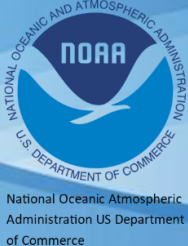




Office of Disaster
Preparedness &
Emergency
Management



St.
Catherine
Municipal
Corporation



Caribbean Tsunami
Information Centre

Old Harbour Bay Tsunami Response Plan and Standard Operating Procedures



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THE STRENGTHENING CAPACITIES OF EARLY WARNING AND RESPONSE FOR TSUNAMIS AND OTHER
COASTAL HAZARDS IN THE CARIBBEAN PROJECT

2021

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List of Acronyms

ADRA	Adventist Development and Relief Agency
CARIBE EWS	Caribbean Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions
CBO	Community Based Organization
CDA	Community Development Association
CDEMA	Caribbean Disaster Emergency Management Agency
CDRMG	Community Disaster Risk Management Group
CERT	Community Emergency Response Team
CTIC	Caribbean Tsunami Information Centre
EQU	Earthquake Unit
JCF	Jamaica Constabulary Force
JDF	Jamaica Defense Force
JDFCG	Jamaica Defense Coast Guard
JFB	Jamaica Fire Brigade
JIOC	Joint Information Operations Centre
JIS	Jamaica Information Service
JPSCo	Jamaica Public Service Company
JRC	Jamaica Red Cross
ICG	Intergovernmental Coordination Group
IDA	Initial Damage Assessment
MDA	Ministry, Department and Agency
MFAFT	Ministry of Foreign Affairs and Trade
MLGRD	Ministry of Local Government and Rural Development
MLSS	Ministry of Labour and Social Security
MNS	Ministry of National Security
MOFP	Ministry of Finance and Planning
MOHW	Ministry of Health and Wellness
MSJ	Meteorological Service of Jamaica
NDRMC	National Disaster Risk Management Council
NEOC	National Emergency Operations Centre
NEPA	National Environment and Planning Agency

NERGIST	National Emergency Geographic Information System Team
NGO	Non-Governmental Organization
NSWMA	National Solid Waste Management Authority
NTWC	National Tsunami Warning Centre
NWA	National Works Agency
NWC	National Water Commission
ODPEM	Office of Disaster Preparedness and Emergency Management
OPM	Office of the Prime Minister
PAJ	Port Authority of Jamaica
PEOC	Parish Emergency Operations Centre
PIOJ	Planning Institute of Jamaica
PSOJ	Private Sector Organization of Jamaica
PTWC	Pacific Tsunami Warning Centre
RADA	Rural Agricultural Development Agency
SAR	Search and Rescue
SMS	Short Text Messages
SOP	Standard Operating Procedures
SRC	Scientific Research Council
TNC	Tsunami National Contact
TWFP	Tsunami Warning Focal Point
TWS	Tsunami Warning System
UNESCO	United Nations Educational Scientific and Cultural Organization
USGS	United States Geological Survey
UWI	University of the West Indies
UHF	Ultra High Frequency
UNDAC	United Nations Damage Assessment and Coordination
VHF	Very High Frequency

Glossary of Terms

Assembly Point	The designated location or area where evacuees from a threatened area will gather before moving to a tsunami shelter or other safe area outside of the threatened area. An Assembly Point Coordinator is appointed to conduct a head count of the evacuees and record the evacuation location
CARIBE-EWS	UNESCO IOC Intergovernmental Coordination Group for Tsunamis and other Coastal Hazards for the Caribbean and Adjacent Regions. It recommended to the IOC the implementation of the Tsunami Ready Programme and the corresponding guidelines for Community Based Tsunami Recognition.
Community Emergency Response Team	A team established by an existing Community Based Organization with the support of the Municipal Corporation and the Office of Disaster Preparedness and Emergency Management. The CERT is responsible for conducting response actions including evacuation, search and rescue and first aid.
Community Disaster Risk Management Group	The CDRM Group is established in communities by the Office of Disaster Preparedness and Emergency Management with the support of Parish Disaster Coordinators. The group is typically formed using the leadership of existing Community Based Organizations. The Group is provided with a Terms of Reference outlining the required disaster risk management functions.
Earthquake	An earthquake is the shaking of the surface of the Earth resulting from a sudden release of energy that creates seismic waves. The force of these waves can cause damage to buildings and infrastructure and if under the sea or near the coast may generate a tsunami.
Evacuation	The process of leaving a threatened area when there is an impending hazardous event. During an evacuation persons leave their homes and belongings behind and head to a safe location outside of the threatened area.
National Emergency Operations Centre	The operational body that is activated by the National Coordinator (Director General of the ODPEM) to respond to a disaster. The NEOC comprises key response agencies that coordinate the operational activities during national emergency response. The NEOC is activated when the capacity of the parish response mechanism is exceeded.
National Tsunami Warning Centre	The centre is established by the Government that is authorized to receive, monitor and issue tsunami alert messages and other tsunami information statements.
Parish Emergency Operations Centre	The operational body that is activated by the Mayor or the Parish Disaster Coordinator to respond to a disaster or hazardous event in the parish. The NEOC comprises key response agencies that coordinate the operational activities during national emergency response.

Pacific Tsunami Warning Centre	PTWC is the designated Tsunami Service Provider for the CARIBE-EWS. It monitors seismic and sea level activity and issues timely tsunami threat information within the CARIBE-EWS framework to National Tsunami Warning Centres/Tsunami Warning Focal Points designated by the Member States. The NTWC/TWFPs may use these products to develop and issue tsunami warning for their countries. It also acts as the National Tsunami Warning Centre for Puerto Rico, US Virgin Islands and the British Virgin Islands providing tsunami warnings.
Standard Operating Procedures	A set of step-by-step instructions compiled by the relevant authorities to guide key agencies and responders in implementing the tsunami response plan.
Threatened Area	Any area along Jamaica's coast at risk to the impact of a tsunami. The threatened area is determined by the NEOC/ODPEM and declared by the Director General, ODPEM.
Tsunami	A tsunami is a series of waves in a water body caused by the displacement of a large volume of water due to an earthquake occurring beneath the floor of an ocean or lake. Tsunami waves can travel for many kilometers across the ocean before landing on the coast, where waves can travel for kilometers inland. The tsunami hazard is known to cause mass casualty and death in affected areas.
Tsunami National Contact	The entity or individual designated by the Member State (Jamaica) to the Intergovernmental Coordination Group (ICG) CARIBE-EWS to represent the country in the coordination of international tsunami warning and mitigation activities.
Tsunami Ready Programme	Tsunami Ready is a UNESCO/IOC performance-based community recognition programme consisting of key indicators that help to reduce tsunami-related risks to individuals and communities. Through the Tsunami Ready Recognition Program, communities become aware of the risks they face from tsunamis and consequently, take steps to address them.
Tsunami Shelter	The designated building or location to temporarily house evacuees from an area threatened or impacted by a tsunami.
Tsunami Warning	A message advising of a tsunami threat with less than or equal to three (3) hours that is issued by the National Tsunami Warning Centre (ODPEM).
Tsunami Warning Focal Point	A 24-hour X 7 days a week point of contact (office, operational unit or position, not a person) officially designated by the NTWC or the government to receive

and disseminate earthquake and tsunami information and alert messages from the Scientific Research Council, the United States Geological Services and the Pacific Tsunami Warning Centre. Information received is relayed to the Tsunami National Contact. The Tsunami Warning Focal Point for Jamaica is the Meteorological Service of Jamaica (MSJ) and the alternate TWFP is the Jamaica Constabulary Force (JCF).

1. INTRODUCTION

Tsunamis are generally caused by large earthquakes centered under or near the ocean and are produced when there is vertical displacement of the sea floor along and around an underwater fault. The displacement of the water surface generates a series of tsunami waves, which travel rapidly in all

directions across the ocean. Historically tsunamis have also been caused by volcanic eruptions, underwater avalanches or submerged landslides. An earthquake's magnitude, depth of focus, the amount of vertical crustal displacements, and other sources will determine the size, orientation, and destructiveness of a tsunami. A Tsunami travels rapidly across the ocean and the speed is relative to the water depth. It is this relationship which permits prediction of tsunami arrival times at all points in the Pacific Ocean.

The destructive nature of tsunamis is associated with the strength and speed of the tsunami waves. The energy generated by a tsunami, results in structural damages, high velocity movement of debris, injury and loss of life. Tsunamis that are locally generated provide little or no time to warn coastal communities at risk. For tsunamis generated offshore the lead time for early warning and mass evacuation is marginal. There is therefore high-risk exposure to coastal communities and critical assets. In worst case scenarios, there is mass casualty and extensive damage and destruction that can collapse the local economy.

As part of this plan and based on scenarios /modeling previously done for the community, sections of the Old Harbour Bay Community have been zoned in terms of areas that would be inundated in the event of a tsunamis generated from the coasts of other countries in the Caribbean Region and the Atlantic Ocean. Zoning of the community will be refined as data becomes available for locally generated tsunamis.

The Old Harbour Bay community is located on the coast and the potential for a tsunami wave impact is probable. This plan recognizes the significant impact on life and property that may be caused by a tsunami and outlines procedures for the timely evacuation of the community to avoid potential loss of life.

1.1 Purpose of Plan

The purpose of this plan is to outline the critical emergency response procedures to be implemented for the Old Harbour Bay Community in the event of a tsunami threat and/or impact. The plan also outlines early recovery measures to be implemented post impact with the support of the St. Catherine Municipal

Corporation and key agencies to reduce the negative effects and far-reaching cumulative impacts of a tsunami.

1.2 Scope of Plan

The Old Harbour Bay Tsunami Response Plan and SOPs is a community-based plan outlining the emergency response mechanisms to be carried out in the event of a tsunami threat and warning for the coast of Jamaica and threatens the coast of Old Harbour Bay. The plan details actions to be taken during the pre-impact, impact and post impact phases of the tsunami. The plan does not include the preparedness measures (including public education and awareness and trainings) to be undertaken when there is no threat of a tsunami to the community.

The institutional arrangements for the coordination and activation of the Tsunami Early Warning System (EWS) for the community and response mechanism is provided. The plan is gender responsive and includes targeted response strategies for vulnerable groups and factors cultural influences of the community that may affect tsunami response. The plan also outlines the procedures for integrating community tsunami response into the parish and national response mechanisms.

The Old Harbour Bay Tsunami Response Plan is aligned to national and parish plans that may be triggered following activation of this plan. See Section 3 for plans that may be activated to support tsunami response for the Old Harbour Bay Community.

1.2.1 Intended Users of the Plan

1. Old Harbour Bay Community Development Association (CDA)
2. Old Harbour Bay Proper residents
3. New Harbour Village Management Committees Phases 1, 2 and 3
4. St. Catherine Parish Council
5. Jamaica Fire Brigade (Old Harbour and Spanish Town Branches)
6. Ministry of Health (Old Harbour Health Centre)
7. Jamaica Constabulary Force (JCF) Old Harbour and Old Harbour Bay stations and St. Catherine South Div. Headquarters)
8. Ministry of Education Youth and Information (MOEYI) Region 6
9. Toll Authority of Jamaica
10. Jamaican Infrastructure Operators (JIO)
11. Old Harbour Route Taxi Association
12. Old Harbour High School
13. JPS (Old Harbour Bay Plant)

14. Jamaica Energy Partners (Dr. Bird Power Plant)
15. Jamaica Broilers Ethanol Plant
16. Caribbean Coastal Area Management Foundation (C-CAM)
17. Social Development Commission (SDC)
18. WINDALCO – Port Esquivel
19. Local Media – e.g. Old Harbour News
20. RJR 94 and other media entities (Warning Message to be broadcasted)
21. Four Basic Schools (early childhood institutions) and the Old Harbour Bay Primary School
22. JAMALCO, Rocky Point

1.3 Plan Objectives

The objectives of the Old Harbour Bay Tsunami Response Plan and SOPs are to:

1. To outline procedures for warning and alerting the community in the event of a tsunami threat.
2. To outline measures for strengthening community preparedness and response capacity to respond to tsunamis.
3. To assign duties and responsibilities to residents, key agencies and volunteers for the coordination and mobilization of resources for early warning, emergency response and early recovery.
4. To clearly outline Standard Operating Procedures for the timely evacuation plan

1.4 Plan Assumptions

The Old Harbour Bay Tsunami Response Plan and SOPs is developed based on the following assumptions:

1. A tsunami will cause death and extensive damage to or destruction of buildings and critical infrastructure in the community.
2. The lead time for mass evacuation in response to a tsunami threat may not exceed three hours.
3. Secondary effects of a tsunami will include flooding, fire and debris flows in the community.
4. The tsunami impact will trigger regional and international media interest.
5. The tsunami impact may have significant environmental and economic implications.
6. There will be need for shelter and temporary housing to support displaced households.
7. The tsunami impact may trigger activation of additional contingency and response plans.

8. Extensive debris management will be required to restore housing and critical infrastructure.

1.5 Authority of Plan

The St. Catherine Municipal Corporation is the authority for the implementation of the Old Harbour Bay Tsunami Response Plan and SOPs and will execute responsibilities through the activation of the Parish Emergency Operations Centre following activation of the plan.

1.6 Plan Activation

The Old Harbour Bay Community Development Association is the authority for the activation of the Old Harbour Bay Tsunami Response Plan and SOPs upon the advice of the St. Catherine Municipal Corporation.

1.7 Plan Review

The contents of the Old Harbour Bay Tsunami Response Plan and SOPs is to be reviewed and updated every two (2) years or following an event triggering activation of the plan. Testing of the plan will be done bi-annually. The Old Harbour Bay community may also be involved in the testing of the parish mechanism or may participate in testing of the National Tsunami Warning System.

2. TSUNAMI RISK PROFILE

Jamaica being an island state and its position in the Caribbean means that the entire coastline is susceptible to tsunamis that may be generated in the Caribbean Sea or the Atlantic Ocean. The south and northeastern coasts are at highest risk to tsunamis, as major earthquakes that could impact the island are mainly generated along the Plantation Garden Fault.

The Old Harbour Bay Community is situated along the south coast in the southwestern section of the parish of St. Catherine. The community is predominantly a fishing village and has a population of approximately 5,543 people. The community is located 7.8 km south of the Old Harbour town centre and 29km southwest of Spanish Town, St. Catherine.

The community of Old Harbour Bay has twenty-one (21) districts and is approximately one hundred (100) miles from the Pedro Banks, bordered north by Old Harbour, to the east and west by Lloyd's Pen and Port Esquivel respectively and the Caribbean Sea towards the south. The total area of Old Harbour Bay is approximately 11,000 sq. metres.

Old Harbour Bay is located in the middle of three (3) major drainage features. These are the Fraser's Gully, Stony Gully and Church Pen Gully which confluence in the vicinity of Brampton farms then travels through the mangroves out to sea along the eastern boundary of the Old Harbour Bay community. There is also the Bower's Gully and other smaller natural drainage networks in the community.

2.1 Critical Assets at Risk

The Old Harbour Bay area consists of mixed use with residential, farming and industry. There are three large industries operating in Old Harbour Bay. These are the JPSCo Power Plant, Jamaica Energy Partners (JEP) and the Dr. Bird Power Plant which operates a Power Barge. Other industries are located in close proximity to Old Harbour Bay include the Jamaica Broilers Ethanol Plant, WINDALCO Port Esquivel Operations and JAMALCO Rocky Point. The Old Harbour Bay Community also contains critical facilities including schools, a police station, a post office, churches and a community centre. Public transport via route taxis is the primary mode of transportation to and from the community. See appendix 1 for photographs depicting critical assets at risk in the community.

The residents of Old Harbour Bay are also deemed critical assets to the community. Table 1 outlines the type of skills, organizations and response capacity currently in the community.

Table 1: Community assets and resources

Community Based Organisations	Resources
<ul style="list-style-type: none"> • Old Harbour Bay Community Development Association (CDA) • Old Harbour Bay Fisherfolk's Council • Blackwood Gardens Citizens' Association • Old Harbour Zonal Committee • Old Harbour Bay United • Black Survivors Youth Club • National Council for Senior Citizens • Red Cross • Social Development Commission • C-CAM • Political groups - JLP - G2K and PNP Youth 	<ul style="list-style-type: none"> • Fishing boats • Local communications networks • Energy Plants • Skilled and trained residents • Local businesses and commercial enterprises
Skills	Response Capacity
<ul style="list-style-type: none"> • Fisherfolk • Nurses • Welders • Technicians 	<ul style="list-style-type: none"> • Town criers • Sirens • Community Emergency Response Team (CERT) <ul style="list-style-type: none"> - Shelter Managers - Evacuation Managers - Initial Damage Assessors - Radio Operators (EARS) - First Aiders

Sensitive coastal ecosystems located along the coast and offshore are also at risk to the destructive nature of tsunamis. The recovery of natural ecosystems would take years and would have far reaching effects to livelihoods that rely heavily on coastal ecosystems. The community's heavy reliance on fishing livelihoods makes it highly susceptible to the impacts of a tsunami where livelihoods could be disrupted or lost for months. The popular fishing village and market on the coast would be destroyed in the event of a tsunami with wave heights in excess of three (3) meters.

2.2 Vulnerable Population

The Old Harbour Bay Community and environs has an estimated population of 7, 530 persons (Census 2011). In recent years the population has grown with the development of high density housing schemes such as New Harbour Village I, II and III. The increased population is estimated at 27,000 persons at an average household size of 3 persons per household.¹

Approximately 5,543 people reside in Old Harbour Bay Proper which comprises the coastal fishing village. There are 1,894 dwelling units in the community. The tsunami risk exposure is highest for the fishing village in the Old Harbour Bay area.

Majority household heads in the Old Harbour Bay Community are employed and accounts for 61.6% of households, with 51% employed full time. The remaining employed household heads include fisherfolk that are self-employed with some operating seasonal businesses in the fishing village. Of the remaining unemployed household heads which stands at 38.4%; 9.6% are males aged 20 – 24 years old.

The distribution of children and elderly population in the community is 2277 (<15yrs) and 323 (>64yrs) respectively. The most common illness in the community is hypertension and access to health services is available in the Old Harbour Town Centre located 3.5km from the community.

Issues raised during a Vulnerability Analysis conducted revealed that:

- i. Reduced mobility of vulnerable groups especially the elderly, disabled and very young children and the mechanism that need to be put in place to ensure timely and safe evacuation of these persons.
- ii. Lack of acceptance by the population as the threat of the hazard may be perceived as a low probability of occurrence hazard and so people may not readily evacuate.

¹ Each New Harbour Village Housing Scheme has approximately 3000 housing units.

3. Legal and Institutional Framework

3.1 Governing Legislation and Regulations

The Old Harbour Bay Tsunami Plan and SOPs is governed by the following legislation, policies and regulations:

- Disaster Risk Management Act 2015
- Public Health Act
- Occupational Health and Safety Act
- Disabilities Act
- Social Protection Policy 2014
- Hazardous Materials Policy
- Comprehensive Disaster Risk Management Policy
- Disaster Risk Management Orders
- Preventative Evacuation Orders

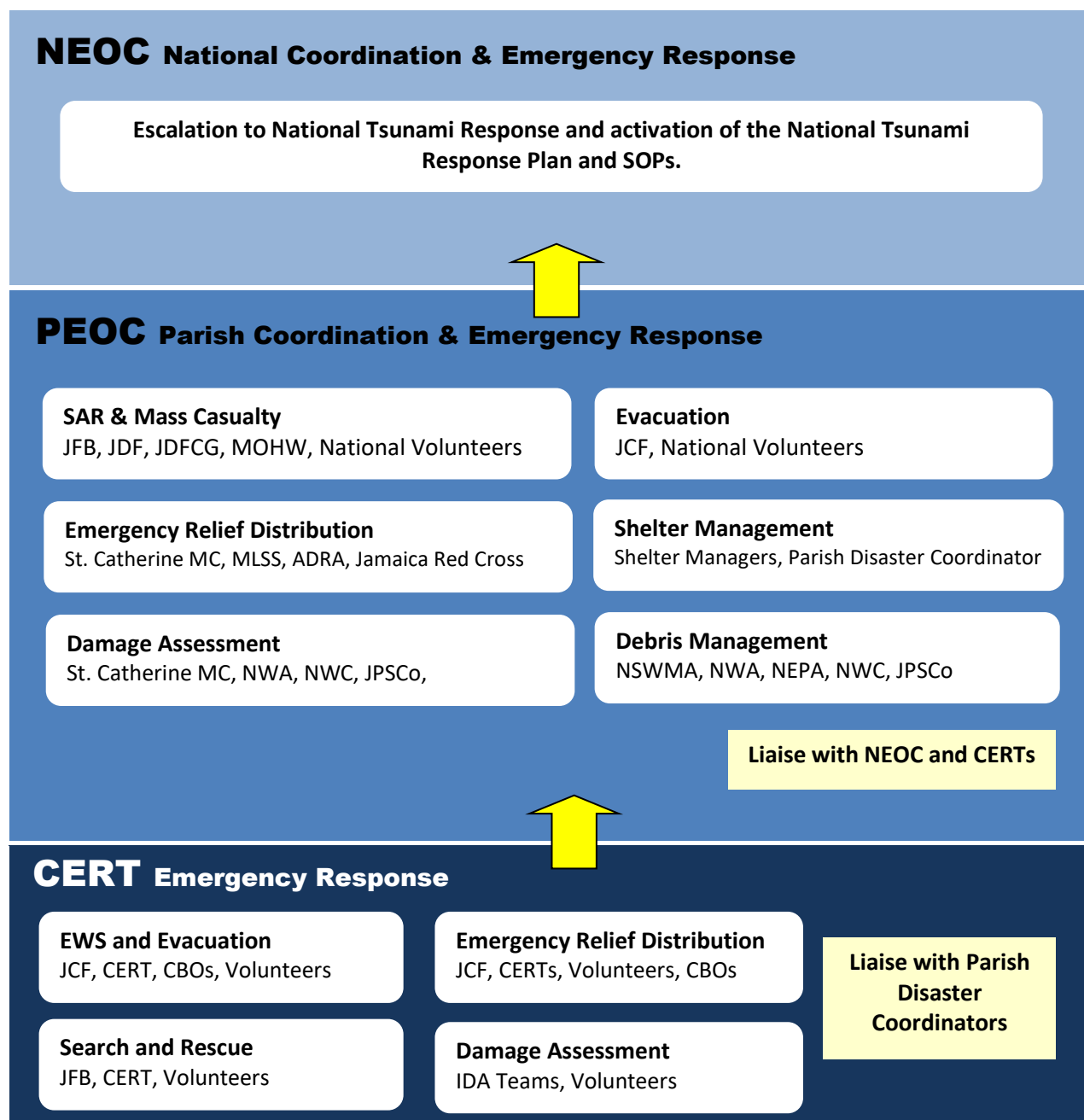
A tsunami leading to the activation of this plan may also trigger the activation of the following plans:

- National Tsunami Response Plan and SOPs
- National Disaster Plan
- Mass Casualty Plan
- National Mass Rescue Operations Plan
- National Pandemic Plan
- Shelter Welfare and Relief Clearance Plan
- National Oil Spill Response Plan
- National Response Coordination Plan
- National Search and Rescue Plan
- Border Security Plan
- National Media Plan
- St. Catherine Disaster Risk Management Plan

3.2 Institutional Arrangements

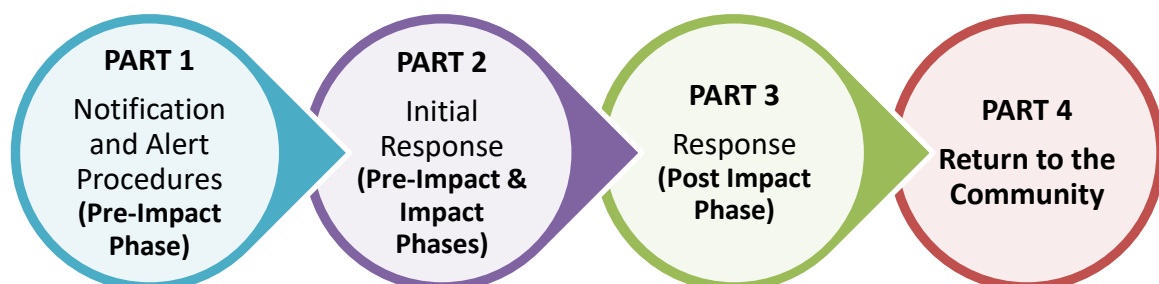
The community response mechanism is linked to the parish mechanism. If the community and parish capacity to respond to the tsunami incident is exceeded, then the National Tsunami Response Plan and SOPs will be activated. Figure 1 illustrates the institutional arrangements for tsunami response in the Old Harbour Bay Community and environs and escalation of response at national and parish levels. A tsunami threatening the coast of Old Harbour Bay will trigger activation of the Parish Emergency Operations Centre (PEOC).

Figure: 1: Old Harbour Bay Community Tsunami Response Mechanism



4. EMERGENCY OPERATIONS

The emergency operations following activation of this plan is divided into four (4) parts. See Annex 4 for detailed SOPs.

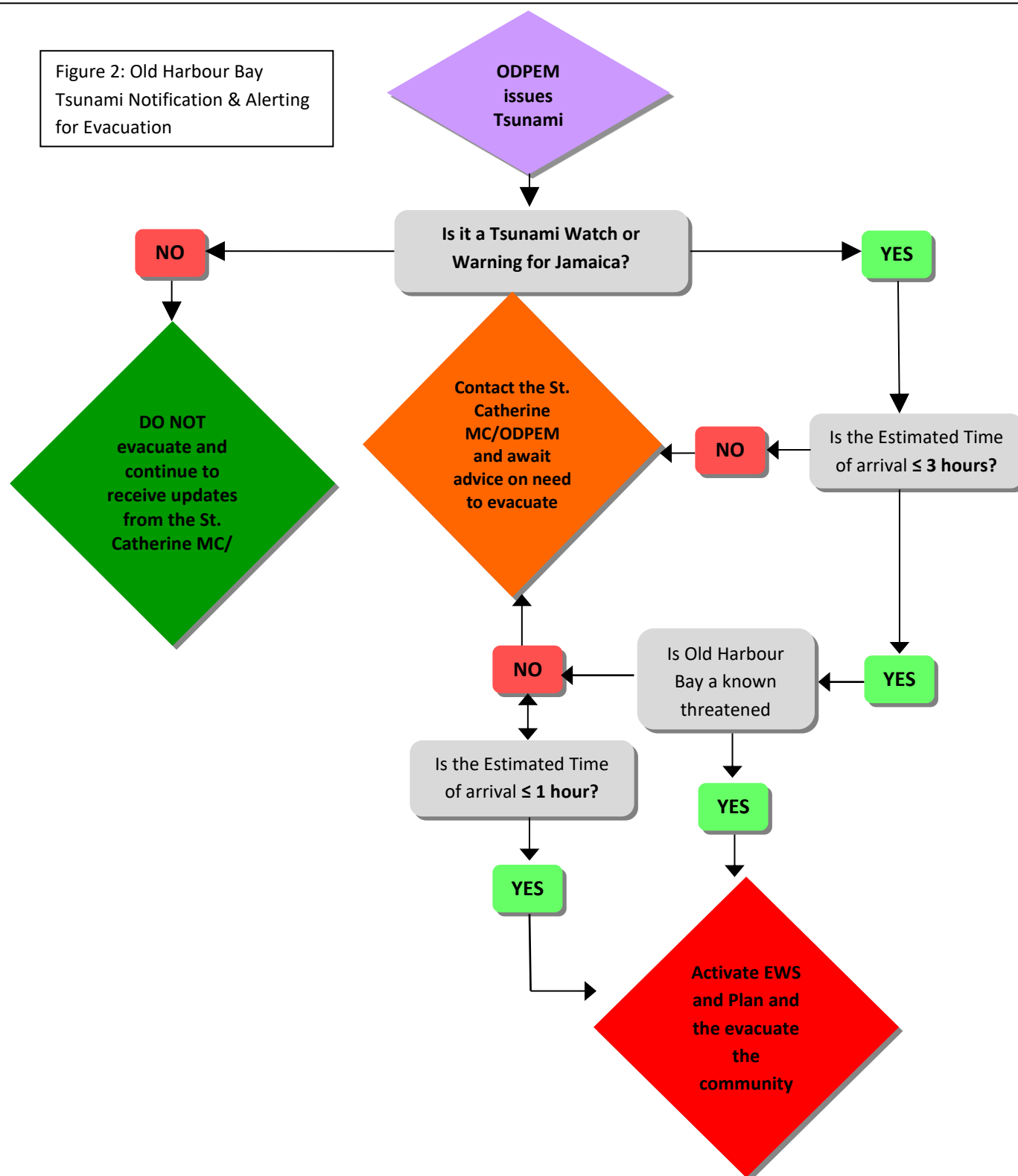


4.1 PART 1: Notification and Alert Procedures (Pre-Impact Phase)

The Old Harbour Bay Tsunami Response Plan and SOPs is to be activated in the event of a tsunami threat to the coast of Jamaica where a Tsunami Watch or Warning (see Annex 2 for description of tsunami alert levels for Jamaica) has been issued by the ODPEM as Tsunami Warning Focal Point. If there is a strong coastal earthquake a tsunami may be generated and impact the coast in minutes. During Tsunami Preparedness persons should be taught to evacuate immediately inland to higher ground when a strong earthquake is felt along the coast and do not wait for official tsunami warnings or evacuation orders. Figure 2 illustrates the notification and alert procedures to be implemented for the Old Harbour Bay Community. When a Tsunami Watch or Warning has been issued by the ODPEM.

Old Harbour Bay Tsunami Notification and Alerting for Evacuation

Figure 2: Old Harbour Bay Tsunami Notification & Alerting for Evacuation



4.2 PART 2: Initial Response (Pre-Impact and Impact Phases)

The PRIORITY ACTIONS in the event of a tsunami threat to Old Harbour Bay are to:

Priority Action	Lead Responsibility
1. Activate Early Warning System	ODPEM, St. Catherine MC
2. Evacuate residents from the community to designated Assembly Points/ Tsunami Shelters	JCF, JFB, Old Harbour Bay CERT

4.2.1 Activation of Early Warning System

There is an established Tsunami Early Warning System and several alerting mechanisms in the Old Harbour Bay Community. These are the siren at the JPSCo Power Plant, church bells at the Faith Bible Baptist, Old Harbour Bay Baptist and the St. Phillips Anglican churches and the use of bull horns to alert residents. Radio communication is also used to alert CERT members. Mobile phones and word of mouth will also be used to inform residents of an impending threat. See table 2:

Table 2: Community based EWS for Old Harbour Bay

Community Early Warning System	Responsibility
Trigger activation of community siren	ODPEM/St. Catherine MC
Transmit Tsunami Warning Message to St. Catherine Municipal Corporation via SMS, Email and radio communication	ODPEM
Issue Tsunami Warning Message to Community Emergency Response Team (CERT)	St. Catherine Municipal Corporation
Ring church bells at the Faith Bible Baptist, Old Harbour Bay Baptist and St. Phillips Anglican Church	Designated CERT member
Use Bull Horns to alert residents and mobilize evacuation	CERT
Utilize handheld radios to alert CERT Team Leaders	CERT/ St. Catherine MC
Utilize mobile phones, social media, word of mouth to alert residents and mobilize evacuation of the community	CERT

The Siren System located at Old Harbour Bay is a combination of several technologies which disseminate warning and hazard information. The system is currently operated by the Preparedness and Emergency Operations Division – Telecommunications Unit of the ODPEM and the St. Catherine Municipal Corporation.

Operators of the system are approved at three levels:

1. National Level ODPEM (Telecommunications Unit Staff)
2. Parish Level St. Catherine Municipal Corporation (Roads and Works Department and Disaster Unit)
3. Community Level Old Harbour Bay Community Emergency Response Team

The siren system is operated using a control code via the number keys on the radio terminal. The activation method is the same as the existing analog VHF radio siren system at the ODPEM. The power supply system is the independent type based on solar panels installed at the siren towers and the main power supply is provided by JPSCo and managed by the St. Catherine Municipal Corporation.

The Old Harbour Bay Siren System shall **not** be used for any of the following purposes:

- a) Any message of commercial nature
- b) Any message of political nature
- c) Any message relating to non-official, non-public safety business

Table 3 indicates the authorized officers for activation of the siren:

Table 3: Authorized officers for activation of the Old Harbour Bay Siren

National	Parish	Community
Director General, ODPEM	Parish Disaster Coordinator, St. Catherine MC	Community Emergency Response Team
Deputy Director General, ODPEM	Chief Engineering Officer, St. Catherine MC	Police, Old Harbour and Old Harbour Bay)
Senior Director PEOD, ODPEM	Building Officer, St. Catherine MC	Fire, Old Harbour Fire Station
Radio Room staff ODPEM		South Jamaica Power Company (SPCJ), Old Harbour Bay, (JPSCo Subsidiary that will operate their own siren to support the system)

See detailed Old Harbour Bay Early Warning System Siren Standard Operating Procedures.

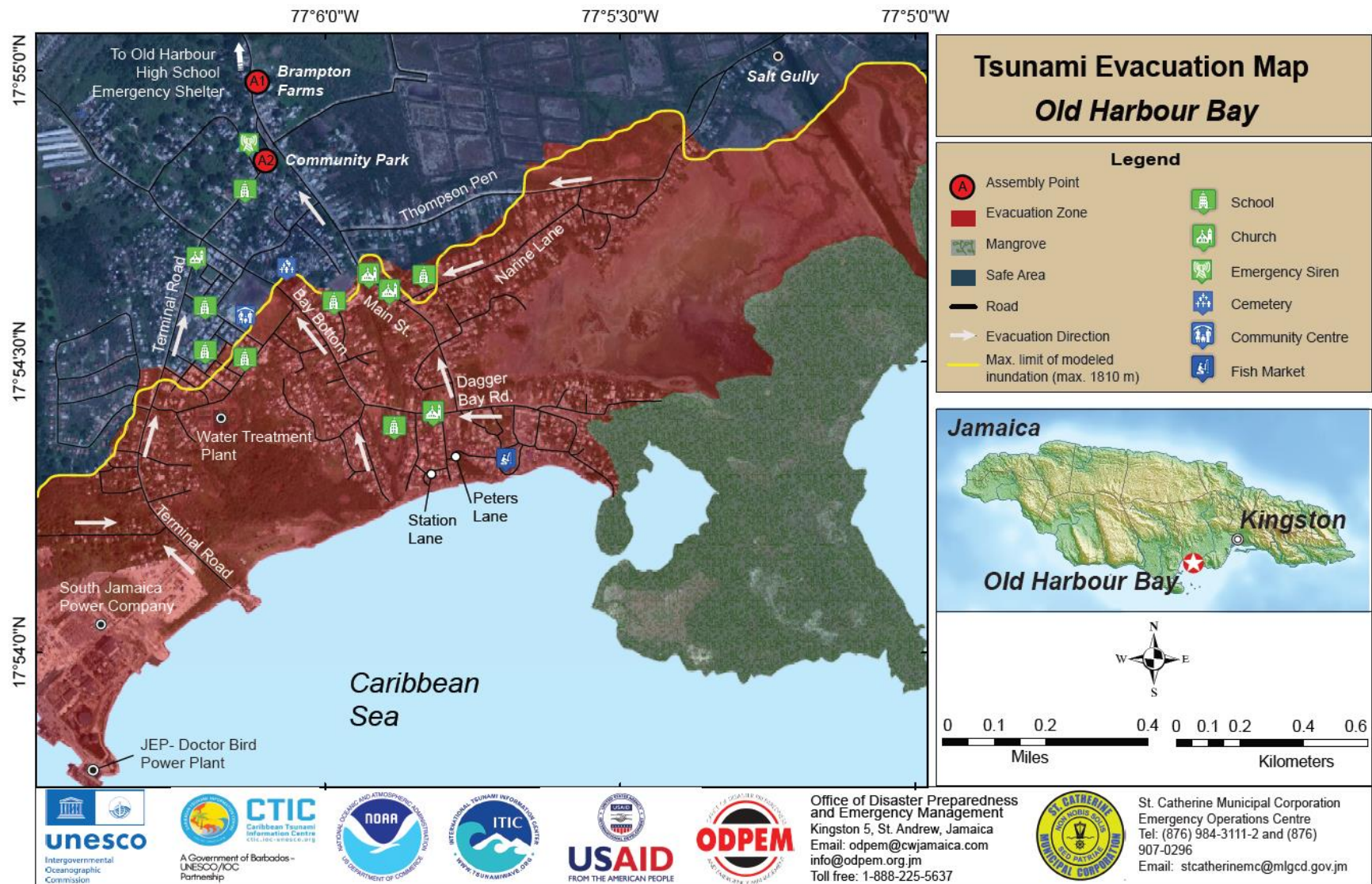
4.2.2 Priority Areas for Evacuation

The districts/areas to be given priority evacuation in the Old Harbour Bay Community include:

1. **Old Harbour Bay Market and Fishing Beach**
2. **Peter's Lane**
3. **Station Lane**
4. **Dagger Bay**
5. **Terminal – to include JPS Power Plant and Dr. Bird Power Plant**
6. **Buddho**
7. **Salt Gully**
8. **Bay Bottom**

Figure ---- shows the evacuation routes, location of assembly points and designated tsunami shelter for the Old Harbour Bay Community. The section in red highlights the priority areas to be evacuated once a tsunami warning has been issued for the community.

Figure 3: Old Harbour Bay Evacuation Map



Tsunami warning signs are placed at strategic locations in the community. See Annex 4 for tsunami signage and assembly points. A combination of both motor vehicles and by foot will be used to for the evacuation of children and persons with disabilities. There is currently no ambulance service at the Old Harbour Health Centre which provides primary health care to the community. There is also heavy reliance on route taxis that travel to and from the community to the Old Harbour town centre. This resource may be relied upon to help evacuate vulnerable persons from the community.

4.2.3 Evacuation Procedures

The following actions must be taken to evacuate the Old Harbour Bay Community when the area is identified as a threatened area with ≤ 3 hours lead time or where the destination of the tsunami is unknown and there is less than 1 hour lead time for evacuation. See Annex 1 for detailed SOPs.

Actions during Tsunami Watch >3hrs lead time	Actions during Tsunami Warning ≤ 3 hrs lead time	
	Up to 3 hours	Less than 1 hour
Evacuate the beach and coastline areas	Activate EWS and evacuate the entire community immediately	Activate EWS and evacuate the entire community immediately
Secure boats at the shoreline and those at sea are to move vessels to deep water	Evacuate on foot to assembly points then on to tsunami shelter	Evacuate on foot to assembly points then on to tsunami shelter
Seek the advice of the St. Catherine Municipal Corporation/ODPEM	Movement of offshore vessels to deep water if time allows	Movement of offshore vessels to deep water if time allows
Activate Tsunami Shelter	Activate Tsunami Shelter	Activate Tsunami Shelter
Activate Early Warning Systems as advised by the St. Catherine Municipal Corporation/ODPEM	Divert traffic away from Main Street to facilitate rapid evacuation of the Old Harbour Bay community	Divert traffic away from Main Street to facilitate rapid evacuation of the Old Harbour Bay community
CERT team to be placed on standby	Mobilize CERT to evacuate the community	Mobilize CERT to evacuate the community
Evacuate the community if advised to do so by the St. Catherine Municipal Corporation/ODPEM	Emergency responders and volunteers placed on standby outside the threatened area	Emergency responders and volunteers placed on standby outside the threatened area
Continue to monitor situation and receive official updates from the ODPEM	Continue to monitor situation and receive official updates from the ODPEM	Continue to monitor situation and receive official updates from the ODPEM

4.3 Initial Response - IMPACT PHASE

The Impact Phase is classified as the point where the tsunami impacts the coast and can last for hours. NO rescue mission is to be authorized in any threatened area during a tsunami impact. All other actions are to be carried out post impact. Table 4 outlines actions to be taken by national and parish authorities during the impact phase.

Table 4: Critical actions during tsunami impact

Critical Actions during Tsunami Impact	Lead Responsibility
1. Satellite and aerial monitoring and survey of impact areas	NEOC/JIOC
2. Continued evacuation of threatened areas	Residents with support of the JCF & JFB
3. Restrict access to threatened and impacted areas	JCF/JDF
4. Management of activated Tsunami Evacuation Shelters and support to evacuees	PEOC/Shelter Managers/MLSS/Jamaica Red Cross
5. Pre-position Emergency Response Teams (SAR, Mass Casualty, Debris Management) and equipment outside the threatened areas	NEOC/PEOC
6. Continued updates and engagement of public and social media	NEOC

4.4 PART 3: Response (Post-Impact Phase)

The Post-Impact Phase occurs when the Director General of the ODPEM or a designate has declared the end of the Impact Phase of the tsunami event by issuing a Tsunami Warning Cancellation message. No evacuee is to return to their homes or an impacted area until it has been declared safe to do so and/or following preliminary assessments of the impacted areas by the relevant authorities.

The PRIORITY ACTIONS in the Post-Impact Phase of a tsunami event for Old Harbour Bay are:

Priority Action	Lead Responsibility
3. Search and rescue operations in affected areas	JFB
4. Assess damage to impacted areas	ODPEM, St. Catherine MC
5. Emergency relief to affected population	St. Catherine MC, MLSS
6. Conduct debris removal in impacted areas	NSWMA
7. Crisis communication	ODPEM, ST. Catherine MC

4.4.1 Search and Rescue Operations

Search and Rescue (SAR) operations must be carried out in the impacted areas immediately following the declaration of an **All Clear** for the Tsunami event and issuing of a **Tsunami Warning Cancellation Message** by the ODPEM. SAR operations are to be coordinated by the PEOC with the support of the NEOC and led by the Jamaica Fire Brigade (JFB). Trained SAR teams (CERT) in the community are to be mobilized under the management of the JFB. See Annex 1 for detailed SOPs.

Search and rescue efforts may be supported by national volunteers or regional/international humanitarian response depending on the scale of the event in the community. The mobilization of national volunteers, regional and international humanitarian assistance to the affected areas is to be managed by the NEOC.

The scale of the tsunami event may trigger activation of the National Mass Casualty Plan which is to be carried out by the Ministry of Health and Wellness. Coordination and management of the MCI is to be done by the NEOC through the PEOC and with the support of the Public Health Department and the Old Harbour Bay CDA. See Annex 5 describing staging areas for a Mass Casualty Incident.

1.4.2 Damage Assessment

During the tsunami impact, aerial surveillance, satellite monitoring and other remote methods will be conducted by the NEOC to assess damages caused by the tsunami in the community. On the ground damage assessment is to be initiated following an All-Clear message from the ODPEM. The following assessments are to be conducted in the community following tsunami impact:

- **Initial Damage Assessment (IDA)** in the affected areas – to be carried out by IDA Teams and representatives from the Parish Disaster Committee (PDC) and PEOC. IDA reports are to be provided to the St. Catherine Municipal Corporation and the ODPEM.
- **Detailed Damage Assessment** by critical sectors – this is to be done by the affected industries and a report submitted to the St. Catherine Municipal Corporation and the ODPEM.

4.4.3 Emergency Relief

The PEOC through the Parish Disaster Coordinator is to coordinate emergency relief for the community post impact. Emergency relief will be supported by the Ministry of Labour and Social Security (MLSS), the Adventist Development Relief Agency (ADRA), Food for the Poor, Jamaica Red Cross and volunteers. The engagement of regional and international support for emergency relief is to be led by the Ministry of Foreign Affairs and Trade (MFAFT) and coordinated by the NEOC.

4.4.4 Debris Management

The removal of debris post impact may take weeks or months to complete. There will be need for a coordinated effort to maximize the use and efficiency of available resources. The National Solid Waste Management Authority (NSWMA) through the PEOC is to have lead responsibility for coordinating the removal of debris in the affected areas. A Debris Management Action Plan is to be developed and implemented by the NEOC. Debris removal, road clearance and other activities is to be supported by the National Works Agency (NWA), Roads and Works Department, Jamaica Fire Brigade and volunteers.

4.5 PART 4: Return to the Community

No resident is to return to the community until an official All Clear Message has been issued by the ODPEM and the local Fire Brigade has declared the area safe for reentry. The Jamaica Constabulary Force (JCF) will be responsible for security, crowd control and enforcing law and order during the return of residents to the community. The Parish Disaster Coordinator is to coordinate the movement of residents from the Tsunami Shelter at the Old Harbour High School back to the community.

Annexes

Annex 1: OLD HARBOUR BAY TSUNAMI STANDARD OPERATING PROCEDURES

The following Standard Operating Procedures (SOPs) are to be executed by the designated agency/entities in response to a tsunami threat and/or impact to the Old Harbour Bay Community. The response time indicates the time in which an activity is to commence and/or completed.

- SOP A** **for <1hr lead time (Pre-Impact Phase)**
- SOP B** **up to 3hrs lead time (Pre-Impact Phase)**
- SOP C** **for 3 – 6hrs lead time (Pre-Impact Phase)**
- SOP D** **Impact Phase**
- SOP E** **Post Impact Phase**

SOP A <1hr lead time			
ACTIONS TO BE TAKEN	Lead Responsibility	Response Time (hr/min)	Support/ Alternate
Notification & Alert Procedures			
Receive Tsunami Warning Message from the ODPEM and disseminate to the Old Harbour Bay Community and environs	St. Catherine MC	<5min	PEOC
Notify critical agencies and the Old Harbour Bay Community	St. Catherine MC	5 – 10 mins	Old Harbour Bay CDA
Trigger activation of community siren	ODPEM/ St. Catherine MC	<5min	NEOC
Issue Tsunami Warning Message to Community Emergency Response Team (CERT)	Parish Disaster Coordinator	5 – 10 mins	Old Harbour Bay CDA
Ring church bells at Faith Bible Baptist, Old Harbour Bay Baptist and St. Phillips Anglican Church	Designated CERT member	5 – 10 mins	Any available resident
Use Bull Horns to alert residents and mobilize evacuation	CERT	5 – 10 mins	Any available resident
Utilize handheld radios to alert CERT Team Leaders	Old Harbour Bay CDA	5 – 10 mins	CERT
Utilize mobile phones, social media, word of mouth to alert residents and mobilize evacuation of the community	CERT	5 – 10 mins	All residents
Notify Toll Authority and Jamaican Infrastructure Operators (JIO)	PEOC	5 – 10 min	NEOC
Provide ongoing updates on tsunami threat	St. Catherine MC	<1hr	PEOC, ODPEM, JIS
Evacuation of Threatened Areas			
Mobilize evacuation of entire community	CERT/Old Harbour Bay CDA	<5mins	Parish Disaster Coordinator, residents
Apply “Buddy System” for the evacuation of persons with disabilities, elderly and children	CERT, Residents	<1hr	Public Health Dept.
Coordinate evacuation of entire community	JCF	<1hr	JFB, Public Health Dept.
Authorize movement of offshore vessels to deep water where possible	PAJ	<5min	JDFCG, Marine Police
Divert traffic away from threatened areas	JCF	<1hr	JDF
Restrict access into threatened areas	JCF	<1hr	JFB
Coordinate traffic movement along evacuation routes	JCF	<1hr	JDF
Tsunami Shelter Management			
Mobilize Shelter Managers	Parish Disaster Coordinator	5 -10 mins	PEOC
Activate Tsunami Shelters	Shelter Managers	5 – 10 mins	Parish Disaster Coordinator
Equip Tsunami Shelters with resources	St. Catherine MC	<1hr	MLSS, ODPEM,

SOP A <1hr lead time			
ACTIONS TO BE TAKEN	Lead Responsibility	Response Time (hr/min)	Support/ Alternate
			Jamaica Red Cross
Mobilize volunteers to support Shelter Managers	PEOC	<1hr	ODPEM, MLSS, Jamaica Red Cross
Pre-positioning of Resources			
Establish Incident Command Post outside the threatened area	JCF/JFB	<30 mins	PEOC
Pre-position SAR equipment and personnel outside the threatened areas to respond post impact	JFB, JDFCG	<1hr	JDF, JCF, NWA
Conduct staging for Mass Casualty outside the threatened areas to respond post impact	MOHW	<1hr	PEOC, Public Health Dept.
Pre-position emergency relief supplies and personnel outside of the threatened areas to respond post impact	St. Catherine MC	<1hr	ODPEM, MLSS, ADRA, Jamaica Red Cross
Border Security			
Maintain secure perimeter of threatened areas	JCF, JDFCG	<30 mins	Marine Police, JFB
Discontinue all port activities in threatened areas of Old Harbour Bay	PAJ	<1hr	JDFCG, Marine Police
Restrict access to port facilities by land and sea	JCF, JDFCG, Marine Police	<1hr	JDF, JFB

SOP B ≤3hrs lead time			
ACTIONS TO BE TAKEN	Lead Responsibility	Response Time (hr/min)	Support/ Alternate
Notification & Alert Procedures			
Receive Tsunami Warning Message from the ODPEM and disseminate to Old Harbour Bay and environs	St. Catherine MC	<5min	PEOC
Notify critical agencies and the Old Harbour Bay Community	St. Catherine MC	5 – 10 mins	Old Harbour Bay CDA
Trigger activation of community siren	ODPEM/ St. Catherine MC	<5min	NEOC
Issue Tsunami Warning Message to Community Emergency Response Team (CERT)	Parish Disaster Coordinator	5 – 10 mins	ODPEM Regional Coordinator
Ring church bells at Faith Bible Baptist, Old Harbour Bay Baptist and St. Phillips Anglican Church	Designated CERT member	5 – 10 mins	Any available resident
Use Bull Horns to alert residents and mobilize evacuation	CERT	5 – 10 mins	Any available resident
Utilize handheld radios to alert CERT Team Leaders	Old Harbour Bay CDA	5 – 10 mins	CERT
Utilize mobile phones, social media, word of mouth to alert residents and mobilize evacuation of the community	CERT	5 – 10 mins	All residents
Notify Toll Authority and Jamaican Infrastructure Operators (JIO)	PEOC	5 – 10 min	NEOC
Provide ongoing updates on tsunami threat	St. Catherine MC	<3hrs	PEOC, ODPEM, JIS
Evacuation of Threatened Areas			
Mobilize evacuation of entire community	CERT/Old Harbour Bay CDA	5 – 10 mins	Parish Disaster Coordinator, residents
Apply “Buddy System” for the evacuation of persons with disabilities, elderly and children	CERT, Residents	<3hrs	Public Health Dept.
Coordinate evacuation of entire community	JCF	<3hrs	JFB, Public Health Dept.
Authorize movement of offshore vessels to deep water where possible	PAJ	<1hr	JDFCG, Marine Police
Post names of evacuation routes on website and social media	St. Catherine MC	5 – 10 mins	JIS, NWA, ODPEM, MSJ
Divert traffic away from threatened areas	JCF	<3hrs	JDF
Restrict access into threatened areas	JCF	<3hrs	JFB
Coordinate traffic movement along evacuation routes	JCF	<3hrs	JDF
Tsunami Shelter Management			
Mobilize Shelter Managers	Parish Disaster Coordinator	5 -10 mins	PEOC
Activate Tsunami Shelters	Shelter	<1hr	Parish Disaster

SOP B ≤3hrs lead time			
ACTIONS TO BE TAKEN	Lead Responsibility	Response Time (hr/min)	Support/ Alternate
	Managers		Coordinator
Equip Tsunami Shelters with resources	St. Catherine MC	<1hr	MLSS, ODPEM, Jamaica Red Cross
Mobilize volunteers to support Shelter Managers	PEOC	<1hr	ODPEM, MLSS, Jamaica Red Cross
Pre-positioning of Resources			
Establish Incident Command Post outside the threatened area	JCF/JFB	<1hr	PEOC
Pre-position SAR equipment and personnel outside the threatened areas to respond post impact	JFB, JDFCG	<2hrs	JDF, JCF, NWA
Conduct staging for Mass Casualty outside the threatened areas to respond post impact	MOHW	<2hrs	PEOC, Public Health Dept.
Pre-position emergency relief supplies and personnel outside of the threatened areas to respond post impact	St. Catherine MC	<2hrs	ODPEM, MLSS, ADRA, Jamaica Red Cross
Border Security			
Maintain secure perimeter of threatened areas	JCF, JDFCG	<1hr	Marine Police, JFB
Discontinue all port activities in threatened areas of Old Harbour Bay	PAJ	<3hrs	JDFCG, Marine Police
Restrict access to port facilities by land and sea	JCF, JDFCG, Marine Police	<3hrs	JDF, JFB

SOP C 3 - 6hrs lead time			
ACTIONS TO BE TAKEN	Lead Responsibility	Response Time (hr/min)	Support/ Alternate
Notification & Alert Procedures			
Receive Tsunami Warning Message from the ODPEM and disseminate to Old Harbour Bay and environs	St. Catherine MC	5 – 10 mins	PEOC
Notify critical agencies and the Old Harbour Bay Community	St. Catherine MC	5 – 10 mins	Old Harbour Bay CDA
Trigger activation of community siren	ODPEM/ St. Catherine MC	<3hrs	NEOC
Issue Tsunami Warning Message to Community Emergency Response Team (CERT)	Parish Disaster Coordinator	5 – 10 mins	ODPEM Regional Coordinator
Ring church bells at Faith Bible Baptist, Old Harbour Bay Baptist and St. Phillips Anglican Church	Designated CERT member	<1hr	Any available resident
Use Bull Horns to alert residents and mobilize evacuation	CERT	<1hr	Any available resident
Utilize handheld radios to alert CERT Team Leaders	Old Harbour Bay CDA	<1hr	CERT
Utilize mobile phones, social media, word of mouth to alert residents and mobilize evacuation of the community	CERT	<1hr	All residents
Notify Toll Authority and Jamaican Infrastructure Operators (JIO)	PEOC	5 – 10 min	NEOC
Provide ongoing updates on tsunami threat	St. Catherine MC	<6hrs	PEOC, ODPEM, JIS
Evacuation of Threatened Areas			
Mobilize evacuation of entire community	CERT/Old Harbour Bay CDA	<3hrs	Parish Disaster Coordinator, residents
Apply “Buddy System” for the evacuation of persons with disabilities, elderly and children	CERT, Residents	<3hrs	Public Health Dept.
Coordinate evacuation of entire community	JCF	<3hrs	JFB, Public Health Dept.
Authorize movement of offshore vessels to deep water where possible	PAJ	<1hr	JDFCG, Marine Police
Post names of evacuation routes on website and social media	St. Catherine MC	<1hr	JIS, NWA, ODPEM, MSJ
Divert traffic away from threatened areas	JCF	<3hrs	JDF
Restrict access into threatened areas	JCF	<3hrs	JFB
Coordinate traffic movement along evacuation routes	JCF	<6hrs	JDF
Tsunami Shelter Management			

SOP C 3 - 6hrs lead time			
ACTIONS TO BE TAKEN	Lead Responsibility	Response Time (hr/min)	Support/ Alternate
Mobilize Shelter Managers	Parish Disaster Coordinator	<3hrs	PEOC
Activate Tsunami Shelters	Shelter Managers	<3hrs	Parish Disaster Coordinator
Equip Tsunami Shelters with resources	St. Catherine MC	<3hrs	MLSS, ODPEM, Jamaica Red Cross
Mobilize volunteers to support Shelter Managers	PEOC	<3hrs	ODPEM, MLSS, Jamaica Red Cross
Pre-positioning of Resources			
Establish Incident Command Post outside the threatened area	JCF/JFB	<3hrs	PEOC
Pre-position SAR equipment and personnel outside the threatened areas to respond post impact	JFB, JDFCG	<4hrs	JDF, JCF, NWA
Conduct staging for Mass Casualty outside the threatened areas to respond post impact	MOHW	<4hrs	PEOC, Public Health Dept.
Pre-position emergency relief supplies and personnel outside of the threatened areas to respond post impact	St. Catherine MC	<4hrs	ODPEM, MLSS, ADRA, Jamaica Red Cross
Border Security			
Maintain secure perimeter of threatened areas	JCF, JDFCG	<6hrs	Marine Police, JFB
Discontinue all port activities in threatened areas of Old Harbour Bay	PAJ	<3hrs	JDFCG, Marine Police
Restrict access to port facilities by land and sea	JCF, JDFCG, Marine Police	<3hrs	JDF, JFB

SOP D Tsunami Impact			
ACTIONS TO BE TAKEN	Lead Responsibility	Response Time (hr/min)	Support/ Alternate
Continued evacuation of threatened areas.	Residents	Ongoing	JCF, JFB
Coordinate movement of evacuees leaving impact areas	JCF/JFB	Ongoing	PEOC
Restrict access to threatened and impacted areas	JCF	Ongoing	JDF, JDFCG
Management of Tsunami Shelters and support to evacuees	Shelter Managers	Ongoing	Parish Disaster Coordinator, Volunteers
Emergency Response Teams (SAR, Mass Casualty, Debris Management) and equipment to remain on standby outside the threatened areas	PEOC	Standby	JCF, JFB, MLSS, NSWMA, NWA
Continued tsunami updates and engagement of public and social media	Parish Disaster Coordinator	Ongoing	JIS, ODPEM, Media Houses

SOP E Post Impact			
ACTIONS TO BE TAKEN	Lead Responsibility	Response Time (hr/min)	Support/ Alternate
All Clear			
Notify community of Tsunami Warning Cancellation Message	St. Catherine MC	5 – 10 mins	Old Harbour Bay CDA
Provide tsunami updates within Old Harbour Bay and environs	NEOC/PEOC	Ongoing	JIS, Parish Disaster Coordinator
Restrict access into impacted areas	JCF	<1hr	JFB, NWA
SAR and Mass Casualty			
Coordinate evacuation of persons from the affected areas	JCF	<1hr	JDF, JFB, Parish Disaster Coordinators, Jamaica Red Cross, Volunteers
Conduct SAR operations in affected areas	JFB, JDFCG	<1hr	JDF, JCF, NWA, National Volunteers, Regional/Intl Volunteers
Conduct Mass Casualty operations near the impact zone	MOHW	<1hr	JDF, JCF, NWA, Jamaica Red Cross, National Volunteers, Regional/Intl Volunteers
Damage Assessment			
Monitoring and survey of impact areas	PEOC	<1hr	NWA, JDF, NEOC JDFCG, UNDAC-Map Action
Conduct Initial Damage Assessments in the affected areas (land and offshore)	NWA, MLSS, Parish Disaster Coordinators, NWC, JPSCo	<24hrs	ODPEM, Jamaica Red Cross, NERGIST, JDFCG, Marine Police
Conduct Detailed Damage Assessments in the affected areas	NWA, MLSS, NWC, JPSCo, RADA, NEPA	3 days	ODPEM, Jamaica Red Cross, NEOC, PEOC, Regional DA Teams
Emergency Relief Distribution			
Administer emergency relief to affected population	St. Catherine MC, MLSS	Ongoing	ODPEM, ADRA, Jamaica Red Cross
Coordinate the deployment of regional and international humanitarian support to the affected areas	PEOC	<1hr	ODPEM, MLSS, Jamaica Red Cross
Tsunami Shelter Management			
Management of Tsunami Shelters and support to evacuees	Shelter Managers	Ongoing	Parish Disaster Coordinators, Volunteers
Mobilize additional volunteers to support Shelter Managers if required	Parish Disaster Coordinator	<1hr	ODPEM, MLSS, Jamaica Red Cross

SOP E Post Impact			
ACTIONS TO BE TAKEN	Lead Responsibility	Response Time (hr/min)	Support/ Alternate
Debris Management			
Conduct removal of debris, road clearances and cleanup of the impacted areas	NSWMA, NWA, Road & Works Dept	Ongoing	JFB, NWC, JPSCo, Volunteers, CERT
Return of Residents			
Determine and declare when it is safe for residents to return to the community	JFB	-	JCF, Public Health Dept.
Coordinate return of residents to the community when it declared safe to do so	Parish Disaster Coordinator	-	JCF, JFB, Volunteers

Annex 2: Tsunami Alert Levels for Jamaica

Table 10: Tsunami Alert Levels for Jamaica

LEVEL 1 Tsunami Bulletin				
	LEVEL 2 Tsunami Advisory			
		LEVEL 3 Tsunami Watch	Plan Activation	End of Threat Message/ All Clear
		LEVEL 4 Tsunami Warning	Plan Activation	

Level 1	Level 2	Level 3	Level 4
Not localized	Not localized	>3hrs lead time	≤3hrs lead time
Tsunami Bulletin	Tsunami Advisory	Tsunami Watch	Tsunami Warning
<p>Issued by the NTWC/ODPEM in the event of an earthquake that may generate a tsunami threat that is not localized to the coast of Jamaica.</p> <p>Tsunami Bulletins are provided by the Pacific Tsunami Warning Centre (PTWC) and can be modified for dissemination by the ODPEM.</p>	<p>Issued by the NTWC/ODPEM when a tsunami warning has been issued for a region in the Caribbean or Atlantic and there is the possibility of dangerous currents from the tsunami affecting Jamaica's territorial waters.</p> <p>An Advisory indicates that Jamaica is either outside the current watch and warning regions or that the tsunami does not pose a direct threat to the coast. Hourly updates to be provided until the watch or warning is ended for the area under tsunami threat.</p>	<p>Issued by the NTWC/ODPEM when there is a tsunami threat that will take three (3) hours or more to impact the island's coast. The public should be advised to stay away from rivers near the coast and beaches.</p> <p>Be sure to inform persons NOT to evacuate until further notification is received from the NTWC/ODPEM or relevant Municipal Corporation.</p> <p>A Tsunami Watch message will trigger activation of this plan.</p>	<p>Issued by the NTWC/ODPEM when there is a tsunami threat that will impact the coast in three (3) hours or less. The Warning message must include instructions for the evacuation of low-lying areas along the coast and movement of ships and boats out of harbours and into deep water.</p> <p>An Evacuation Order is to be issued by the NTWC/ODPEM and the warning messages are to be updated as the condition warrants.</p> <p>A Tsunami Warning message will trigger activation of this plan.</p>

The designated Tsunami Warning Focal Point (TWFP) is the Meteorological Service of Jamaica (MSJ) and the alternate TWFP is the Jamaica Constabulary Force (JCF). The ODPEM is the Tsunami National Contact (TNC) and the one responsible for issuing the tsunami warning messages to key agencies and the public. The Earthquake Unit (EQU) is the scientific arm of the tsunami alert process and will receive earthquake information from the Scientific Research Council (SRC) and the United States Geological Services (USGS). The TWFP must be available twenty-four hours a day, seven days a week to receive tsunami and other coastal hazard-related information bulletins and warnings guidance. The TWFP has the responsibility of notifying the relevant authorities of the event characteristics (earthquake and/or tsunami) and issuing the following tsunami alerts:

End of Threat Message

At the end of a Tsunami Watch or Warning alert message an End of Threat Message is to be issued by the ODPEM when there is no longer a threat of a tsunami to Jamaica. If there has been a tsunami impact, then an All-Clear Message is to be provided by the ODPEM when it is safe for the displaced persons to return to the area. It may take days, weeks or months for an All-Clear Message to be issued depending on the scale of the tsunami impact.

Annex 3: Sample Tsunami Warning Message Template

TSUNAMI WARNING

Tsunami Message Number: 00
Date of Message: (DD/MM/YY)
Time of Message: (Hour and minutes)
Name of National Disaster Office: E.g. ODPEM

TSUNAMI WARNING - TSUNAMI THREAT MESSAGE

A TSUNAMI WARNING IS IN EFFECT FOR JAMAICA

Repeat

A TSUNAMI WARNING IS IN EFFECT FOR JAMAICA

The following parishes are placed on high alert: insert names

PRELIMINARY EARTHQUAKE PARAMETERS

An earthquake has occurred with the following preliminary Parameters reported by the Pacific Tsunami Warning Center.

< copy earthquake parameters from PTWC message. Convert UTC time to local time. >

Origin Time -
Coordinates -
Depth -
Location -
Magnitude -

EVALUATION

A major earthquake has occurred which may have generated a destructive tsunami that is projected to impact the coast of Jamaica. The tsunami threat to Jamaica is still under evaluation. If there is a tsunami threat remains, the earliest impact would occur around **<earliest ETA for country>**. Appropriate action including the evacuation of threatened areas is advised. A decision regarding the threat will be made no later than **<country decides this time based upon the minimum lead time needed for a beach or full evacuation>**.

TSUNAMI THREAT FORECAST

< copy PTWC sections applicable to a country's coastal tsunami amplitude wave forecasts in meters above the tide level. View kmz file to determine if the threat is for all coasts or can be limited to certain sections of coast.>

ESTIMATED TIMES OF ARRIVAL

Estimated times of arrival (ETA) of the initial tsunami wave for points within threatened regions are given below. Actual arrival times may differ and the

initial wave may not be the largest.

Location Region Coordinates ETA (local time)

< copy PTWC wave arrival time sections applicable to a country's coastline.

Convert UTC time to local time. >

RECOMMENDED ACTIONS

- This message is issued as guidance to key agencies responsible for public safety and evacuation.
- Persons located in threatened coasts are advised to evacuate to designated Tsunami Shelters and locations outside of the threatened areas.
- The JCF and local authorities are to coordinate and manage evacuation of the threatened areas
- Persons are advised to stay alert for instructions from national and local authorities.

POTENTIAL IMPACTS

- A tsunami is a series of waves and the time between wave crests can vary between five minutes to one hour. The hazard may persist for many hours after initial wave arrival. The first wave may not be the largest.
- Loss of life and property within the threatened areas.
- A coastal tsunami of greater than 1-meter amplitude above tide level can cause strong currents inside a harbour and be dangerous to vessels and swimmers. Persons located along coastal inland waterways are also at high risk.
- Flooding impacts can vary significantly from one section of coast to the next due to local bathymetry, shape and elevation of the shoreline.

TSUNAMI OBSERVATIONS

The following are tsunami wave observations from coastal and/or deep-ocean sea level gauges at the indicated locations. The maximum tsunami amplitude is measured with respect to normal tide level.

Gauge Location

Coordinates Time of Measure Max Tsunami Amplitude Wave Period

< copy PTWC tsunami observation section. >

NEXT UPDATE AND ADDITIONAL INFORMATION

- The next Tsunami alert message will be issued **every thirty minutes** or sooner if the situation warrants.
- The Tsunami Watch will remain in effect until further notice.
- Authoritative information about this event can be found at **XXX<website>**

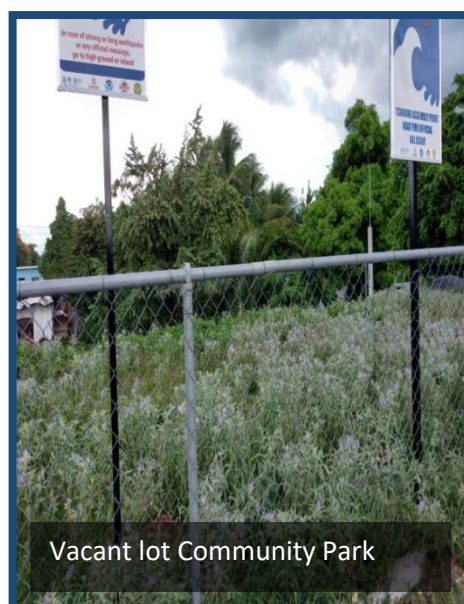
Annex 4: Old Harbour Bay Tsunami Evacuation Signs and Assembly Points

Old Harbour Bay Tsunami Evacuation Signage

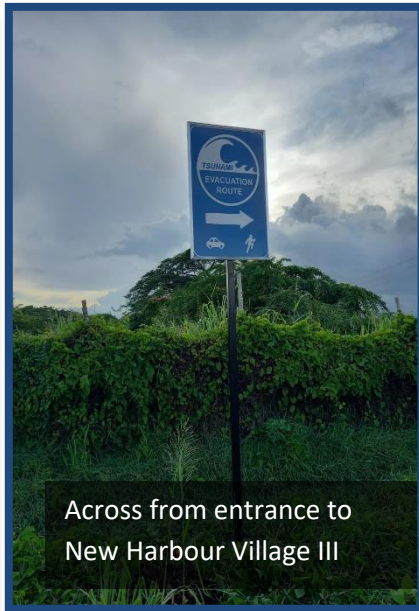
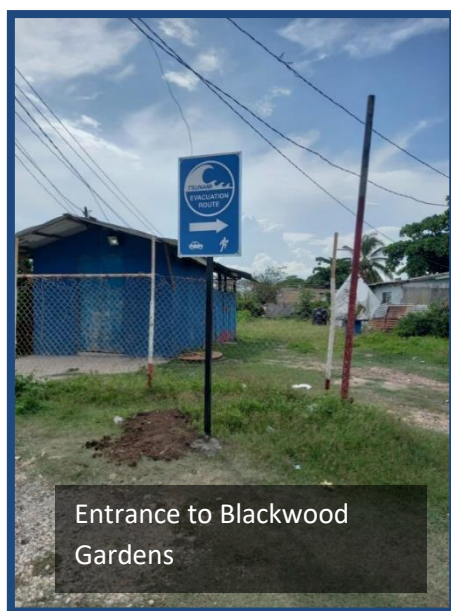
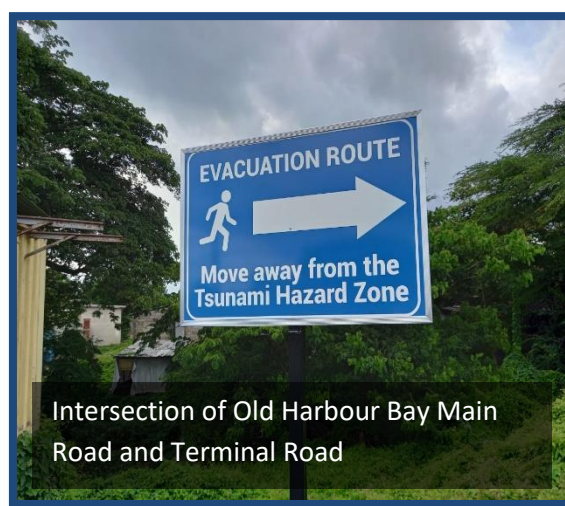
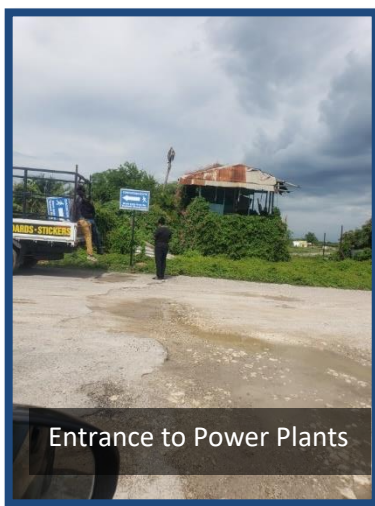
TSUNAMI HAZARD ZONE SIGNAGE



ASSEMBLY POINT SIGNAGE

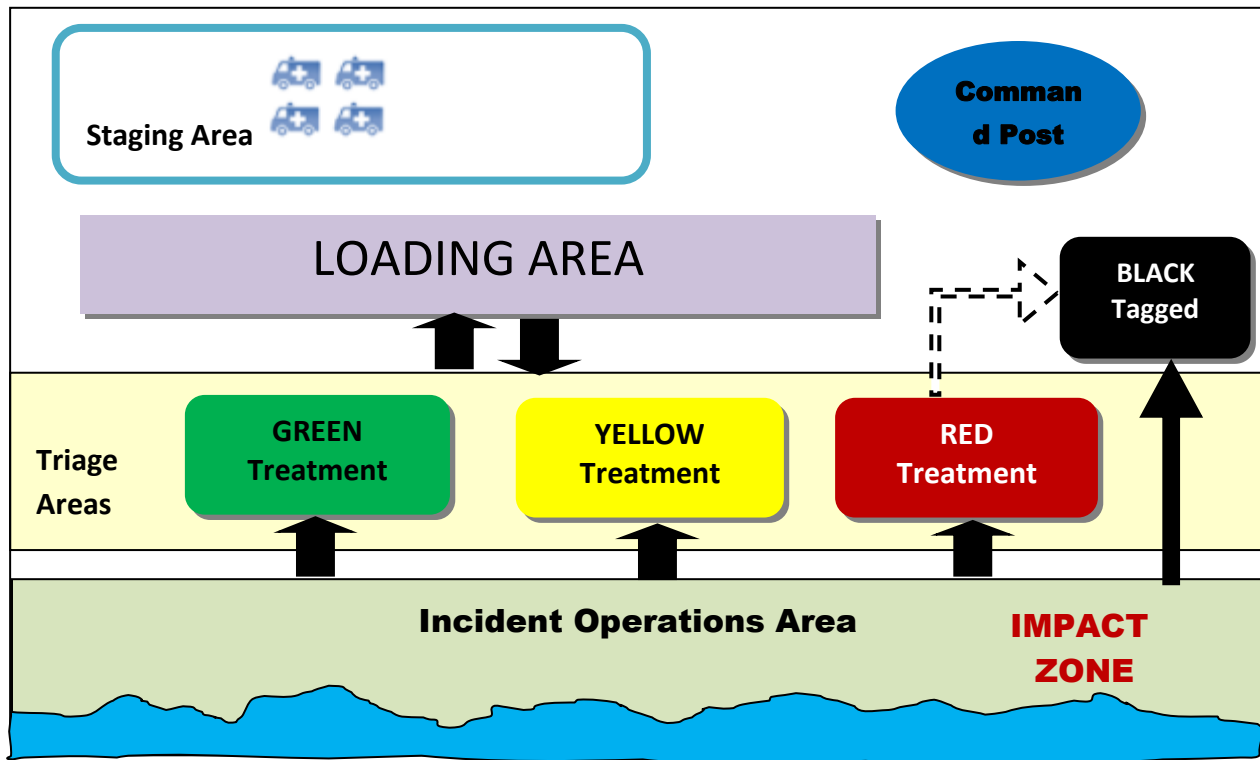


EVACUATION ROUTE SIGNAGE



Annex 5: Staging for Mass Casualty Incident

Figure 4: Staging for Mass Casualty Incident (MCI)



Incident Operations Area – The impact zone in which SAR operations and removal of dead bodies occurs.

TRIAGE AREA: The designated location for the treatment of casualties and injuries

Red Treatment: Location for treating persons in critical condition and may require transfer to hospital

Yellow Treatment: Location for treating persons with serious injuries but they are able to walk

Green Treatment: Location for treating persons with minor injuries

Black Tagged: Location where dead bodies are tagged and stored

Loading Area: Location where tools and equipment to support operations in the triage area is exchanged. This is also the area where patients are moved from the treatment areas for transfer to hospital.

Command Post: Location in a safe zone close to the site where critical agencies will manage the incident on the ground. The Command Post is managed by the On-Scene Commander (OSC)

Staging Area – Location for emergency vehicles and buses to move patients

Annex 6: Old Harbour Bay Tsunami Resource Inventory

Table 11 outlines the available resources in Old Harbour and environs to support tsunami response for the Old Harbour Bay Community.

Table 11: Tsunami Response Resource Inventory

Resource	Quantity	Location	Source
Fire Truck	1	Old Harbour Fire Station	JFB
Firemen			
Police Officers		Old Harbour Police Station	
Route Taxi Operators		Old Harbour	Residents
Trained CERT Team Members		Old Harbour Bay	Old Harbour Bay CDA/ Residents
Doctors			Residents
Nurses			Residents

Annex 7: EMERGENCY CONTACT LIST

Old Harbour Bay Contact List for Tsunami Response

Yellow

First Call Session

Blue

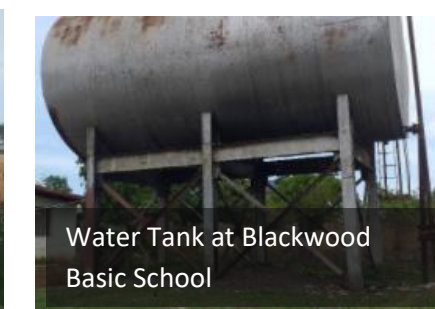
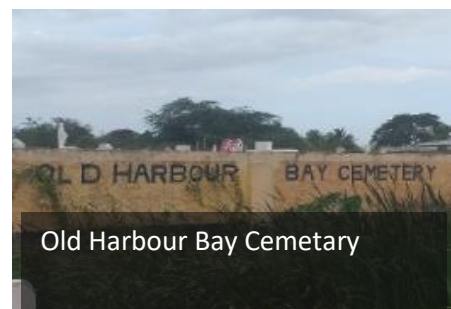
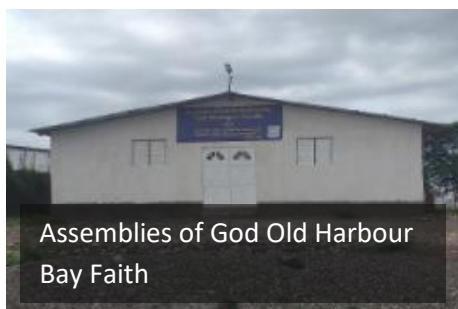
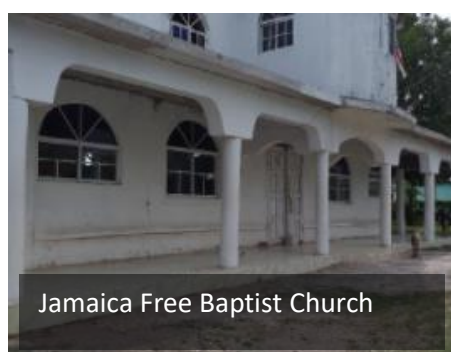
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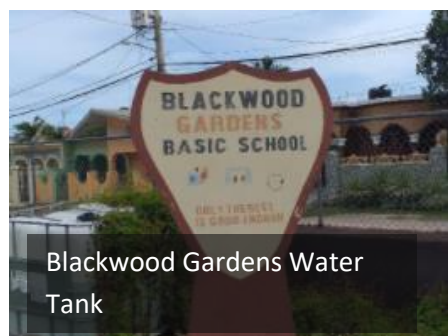
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Third Call Session/ Text only

Appendices

Appendix 1: Critical Assets at Risk in the Old Harbour Bay Community





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