower as required Close and open roads at the direction of the QPS. Other tasks as required.	Works Manager
Welfare Agencies	Provide catering at the evacuation centre. Provide emotional support to evacuees. Maintain a log of evacuees.	Nominated officer
DDMG	Issue of the Mandatory evacuation order. Provide assistance to the LDMG as required Provide information to the SDMG.	DDC

Warnings

The warning phase of the evacuation due to flooding of the Norman river at Karumba can be conducted over a period of days. The properties likely to be effected are known to the LDMG. All persons in areas likely to be inundated will be informed of the need to move and will be provided with accommodation in commercial accommodation.

Warnings will be given face to face by the local SES and Police.

Withdrawal

It is anticipated that the majority of persons being moved will be able to provide their own transport. Those requiring assistance will be provided transport from the LDMG.

Shelter

Persons moved due to inundation will remain in commercial accommodation until the water recedes. Available accommodation that is above the level of expected inundation is known the LDMG.

Return

Individuals will return to their houses once the premises have been cleaned and essential services have been restored. Should any of the premises be uninhabitable the LDMG will assist these persons in sourcing alternative long term accommodation.

Procedures for the evacuation of Normanton residents due to flooding of the Norman River.

Aims and Objectives

Aim

The Aim of this strategy is to conduct precautionary movement of persons from low lying areas of Normanton that are likely to become uninhabitable due to flood waters.

Objective

The objective of this strategy is to enable the deliberate, controlled movement of persons away from areas that are known to flood. There persons can be accommodated in the Normanton township.

Scope

This section of the plan deals with the relocation of persons in the low lying areas of Normanton at threat of inundation from the flooding of the Norman river. The plan is limited to the township of Normanton. This plan is supported by the local disaster management plan for the shire.

Geographic and Topographic Description

The town of Normanton is located at -17.674073 Lat and 141.075919 Lon. The town is situated on the Norman River and is predominately flat. The highest area of the town is the hospital.

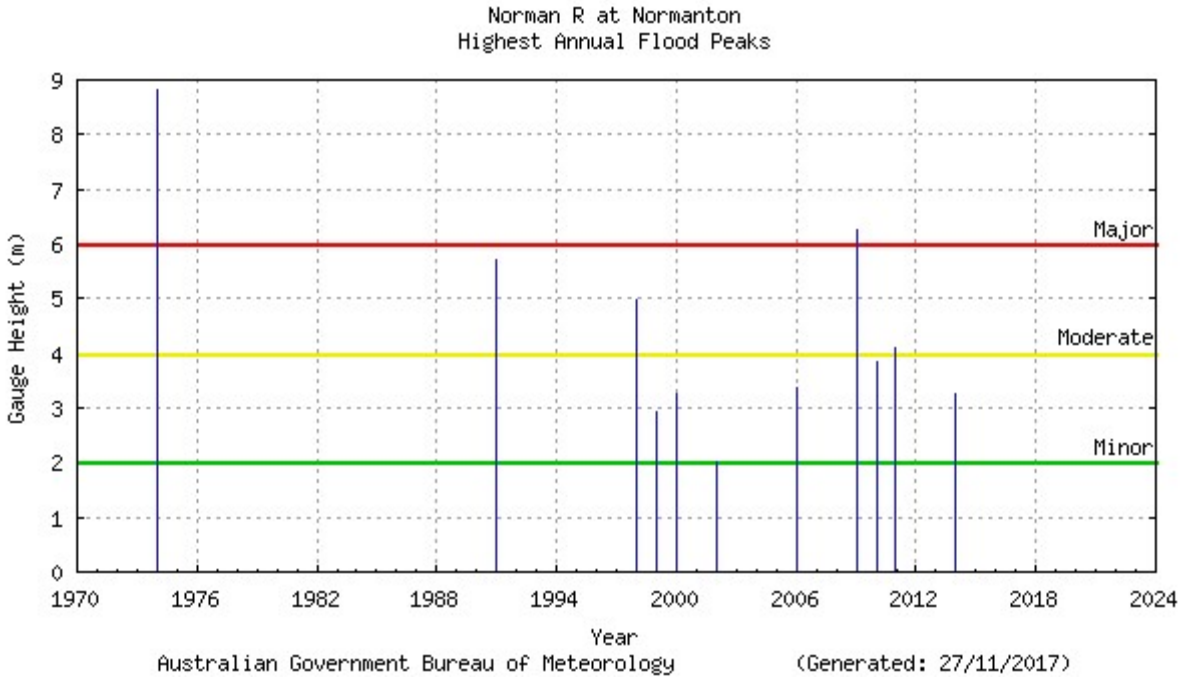
Low lying areas of the town experience inundation during high level flooding of the Norman River.

(Normanton in flood 2009, the Norman River reached 6.3m at Normanton)

Catchment areas

The Norman River catchment is located in North West Queensland and covers an area of approximately 49,000 square kilometres. The river rises in the Gregory Range (Great Dividing Range) 200 kilometres southeast of Croydon and flows in a north-westerly direction. It is joined by its major tributaries, the Clara and Yappar Rivers, near the river height and rainfall station of Yappar River.

Floods normally develop in the headwaters of the Norman, Clara and Yappar Rivers, however, general heavy rainfall situations can develop from cyclonic influences causing widespread flooding, particularly in the lower delta country around Normanton and Karumba.



Population

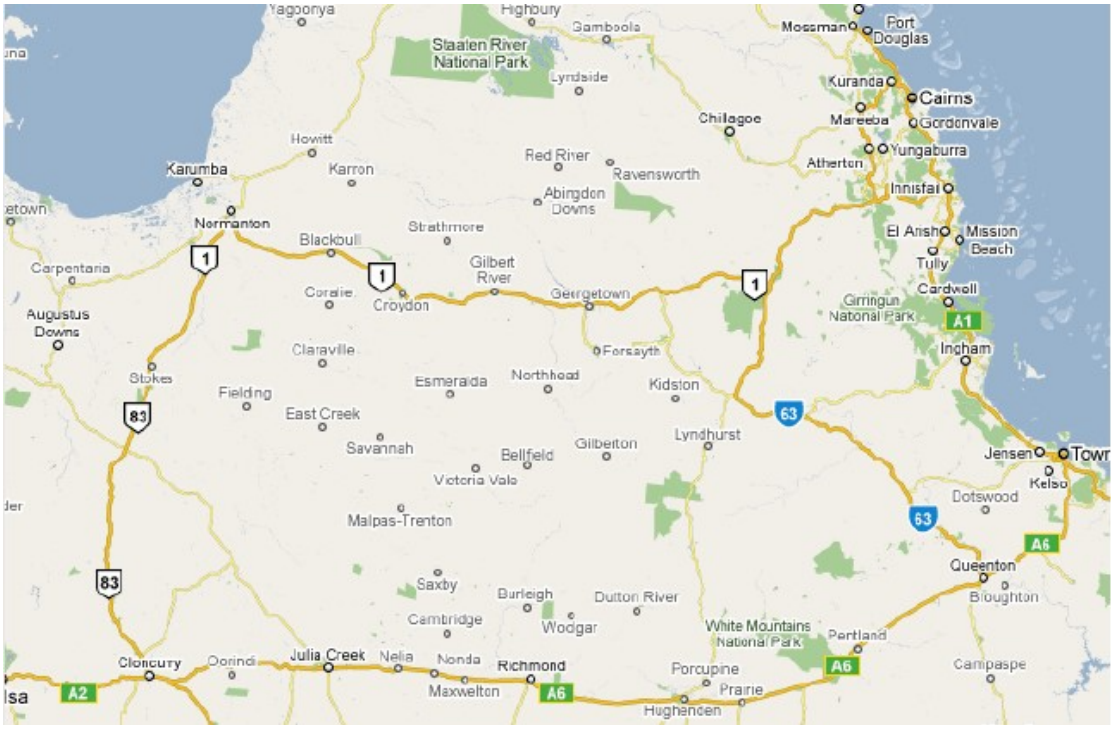
The population of Normanton is 1 326 (2021 census) with the following breakdown:

Age	Normanton
Median age	31
0-4 years	111
5-9 years	142
10-14 years	110
15-19 years	68
20-24 years	107
25-29 years	99
30-34 years	92
35-39 years	78
40-44 years	79
45-49 years	62
50-54 years	94
55-59 years	79
60-64 years	76
65-69 years	45
70-74 years	32
75-79 years	26
80-84 years	17
85 years and over	3

Normanton has a large Indigenous population stated as 57.8% (Qld 4.6%)

Transport routes

There are two major supply routes to Normanton. One from Cairns via Croydon and Georgetown and the other to Cloncurry. The majority of supplies are sourced from Cairns.



Both of these supply routes are impassable for periods of time during flooding.

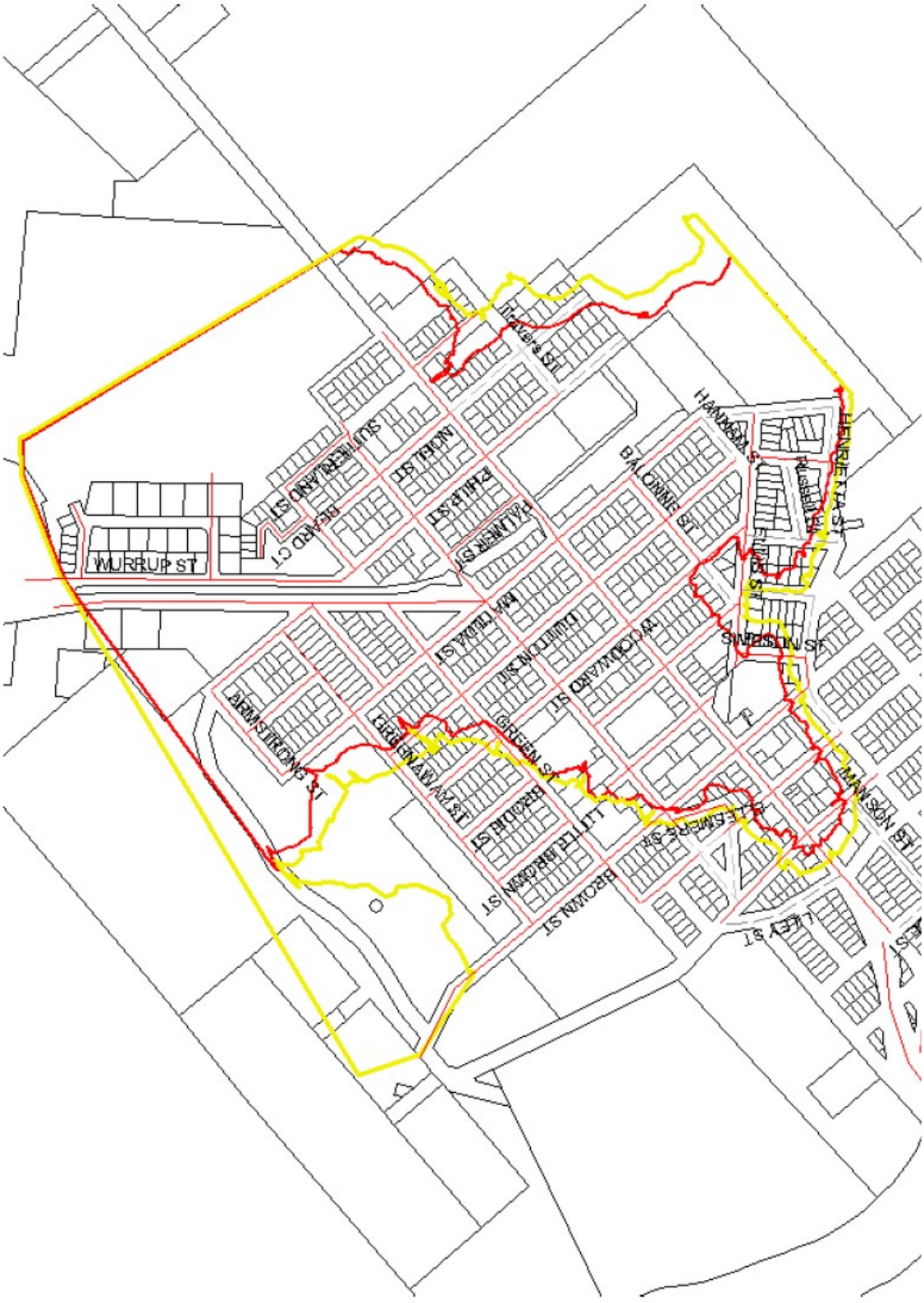
Evacuation for this event will involve use of the town road network. Whilst areas of this network may be inundated it is unlikely to effect evacuation.

The Evacuation Strategy

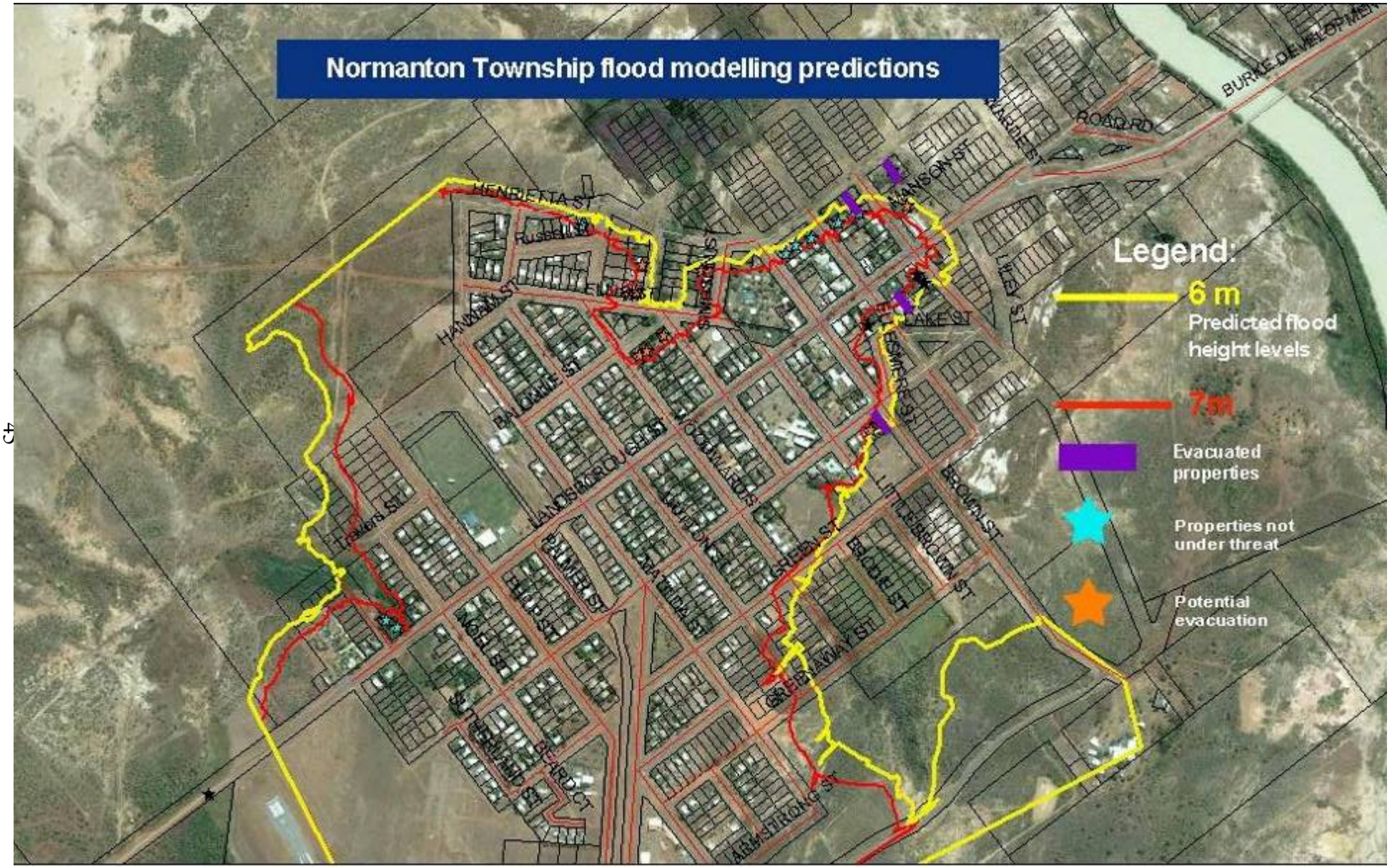
The evacuation of low lying area on Normanton will take place over a number of days. The LDMG will determine the areas to be evacuated based on the river heights at the Yappar River and Glenore (in consultation with the BoM) and the flood inundation mapping for the town of Normanton.

Persons evacuated from their normal residence will be accommodated in commercial accommodation, should there be insufficient accommodation available the LDMG may activate the evacuation centres in the town.

Flood inundation map of Normanton



	Indicates 6m Flood level
	Indicates 7m Flood Level


Normanton Township flood modelling predictions
Legend:
6 m
Predicted flood height levels
7m
Evacuated properties
Properties not under threat
Potential evacuation
HENRIETTA ST
HANSON ST
LAKE ST
LAKE ST
ESMEREE ST
BROWN ST
LITTLE BROWN ST
GREEN ST
GREENAWAY ST
LANDSBOROUGH ST
PALMER ST
NOEL ST
SUTHERLAND ST
BEARD CT
ARMSTRONG ST
ROAD RD
BURKE DEVELOPMEN

4.4.3 Summary of Norman River Flood Mapping

Norman River at Normanton

Table 37 details all relevant features of Norman River flood maps at Normanton.

Table 37
Norman River at Normanton – Flood Mapping Features

2 year	▪ River flooding extends to causeway area north-east of Landsborough Street. ▪ All other areas of Normanton are free from flooding.
5 year	▪ Inundation of Brown Street (the old hospital road) is evident. ▪ Flood waters extend up to the reservoir wall, located to the south of the town. ▪ No properties appear to be affected by inundation.
20 year	▪ Flood waters extend to Ellis Street. ▪ The bottom of Henrietta Street is inundated and flood water extends to the approach road on the eastern side of town but no properties appear inundated. The town reservoir is submerged.
50 year	▪ Inundation of Ellis Street on the northern side of town is evident. ▪ Flood waters approach Thomson Street and the medical centre on the east side of town. ▪ 18 properties appear to be inundated. ▪ Flood waters approach the old store from eastern Normanton access road.
100 year	▪ Inundation approaches the corner of Landsborough Street and Haig Street (Council Building)
200 year	▪ Two blocks are isolated on four sides on the north-east side of town. ▪ A large inundated area exists around the Ellis Street drain. ▪ Flood waters approach Landsborough Street near Gulfland Motel from the north-west.
500 year	▪ Flows cross Landsborough Street and continuous inundation between Ellis Street and the east side of town is observed. ▪ Flood waters cross Landsborough Street from north-west near Gulfland Motel.
PMF	▪ Widespread inundation of the majority of town. ▪ The only high ground remaining in the vicinity of the airport and the Council depot remains flood free. ▪ The hospital (located outside approx. RL13) is above PMF flood level but access is cut. ▪ Flooding of the airfield is evident, with flood waters inundating Landsborough Street from the north.

Streets and houses likely to be impacted

During the 2009 floods the Norman river peaked at 6.29m.

The peak of Norman river was 6.29m at Normanton on the 4/2/09 at 14:30hrs. The following areas were effected.

Normanton 6.27		Broadwater Station Glenore Station Wondoola Station Maggievale Station Delta Station Albion Hotel lower section12 units		Water through house Water through house Water through house Water through house Water inundation Inundation at 6.1 / 6.35	5x stations 5x town properties
	Carolyn St	4 x residents	1 business Burns Philip yard only 1 business Curleys transport Yard only	2 @ inundated house 1@ inundated 2@ 6.2 floor boards	
	Thompson St	1x low set 1x occupied dwelling 1x unoccupied		1 x Floor boards	

Planning Considerations

The planning of any evacuations in the town of Normanton will be conducted with the following considerations:

- The anticipated height of the Norman River at Normanton,
- The time of the anticipated peak of the Norman River,
- The population at the time of the peak,
- The availability of accommodation,
- The number of residences likely to be effected, and
- The current weather conditions

Significant flooding

Rivers close to the towns may threaten the low lying areas. There may be a need to evacuate and relocate people that may experience water inundation to their houses.

The areas that are likely to be flooded are detailed in the flood mapping of both Normanton and Karumba. The Chair will need to take into consideration the following:

- The current levels of rivers that may threaten the town/s
- Rainfall received in the catchment areas of these rivers.
- Advice from the BoM hydrology section.
- The time of expected peaking of flood waters
- The level of flooding expected in relation to the flood map.

Information on the potential for flooding

NORMAN RIVER CATCHMENT - ASSESSMENT OF THE FLOOD POTENTIAL

Major flooding requires a large scale rainfall situation over the Norman River catchment. The following can be used as a rough guide to the likelihood of flooding in the catchment :

100mm in 24 hours in isolated areas, with lesser rains of 50mm over more extensive areas will cause stream rises and the possibility of minor flooding. If similar rainfalls have been recorded in the previous 2-3 days, then moderate to major flooding may develop.

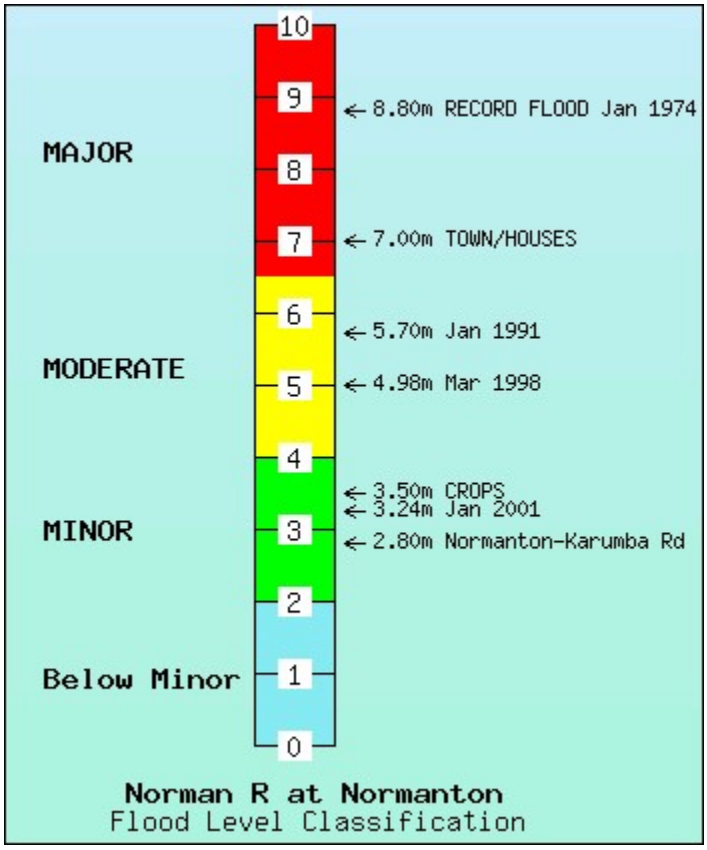
100mm in 24 hours will cause isolated flooding in the immediate area of the heavy rain.

General 100mm or heavier falls in 24 hours over a wide area will most likely cause major flooding, particularly in the middle to lower reaches of the Norman, Clara and Yappar Rivers.

Major Flooding : This causes inundation of large areas, isolating towns and cities. Major disruptions occur to road and rail links. Evacuation of many houses and business premises may be required. In rural areas widespread flooding of farmland is likely.

Moderate Flooding : This causes the inundation of low lying areas requiring the removal of stock and/or the evacuation of some houses. Main traffic bridges may be closed by floodwaters.

Minor Flooding : This causes inconvenience such as closing of minor roads and the submergence of low level bridges and makes the removal of pumps located adjacent to the river necessary.



River Height Station	*First Report Height*	*Crossing Height*	*Minor Flood Level*	*Crops & Grazing*	*Moderate Flood Level*	*Towns and Houses*	*Major Flood Level*
Yappar River	1.6	0.0 (X)	1.6	2.0	2.5	3.8	3.8
Glenore Weir	-	9.64 (B)	9.0	-	12.0	-	15.0
Normanton	2.0	2.83 (A)	2.0	3.5	4.0	6.0	6.5

All heights are in metres on flood gauges.
(B) = Bridge (A) = Approaches (C) = Causeway (X) = Crossing (d/s) = Downstream

Predicting River Height

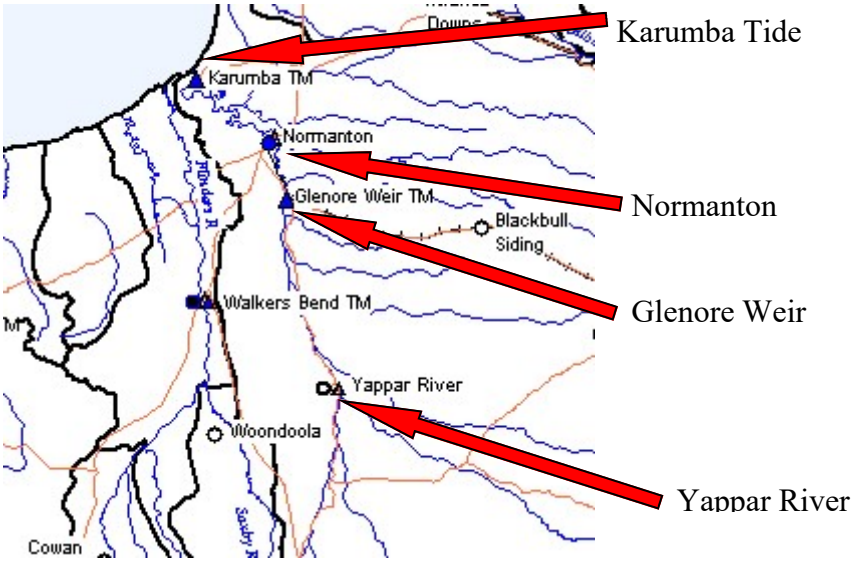
The following data can be used as a rough guide only. No action will be taken by the LDMG without consulting the BoM hydrology section.

The river heights along the Norman River are calculated by data gathered from the telemetry systems along the river.

It is important to note that there are minimal rainfall sensors in the area, any rainfall data the LDMG has from stations in the various catchment areas should be discussed with the BoM hydrology section.

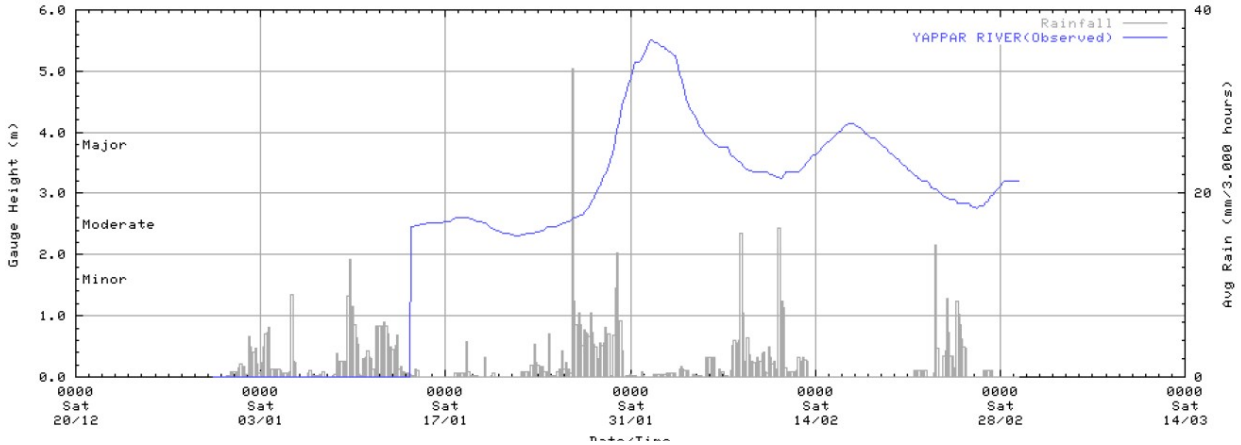
The following flood warning stations are located along the Norman River:

Station Name	Stream	River Basin	Lat	Long
Yappar River	Norman River	Norman	182600	1411612
Glenore	Norman River	Norman	175136	1410743
Normanton	Norman River	Norman	174000	1410512
Karumba Tide	Norman River	Norman	172917	1405004

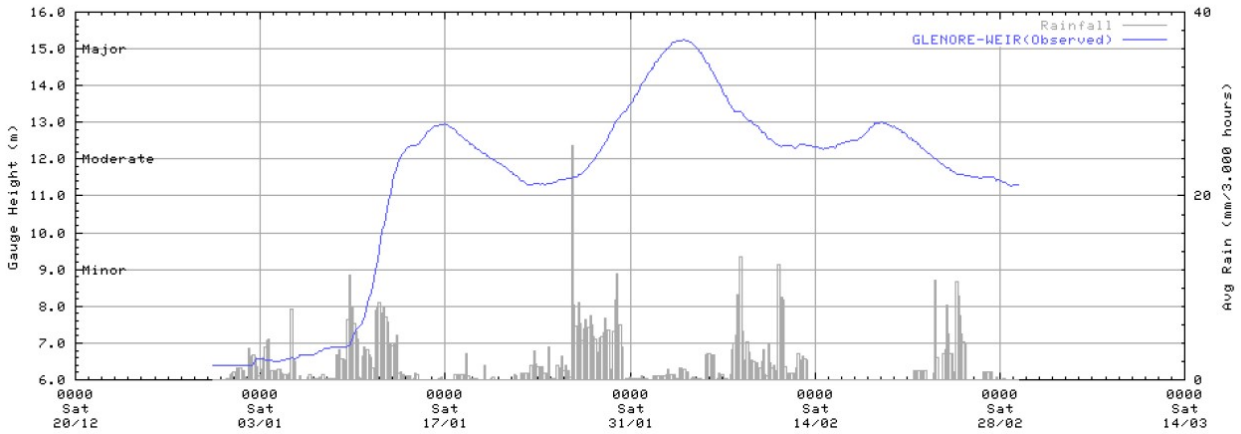


The correlation between the river heights and times can be seen in the following graphs. Again it must be stressed that local rainfall plays a significant role in this and no planning should be conducted without discussing predictions with the BoM.

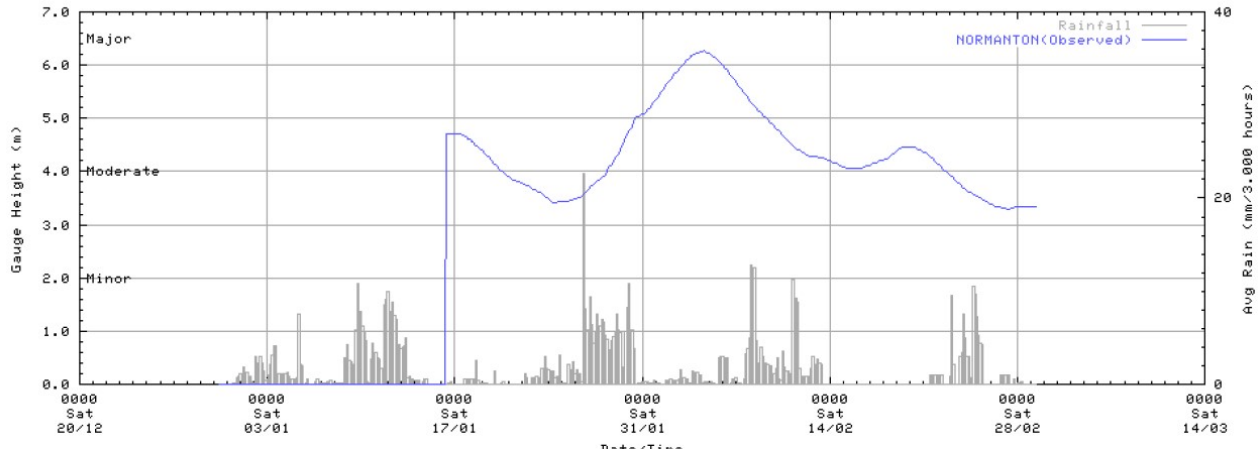
029154 Yappar River



529012 Glenore Weir TM



029155 Normanton



Activation of the Plan

The plan will be activated by the chair of the LDMG when they believe that the threat from flooding of the Norman river will be significant enough to threaten areas of the Normanton township.

The trigger for the activation of the plan is the prediction that the Norman River will exceed 5m at Normanton. The Chair of the LDMG is responsible for the activation of the plan.

Whilst it is not anticipated to be required, should the Chair of the LDMG believe that a managed evacuation is required the chair will make the request to the DDC.

Roles and Responsibilities

Agency	Roles	Agency Coordinator
LDMG	Overall coordination of the Evacuation. Coordination of resources Reporting activities to the DDMG Establishment of the evacuation centres Requesting assistance form the DDMG Issue of voluntary evacuation order Request DDC for Managed Evacuation Order	Chair LDMG
QFES	Provide advice to the LDMG Exercise the evacuation plan through normal exercise regime.	QFES
QPS	Management of Traffic Assist in delivering the warning message. Coordination of group movement	OIC
SES	Assist in the issue of warnings Establishment of the evacuation centre Assist in movement through vehicles/boats Assist QPS in traffic management Provide assistance to at risk persons Provide communications throughout the evacuation.	Local Controller
RFS	Assisting the SES in the roles listed above Assisting in the cleanup prior following return	First Officer
QAS	With Queensland Health transport at risk persons. Provide response capability through all phases of movement. With Queensland Heath provide basic primary care at the evacuation centre.	OIC
Council	Prove equipment as required Provide manpower as required Close and open roads at the direction of the QPS. Other tasks as required.	Works Manager
Welfare Agencies	Provide catering at the evacuation centre. Provide emotional support to evacuees. Maintain a log of evacuees.	Nominated officer
DDMG	Issue of the Mandatory evacuation order. Provide assistance to the LDMG as required Provide information to the SDMG.	DDC

Warnings

Due to the modelling available to the LDMG regarding the anticipated river heights the warnings can be conducted face to face. Time permits the engineering department to visit each of the effected residence and explain the level of inundation to each individual.

Withdrawal

Individuals that evacuate their residence will move to accommodation as directed by the LDMG. Should they require assistance with transport the LDMG will provide this.

Should time permit the LDMG will coordinate the removal and storage of housing contents.

Shelter

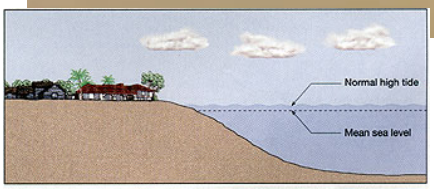
Persons evacuated from their normal place of residence will remain in this accommodation until essential services and access has been restored to their property.

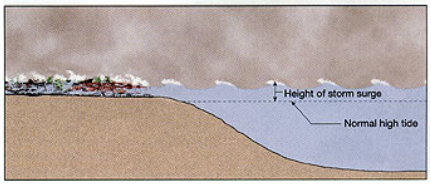
The LDMG will maintain a record of the location of each resident evacuated.

Return

The LDMG will coordinate the return of persons to affected properties. The LDMG will also utilise council assets to assist in the cleaning of properties following inundation.

Procedures for the evacuation of Karumba due to Storm Tide.





Aims and Objectives

Aim

The aim of this plan is to detail the processes for the complete evacuation of the Karumba Township. Due to the minimal amount of storm tide data available to the LDMG all planning must be for the complete evacuation of Karumba.

Objective

The objective of this plan is to detail the process involved in moving the entire population from Karumba to Normanton away from a storm tide event.

Scope

This plan covers the township of Karumba and Normanton (as an evacuation destination only). The sequences and processes in this plan were developed on the understanding that the LDMG would receive warning of a storm tide event. This section of the plan deals only with storm Tide for the town of Karumba and is supported by the local disaster management plan. This plan or parts of this plan may be used by the LDMG for mass evacuation of Karumba due to other threats.

Geographic and Topographic Description

Karumba located at lat -17.485995 Lon 140.838087 (Town) and lat -17.461911 Lon 140.829049 (Point). The majority of the town is at 3-4m above sea level.

Both areas of the town are boarded by the Norman River to the west and tidal salt flats to the east.

Population

The population of Karumba is 487 (2023 census data) with the following breakdown:

Age	Karumba
Median age	55
0-4 years	11
5-9 years	11
10-14 years	19
15-19 years	13
20-24 years	15
25-29 years	20
30-34 years	21
35-39 years	12
40-44 years	31
45-49 years	28
50-54 years	53
55-59 years	58
60-64 years	63
65-69 years	37
70-74 years	42
75-79 years	30
80-84 years	9
85 years and over	6

Transport

There is one road out of Karumba to Normanton (70km), this road is frequently impassable due to water during the wet season.

There is an airstrip at Karumba is a 1271m sealed all weather airstrip

Latitude:	17-27-24.1177S (-17.456699)
Longitude:	140-49-48.0066E (140.830002)

The port of Karumba is only closed infrequently due to high winds from offshore storms or cyclones.

The Evacuation Strategy

The true risk of storm tide at Karumba is relatively unknown. There is very little data available and no surge study or surge mapping is available for the Gulf of Carpentaria. Given the very low elevation of Karumba, its large tides and the frequency of cyclones in the gulf the assumption must be that Karumba is at a very high risk of storm Tide.

The conditions required to create a storm tide would be for a cyclone to make landfall to the west of Karumba on or near a high tide. The historical data available is as follows:

Douglas Mawson 1923

Large waves hit Karumba and a storm Tide inundated the flats for miles on 30th and 31st.

Unnamed 1951

A storm surge of 5 ft (1.5m) was sustained at Karumba between 3 am and 1 pm on the 11 th.

TC Ted 1976

Tides at Karumba were 2 meters above normal and badly damaged the wharf and prawn processing installations. Magowra Station (SW of Normanton) reported that the sea came 30 km inland.

TC Dominic 1982

Tides were 1 m above normal at Weipa and 1.5 m above normal at Karumba

TC Jason 1987

A 2.04 meter storm surge was measured at Karumba at 0500 UTC 13th. The maximum storm tide was 4.7 meters (lowest astronomical tide datum) at 0700 UTC which was 0.11 meters above highest astronomical tide.

TC Warren 1995

A 1.5 m surge was measured at Karumba. Karumba wave recording station recorded Hsig to 1.8m and Hmax to 3.5m.

TC Abigale 2001

At Karumba there was a 1.2m storm surge.

Given the expected damage from a significant storm tide at Karumba and the lack of suitable shelters in the town the LDMG will plan for the complete evacuation of the town. This is the only acceptable risk reduction method for this threat.

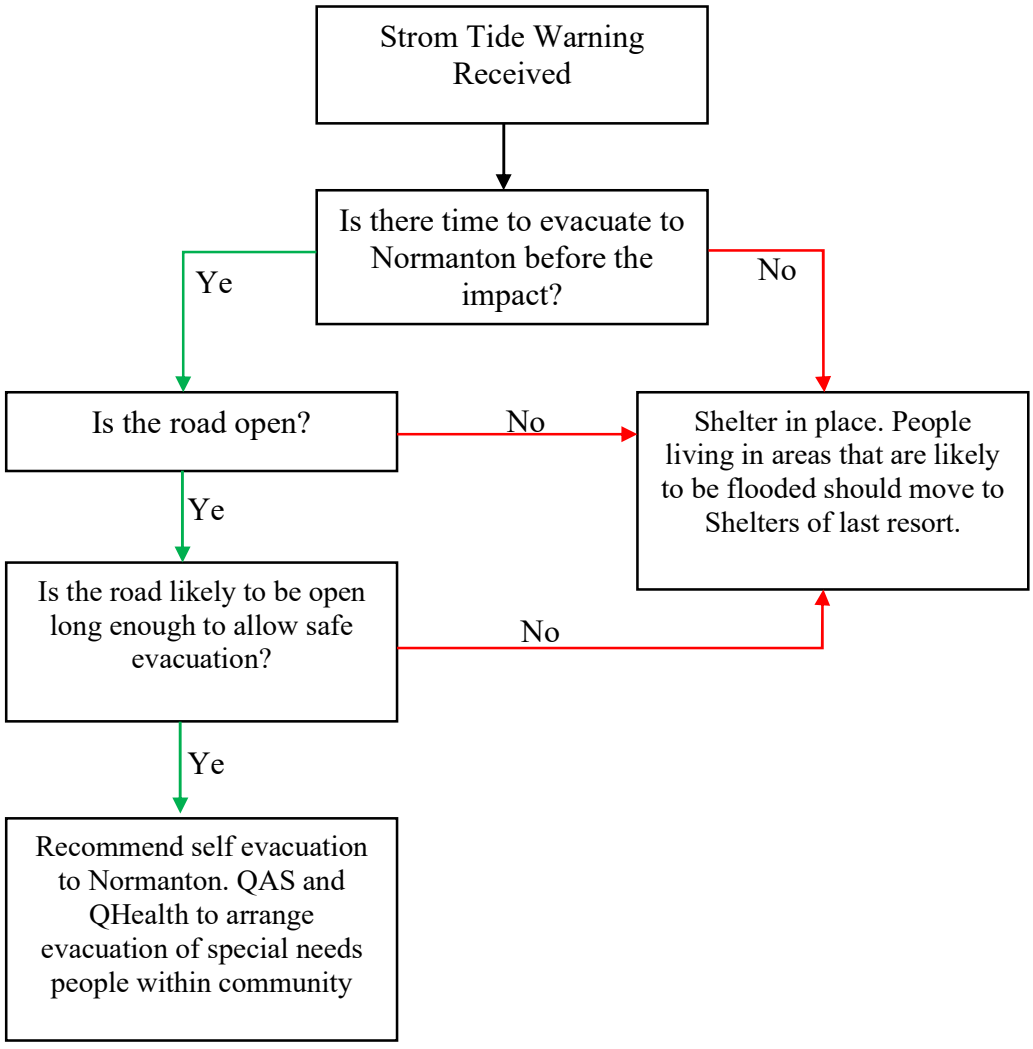
The LDMG accepts that the decision to evacuate must be made early with consideration given to the data available them.

Planning Considerations

There are a number of factors that will influence the evacuation process for Karumba. These include:

- The condition of the road to Normanton,
- The expected time of the storm Tide,
- The expected height of the storm Tide at Karumba and the potential of this to change
- The certainty of the cyclone track, and
- The number of persons in Karumba at the time.

In order to assist in the decision making process the following flow chart has been developed:



Planning Considerations (cont..)

As shown in the timeline there are two very different scenarios for evacuation of Karumba, the first is based on the storm tide warning being issued with enough time to effect the evacuation, the second is based on an expected Tide with little to no warning.

The timeline attachment (attachment A) shows the process of warnings and actions required to effect the evacuation.

Activation of the Plan

The plan will be activated by the LDMG upon receipt of a storm tide warning, planning and movement of at risk persons from Karumba to Normanton may begin upon receipt of the storm tide watch or prior to the receipt of the warning.

Voluntary evacuation advice will be issued by the Chair of the LDMG. Managed evacuation ordered will be issued by the DDC (Mount Isa).

Roles and Responsibilities

Agency	Roles	Agency Coordinator
LDMG	Overall coordination of the Evacuation. Coordination of resources Reporting activities to the DDMG Establishment of the evacuation centres Requesting assistance form the DDMG Issue of voluntary evacuation order Request DDC for Managed Evacuation Order	Chair LDMG
QFES	Provide advice to the LDMG Exercise the evacuation plan through normal exercise regime.	QFES-EMC
QPS	Management of Traffic Assist in delivering the warning message. Coordination of group movement	OIC
SES	Assist in the issue of warnings Establishment of the evacuation centre Assist in movement through vehicles/boats Assist QPS in traffic management Provide assistance to at risk persons Provide communications throughout the evacuation.	Local Controller
RFS	Assisting the SES in the roles listed above Assisting in the cleanup prior following return	First Officer
QAS	With Queensland Health transport at risk persons. Provide response capability through all phases of movement. With Queensland Heath provide basic primary care at the evacuation centre.	OIC
Council	Prove equipment as required Provide manpower as required Close and open roads at the direction of the QPS. Other tasks as required.	Works Manager
Welfare Agencies	Provide catering at the evacuation centre. Provide emotional support to evacuees. Maintain a log of evacuees.	Nominated officer
DDMG	Issue of the Mandatory evacuation order. Provide assistance to the LDMG as required Provide information to the SDMG.	DDC

Warnings

The initial warning to the LDMG will be in the form of a storm tide standby bulletin. These will be issued by the BoM and are not to be released to the general public.

NOT FOR DIRECT RELEASE
TO THE MEDIA OR THE GENERAL COMMUNITY

FOR ATTENTION

- State Disaster Coordination Centre
- EPA Storm Tide Adviser

STORM TIDE STANDBY BULLETIN

Issued at 11am on Saturday 27 December 2008
by the Australian Bureau of Meteorology Brisbane.

Tropical Cyclone KYM may in due course reach severe Tropical Cyclone intensity and cross the coast, although this is by no means certain. The current forecast outlook shows KYM making landfall as a Category 3 cyclone between Cairns and Townsville during Monday.

If this should occur, the resulting Storm Surge would be about 2 metres* with wave action on top. The height of the Storm Tide would then depend on the state of the normal tide at the time. The sea level could reach or exceed HAT.

Refer to the current Tropical Cyclone Advice for further information on Tropical Cyclone KYM.

The next update of the Storm Tide Standby Bulletin will be issued at 5pm.

*Note: This estimate includes only the storm surge, the actual storm tide would also depend on the effects of wave action and the height of the normal tide height at the time of crossing.

Further information:
Is available from the Bureau of Meteorology Tropical Cyclone Warning Centre (07) 3239 8780

Following the release of the standby bulletin the BoM will issue a storm tide warning (once the track of the cyclone and the size of the storm tide can be predicted with an amount of certainty)

NOT FOR DIRECT RELEASE TO THE MEDIA OR THE GENERAL COMMUNITY

FOR URGENT ATTENTION

- State Disaster Coordination Centre (SDCC)
- District Disaster Coordinators at: CAIRNS : INNISFAIL : TOWNSVILLE
- Local Government Officers in the threatened zone

FOR INFORMATION

- Police Communications Centre Brisbane
- District Disaster Coordinators at: MACKAY
- EMQ Regional Directors in the threatened zone

STORM TIDE WARNING
Issued at 8am on Monday 29 December 2008
by the Australian Bureau of Meteorology Brisbane.

The centre of severe Tropical Cyclone KYM is expected to cross the north Queensland coast between Innisfail and Lucinda late this afternoon.

Open coast storm tide rising to 4 metres above Australian Height Datum (repeat above AHD) between Mission Beach and Lucinda after 3pm today.

[Estimated arrival time of 100 km/h wind gusts is included here if not already being experienced.]

[Observed Storm Tide gauge height(s) above AHD may be included here.]

Further details are available from the following sources:

1. Severe tropical cyclone KYM
   Bureau of Meteorology - Telephone (07) 3239 8780
2. Technical aspects of the Storm Tide
   Environmental Protection Agency - Telephone (07) 3247 8944

Telephone numbers are restricted to official use only.

Next Storm Tide Warning will be issued at 11am.

Additional Information on the Potential Local Impact of the Storm Tide supplied by the Environmental Protection Agency

The storm tide of *xx.xm* AHD corresponds to *xx.xm* above the Highest Astronomical Tide (HAT) at *insert coastal centre*. This corresponds to *inundation/no inundation* in the coloured Zones as shown in *(the relevant 1975 Department of Lands Risk Zone maps or the National Storm Tide Mapping Model for Emergency Response maps)*.

The estimate includes an allowance of *xx.xm* for wave setup *(optional)*.

A preliminary sensitivity assessment of the storm tide estimate to various factors (such as central pressure at landfall) indicates that the total water level could be up to *xx.xm* higher or lower than predicted.

The storm tide prediction assumes that the peak surge coincides with the local high tide. If the cyclone makes landfall earlier or later than the time of high water, the total storm tide level would be considerably lower than predicted. For example, a crossing 3 hours later would result in a storm tide approx *xx.xm* lower.

Local considerations that should be noted:

- Local variations of near shore seabed slope are low and could result in variations of estimated surge across the affected region. For example, storm tides in insert adjacent coastal centre could be up to *xx.xm* lower than the insert coastal centre area.
- There may be some localised reduction of storm surge due to open coastline such as local features. This is highly dependant on factors such as the approach track of the cyclone just before landfall.

End of message

The following is the suggested template for the issue of voluntary evacuation advice:

Media Instructions:
TOP PRIORITY – FOR IMMEDIATE BROADCAST

VOLUNTARY EVACUATION ADVICE
issued at 8am on Monday 27 December 1999
by the (*insert District name*) District Disaster Coordinator

Summary of the cyclone and storm tide threat extracted from the latest Tropical Cyclone Advice

Define areas/streets at high risk from the storm tide threat

Suggest suitable safe havens/suburbs above the forecast storm tide level

Provide telephone number(s) for advice and assistance

Insert other community response statements relevant to the situation

Next Voluntary Evacuation Advice will be issued at (*insert time*)

The following is the suggested template for the issue of managed (or mandatory) evacuation advice:

Media Instructions:
TOP PRIORITY – FOR IMMEDIATE BROADCAST

Please use the Standard Emergency Warning Signal

MANDATORY EVACUATION ORDER
issued at 11am on Monday 27 December 1999
by the (*insert District name*) District Disaster Coordinator

Summary of the cyclone and storm tide threat extracted from the latest Tropical Cyclone Advice

Define areas/streets which must be evacuated

Suggest suitable safe havens/suburbs above the forecast storm tide level

Provide telephone number(s) for advice and assistance

Insert other community response statements relevant to the situation

Next Mandatory Evacuation Order will be issued at (*insert time*)

Warnings Delivery

The evacuation advice must be delivered through media, the LDMG must also inform residents of how the messages will be delivered (for example ABC radio).

The size and population of Karumba allows the LDMG to utilise public meetings during the initial phases of the evacuation procedure. As is detailed in the evacuation timeline the frequency of these will depend on the expected time of arrival of the storm tide.

The meetings are a forum for the delivery of the advice to residents. The OIC of police in Karumba may be used to issue the advice however the content of the advice must be scripted by the LDMG.

Withdrawal

The withdrawal phase of the evacuation will require the movement of 500-750 persons from Karumba to Normanton, a distance (by road) of 70km. It is anticipated that this will be conducted in phases as the threat increases. A number of persons will self evacuate upon receipt of the initial warnings. The remainder of residents will move as the threat escalates.

At risk persons (elderly, infirmed, assisted living…) will be moved by QAS and Queensland Health as early as practicable. These persons will be accommodated at the Normanton Hospital.

The method of transport will depend on the routes available to the LDMG. Early movement whilst the road to Normanton is trafficable is to be strongly encouraged by use of own transport. Additional transport options will be explored by the LDMG and assets prepared for use if need be. The preferences for transport are:

Method	Advantage	Risk
Road	Will allow movement of more people.	Difficult to manage. Susceptible to road closures due to flooding.
Air	Expedient. Not dependant on road conditions.	Can only move small amount of persons. Dependant on strip conditions and wind at the point. Aircraft would need to be sourced from larger centre.

The LDMG may consider the use of any or all of these transport options.

Road

The movement of persons by road must be managed. The LDMG in consultation with the QPS may decide to close the road to all north bound traffic (Normanton to Karumba) early. This will reduce the risk of accidents through driving in possible bad weather. The road to Kowanyama may also be closed at this stage.

The flow of traffic and the road condition must be monitored throughout this process. This action is designed to reduce the possibility of vehicles being stranded between water courses.

The monitoring stations will be used to collect information on vehicles departing Karumba, this will be compared to data collected at Normanton in order to ensure that all vehicles are accounted for.

The police at Karumba may close the road based on the information received from these monitoring stations (the road may be closed in stages for example high clearance only). The suggested areas of these monitoring stations are:

Theses monitoring stations are to maintain communications with the LDMG, QPS and each other via radio (use council repeater).

Air

Movement of persons by air is considered logistically difficult due to the availability of suitable aircraft in the area. Aircraft will be sourced from Burketown and mount Isa. The current position and design of the airstrip in Karumba makes it highly susceptible to water inundation and cross winds.

Movement by air must be considered in conjunction with other forms of transport (road or boat) subject to route conditions.

Loading of aircraft and movement at the airside must be strictly controlled by police and SES for safety.

The airport at Karumba will be the central point for departure by air, an SES member will collate manifests prior to the loading of aircraft. Baggage must be kept to a minimum.

Shelter

The duration of the shelter phase will dependant on the impact of the storm tide on Karumba.

Evacuation centres in Normanton are detailed in the local disaster management plan, these include:

Centre	Number of persons	Toilets	Showers	Disabled access
All commercial accommodation	Will vary	Yes	Yes	Varies
Sports Centre	??	??	??	??
Town hall	??	??	??	??
Court house	??	??	??	??

The LDMG will arrange for the staffing, provision of catering and equipment for the evacuation centres.

The LDMG will appoint an information officer for each of the locations, this person will act as a point of contact within the centre and will disseminate information from the LDMG to evacuated persons in conjunction with the centre manager.

It is anticipated that many people will chose to stay with family and friends in Normanton. The LDMG will provide information to these people through the normal media (web site, newsletter). The LDMG will also establish a central number for Karumba residents to call for information.

Return

The return of residence from Normanton to Karumba will be conducted in phases; the duration of these phases will depend on the damage sustained by the storm tide this phase may also be delayed by flooding of the Normanton to Karumba road.

Bases on the damage to infrastructure in Karumba there may be a need to allow people to return to Karumba as sectors of the town are declared safe.

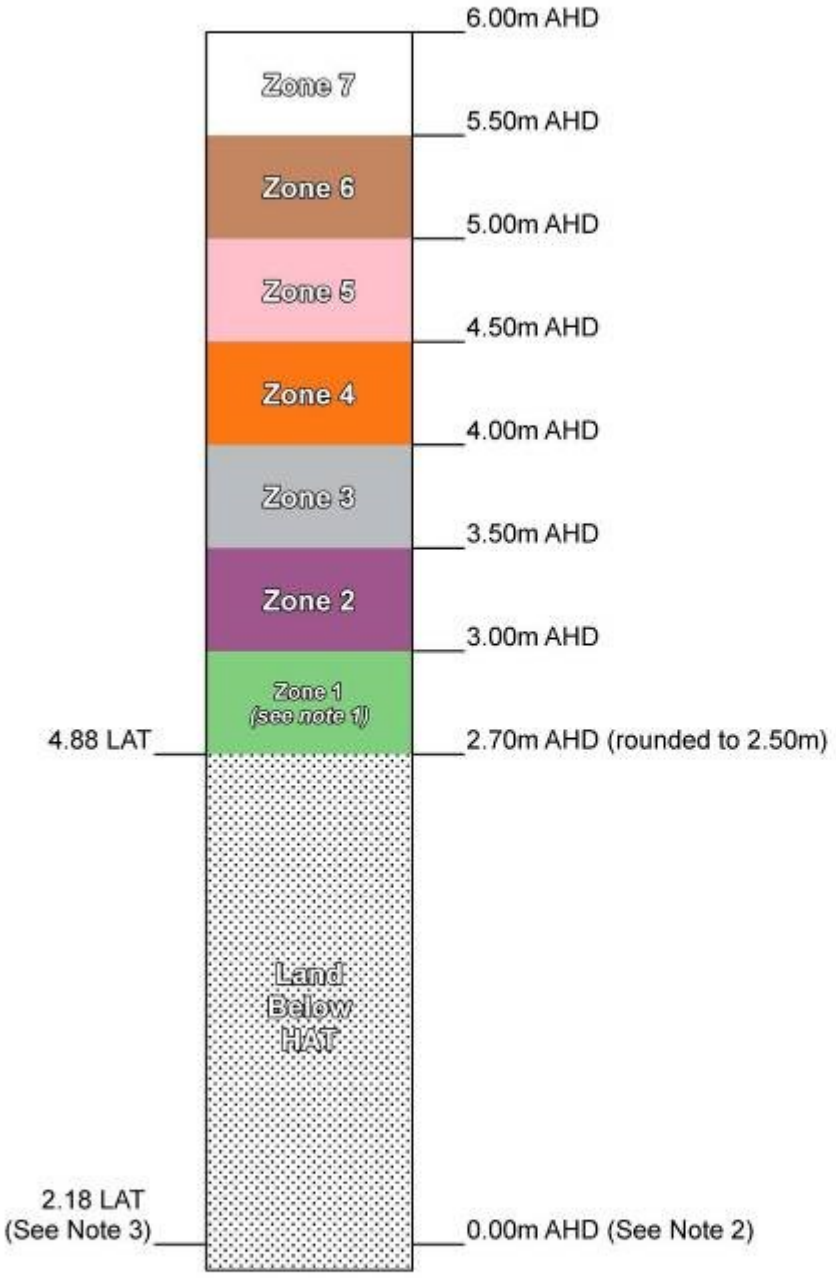
Increased police presence or private security providers will be used to ensure unoccupied buildings remain safe from criminal activity.

Any detailed level of planning for the return phase is beyond the scope of this document, a stand alone return plan must be developed after the Damage Assessment has been completed and the actual level of damage has been determined.

Annex A- Karumba Storm Tide Model Zones

Karumba

National Storm Tide Mapping Model
Inundation Zones

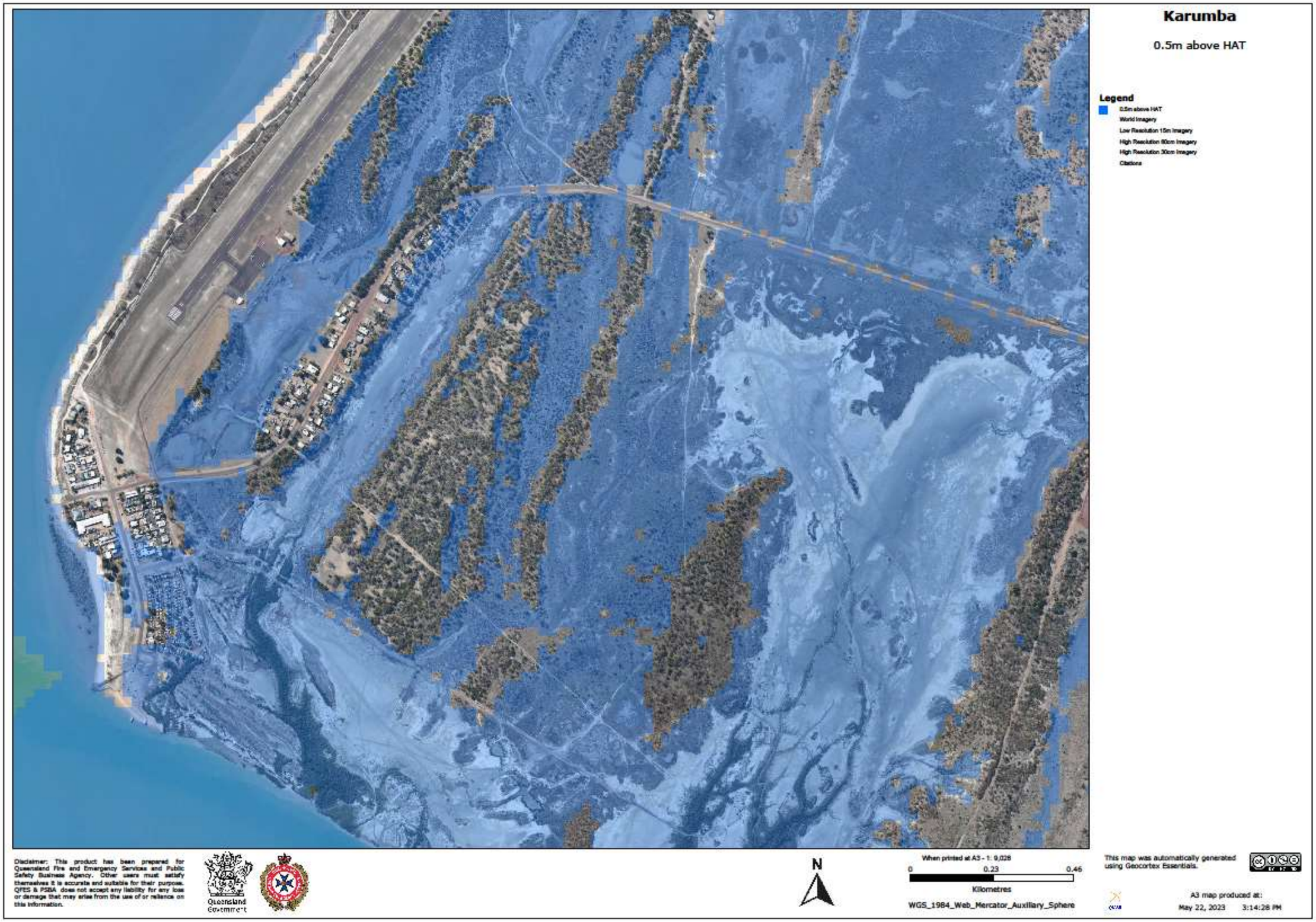


Notes:

1 This zone extends from Highest Astronomical Tide (HAT) to the next 0.5m level (AHD).
For the purpose of referencing these zones to existing contours the bottom of the green zone is rounded down to the next lowest 0.25cm elevation contour.

2 This is a representation of 0.00 Australian Height Datum (AHD) but not to scale.
This zone extends to as low as ground elevation data collected.

3 This is a representation of the Lowest Astronomical Tide (LAT) datum referenced to 0.00 AHD.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Legend
0.5m above HAT
World Imagery
Low Resolution 15m Imagery
High Resolution 60cm Imagery
High Resolution 30cm Imagery
Citations
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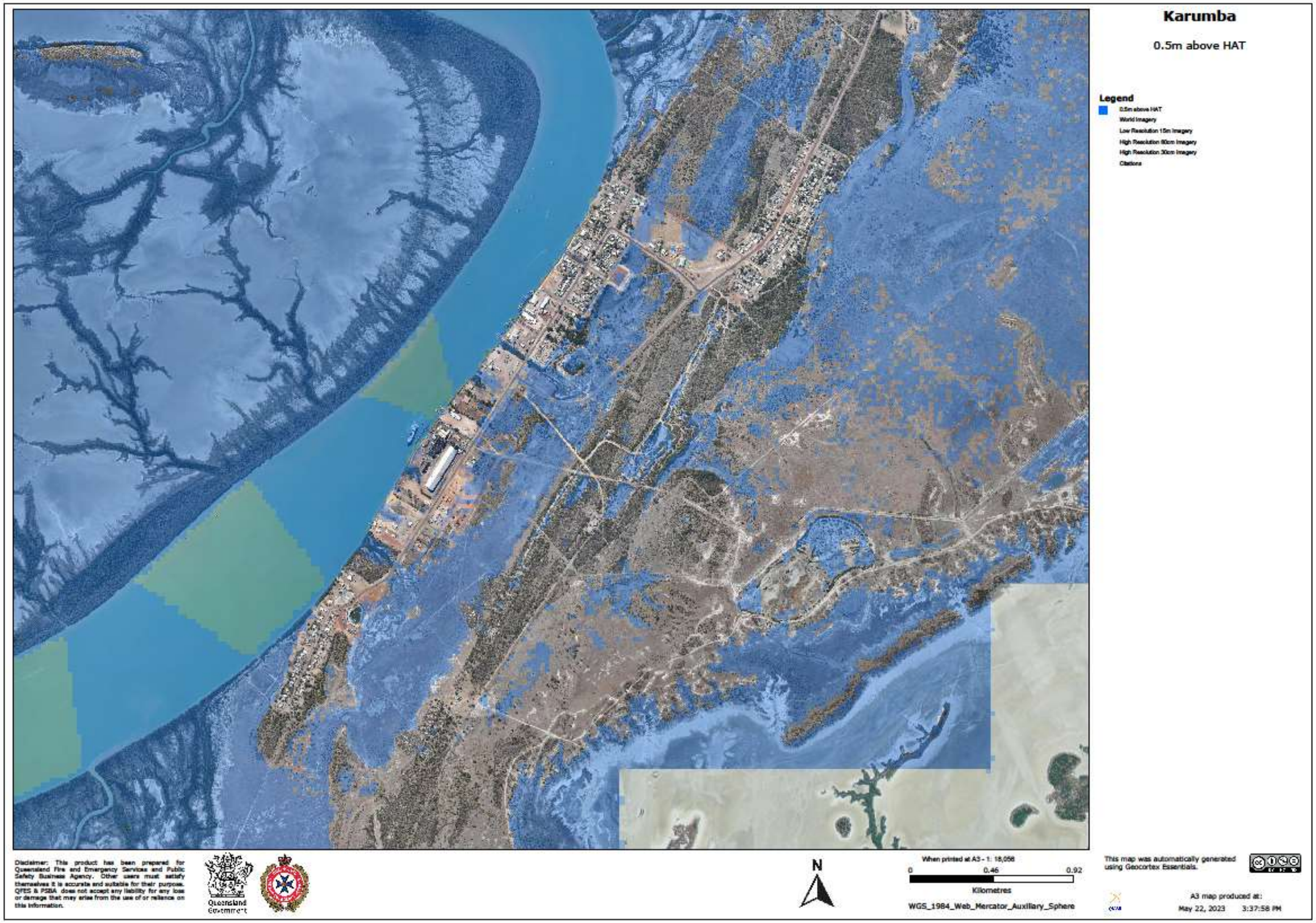
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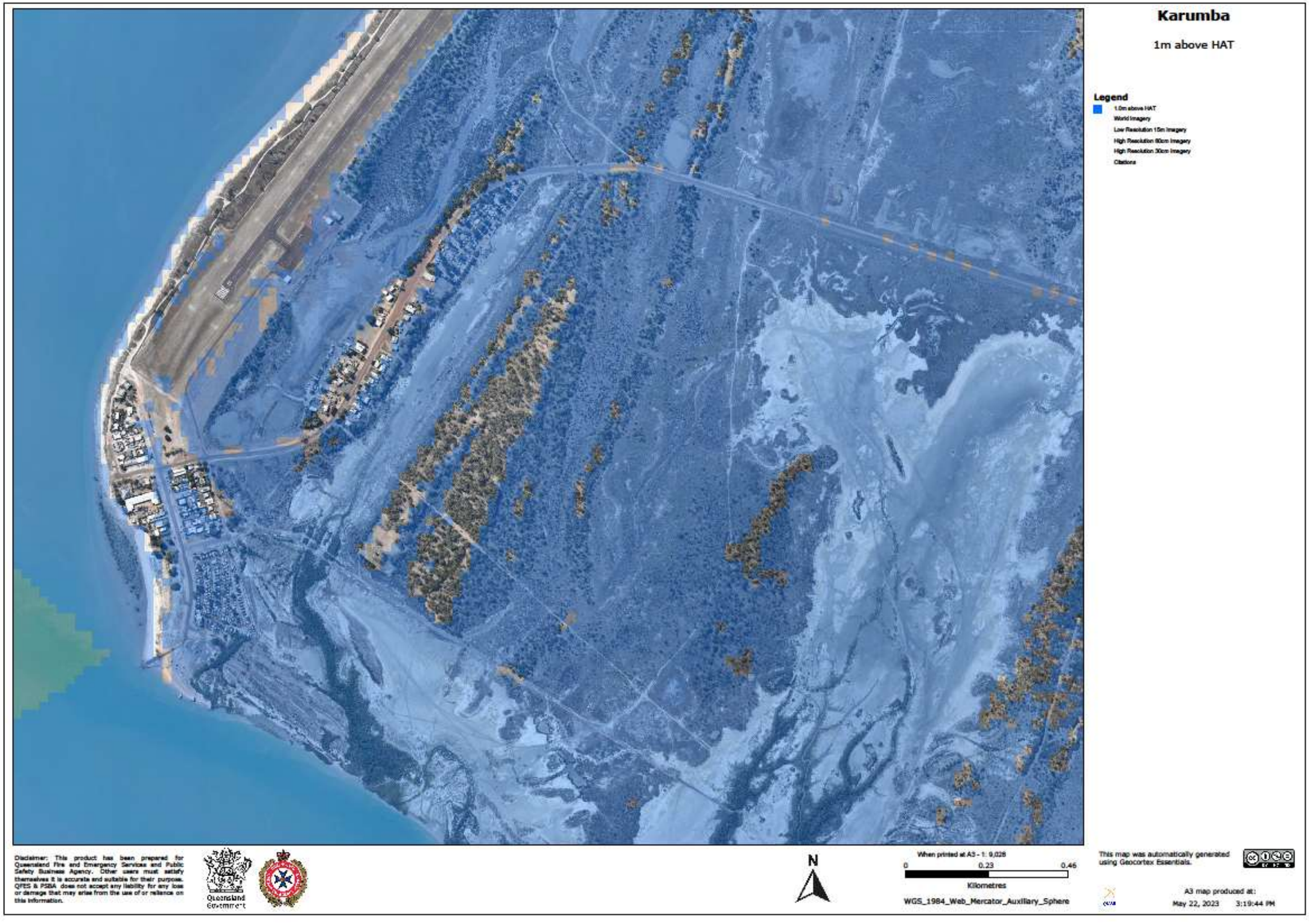
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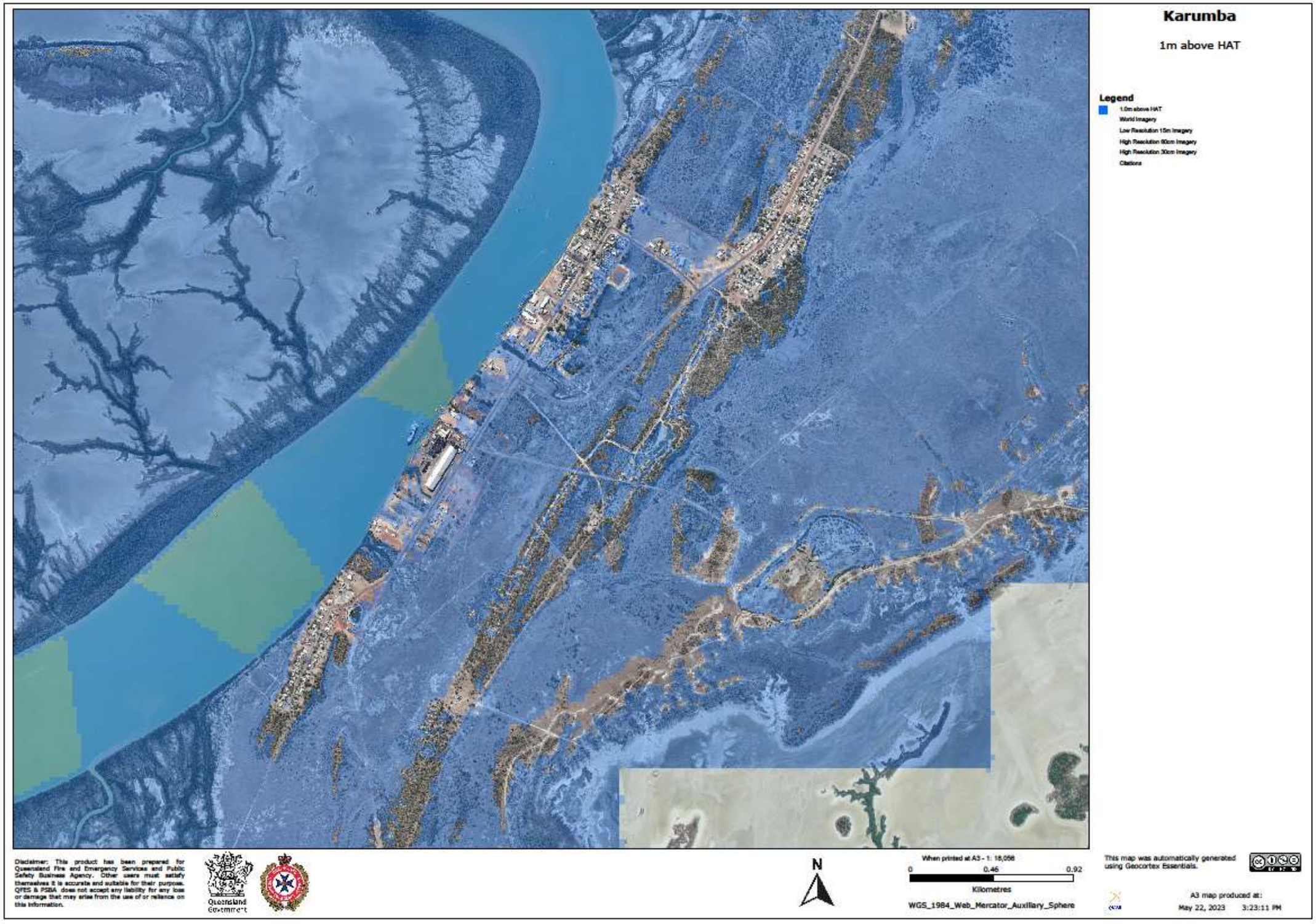
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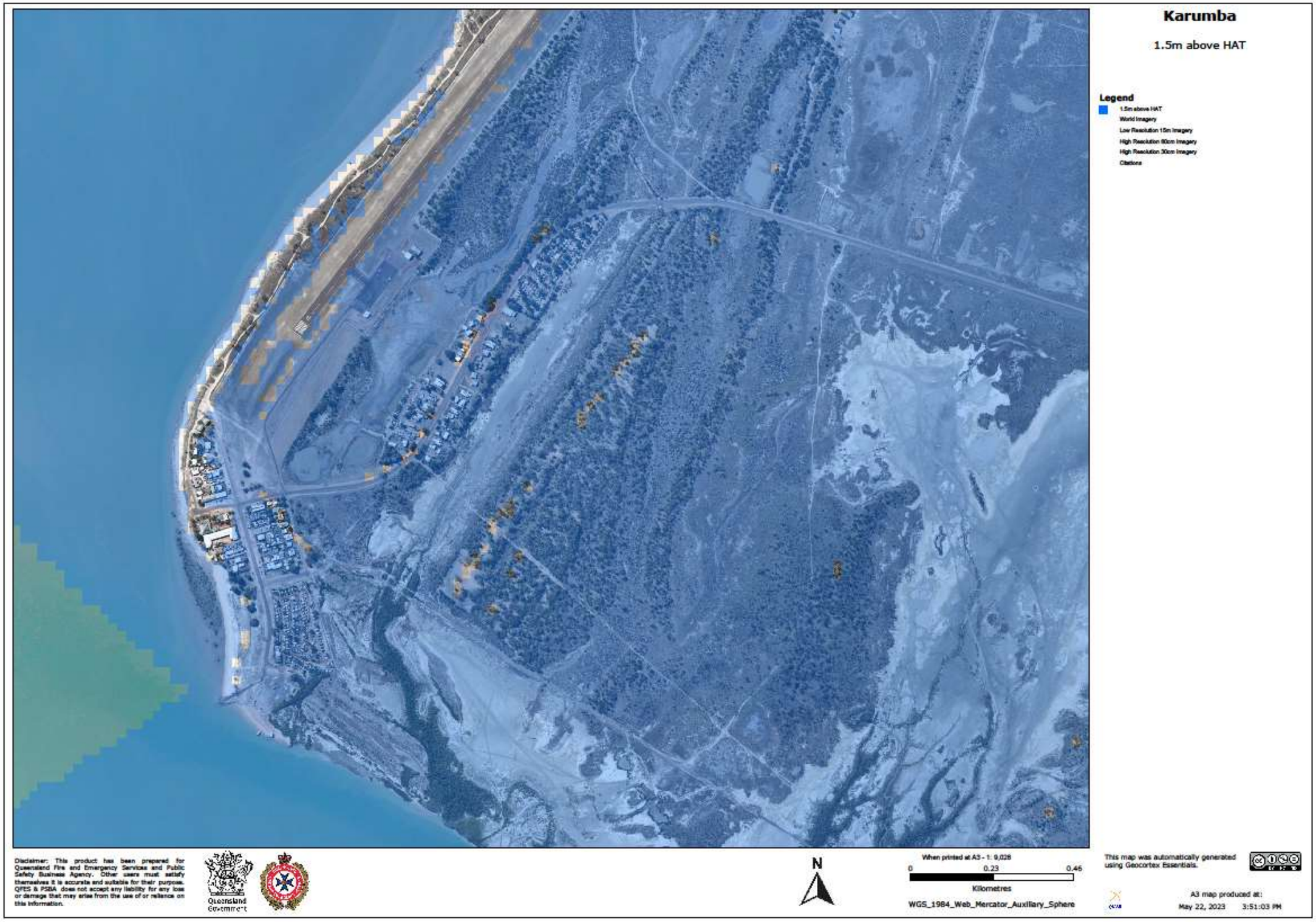
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Cladons
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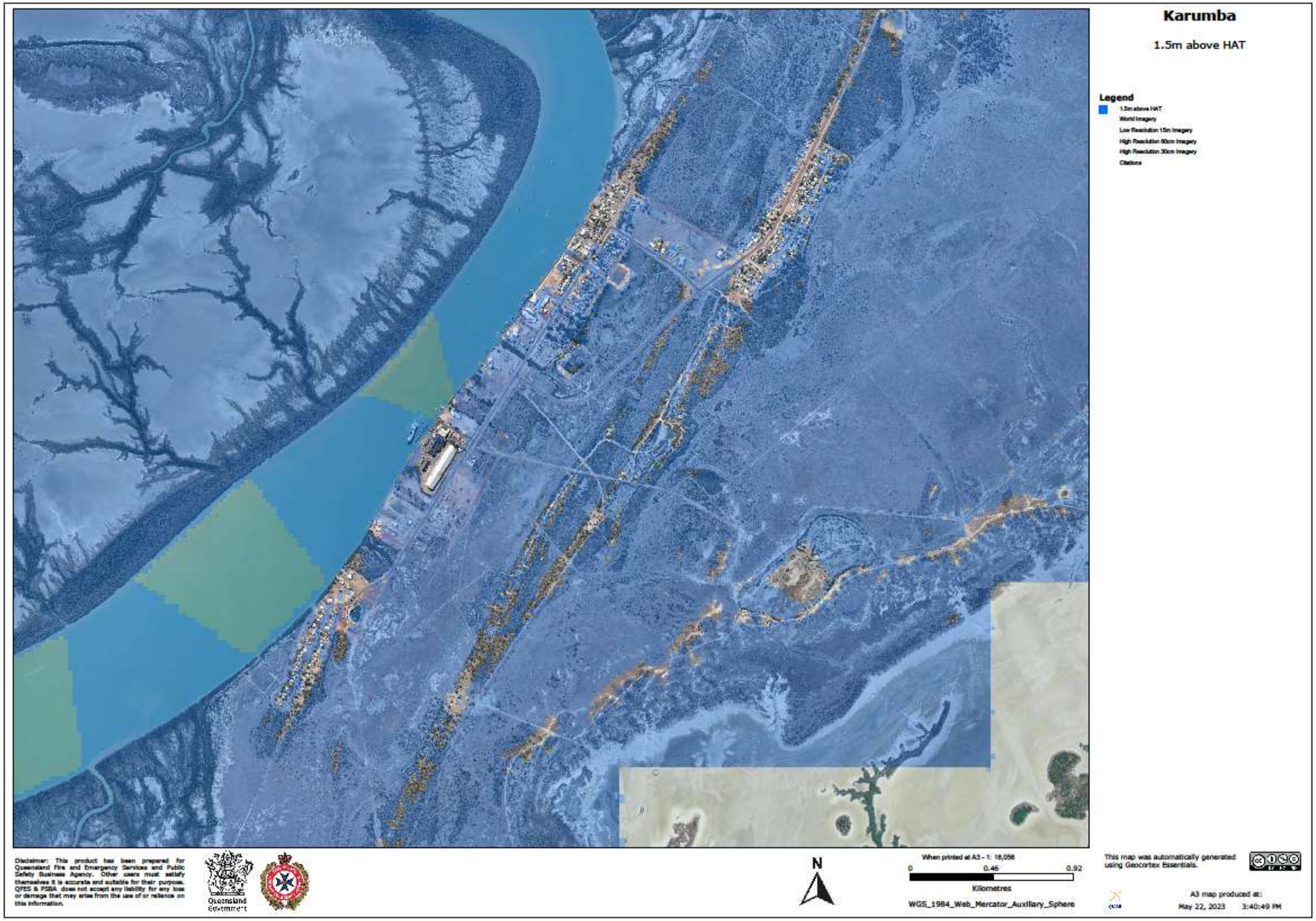
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World Imagery
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Karumba
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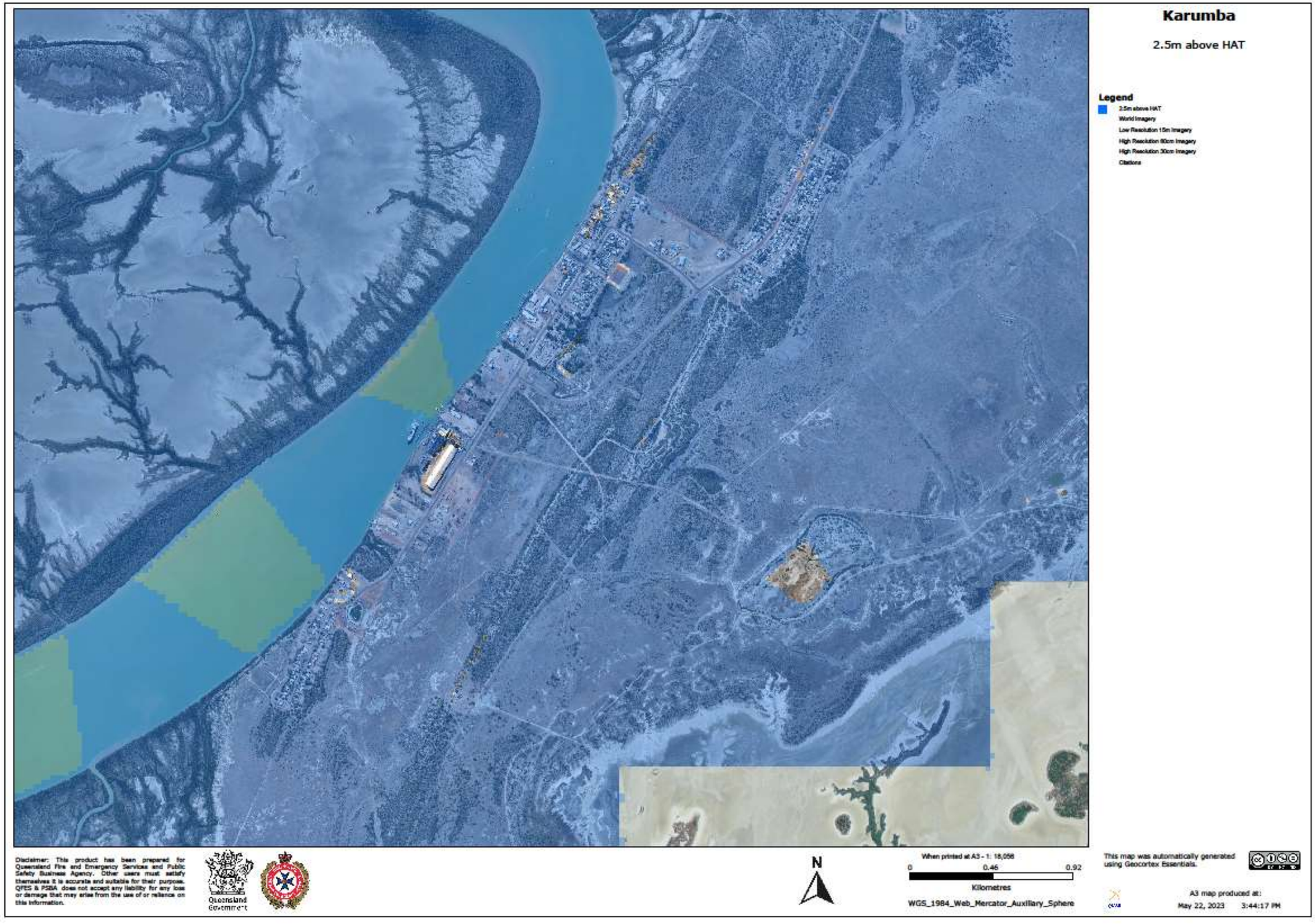
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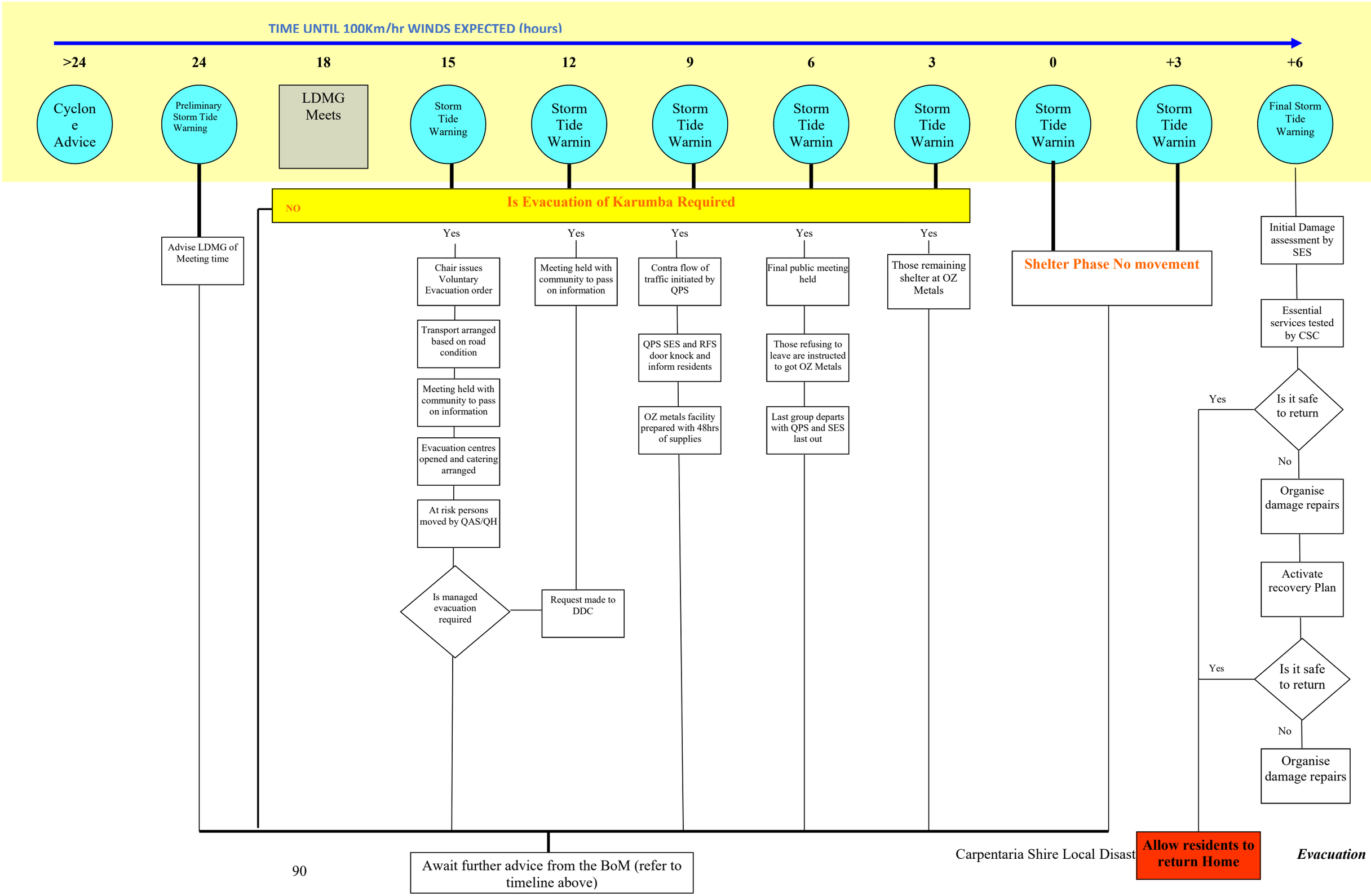
TIME UNTIL 100Km/hr WINDS EXPECTED (hours)
>24
24
18
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12
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6
3
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+3
+6
Cyclone Advice
Preliminary Storm Tide Warning
LDMG Meets
Storm Tide Warning
Storm Tide Warnin
Storm Tide Warnin
Storm Tide Warnin
Storm Tide Warnin
Storm Tide Warnin
Storm Tide Warnin
Final Storm Tide Warning
Advise LDMG of Meeting time
NO
Is Evacuation of Karumba Required
Yes
Chair issues Voluntary Evacuation order
Transport arranged based on road condition
Meeting held with community to pass on information
Evacuation centres opened and catering arranged
At risk persons moved by QAS/QH
Is managed evacuation required
Request made to DDC
Yes
Meeting held with community to pass on information
Yes
Contra flow of traffic initiated by QPS
QPS SES and RFS door knock and inform residents
OZ metals facility prepared with 48hrs of supplies
Yes
Final public meeting held
Those refusing to leave are instructed to got OZ Metals
Last group departs with QPS and SES last out
Yes
Those remaining shelter at OZ Metals
Shelter Phase No movement
Initial Damage assessment by SES
Essential services tested by CSC
Yes
Is it safe to return
No
Organise damage repairs
Activate recovery Plan
Yes
Is it safe to return
No
Organise damage repairs
Allow residents to return Home
Await further advice from the BoM (refer to timeline above)

Evacuation timeline for Karumba