Tsunami Awareness and Preparedness on the East Coast of New Zealand's North Island

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ABSTRACT

A major tsunami impacting New Zealand could cause thousands of fatalities along the East coast of the North Island. The Hikurangi subduction zone located off the East Coast is the boundary between the Pacific and the Australian tectonic plates. A major earthquake along this subduction zone could to trigger a local tsunami that could hit the coast within minutes. In June 2015, a survey was undertaken by a collaborative effort between GNS Science and the Joint Centre for Disaster Research at Massey University (JCDR). The goal was to investigate the public's understanding of the risk they are exposed to and their preparedness for a tsunami on the East coast of the North Island. The survey focussed mainly on tsunami risk awareness, preparedness and evacuation intentions in case of a major event. This report presents the tabulated results of this survey.

KEYWORDS

Tsunami hazard, survey, awareness, coastal population, risk, preparedness

1.0 INTRODUCTION

Since the 2004 Indian Ocean tsunami, New Zealand had undertaken a complete renovation of its tsunami risk prevention strategy. After the publication of the 2005 “Review of New Zealand’s preparedness for tsunami hazard, comparison to risk and recommendations for treatment” by GNS Science (Webb, 2005), a national plan has been developed by the Ministry of Civil Defence and Emergency Management (MCDEM). It has resulted in a stronger framework and a better organisation between involved parties. MCDEM is responsible for transmitting tsunami alerts and disseminating key messages that ‘at risk’ populations need to be aware of. At the local scale, CDEM groups are responsible for organising tsunami risk management within their own jurisdictions (MCDEM, 2008).

Given the progress in tsunami planning that has occurred during the last decade, a survey was undertaken to measure the effectiveness of these efforts. A nationwide survey had been carried out (Johnston et al., 2003) to determine perception and preparedness for coastal hazards, including tsunami. This survey provided an excellent baseline for the present study, and an opportunity to compare the 2003 results with the new 2015 survey. This comparison showed a clear picture of tsunami awareness evolution within the last ten years. Several other surveys (Currie et al. (2014); Fraser et al. (2013); Couling (2013), Coomer et al. (2014)) focusing on tsunami risk were conducted between 2003 and 2015. The outcomes of these surveys fed into the present study.

The 2015 survey was conducted by GNS Science and Massey University (Wellington) through the Joint Centre for Disaster Research (JCDR). The focus region was the East Coast of the North Island as this coast has the highest level of tsunami hazard for New Zealand. The North Island East Coast lies close to a large subduction zone, the Hikurangi trench, along which a major earthquake could occur resulting in a local source tsunami, which could send waves 20 metres high or greater to the coast within minutes. This survey covers a broad spectrum of topics, including tsunami risk perception, awareness, self-estimated preparedness level, hazard knowledge, previous experience, prevention knowledge and evacuation intentions for three hypothetical scenarios (local, regional and distant source tsunami). The outcomes of this survey will be used to understand the effectiveness of current risk prevention strategies employed by national and local government, and will help inform improvements in tsunami planning and preparedness over time.

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2.0 METHODOLOGY

The main purpose of this project was to create a baseline of indicators to understand the present public perception of tsunami hazard. These indicators could then be used over time to measure tsunami awareness' improvements.

The data was gathered using a questionnaire, designed to be self-completed by the participants. Most of the questions used in the present survey were re-used from past surveys (Johnston et al. (2003), Currie et al. (2014); Fraser et al. (2013); Coomer et al. (2014)). Where possible, questions were duplicated; however, some questions were modified to best match the needs of this survey.

The survey contained more than 50 questions (and sometimes a range of sub-questions), in order to measure different aspects of awareness. Topics covered included:

- Public consciousness of tsunami risk exposure at the locations where the questionnaire was sent
- Awareness of tsunami sources, and the differences between local, regional and distant source tsunami (tsunami knowledge)
- Awareness of existing warnings and any other prevention strategies
- Intentions related to evacuation, including evacuation routes, when and how to evacuate (transportation mode)
- Perception of self-preparedness in the event of a tsunami threat

A range of demographic questions were asked at the end of the survey in order to measure the influence of these demographic parameters to some specific answers. Location of respondents who answered the survey was also considered as a key factor in influencing their answers. A copy of the questionnaire can be found in Appendix 1.

Over 3000 questionnaires were hand delivered to ten coastal communities along the North Island East Coast. These communities were selected because their population participated in the 2003 Coastal survey (Johnston et al., (2003)). Thus, this choice allowed a comparison to be made between the 2003 and 2015 surveys. The selected communities were (See Figure 1 – Map of the 10 selected communities):

- **Eastbourne**, **Seatoun** and **Lyall bay**, from Wellington region
- **Castlepoint**, **Riversdale Beach** and **Akitio**, in the Wairarapa
- **Westshore**, **Haumoana** and **Te Awanga**, within Napier urban area
- **Wainui Beach**, nearby Gisborne.

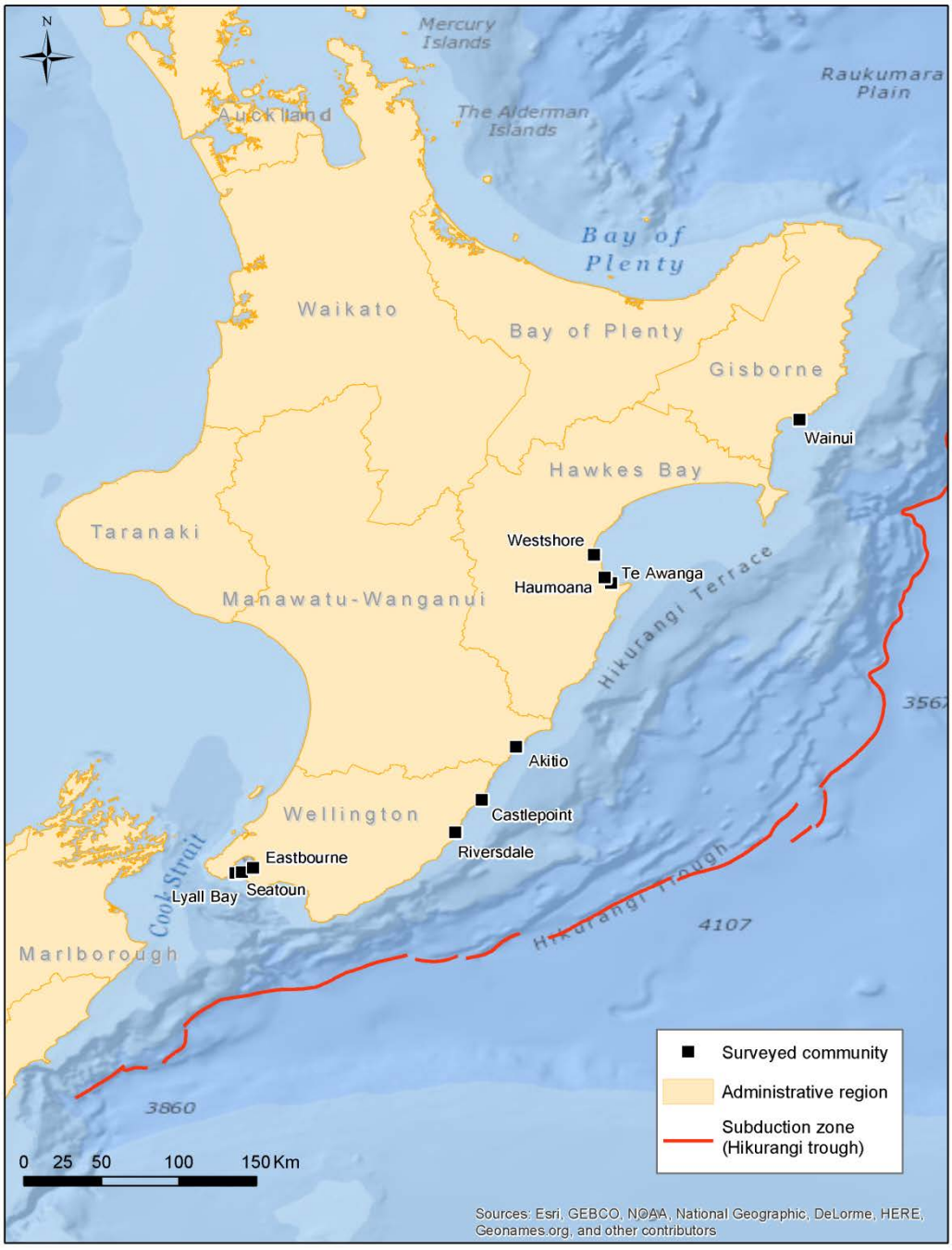

Figure 1 Location of the ten surveyed communities along the East coast.

Where possible, questionnaires were delivered to every household of each community. An exception was made for Wellington's communities, where 400 to 500 households were randomly selected, since these communities were more populated compared to the others.

The selected households received a copy of the questionnaire with a free-post envelope to send it back once completed. Questionnaires were hand-dropped in letter boxes during the first half of June 2015 (phase 1), then re-posted three weeks later to the households that did not respond to the first drop (phase 2). Surveyed respondents were asked to be the person in the household aged 18 years old or older who most recently had a birthday. Confidentiality was assured to the respondents, no name or information that could be related to the person were recorded. From a total of 3036 households that were asked to participate, 875 responses were received (response rate of 28.8%).

The table below (Table 1) summarises the data gathering process, questionnaire delivery, and return rates for each community.

Table 1 Location, delivery and return rates by community.

Location	Date delivered (phase 1)	No. delivered	No. returned	Date delivered (phase 2)	No. delivered	No. Received	TOTAL of quest. returned	Return rate (%)
Wainui	3 June	284	64	1 July	224	22	86	30.3
Westshore	3 & 4 June	542	120	1 July	424	26	146	27.0
Haumoana	4 June	471	90	1 July	388	30	120	25.5
Te Awanga	5 June	303	75	1 July	231	24	99	32.7
Akitio	6 June	42	4	1 July	4	0	4	9.5
Castlepoint	8 & 12 June	37	9	1 July	11	2	11	29.7
Riversdale	8 & 12 June	80	14	1 July	1	0	14	17.5
Eastbourne	9 June	478	123	1 July	361	43	166	34.7
Seatoun	10 & 11 June	399	97	1 July	320	31	128	32.1
Lyall Bay	11 June	400	73	1 July	334	27	100	25.0
Unknown location	-	-	1	-	-	-	1	-
TOTAL	-	3036	670	-	2298	205	875	28.8

Questionnaire response data was entered into SPSS Statistics and Le Sphinx for analysis. Tables from this report were created using Le Sphinx analysis tools.

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3.0 RESULTS

The following sections of this report present the detailed results of the survey in tabulated data format. No analysis of the data is presented here, but will be done in future publications.

The data was cross-tabulated with the ten surveyed communities. 'TOTAL' refers to the total number of participants who answered the question (n), followed by the mean percentage for the whole sample.

3.1 NATURAL HAZARDS KNOWLEDGE AND PREVIOUS EXPERIENCE

Table 2 **Q1.** The two natural hazards the respondent thinks are most likely to affect his/her community.

Community	n	Flooding (river or sea) (%)	Storm or cyclone (%)	Forest or bush fire (%)	Earthquake (%)	Ashfall from a volcanic eruption (%)	Tsunami (%)	Coastal erosion (%)	Landslide (%)
Akitio	4	25.0	25.0	0	0	0	50.0	75.0	25.0
Castlepoint	11	0	63.6	0	45.5	0	45.5	45.5	0
Eastbourne	166	22.3	19.3	5.4	78.9	0	60.8	6.0	4.2
Haumoana	120	45.8	14.2	0.8	30.8	0.8	65.0	50.8	0.8
Lyall Bay	100	16.0	19.0	0	75.0	0	83.0	8.0	0
Riversdale	14	21.4	35.7	0	28.6	0	85.7	28.6	0
Seatoun	128	9.4	21.9	0.8	88.3	0	75.8	6.3	2.3
Te Awanga	99	52.2	15.2	1.0	21.2	1.0	62.6	43.4	0
Wainui	86	8.1	29.1	1.2	50.0	0	80.2	31.4	1.2
Westshore	146	19.2	19.2	0	50.0	0.7	77.4	36.3	0.7
TOTAL	**874**	**24.1**	**20.3**	**1.5**	**57.5**	**0.3**	**71.1**	**25.5**	**1.6**

Table 3 **Q2.** The most likely causes of a tsunami along the North Island East Coast, ranked from 1 (most likely) to 5 (least likely) - Mean & standard-deviation for each cause by community.

Community	n	Marine and/or coastal landslide		Volcanic eruption		Local earthquake		Meteor impact		Distant source earthquake	
		Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.
Akitio	4	3.75	1.89	4.75	0.50	1.00	0.00	4.00	1.16	2.25	0.50
Castlepoint	11	2.91	0.94	3.70	1.34	2.00	1.18	4.00	1.33	2.10	1.29
Eastbourne	166	2.83	1.21	3.75	0.79	1.54	0.76	4.70	0.71	2.20	0.89
Haumoana	120	2.99	1.24	3.63	1.01	1.80	1.06	4.49	0.97	2.20	1.03
Lyall Bay	100	2.94	1.11	3.85	0.90	1.57	1.01	4.45	0.93	2.31	0.81
Riversdale	14	2.82	1.47	3.55	1.04	1.50	0.65	4.36	1.21	2.21	0.98
Seatoun	128	2.95	1.16	3.74	0.84	1.48	0.73	4.57	0.83	2.22	0.98
Te Awanga	99	3.11	1.11	3.76	0.95	1.88	1.09	4.27	1.19	2.07	1.03
Wainui	86	2.31	1.19	3.95	0.77	1.82	0.89	4.56	0.92	2.42	0.91
Westshore	146	2.96	1.20	3.76	0.82	1.80	0.98	4.49	1.01	2.01	0.93
TOTAL	**874**	**2.89**	**1.20**	**3.77**	**0.88**	**1.69**	**0.93**	**4.51**	**0.94**	**2.19**	**0.95**

Table 4 **Q3.** Qualities of an earthquake that could cause a tsunami severe enough to evacuate. (Several options possible).

Community	n	Last longer than a minute (%)	Might not feel at all (%)	Strong enough to collapse buildings (%)	Too strong to stand during (%)	Other (%)
Akitio	4	75.0	25.0	100	100	0
Castlepoint	11	54.6	36.4	90.9	72.7	18.2
Eastbourne	166	81.9	39.2	80.7	90.4	10.2
Haumoana	120	77.5	36.7	82.5	87.5	13.3
Lyall Bay	100	77.0	29.0	89.0	90.0	7.0
Riversdale	14	71.4	42.9	85.7	92.2	7.1
Seatoun	128	78.1	40.6	80.5	95.3	10.2
Te Awanga	99	73.7	31.3	83.8	88.9	13.1
Wainui	86	79.1	40.7	80.2	83.7	15.1
Westshore	146	62.3	39.7	82.2	86.3	6.9
TOTAL	**874**	**75.1**	**37.1**	**82.6**	**88.9**	**10.6**

Table 5 **Q3.** Other qualities of an earthquake that could cause a tsunami severe enough to evacuate.

Community / Other Cause	Akitio	Castlepoint	Eastbourne	Haumoana	Lyall Bay	Riversdale	Seatoun	Te Awanga	Wainui	Westshore	TOTAL
n	4	11	166	120	100	14	128	99	86	146	**874**
Distant earthquake (not felt)(%)	0	9.1	1.8	3.3	2.0	0	3.9	0	3.5	2.1	**2.4**
Local earthquake (%)	0	0	0.6	0	0	0	0	2.0	3.5	0	**0.7**
Rolling movement (%)	0	0	1.8	0	0	0	0.8	0	0	0	**0.5**
Earthquake that causes sea to recede (%)	0	0	0.6	0.8	1.0	0	0	2.0	0	0.7	**0.7**
Submarine earthquake (%)	0	0	2.4	1.7	0	0	0.8	2.0	1.2	0	**1.1**
Earthquake from a subduction zone (%)	0	0	0	0	2.0	0	0.8	1.0	0	1.4	**0.7**
Resonance in harbour (%)	0	0	0.6	0	0	0	0	0	0	0	**0.1**
Shallow (%)	0	0	1.2	0.8	0	0	1.6	1.0	2.3	0.7	**1.0**
Deep (%)	0	0	0	0.8	0	0	0	0	1.2	0	**0.2**
Sudden jolt (%)	0	0	0	1.7	0	0	0	1.0	1.2	0	**0.5**
Underwater collapse (%)	0	0	0	0.8	0	0	0	0	0	1.4	**0.3**

Table 6 **Q4.** Respondent's personal experience of natural hazards (earthquake and tsunami) (a) and experience of loss or damage due to this/these hazard(s) (b).

Community	n	Personal experience of earthquake (a) (%)	Experienced loss or damage due to earthquake (b) (%)	Personal experience of tsunami (a) (%)	Experienced loss or damage due to tsunami (b) (%)	Never experienced any earthquake or tsunami (%)
Akitio	4	75.0	25.0	0	0	25.0
Castlepoint	11	54.6	27.3	0	0	36.4
Eastbourne	166	31.3	9.0	2.4	0	65.7
Haumoana	120	20.0	6.7	4.2	0	69.2
Lyall Bay	100	31.0	10.0	0	1.0	68.0
Riversdale	14	14.3	14.3	7.1	0	64.3
Seatoun	128	35.9	10.2	1.6	0.8	69.9
Te Awanga	99	19.2	2.0	6.1	1.0	73.7
Wainui	86	77.9	39.5	19.8	0	18.6
Westshore	146	21.2	4.1	5.4	0	72.6
TOTAL	**874**	**32.1**	**10.7**	**5**	**0.3**	**62.5**

Table 7 **Q4.1.** Place and year of the worst earthquake experienced by the respondent (c).

Community / Place and year of the earthquake	Akitio	Castlepoint	Eastbourne	Haumoana	Lyall Bay	Riversdale	Seatoun	Te Awanga	Wainui	Westshore	TOTAL
n	4	11	166	120	100	14	128	99	86	146	**874**
Wellington 2013 (%)	0	18.2	13.3	0.8	12.0	0	14.8	0	1.2	0.7	**6.6**
Christchurch (2010-2011) (%)	0	0	4.2	5.0	1.0	7.1	6.3	3.0	3.5	2.7	**3.8**
Gisborne 2007 (%)	0	0	0	0.8	1.0	0	0	0	32.6	0.7	**3.4**
Eketahuna 2014 (%)	50.0	27.3	1.8	0	5.0	0	4.7	0	0	0	**2.2**
Inangahua Jct 1968 (%)	0	0	1.2	0	3.0	0	1.6	0	0	0	**0.8**
Dannevirke 1990 (%)	25.0	0	0	1.7	0	0	0	0	0	2.7	**0.8**
Gisborne 1966 (%)	0	0	0	0.8	0	0	0	0	3.5	0.7	**0.6**
Napier 1931 (%)	0	0	0.6	1.7	0	0	0	0	0	0.7	**0.5**
Masterton 1942 (%)	0	0	1.2	0	0	0	0.8	0	0	0	**0.3**
Gisborne 2008 (%)	0	0	0	0	0	0	0	0	3.5	0	**0.3**
Edgecumbe 1987 (%)	0	0	0	0	0	0	0.8	0	1.2	0.7	**0.3**
Hamner Spring 1948 (%)	0	0	0.6	0	0	0	0.8	0	0	0	**0.2**
Cook Strait 1966 (%)	0	0	0.6	0	0	0	0	1.0	0	0	**0.2**
Taupo 1973 (%)	0	0	0	0.8	0	0	0	0	0	0.7	**0.2**
Hastings 1993 (%)	0	0	0	0	0	0	0	1.0	0	0.7	**0.2**
Vanuatu 2010 (%)	0	0	0	0.8	0	0	0	1.0	0	0	**0.2**
Wellington 1943 (%)	0	0	0.6	0	0	0	0	0	0	0	**0.1**
Arthur Pass 1992 (%)	0	0	0.6	0	0	0	0	0	0	0	**0.1**
Los Angeles 1999 (%)	0	0	0.6	0	0	0	0	0	0	0	**0.1**
Haiti 2010 (%)	0	0	0	0	0	7.1	0	0	0	0	**0.1**
Other (not identified)* (%)	0	9.1	3.6	5.8	6.0	7.1	4.7	12.1	29.1	8.2	**8.7**

*Other earthquakes cited (but not linked to precise events)[1]:

Event cited	Count (n)
Gisborne	9
Gisborne 2006	4
Gisborne 2005	3
Hawkes Bay	2
Wellington	2
Hastings around 1970	2
Gisborne 2010	2
10 years ago	2
Whakatane	2
1992 or 1993	1
Murchiston	1
Petone sometime between 2004 and 2007	1
About 65 years ago, Southern Hawkes Bay	1
Bolaa 1985	1
Masterton 1941	1
Castlepoint	1
Woodville 1986	1
Years ago in Japan	1
2007	1
Brakages 2007	1
Napier 1990	1
1941/1942	1
New Zealand 2008	1
Japan 1969	1
New Zealand	1
Taihape in the 1950's	1
Hawkes Bay 2003	1
Manutike 1975	1
Afghanistan 1991	1
Manawatu/Wairarapa	1
Papua New Guinea 1992	1
1967	1
5th Waikato Putaruru – NZ 2004	1
Rarotonga, Cooks Islands 2012	1
Dec	1

Event cited	Count (n)
Wairoa 1970's	1
Taradale, Hawkes Bay in the 1980's	1
Gisborne in the 1950's	1
Wellington earthquakes 2011	1
2012	1
Napier 19?	1
Wellington 90's	1
NZR Building Wellington about 1968	1
Wainui Beach	1
1931/1963/1947	1
Gisborne 10 years ago	1
Central Hawkes Bay	1
2008	1
Havelock North in the late 70's	1
Hastings	1
California 1983	1
2013	1
Gisborne 2012	1
Japan 20 years ago	1
Wellington 2012	1

[1] **NOTE:** The answers in this table were reported as it was originally written in the returned questionnaire forms. These answers were usually too imprecise in their contents (e.g. the date or place was missing) to be related to a precise and referenced event. This is the reason why there were reported in a different table. This comment applies for other similar results in this report.

Table 8 **Q4.2.** Place and year of the worst tsunami experienced by the respondent (c).

Community	n	New Zealand 1960 (%)	Gisborne 1947 (%)	New Zealand 2010 (%)	New Zealand 2009 (%)	New Zealand 2001 (%)	Indian Ocean 2004 (%)	Other (not identified)* (%)
Akitio	4	0	0	0	0	0	0	0
Castlepoint	11	0	0	0	0	0	0	0
Eastbourne	166	0.6	0	0	0	0	0	1.2
Haumoana	120	1.7	0.8	0	0.8	0	0	0.8
Lyall Bay	100	0	0	0	0	0	1.0	0
Riversdale	14	0	0	0	7.1	0	0	0
Seatoun	128	0	0	0.8	0	0	0	0
Te Awanga	99	1.0	0	1.0	0	1.0	0	2.0
Wainui	86	1.2	5.8	1.2	0	0	0	5.8
Westshore	146	2.1	0	0.7	0.7	0	0	2.1
TOTAL	**874**	**1.0**	**0.7**	**0.5**	**0.3**	**0.1**	**0.1**	**1.5**

*Other tsunami cited (but not linked to precise events):

Event cited	Count (n)
Mid 2012, earthquake in South America	1
Auckland	1
Wellington 90's	1
Coromandel	1
Te Awanga - quake off Japan	1
Wainui Beach 1977	1
2008	1
Gisborne last 10 years	1
Cook Islands	1
Wainui Beach 2012/2013	1
Gisborne	1
Tolaga Bay 1988	1
Mild inside Bay Kawau Island years ago	1

3.2 RISK PERCEPTION AT RESPONDENTS' CURRENT LOCATION

Table 9 **Q5.1.** Is the respondent's house in a tsunami evacuation/hazard zone?

Community	n	Yes (%)	No (%)	Don't know (%)
Akitio	4	100	0	0
Castlepoint	11	63.6	36.4	0
Eastbourne	166	86.1	4.8	8.4
Haumoana	120	90.0	4.2	5.8
Lyall Bay	100	94.0	0.0	6.0
Riversdale	14	92.9	0.0	7.1
Seatoun	128	94.5	2.3	2.3
Te Awanga	99	91.9	4.0	2.0
Wainui	86	82.6	5.8	10.5
Westshore	146	79.5	1.4	19.2
TOTAL	**874**	**87.9**	**3.5**	**8.0**

Table 10 **Q5.2.** How did the respondent find out his/her house was, or was not, in a tsunami evacuation/hazard zone? This is an open-question. Answers were turned into categories and summarized in the table below.

Community / How did they find out	Akitio	Castlepoint	Eastbourne	Haumoana	Lyall Bay	Riversdale	Seatoun	Te Awanga	Wainui	Westshore	TOTAL
n	4	11	166	120	100	14	128	99	86	146	**874**
Advertisement by Civil Defence/Council (%)	50.0	9.1	33.1	40.8	11.0	42.9	14.1	27.3	32.6	17.1	**25.5**
Self-deduction (%)	0	18.2	22.3	23.3	31.0	21.4	26.6	17.2	25.6	32.9	**25.4**
Evidence in public areas (%)	0	36.4	3.6	4.2	30.0	21.4	43.0	25.3	2.3	2.7	**15.3**
Newspaper/local media (%)	0	0	19.3	1.7	10.0	0	7.8	6.1	7.0	11.6	**9.5**
Local knowledge (%)	0	0	1.2	4.2	7.0	0	4.7	8.1	3.5	4.8	**4.3**
Informed when purchased/rented house (%)	0	0	1.8	5.0	2.0	0	3.9	5.1	1.2	2.1	**2.9**
Looked online (%)	0	0	4.2	0	1.0	0	4.7	1.0	7.0	0.7	**2.5**
Someone told me (neighbour, relatives) (%)	0	0	1.2	2.5	3.0	7.1	2.3	3.0	4.7	2.1	**2.5**
Heard a warning before (%)	0	9.1	0	3.3	1.0	7.1	0	6.1	4.7	2.7	**2.4**
At a public meeting (%)	0	9.1	1.2	1.7	0	7.1	1.6	2.0	1.2	0	**1.3**
Read it somewhere (%)	0	0	2.4	0.8	4.0	0	0.8	0	0	0.7	**1.3**
Previous events in the world (%)	0	0	0	1.7	1.0	0	1.6	1.0	1.2	2.1	**1.1**
School (%)	25.0	0	0	0.8	3.0	0	2.3	0	1.2	0.7	**1.1**
Emergency services (%)	25.0	9.1	0	1.7	0	0	0.8	0	0	0	**0.6**

Table 11 **Q5.3.** When did the respondent first find out he/she was, or was not, in a tsunami evacuation zone? This is an open-question. Answers were turned into categories and summarized in the table below.

Community	n	Less than a year ago (%)	Between 1 and 2 years ago (%)	Between 2 and 5 years ago (%)	Between 5 and 10 years ago (%)	Between 10 and 20 years ago (%)	More than 20 years ago (%)	Always knew or long time (unspecified) (%)
Akitio	4	0	25.0	25.0	25.0	25.0	0	0
Castlepoint	11	0	0	18.2	27.3	0	9.1	0
Eastbourne	166	2.4	10.2	29.5	9.0	7.2	5.4	3.6
Haumoana	120	1.7	2.5	23.3	21.7	11.7	11.7	4.2
Lyall Bay	100	11.0	9.0	16.0	8.0	11.0	18.0	2.0
Riversdale	14	0	7.1	21.4	7.1	35.7	7.1	7.1
Seatoun	128	12.5	22.7	20.3	6.3	16.4	3.9	0.8
Te Awanga	99	7.1	5.1	23.2	14.1	16.2	9.1	2.0
Wainui	86	5.8	4.7	10.5	18.6	19.8	9.3	2.3
Westshore	146	4.1	4.8	11.6	3.4	9.6	15.1	4.1
TOTAL	**874**	**5.8**	**8.7**	**19.9**	**11.1**	**12.7**	**9.9**	**2.9**

Table 12 **Q6.1.** How often does the respondent think about tsunami?

Community	n	Never (%)	Once per year or less (%)	At least once per month (%)	At least once per week (%)	Everyday (%)
Akitio	4	0	50.0	50.0	0	0
Castlepoint	11	9.1	54.6	27.3	9.1	0
Eastbourne	166	7.8	49.4	33.1	5.4	1.8
Haumoana	120	10.0	41.7	32.5	12.5	1.7
Lyall Bay	100	4.0	47.0	35.0	12.0	1.0
Riversdale	14	7.1	28.6	57.1	7.1	0
Seatoun	128	4.7	38.3	37.5	17.2	1.6
Te Awanga	99	3.0	58.6	24.2	9.1	1.0
Wainui	86	1.2	61.6	27.9	5.8	2.3
Westshore	146	7.5	54.1	31.5	4.8	1.4
TOTAL	**874**	**5.9**	**49.1**	**32.5**	**9.3**	**1.5**

Table 13 **Q6.2.** How often does the respondent talk about tsunami?

Community	n	Never (%)	Once per year or less (%)	At least once per month (%)	At least once per week (%)	Everyday (%)
Akitio	4	25.0	25.0	50.0	0	0
Castlepoint	11	27.3	54.6	18.2	0	0
Eastbourne	166	12.7	59.0	22.3	1.2	0.6
Haumoana	120	11.7	56.7	22.5	4.2	0.8
Lyall Bay	100	13.0	49.0	27.0	1.0	0
Riversdale	14	14.3	42.9	42.9	0	0
Seatoun	128	10.2	51.6	32.8	3.1	0
Te Awanga	99	16.2	57.6	19.2	2.0	0
Wainui	86	15.1	66.3	14.0	0	0
Westshore	146	17.1	58.2	20.6	0.7	0
TOTAL	**874**	**13.8**	**56.3**	**23.3**	**1.7**	**0.2**

Table 14 **Q6.3.** How often does the respondent get information about tsunami?

Community	n	Never (%)	Once per year or less (%)	At least once per month (%)	At least once per week (%)	Everyday (%)
Akitio	4	25.0	75.0	0	0	0
Castlepoint	11	18.2	72.7	9.1	0	0
Eastbourne	166	23.5	63.3	6.0	1.2	0
Haumoana	120	25.0	55.8	10.0	1.7	1.7
Lyall Bay	100	26.0	55.0	9.0	1.0	1.0
Riversdale	14	21.4	78.6	0	0	0
Seatoun	128	18.8	68.0	7.8	0.8	0.8
Te Awanga	99	31.3	56.6	6.1	0	2.0
Wainui	86	36.1	57.0	3.5	0	0
Westshore	146	38.4	47.3	6.9	0	0.7
TOTAL	**874**	**27.8**	**58.3**	**7.0**	**0.7**	**0.8**

Table 15 **Q7.** How does the respondent perceive tsunami risk in his/her community? Following is a list of statements on how the respondent perceives tsunami risk. For each statement, the mean is of all responses to this question on a scale from 1 (strongly disagree) to 5 (strongly agree).

Community	n	Tsunami are too destructive to bother preparing for		A serious tsunami is unlikely to occur during the rest of my lifetime		It is unnecessary to prepare for tsunami as assistance will be provided by local/regional councils or Civil Defence		My property will never be damaged by a tsunami		Preparing for tsunami will improve my everyday living conditions		Preparing for tsunami will help save lives		I do not know how I can prepare for tsunami	
		Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.
Akitio	4	3.00	1.63	2.25	0.50	2.75	2.06	1.00	0.00	2.50	0.58	3.75	0.50	1.25	0.50
Castlepoint	11	2.09	1.30	1.91	0.83	1.73	1.19	2.73	1.35	3.00	1.18	4.46	0.52	2.09	0.94
Eastbourne	166	2.01	0.92	2.71	1.03	1.74	0.82	1.92	0.96	2.91	0.94	4.03	0.88	2.37	0.93
Haumoana	120	1.99	0.92	2.25	0.99	1.81	0.95	1.79	0.92	3.29	1.08	4.18	0.86	2.41	1.05
Lyall Bay	100	2.14	1.11	2.49	1.01	1.66	0.77	1.76	0.89	3.03	1.05	4.11	0.91	2.61	1.15
Riversdale	14	1.71	0.91	2.36	1.22	1.57	0.94	2.64	1.69	3.21	0.80	4.21	0.89	2.50	1.09
Seatoun	128	1.91	0.98	2.54	0.94	1.58	0.67	1.83	0.74	3.15	0.93	4.06	0.96	2.26	1.08
Te Awanga	99	2.20	1.11	2.58	1.08	1.57	0.89	1.91	0.93	3.08	1.01	4.06	0.87	2.35	1.04
Wainui	86	1.87	0.91	2.42	1.00	1.87	0.87	1.88	0.76	3.02	0.95	3.95	0.93	2.46	1.09
Westshore	146	2.39	1.23	2.53	1.10	1.89	0.87	1.66	0.79	3.07	0.99	4.04	0.84	2.61	1.15
TOTAL	**874**	**2.08**	**1.05**	**2.51**	**1.03**	**1.76**	**0.86**	**1.84**	**0.90**	**3.07**	**0.99**	**4.07**	**0.89**	**2.43**	**1.07**

Table 16 **Q8.** Has the respondent heard or received any information about preparing for tsunami hazards from any of the following? (Several options possible).

Community / Source of information	Akitio	Castlepoint	Eastbourne	Haumoana	Lyall Bay	Riversdale	Seatoun	Te Awanga	Wainui	Westshore	TOTAL
n	4	11	166	120	100	14	128	99	86	146	**874**
Friends (%)	50.0	27.3	18.7	30.8	23.0	21.4	26.6	20.2	27.9	19.9	**23.5**
Neighbours (%)	50.0	18.2	18.7	31.7	12.0	35.7	19.5	16.2	22.1	15.8	**19.8**
Relatives (%)	25.0	9.1	12.1	17.5	17.0	0	16.4	9.1	15.1	12.3	**13.8**
Central Government agencies (%)	50.0	18.2	29.5	24.2	31.0	21.4	34.4	22.2	29.1	15.1	**26.2**
Regional council (%)	25.0	45.5	59.0	50.0	35.0	50.0	38.3	52.2	30.2	26.7	**42.6**
Local council (%)	25.0	54.6	64.5	57.5	46.0	57.1	57.8	56.6	62.8	39.7	**54.9**
Local Civil Defence group (%)	100	54.6	53.6	66.7	34.0	71.4	42.2	64.7	47.7	40.4	**50.5**
Business establishments (%)	0	0	0.6	1.7	2.0	0	1.6	1.0	0	0	**0.9**
Research organisations (e.g. NIWA, GNS, universities) (%)	0	9.1	16.3	10.0	10.0	7.1	21.9	12.1	14.0	7.5	**13.0**
My workplace (%)	25.0	0	13.3	8.3	15.0	0	17.2	8.1	10.5	8.9	**11.4**
My child's school (%)	0	0	11.5	12.5	17.0	0	25.8	8.1	16.3	3.4	**12.7**
Other* (%)	0	18.2	12.7	15.8	14.0	7.1	10.2	8.1	8.1	6.9	**10.9**
I haven't heard or received any information (%)	0	0	10.8	14.2	19.0	7.1	13.3	16.2	11.6	26.0	**15.5**

*Other sources of information cited:

Source cited	Count (n)
(Local) newspaper	17
Internet and social media	16
TV	14
Fire Station	6
Kindergarten	6
Radio	5
The signs	5
Phonebook	4
Police	3
Plunket	1
Castlepoint Rd payer street residents	1
Erosion committee	1
Tsunami Centre Hawaii	1
Local daycare	1
Camp newsletter	1
Local groups WHOW	1
Library	1
Minor damage	1

Table 17 **Q9.** How does the respondent expect to be warned that a tsunami is coming within the next 12 hours? (Several options possible).

Community / Type of warning	Akitio	Castlepoint	Eastbourne	Haumoana	Lyall Bay	Riversdale	Seatoun	Te Awanga	Wainui	Westshore	TOTAL
n	4	11	166	120	100	14	128	99	86	146	**874**
By feeling an earthquake (%)	25.0	63.3	55.4	43.3	65.0	50.0	53.9	43.4	43.0	36.3	**48.7**
Warning sirens (%)	100	81.8	77.1	76.7	60.0	78.6	57.0	77.8	36.1	86.3	**69.8**
Loud speaker announcements (%)	0	45.5	28.9	67.5	47.0	35.7	43.0	63.6	26.7	24.7	**41.5**
Flashing lights (%)	0	9.1	3.6	10.8	7.0	7.1	3.1	15.2	3.5	4.8	**6.5**
Radio and TV announcements (%)	100	72.7	92.8	84.2	89.0	78.6	89.8	82.8	88.4	90.4	**88.2**
Via text message (%)	0	36.4	21.1	13.3	34.0	14.3	32.0	19.2	17.4	17.8	**21.9**
Via smartphone application (%)	0	0	12.1	6.7	20.0	7.1	18.8	8.1	4.7	11.6	**11.7**
Door-to-door visit by emergency services or civil defence staff (%)	100	63.6	24.1	45.0	24.0	35.7	20.3	54.6	55.8	10.4	**36.7**
Word of mouth (%)	50	36.4	41.6	41.7	35.0	42.9	46.1	41.4	52.3	30.8	**40.7**
Don't know (%)	0	0	2.4	0.8	6.0	0	6.3	0	2.3	1.4	**2.6**
Other* (%)	25.0	0	2.4	3.3	11.0	14.3	2.3	4.0	5.8	1.4	**4.2**
I do not expect to receive any kind of warning (%)	0	0	0	1.7	2.0	0	0.8	2.0	0	0.7	**0.9**

*Other types of warning cited:

Type of warning cited	Count (n)
Family and/or friends (phonecall)	9
Social media	5
Checking on Internet	5
Neighbourhood alert	4
MetService	3
GeoNet	2
Sports club	1
Swell map websites	1
Common sense	1
My own intuition	1
Camp manager	1
Ships in port blow foghorns	1
Moving vehicle with warning message	1
Phone tree	1

Table 18 **Q10.** How does the respondent expect to be warned that a tsunami is coming within an hour? (Several options possible).

Community / Type of warning	Akitio	Castlepoint	Eastbourne	Haumoana	Lyall Bay	Riversdale	Seatoun	Te Awanga	Wainui	Westshore	TOTAL
n	4	11	166	120	100	14	128	99	86	146	**874**
By feeling an earthquake (%)	25.0	45.5	63.9	48.3	59.0	57.1	61.7	49.5	55.8	37.0	**53.4**
Warning sirens (%)	100	81.8	83.7	78.3	65.0	85.7	63.3	76.8	31.4	91.1	**73.3**
Loud speaker announcements (%)	25.0	36.4	32.5	73.3	47.0	50.0	37.5	65.7	25.6	35.6	**44.3**
Flashing lights (%)	25.0	18.2	4.8	15.8	11.0	14.3	3.1	18.2	7.0	8.2	**9.5**
Radio and TV announcements (%)	75.0	54.6	78.9	72.5	73.0	50.0	74.2	64.7	76.7	80.1	**74.2**
Via text message (%)	0	27.3	17.5	16.7	33.0	21.4	31.3	16.2	20.9	19.9	**21.8**
Via smartphone application (%)	0	0	12.1	6.7	24.0	7.1	18.0	5.1	5.8	10.3	**11.5**
Door-to-door visit by emergency services or civil defence staff (%)	75.0	63.6	17.5	32.5	21.0	42.9	13.3	37.4	43.0	30.1	**27.4**
Word of mouth (%)	50.0	54.6	32.5	27.5	30.0	28.6	39.1	32.3	37.2	30.1	**32.8**
Don't know (%)	0	0	2.4	1.7	2.0	0	3.9	1.0	1.2	0.7	**1.8**
Other* (%)	0	0	0.6	3.3	5.0	14.3	2.3	6.1	5.8	2.7	**3.4**
I do not expect to receive any kind of warning (%)	0	0	1.2	1.7	1.0	0	0.8	4.0	3.5	1.4	**1.7**

*Other types of warning cited:

Type of warning cited	Count (n)
Neighborhood alert	7
Family and/or friends (phonecall)	3
Observing coastal change	3
Social media	2
Checking on Internet	2
GeoNet	2
Phonetree	2
Camp manager	1
Ships in port blow foghorns	1
Sports club	1
Moving vehicle with warning message	1
School/Kindergarten	1
Abnormal animal behaviour	1
Helicopter with sirens	1

Table 19 **Q11.** Has the respondent seen any tsunami hazard zone maps for their community?

Community	n	Yes (%)	No (%)	Don't know (%)
Akitio	4	75.0	25.0	0
Castlepoint	11	81.8	18.2	0
Eastbourne	166	78.9	18.7	2.4
Haumoana	120	64.2	27.5	8.3
Lyall Bay	100	72.0	27.0	1.0
Riversdale	14	85.7	7.1	7.1
Seatoun	128	74.2	24.2	1.6
Te Awanga	99	66.7	27.3	6.1
Wainui	86	64.0	31.4	4.7
Westshore	146	35.6	62.3	2.1
TOTAL	**874**	**65.5**	**31.0**	**3.5**

Table 20 **Q12.** If he/she had seen a tsunami hazard zone map, where did the respondent find it? (Several options possible).

Community	n	Online (%)	Flyer or booklet (%)	Billboard (%)	Other* (%)
Akitio	4	0	25.0	0	50.0
Castlepoint	11	9.1	45.5	27.3	36.4
Eastbourne	166	16.9	57.2	3.0	27.7
Haumoana	120	17.5	42.5	18.3	17.5
Lyall Bay	100	27.0	26.0	17.0	28.0
Riversdale	14	0	35.7	35.7	21.4
Seatoun	128	25.0	37.5	6.3	28.9
Te Awanga	99	9.1	38.4	16.2	22.2
Wainui	86	22.1	32.6	4.7	25.6
Westshore	146	9.6	15.8	2.7	12.3
TOTAL	**874**	**17.3**	**36.7**	**9.6**	**23.2**

*Other places where tsunami hazard zones maps were found:

Places cited by the respondents	Count (n)
Newspaper	75
Community meeting	15
Council	15
LIM report	5
Library	5
School	5
In my letter box	4
Local Civil Defence	4
At work	3
Email from CD/council	2

Places cited by the respondents	Count (n)
Fire Station	2
Council report	2
Signs on lamp post	2
Walls of Hutt Hospital	1
NIWA	1
Textbook	1
TV	1

Table 21 **Q13.** Are there official tsunami evacuation routes for this community, according to the respondent?

Community	n	Yes (%)	No (%)	Don't know (%)
Akitio	4	100	0	0
Castlepoint	11	100	0	0
Eastbourne	166	39.2	13.9	47.0
Haumoana	120	75.8	3.3	20.8
Lyall Bay	100	66.0	2.0	31.0
Riversdale	14	100	0	0
Seatoun	128	83.6	3.1	13.3
Te Awanga	99	90.9	0	9.1
Wainui	86	30.2	26.7	43.0
Westshore	146	6.9	21.2	71.2
TOTAL	**874**	**55.4**	**10.0**	**34.4**

Table 22 **Q14.** If not, does the respondent think that an official evacuation route should be established?

Community	n	Yes (%)	No (%)
Akitio	4	0	25.0
Castlepoint	11	0	0
Eastbourne	166	51.2	8.4
Haumoana	120	31.7	0.8
Lyall Bay	100	43.0	0
Riversdale	14	14.3	0
Seatoun	128	19.5	4.7
Te Awanga	99	20.2	3.0
Wainui	86	58.1	17.4
Westshore	146	84.3	6.9
TOTAL	**874**	**44.2**	**5.7**

Table 23 **Q15.** With whom does the respondent thinks responsibility for earthquake and tsunami preparedness in their community should lie? For each option, the mean is of all responses to this question on a scale from 1 (most responsible) to 4 (lest responsible).

Community	n	My responsibility		Local Council responsibility		Regional Council responsibility		Emergency Services responsibility	
		Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.
Akitio	4	2.25	1.50	1.50	0.58	3.25	0.96	1.50	1.00
Castlepoint	11	2.00	1.27	2.36	0.81	2.80	1.32	2.55	0.93
Eastbourne	166	1.59	1.10	2.31	0.78	2.91	0.96	3.06	1.04
Haumoana	120	1.79	1.19	2.50	0.96	2.62	1.06	2.86	1.12
Lyall Bay	100	1.66	0.98	2.27	0.82	3.09	0.99	2.84	1.10
Riversdale	14	2.07	1.27	2.07	0.73	2.79	0.98	2.69	1.32
Seatoun	128	1.41	0.86	2.40	0.79	3.12	0.84	2.92	1.10
Te Awanga	99	1.93	1.19	2.64	0.92	2.74	0.99	2.51	1.17
Wainui	86	1.71	1.03	2.04	0.86	3.01	0.92	2.94	1.06
Westshore	146	1.93	1.29	2.41	0.93	2.93	1.01	2.68	1.02
TOTAL	**874**	**1.72**	**1.12**	**2.36**	**0.87**	**2.92**	**0.98**	**2.83**	**1.10**

Table 24 **Q16.** The likelihood of a tsunami occurring that would cause major damage to the community, according to the respondent. For each option, the mean is of all responses to this question on a scale from 0 (extremely unlikely) to 10 (extremely likely).

Community	n	Within the next year		Between 1 and 10 years from now		Within the rest of my lifetime	
		Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.
Akitio	4	6.00	2.45	6.50	2.65	6.50	1.92
Castlepoint	11	3.38	2.26	5.38	3.11	7.00	3.10
Eastbourne	166	3.17	3.03	4.43	2.92	5.03	2.97
Haumoana	120	4.27	2.77	5.37	2.67	6.57	2.71
Lyall Bay	100	3.91	2.62	5.37	2.67	6.34	2.76
Riversdale	14	3.75	2.86	5.33	2.39	6.57	2.59
Seatoun	128	3.59	2.74	4.87	2.59	5.89	2.48
Te Awanga	99	3.46	2.67	4.71	2.75	5.54	3.05
Wainui	86	3.68	2.49	5.00	2.22	6.34	2.45
Westshore	146	3.82	2.79	4.94	2.71	5.47	2.85
TOTAL	**874**	**3.69**	**2.77**	**4.94**	**2.69**	**5.83**	**2.81**

Table 25 **Q17.** What place or places does the respondent think a tsunami that threatens their location would originate from? This is an open-question. Answers were turned into categories and summarized in the table below.

Community / Source cited	Akitio	Castlepoint	Eastbourne	Haumoana	Lyall Bay	Riversdale	Seatoun	Te Awanga	Wainui	Westshore	TOTAL
n	4	11	166	120	100	14	128	99	86	146	**874**
Chile/Peru/South America (%)	75.0	9.1	16.9	27.5	10.0	50.0	21.9	33.3	52.3	37.7	**27.8**
Pacific Ocean/Ocean (%)	25.0	9.1	17.5	15.0	11.0	14.3	18.8	23.2	15.1	24.0	**18.0**
Cook Strait (%)	0	0	34.3	0	31.0	0	35.9	0	0	0	**15.3**
East Coast of New Zealand (%)	50.0	0	8.4	20.0	4.0	0	7.8	13.1	22.1	10.3	**11.6**
Pacific islands (%)	0	0	1.8	10.8	6.0	21.4	5.5	10.1	4.7	9.6	**6.9**
Pacific plate boundaries/ Ring of Fire (%)	0	9.1	6.0	6.7	5.0	7.1	8.6	3.0	2	3.4	**5.3**
Local (%)	0	0	3.0	6.7	2.0	21.4	7.8	5.1	7.0	2.7	**4.9**
Japan (%)	0	0	2.4	8.3	4.0	7.1	3.1	4.0	3.5	6.2	**4.5**
Southern Pacific (%)	0	0	6.0	3.3	3.0	7.1	0	3.0	8.1	6.2	**4.2**
New Zealand (%)	0	9.1	4.8	2.5	9.0	0	4.7	1.0	3.5	3.4	**4.1**
Wellington (%)	0	0	9.6	0.8	6.0	0	7.8	0	1.2	0.7	**4.0**
Asia/Pacific (%)	0	0	4.2	3.3	4.0	7.1	3.9	2.0	4.7	4.8	**3.9**
Hikurangi subduction zone (%)	0	0	1.2	5.0	3.0	0	0	2.0	12.8	1.4	**3.0**
Hawkes Bay fault line (%)	0	0	0	8.3	0	0	0.8	6.1	0	4.8	**2.8**
Wellington/Wairarapa fault (%)	0	0	7.2	0	3.0	7.1	5.5	0	0	0	**2.6**
Kermadec Trench (%)	0	0	1.2	5.0	0	0	1.6	5.1	3.5	2.1	**2.4**
Indonesia (%)	0	0	1.2	0.8	1.0	0	0.8	3.0	2.3	2.1	**1.5**
Tonga/Samoa (%)	0	9.1	0	3.3	0	7.1	1.6	1.0	2.3	0.7	**1.4**
Hawaii (%)	0	0	0	0.8	0	0	0.8	1.0	2.3	1.4	**0.8**
Antarctic (%)	0	0	1.2	0	1.0	0	1.6	0	0	0.7	**0.7**
Anywhere (%)	0	0	0	0.8	2.0	0	0.8	1.0	1.2	0	**0.7**
Alpine fault (%)	0	0	0.6	0	1.0	0	2.3	0	0	0	**0.6**
North America (%)	0	0	0	2.5	1.0	0	0	0	0	0.7	**0.6**
Central America (%)	0	0	0	0.8	1.0	0	0	0	1.2	0.7	**0.5**
Pacific North of New Zealand (%)	0	0	0.6	0	0	0	0	0	0	1.4	**0.3**
Meteor strike (%)	0	0	0	0.8	0	0	0	1.0	0	0	**0.2**
Christchurch (%)	0	0	0.6	0	0	0	0	0	0	0	**0.1**
West of New Zealand (%)	0	0	0.6	0	0	0	0	0	0	0	**0.1**
Africa (%)	0	0	0.6	0	0	0	0	0	0	0	**0.1**
Other exact location (%)	0	0	1.8	1.7	6.0	7.1	6.3	4.0	0	1.4	**3.0**
Other wrong location (%)	0	0	6.0	4.2	10.0	0	6.3	6.1	1.2	3.4	**5.2**
Other vague location (%)	0	27.3	7.8	14.2	10.0	7.1	9.4	14.1	22.1	16.4	**12.9**

Table 26 **Q17.** In addition, this table summarizes the answers previously listed into different categories such as ‘exact location’, ‘vague location’ or ‘wrong location’.

Community	n	Three exact sources or more (%)	Two exact sources (%)	One exact source (%)	Vague answer(s) only (%)	Wrong answer(s) only (%)
Akitio	4	0	25.0	75.0	0	0
Castlepoint	11	0	0	18.2	45.5	0
Eastbourne	166	4.8	14.5	38.6	25.3	1.8
Haumoana	120	5.8	13.3	38.3	25.0	1.7
Lyall Bay	100	4.0	8.0	41.0	25.0	4.0
Riversdale	14	0	14.3	50.0	21.4	0
Seatoun	128	7.0	14.1	42.2	22.7	0.8
Te Awanga	99	4.0	11.1	38.4	32.3	2.0
Wainui	86	4.7	24.4	38.4	24.4	0
Westshore	146	3.4	11.6	36.3	33.6	0.7
TOTAL	**874**	**4.7**	**13.5**	**39.0**	**27.0**	**1.5**

Table 27 **Q18.** How much time does the respondent think he/she has to move to safety if he/she feels an earthquake while at the beach?

Community	n	A few minutes (%)	10 minutes to half an hour (%)	Half an hour to one hour (%)	1 - 3 hours (%)	More than 3 hours (%)	Don't know (%)
Akitio	4	50.0	50.0	0	0	0	0
Castlepoint	11	45.5	45.5	0	0	0	9.1
Eastbourne	166	51.8	30.7	6.6	1.8	0	6.6
Haumoana	120	46.7	30.0	7.5	1.7	1.7	12.5
Lyall Bay	100	45.0	37.0	4.0	2.0	1.0	9.0
Riversdale	14	21.4	57.1	7.1	0	0	14.3
Seatoun	128	49.2	37.5	4.7	0.8	0.8	7.0
Te Awanga	99	32.3	46.5	8.1	1.0	1.0	11.1
Wainui	86	43.0	40.7	7.0	1.2	0	7.0
Westshore	146	30.8	32.2	11.0	4.8	0.7	19.9
TOTAL	**874**	**42.8**	**36.0**	**7.0**	**2.0**	**0.7**	**10.6**

3.3 COMMUNITY INVOLVEMENT

Table 28 **Q19.** Thinking about the house where the questionnaire was delivered to, which option best applies to the respondent?

Community	n	I/we own and live in this house (%)	I/we rent and live in this house (%)	I/we own a house somewhere else, and are visiting (%)	I/we rent a house somewhere else and are visiting (%)	Other* (%)
Akitio	4	100	0	0	0	0
Castlepoint	11	81.8	0	0	0	18.2
Eastbourne	166	81.9	14.5	0	0	1.8
Haumoana	120	86.7	10.8	0	0	1.7
Lyall Bay	100	75.0	24.0	0	0	1.0
Riversdale	14	64.3	14.3	0	0	21.4
Seatoun	128	85.2	14.8	0	0	0
Te Awanga	99	85.9	12.1	0	0	2.0
Wainui	86	87.2	11.6	0	0	0
Westshore	146	85.6	11.6	0	0	2.7
TOTAL	**874**	**83.6**	**13.8**	**0**	**0**	**2.0**

*Other options cited:

Other housing options	Count (n)
Holiday home/bach	9
We live for free in this house	2
Boarder	1
Vicarage	1
State housing	1
Family house	1

Table 29 **Q20.** For residents only: How long has the respondent lived in his/her community?

Community	n	Less than a year (%)	1-5 years (%)	6-10 years (%)	11-20 years (%)	21-40 years (%)	More than 40 years (%)
Akitio	4	0	0	50.0	25.0	0	25.0
Castlepoint	11	0	27.3	18.2	27.3	9.1	0
Eastbourne	166	1.8	16.9	10.2	21.7	26.5	19.3
Haumoana	120	1.7	18.3	18.3	26.7	22.5	11.7
Lyall Bay	100	7.0	25.0	18.0	20.0	21.0	8.0
Riversdale	14	7.1	21.4	7.1	35.7	0	7.1
Seatoun	128	4.7	28.9	18.8	24.2	13.3	10.2
Te Awanga	99	7.1	25.3	10.1	23.2	25.3	8.1
Wainui	86	2.3	18.6	11.6	22.1	31.4	12.8
Westshore	146	3.4	32.9	13.7	24.7	17.1	6.9
TOTAL	**874**	**3.8**	**23.7**	**14.4**	**23.6**	**21.4**	**11.2**

Table 30 **Q21.** For residents only: How long does the respondent have lived in his current house?

Community	n	Less than a year (%)	1-5 years (%)	6-10 years (%)	11-20 years (%)	21-40 years (%)	More than 40 years (%)
Akitio	4	0	0	75.0	25.0	0	0
Castlepoint	11	0	27.3	27.3	36.4	0	0
Eastbourne	166	4.8	25.9	12.7	29.5	16.9	7.2
Haumoana	120	2.5	30.8	18.3	21.7	21.7	4.2
Lyall Bay	100	8.0	34.0	17.0	20.0	15.0	5.0
Riversdale	14	7.1	21.4	7.1	35.7	7.1	0
Seatoun	128	7.8	33.6	22.7	18.0	13.3	3.9
Te Awanga	99	8.1	32.3	11.1	22.2	22.2	2.0
Wainui	86	3.5	29.1	16.3	25.6	17.4	5.8
Westshore	146	6.2	41.1	13.0	24.0	12.3	2.1
TOTAL	**874**	**5.7**	**32.0**	**16.0**	**23.7**	**16.3**	**4.2**

Q22. For visitors only: How long is the respondent staying in this community?

Stay (weeks)	Count (n)
1 week	3
Less than 1 week	1

Q23. For visitors only: Where is the respondent's usual place of residence?

Place of residence	Count (n)
Wellington	4
Elsthorpe, CHB	1
Tasmania	1
Dannevirke	1
Featherston	1
Pahiatua	1
Masterton	1

Q24. For visitors only: How often does the respondent visit this community?

Visit frequency	Count (n)
First time	0
Weekly	3
Monthly	5
A few times per year	2
Annually or less	1

3.4 HAZARD PREPAREDNESS

Table 31 **Q25.** Does the respondent and his/her household think that they are prepared enough to deal with a tsunami?

Community	n	Yes (%)	No (%)	I/we do not need to get prepared for that specific hazard (%)
Akitio	4	100	0	0
Castlepoint	11	81.8	18.2	0
Eastbourne	166	40.4	53.6	4.2
Haumoana	120	53.3	45.0	1.7
Lyall Bay	100	39.0	59.0	0
Riversdale	14	85.7	14.3	0
Seatoun	128	45.3	51.6	3.1
Te Awanga	99	52.5	42.4	3.0
Wainui	86	45.4	51.2	1.2
Westshore	146	39.7	54.1	4.8
TOTAL	**874**	**46.0**	**50.0**	**2.8**

Table 32 **Q26.** Does the respondent have a 'getaway kit' or items ready to evacuate his/her home quickly?

Community	n	Yes (%)	No (%)
Akitio	4	100	0
Castlepoint	11	54.6	45.5
Eastbourne	166	71.7	27.1
Haumoana	120	60.8	39.2
Lyall Bay	100	58.0	42.0
Riversdale	14	50.0	50.0
Seatoun	128	66.4	32.8
Te Awanga	99	58.6	40.4
Wainui	86	51.2	46.5
Westshore	146	45.9	52.7
TOTAL	**874**	**59.6**	**39.5**

Table 33 **Q27.** What is in the respondent's getaway kit / what are those items? (Several answers possible)

Community	n	First aid kit (%)	Food (%)	Water (%)	Torch (%)	Portable radio (%)	Spare batteries (%)	Change of clothes (%)	Comfortable outdoor shoes (%)	Important documents (or copies) (%)	A household plan (%)	Other* (%)
Akitio	4	50.0	100	100	100	75.0	50.0	50.0	0	25.0	0	0
Castlepoint	11	36.4	36.4	54.6	54.6	36.4	36.4	27.3	18.2	18.2	18.2	18.2
Eastbourne	166	62.1	57.8	65.1	70.5	54.2	37.4	39.2	28.9	17.5	7.8	13.9
Haumoana	120	54.2	51.7	50.8	55.0	45.8	37.5	27.5	25.8	24.2	14.2	9.2
Lyall Bay	100	50.0	50.0	62.0	62.0	50.0	37.0	31.0	22.0	18.0	7.0	12.0
Riversdale	14	35.7	28.6	42.9	42.9	35.7	28.6	28.6	14.3	7.1	7.1	0
Seatoun	128	66.4	53.1	58.6	68.8	55.5	41.4	33.6	28.9	22.7	7.0	18.0
Te Awanga	99	52.5	46.5	51.5	58.6	43.4	35.4	34.3	20.2	23.2	12.1	13.1
Wainui	86	37.2	32.6	39.5	48.8	31.4	27.9	22.1	11.6	17.4	4.7	14.0
Westshore	146	38.4	34.9	42.5	44.5	38.4	28.1	24.0	17.8	8.2	2.7	7.5
TOTAL	**874**	**52.0**	**47.3**	**53.7**	**58.8**	**46.2**	**35.1**	**30.8**	**22.7**	**18.2**	**7.9**	**12.2**

*Other items cited:

Items	Count (n)
Blankets	23
Candles/matches/lighter/fire starter	22
Pet food	19
Tent	16
Cooking gear	15
Toilet paper	12
Sleeping bag	11
Toiletries	7
Plastic bags	7
Hat/gloves	6
Cash	6
Towel	5
Can opener	4
Tarpaulin	4
Knife	4
Diverse outdoor equipment	3
Dust masks	3
Glow sticks	3
Rope	3
Tools	3

Items	Count (n)
Whistle	2
Notebook/paper/pencils	2
Cellphone charger	2
Bucket	2
Firewood	1
List of instructions	1
Pet cage	1
Spare glasses	1
Rubber glove	1
Spare keys	1
Umbrella	1
Hard drive	1
Water purifying tabs	1
Photos	1
Dinghy	1
Lifejackets	1

Table 34 **Q28.** Does the respondent have a specific destination in mind if he/she had to evacuate after a tsunami warning?

Community	n	Yes (%)	No (%)
Akitio	4	100	0
Castlepoint	11	90.9	9.1
Eastbourne	166	85.5	11.5
Haumoana	120	90.0	9.2
Lyall Bay	100	80.0	17.0
Riversdale	14	100	0
Seatoun	128	93.8	6.3
Te Awanga	99	91.9	7.1
Wainui	86	87.2	12.8
Westshore	146	80.1	19.2
TOTAL	**874**	**87.1**	**11.7**

Table 35 **Q29.** How long does the respondent expect to be evacuated for after a tsunami hits the coast?

Community	n	A few hours (%)	Half a day (%)	A day (%)	Between one day and three days (%)	More than three days (%)
Akitio	4	25.0	0	25.0	50.0	0
Castlepoint	11	36.4	18.2	0	9.1	27.3
Eastbourne	166	9.6	10.8	12.7	36.1	25.9
Haumoana	120	1.7	5.8	7.5	29.2	51.7
Lyall Bay	100	7.0	2.0	3.0	35.0	48.0
Riversdale	14	7.1	14.3	28.6	21.4	7.1
Seatoun	128	7.0	7.8	6.3	34.4	39.8
Te Awanga	99	9.1	6.1	5.1	41.4	36.4
Wainui	86	9.3	14.0	14.0	40.7	16.3
Westshore	146	6.9	1.4	9.6	21.2	54.8
TOTAL	**874**	**7.7**	**7.0**	**8.8**	**32.8**	**38.7**

3.5 HAZARD SCENARIOS

The respondent was asked to imagine that a severe earthquake occurs (lasting longer than a minute or during which it is hard to stand) at 3pm on a weekday (assuming he/she and his/her household are at home). This is the **first hazard scenario (earthquake based)** in a series of three different scenarios. For this one, no mention of possible tsunami following the earthquake was made.

Table 36 **Q30.1.** What would he/she do? (Scenario 1 – Tsunami triggered by a local earthquake). This is an open-question. Answers were turned into categories and summarized in the table below.

Actions cited / Community		Akitio	Castlepoint	Eastbourne	Haumoana	Lyall Bay	Riversdale	Seatoun	Te Awanga	Wainui	Westshore	TOTAL
n		4	11	166	120	100	14	128	99	86	146	**874**
Pre-evacuation actions (at individual or family scale) (%)	Grab emergency items/bag	0	9.1	35.5	20.8	26.0	21.4	30.5	25.3	26.7	12.3	**25.1**
	Go get child/children at school	0	0	6.0	1.7	9.0	0	10.9	0	10.5	2.1	**5.4**
	Secure home	0	0	0	0.8	1.0	0	0	0	1.2	2.1	**0.7**
	Gather family	0	0	8.4	6.7	9.0	7.1	10.9	5.1	3.5	2.1	**6.5**
	Call family or relatives	0	0	9.0	10.8	15.0	7.1	11.7	8.1	11.6	4.8	**9.6**
	Find pet(s)	0	0	6.6	13.3	9.0	0	7.8	8.1	9.3	4.1	**7.8**
	Put on warm clothes	0	0	5.4	0	2.0	0	3.9	5.1	3.5	2.1	**3.1**
	Grab valuables	0	0	0	3.3	3.0	0	0	2.0	3.5	1.4	**1.6**
	Check for power and/or turn it off	0	0	3.0	1.7	3.0	0	1.6	0	1.2	1.4	**1.7**
Earthquake reactions (%)	Drop/cover/hold or anything related to earthquakes	0	9.1	16.3	9.2	17.0	0	12.5	11.1	10.5	15.8	**13.2**
Seeking more information/ Assessing the situation (%)	Assess the situation/damage	0	18.2	3.0	2.5	5.0	0	3.1	6.1	2.3	1.4	**3.3**
	Turn on Radio/TV	0	0	15.1	15.8	13.0	14.3	10.9	16.2	12.8	20.6	**14.9**
	Wait for an eventual warning or check it online	0	0	5.4	6.7	12.0	0	7.0	12	1.2	11.0	**7.7**
	Check at sea level	0	0	1.8	0	0	0	0.8	2.0	8.1	4.1	**2.2**
	Get ready to evacuate quickly if necessary	0	0	4.2	2.5	6.0	0	3.1	6.1	2.3	7.5	**4.5**
Helping others (%)	Check on house occupants/neighbours	0	9.1	13.9	7.5	6.0	0	9.4	9.1	4.7	7.5	**8.6**
	Help others	0	9.1	1.8	2.5	0	7.1	3.9	2.0	0	1.4	**2.0**
Respondents who did not fully understood the question (%)	At work	0	0	3.6	6.7	4.0	0	1.6	5.1	3.5	3.4	**3.8**
	Go home	0	0	0.6	0.8	1.0	7.1	0.8	0.0	2.3	0.7	**0.9**
Evacuation (%)	Evacuate to high ground/inland	50.0	36.4	44.0	27.5	42.0	42.9	52.3	25.3	57.0	24.7	**38.6**
	Evacuate/leave (no place specified)	0	9.1	3.6	9.2	11.0	21.4	10.2	14.1	5.8	13.0	**9.5**
	Evacuate to a specific place	0	9.1	2.4	19.2	1.0	7.1	3.1	8.1	2.3	2.7	**5.5**
	Evacuate to a clear/open space or in backyard	25.0	18.2	3.6	0.8	0	7.1	0.8	4.0	2.3	4.1	**2.8**
Other types of reaction (%)	Stay put	0	0	1.2	1.7	5.0	7.1	3.9	1.0	2.3	4.8	**2.9**
	Wait and see	0	0	0	0.8	0	7.1	0.8	1.0	0	0.7	**0.6**
	Panic/shock	25.0	0	0.6	0.8	0	0	0	1.0	0	0.7	**0.6**
	Nothing	0	0	0.6	0	1.0	0	0	1.0	2.3	1.4	**0.8**

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Table 37 **Q30.2.** Is the respondent likely to evacuate? (Scenario 1 – Tsunami triggered by a local earthquake).

Community	n	Yes (%)	No (%)
Akitio	4	75.0	25.0
Castlepoint	11	63.6	27.3
Eastbourne	166	65.1	28.3
Haumoana	120	69.2	26.7
Lyall Bay	100	73.0	24.0
Riversdale	14	78.6	21.4
Seatoun	128	81.3	16.4
Te Awanga	99	64.7	31.3
Wainui	86	75.6	20.9
Westshore	146	63.0	34.3
TOTAL	**874**	**69.8**	**26.3**

Table 38 **Q30.3.** If not, what are the respondent's reason(s) for not evacuating? (Scenario 1 – Tsunami triggered by a local earthquake). This is an open-question. Answers were turned into categories and summarized in the table below.

Community / Reason for not evacuating	Akitio	Castlepoint	Eastbourne	Haumoana	Lyall Bay	Riversdale	Seatoun	Te Awanga	Wainui	Westshore	TOTAL
n	4	11	166	120	100	14	128	99	86	146	**874**
Waiting for an official warning (%)	25.0	0	8.4	5.0	12.0	7.1	6.3	10.1	4.7	14.4	**8.8**
Depends on level of damage/situation (%)	25.0	9.1	6.0	7.5	6.0	7.1	7.8	8.1	4.7	6.2	**6.8**
I feel safer at home (more dangerous outside) (%)	0	0	4.8	3.3	3.0	0	1.6	1.0	0	3.4	**2.6**
I would be at work (%)	0	0	0.6	5.0	1.0	0	0.8	4.0	1.2	2.1	**2.0**
All earthquakes don't cause tsunami (%)	0	0	0	1.7	0	0	0	2.0	7.0	4.1	**1.8**
I/we are above tsunami hazard zone (%)	0	18.2	0	2.5	0	7.1	0.8	2.0	5.8	0	**1.6**
I am too old/unable to walk fast (%)	0	0	4.2	0.8	4.0	0	0.8	0	0	0	**1.5**
Need to help/stay with those who cannot evacuate (%)	0	0	2.4	3.3	0	0	0	1.0	1.2	1.4	**1.4**
I prefer to stay at home (%)	0	0	0.6	0	0	0	1.6	3.0	0	2.7	**1.1**
Unable to leave area (because of traffic, roads closed etc.) (%)	0	0	1.8	0	1.0	0	0.8	1.0	0	2.7	**1.1**
I don't see the point of evacuating (%)	0	0	0.6	0	2.0	0	1.6	3.0	1.2	0.7	**1.1**
Other reason* (%)	0	0	4.8	2.5	1.0	0	0	2.0	1.2	2.7	**2.2**

*Other reasons cited:

Reason	Count (n)
Only need to evacuate if sea is retreating	8
Sufficient number of storeys	4
I don't know where to go	4
The odds are against	1
Follow my inner guidance	1
Succumb to fate	1

Table 39 Q30.4. What would the respondent do before evacuating? (Scenario 1 – Tsunami triggered by a local earthquake).

Community	n	Nothing -evacuate immediately (%)	Gather family (%)	Get life essentials (%)	Collect valuable (%)	Call family or friends (%)	Assist others in evacuative (%)	Seek further information (%)	Other* (%)
Akitio	4	0	50.0	75.0	25.0	0	75.0	50.0	0
Castlepoint	11	0	54.6	63.6	9.1	27.3	63.6	36.4	0
Eastbourne	166	1.2	51.2	80.1	24.1	26.5	54.8	57.2	7.8
Haumoana	120	8.3	60.8	76.7	25.8	30.0	55.0	51.7	11.7
Lyall Bay	100	9.0	52.0	83.0	27.0	39.0	53.0	59.0	9.0
Riversdale	14	7.1	64.3	64.3	28.6	21.4	64.3	64.3	0
Seatoun	128	6.3	64.8	82.8	20.3	23.4	51.6	58.6	5.5
Te Awanga	99	3.0	60.6	73.7	32.3	22.2	60.6	64.7	12.1
Wainui	86	5.8	66.3	74.4	25.6	29.1	55.8	60.5	12.8
Westshore	146	8.9	42.5	71.9	28.1	31.5	58.2	70.6	7.5
TOTAL	**874**	**5.8**	**56.0**	**77.2**	**25.7**	**28.4**	**55.8**	**60.1**	**8.0**

*Other actions cited:

Reason cited	Count (n)
Find pet(s)	33
Pack more items	14
Turn off power/gas	8
Put on warm clothes	3
Secure house and belongings	3
Leave note on door	3
Check if roads are practicable	1
Get high with daughter	1

Table 40 **Q30.5.** How long does the respondent think these actions would take? (Scenario 1 – Tsunami triggered by a local earthquake).

Community	n	One minute or less (%)	1-10 minutes (%)	10-30 minutes (%)	30 min - 1 hour (%)	1 - 3 hours (%)	Longer than 3 hours (%)
Akitio	4	0	50.0	25.0	25.0	0	0
Castlepoint	11	9.1	54.6	36.4	0	0	0
Eastbourne	166	6.0	62.1	21.1	4.2	1.2	0
Haumoana	120	9.2	50.0	29.2	6.7	0.8	0
Lyall Bay	100	12.0	50.0	23.0	6.0	3.0	3.0
Riversdale	14	0	57.1	35.7	7.1	0	0
Seatoun	128	7.0	56.3	24.2	6.3	0.8	2.3
Te Awanga	99	7.1	54.6	28.3	7.1	0	0
Wainui	86	5.8	55.8	29.1	7.0	0	0
Westshore	146	6.2	50.7	26.7	8.9	3.4	0.7
TOTAL	**874**	**7.3**	**54.6**	**25.9**	**6.5**	**1.4**	**0.8**

Table 41 **Q30.6.** Where the respondent would evacuate to? (Scenario 1 – Tsunami triggered by a local earthquake). This is an open-question, answers were turned into categories and the following table summarizes them. Since every evacuation location is related to specific communities, one table per community was created.

Table 41a Evacuation places cited for Akitio:

Evacuation place	Count (n)	%
Beach Hill	2	50.0
Coast Hill	2	50.0
TOTAL	**4**	**-**

Table 41b Evacuation places cited for Castlepoint:

Evacuation place	Count (n)	%
Castlepoint station/wool shed	5	45.5
Masterton	3	27.3
End of Guthrie Cres	1	9.1
Stay home (above tsunami zone)	1	9.1
Highest hill	2	18.2
TOTAL	**11**	**-**

Table 41c Evacuation places cited for Eastbourne:

Evacuation place	Count (n)	%
Hills behind Eastbourne	53	31.9
Muritai park/track	35	21.1
Kowhai Street/track	16	9.6
Up McKenzie Road/track	13	7.8
Butterfly Creek	9	5.4
Muritai School	8	4.8
Rona Street	5	3.0
Wellington	5	3.0
Totara Street	4	2.4
Lower Hutt	4	2.4
Upper Hutt	1	0.6
Days Bay	2	1.2
Higher ground	5	3.0
Where I would be told to	4	2.4
Outside	3	1.8
To someone I know	3	1.8
Attic	1	0.6
As far as possible	1	0.6
TOTAL	**166**	**-**

Table 41d Evacuation places cited for Haumoana:

Evacuation place	Count (n)	%
Haumoana Primary School	85	70.8
Hastings	9	7.5
Te Mata Peak	4	3.3
Tuki Tuki Road	4	3.3
End of Parkhill Road	3	2.5
Havelock North	2	1.7
Summerlee (Te Awanga)	1	0.8
Waimarama Road	1	0.8
Paki Paki	1	0.8
Redmetal Vineyard	1	0.8
Closest Hill	8	6.7
To someone I know	2	1.7
As far as possible	1	0.8
Where I would be told to	1	0.8
TOTAL	**120**	**-**

Table 41e Evacuation places cited for Lyall Bay:

Evacuation place	Count (n)	%
Tavistock Road	17	17.0
Melrose Heights	15	15.0
Newtown	8	8.0
Sutherland Road	7	7.0
View Road	5	5.0
Mt Victoria	5	5.0
Northland/Karori	4	4.0
Wellington CBD	4	4.0
Houghton Valley School	3	3.0
Miramar	3	3.0
Houghton Bay Road	2	2.0
Kilbirnie	2	2.0
Buckingham Street	2	2.0
Hungerford Road	1	1.0
Rongotai	1	1.0
Brooklyn	1	1.0
Kelburn	1	1.0
Upper Hutt	1	1.0
Outside of Wellington region	1	1.0
Up Queens Drive	1	1.0
Closest Hill	15	15.0
To someone I know	2	2.0
Where I would be told to	2	2.0
TOTAL	**100**	**-**

Table 41f Evacuation places cited for Riversdale:

Evacuation place	Count (n)	%
Where I would be told to	2	14.3
Masterton	2	14.3
Closest Hill	9	64.3
TOTAL	**14**	**-**

Table 41g Evacuation places cited for Seatoun:

Evacuation place	Count (n)	%
Seatoun Heights	40	31.3
Tio Tio Road	24	18.8
Pass of Branda	22	17.2
Strathmore	4	3.1
Awa Road	3	2.3
Pinelands Ave	2	1.6
Beacon Hill	2	1.6
Dundas Street	1	0.8
Worser Bay School	1	0.8
Top of Burnham Street	1	0.8
Hataitai	1	0.8
Miramar Heights	1	0.8
Karori	1	0.8
Outside of Wellington region	1	0.8
Closest Hill	22	17.2
Other places (not identified)	4	3.1
Where I would be told to	6	4.7
To someone I know	2	1.6
TOTAL	**128**	**-**

Table 41h Evacuation places cited for Te Awanga:

Evacuation place	Count (n)	%
Haumoana Primary School	37	37.4
Hills behind Te Awanga	13	13.1
Havelock North	5	5.1
Te Awanga Estate	5	5.1
Nilsson Farm, Cape Estate	4	4.0
Elephant Hill	2	2.0
Cape Kidnapper	2	2.0
Clearview Winery Parkhill	2	2.0
Summerlee	1	1.0
Taihape Road	1	1.0
Tuki Tuki Valley	1	1.0
Te Mata Peak	1	1.0
Gordon Road	1	1.0
Outside of Hawkes Bay	1	1.0
Closest Hill	19	19.2
To someone I know	2	2.0
Where I would be told to	1	1.0
TOTAL	**99**	**-**

Table 41i Evacuation places cited for Wainui:

Evacuation place	Count (n)	%
Hills Behind Wainui	59	68.6
Wheatstone Road	9	10.5
Tuahine Point hill	6	7.0
School hall	2	2.3
High ground	7	8.1
To someone I know	2	2.3
Where I would be told to	1	1.2
TOTAL	**86**	**-**

Table 41j Evacuation places cited for Westshore:

Evacuation place	Count (n)	%
Napier/Bluff Hill	47	32.2
Bay View hills	20	13.7
Poraiti hills	17	11.6
Hospital Hill	4	2.7
Eskdale Hill	4	2.7
Puketapu	6	4.1
Taradale hills	6	4.1
Hastings	4	2.7
School Civil Defence centre Westshore	3	2.1
Napier	1	0.7
Western hills	2	1.4
Napier Central School	1	0.7
Patoka	1	0.7
Inland/high ground	22	15.1
Other places (not identified)	1	0.7
Outside of Napier area	5	3.4
Where I would be told to	5	3.4
Upstairs	3	2.1
To someone I know	2	1.4
TOTAL	**146**	**-**

Table 42 **Q30.7.** How would the respondent travel to his destination? (Scenario 1 – Tsunami triggered by a local earthquake).

Community	n	Car (%)	Foot (%)	Public transport (%)	Flight (%)	Bicycle or similar (%)	Other* (%)
Akitio	4	100	75.0	0	0	0	0
Castlepoint	11	90.9	45.5	0	0	0	0
Eastbourne	166	21.7	90.4	0.6	0	6.0	0.6
Haumoana	120	91.7	30.0	0	0	18.3	13.3
Lyall Bay	100	57.0	82.0	6.0	2.0	10.0	9.0
Riversdale	14	85.7	28.6	0	0	0	0
Seatoun	128	50.8	91.4	3.1	0.8	5.5	6.3
Te Awanga	99	88.9	43.4	0	0	18.2	7.1
Wainui	86	64.0	64.0	0	0	9.3	1.2
Westshore	146	88.4	42.5	0.7	0	27.4	4.1
TOTAL	**874**	**64.8**	**63.7**	**1.4**	**0.3**	**13.2**	**5.5**

* Other transportation modes cited:

Transportation mode cited	Count (n)
Motorhome	8
Quad bike	7
Motorbike	7
Wheelchair	5
Buggy	3
Boat	2
Truck	1
Ferry	1
Ladder	1
Tractor	1
Surf board	1

For scenarios two and three, the respondent was asked to imagine he/she hears an official warning of a tsunami coming in **9 hours (scenario 2)** and of a tsunami coming in **1 hour (scenario 3)**. For each of these two scenarios, the same set of sub-questions was asked as scenario 1, in the same order. First question (Q31.1) is **what does the respondent think he/she would do**. This is an open-question, answers were turned into categories and the following table summarizes them.

Table 43 **Q31.1a.** What would the respondent do? - Scenario 2 (tsunami arriving in 9 hours).

Action cited \ Community		Akitio	Castlepoint	Eastbourne	Haumoana	Lyall Bay	Riversdale	Seatoun	Te Awanga	Wainui	Westshore	TOTAL
n		4	11	166	120	100	14	128	99	86	146	**874**
Pre-evacuation actions (at individual or family scale) (%)	Grab emergency bags/items	25.0	36.4	38.6	42.5	50.0	35.7	38.3	41.4	40.7	45.9	**42.0**
	Go get child/children at school	0	9.1	2.4	0.8	3.0	0	1.6	0	2.3	0	**1.5**
	Call family or relatives	0	9.1	16.3	14.2	16.0	7.1	14.8	7.1	12.8	11.0	**13.2**
	Gather family	0	9.1	13.3	10.0	18.0	0	27.3	10.1	14.0	13.7	**14.9**
	Find pet(s)	0	0	5.4	14.2	10.0	7.1	7.0	10.1	5.8	9.6	**8.6**
	Put on warm clothes	0	0	1.2	0.8	0	0	0.8	0	3.5	1.4	**0.9**
	Grab valuables	0	9.1	9.6	17.5	16.0	21.4	13.3	16.2	14.0	14.4	**14.1**
	Turn off power/water	0	0	0.6	1.7	2.0	0	2.3	3.0	1.2	2.7	**1.8**
	Secure belongings	0	0	0.6	1.7	2.0	0	1.6	1.0	1.2	0	**1.0**
	Secure property	0	0	0	5.8	2.0	14.3	1.6	10.1	3.5	3.4	**3.6**
	Charge mobile	0	0	0.6	0	0	0	0.8	0	1.2	0	**0.3**
	Pack more items/ for a longer stay	0	0	3.6	5.8	6.0	7.1	9.4	12.1	9.3	4.1	**6.6**
Helping people (%)	Check or warn neighbours	0	9.1	7.2	11.7	2.0	7.1	7.0	9.1	7.0	11.6	**8.1**
	Help others	25.0	0	1.8	4.2	1.0	7.1	2.3	1.0	0	2.1	**2.1**
Seeking more information – Assessing the situation (%)	Turn on radio/TV/check info online	25.0	0	11.5	9.2	12.0	0	4.7	8.1	9.3	11.6	**9.4**
	Wait for more information/instructions to decide	25.0	0	10.8	9.2	6.0	0	8.6	10.1	12.8	4.1	**8.5**
	Prepare to evacuate if necessary (but not now)	0	0	4.8	8.3	4.0	7.1	3.1	8.1	11.6	7.5	**6.4**
Evacuation (%)	Evacuate to high ground/inland	0	9.1	23.5	7.5	25.0	21.4	27.3	8.1	20.9	20.6	**19.2**
	Evacuate to a specific destination (e.g. at a friend's, or official gathering place)	0	9.1	9.6	12.5	14.0	0	19.5	10.1	2.3	8.9	**11.0**
	Evacuate/leave (no specific destination)	25.0	18.2	15.7	22.5	20.0	28.6	13.3	25.3	14.0	19.9	**18.7**
	Move upstairs/to attic	0	0	0.6	0	0	0	0	0	0	0	**0.1**
	Call someone to pick me up	0	0	0.6	0	0	0	0	0	0	0.7	**0.2**
Respondents who did not fully understand the question (%)	Stay at work	0	0	1.2	0	1.0	0	0	0	0	0.7	**0.5**
	Go home	0	0	1.8	5.0	2.0	0	4.7	2.0	4.7	4.8	**3.4**
Other types of reaction (not resulting in evacuation) (%)	Panic	0	0	0	0	0	0	0	0	0	0.7	**0.1**
	Check at sea level	0	0	0	0.8	0	0	0	0	0	0	**0.1**
	Nothing/Stay put	0	18.2	1.2	0.8	1.0	7.1	0.8	2.0	3.5	1.4	**1.7**

Table 44 **Q31.1b.** What would the respondent do? - Scenario 3 (tsunami arriving in 1 hour).

Action cited \ Community		Akitio	Castlepoint	Eastbourne	Haumoana	Lyall Bay	Riversdale	Seatoun	Te Awanga	Wainui	Westshore	TOTAL
n		4	11	166	120	100	14	128	99	86	146	**874**
Pre-evacuation actions (at individual or family scale) (%)	Grab emergency bags/items	50.0	36.4	36.1	42.5	49.0	42.9	40.6	45.5	34.9	45.9	**41.9**
	Go get child/children at school	0	0	3.6	1.7	5.0	0	2.3	0	4.7	0	**2.3**
	Call family or relatives	0	0	15.1	11.7	10.0	0	13.3	8.1	9.3	7.5	**10.6**
	Gather family	0	9.1	10.2	13.3	19.0	0	21.9	14.1	16.3	15.8	**15.1**
	Find pet(s)	0	0	4.8	11.7	11.0	7.1	5.5	11.1	5.8	6.2	**7.6**
	Put on warm clothes	0	0	0.6	0	0	0	2.3	0	1.2	0.7	**0.7**
	Grab valuables	0	0	1.8	12.5	12.0	28.6	9.4	11.1	11.6	8.2	**9.0**
	Turn off power/water	0	0	1.2	2.5	1.0	0	1.6	1.0	2.3	1.4	**1.5**
	Secure belongings	0	0	1.8	0	0	0	0	0	0	0	**0.3**
	Secure property	0	0	0	1.7	0	14.3	3.1	7.1	1.2	2.1	**2.2**
	Pack more items/ for a longer stay	0	0	1.2	2.5	2.0	7.1	3.1	6.1	5.8	2.1	**3.0**
Helping people (%)	Check or warn neighbours	25.0	0	7.2	9.2	1.0	14.3	8.6	12.1	4.7	6.9	**7.3**
	Help others	0	0	1.2	0.8	1.0	0	2.3	2.0	1.2	2.1	**3.0**
Seeking more information – Assessing the situation (%)	Turn on radio/TV/check info online	0	0	6.6	3.3	7.0	0	0.8	1.0	9.3	3.4	**4.2**
	Wait for more information/instructions to decide	25.0	0	5.4	1.7	0	0	0.8	3.0	3.5	0.7	**2.3**
	Prepare to evacuate if necessary (but not now)	0	0	1.2	4.2	1.0	0	0	2.0	9.3	0.7	**2.2**
Evacuation (%)	Evacuate to high ground/inland	0	18.2	42.8	8.3	25.0	35.7	43.0	14.1	31.4	28.8	**28.7**
	Evacuate to a specific destination (e.g. at a friend's, or official gathering place)	0	9.1	5.4	11.7	11.0	0	14.1	10.1	2.3	8.2	**8.8**
	Evacuate/leave (no specific destination)	75.0	27.3	19.3	45.0	34.0	21.4	24.2	39.4	23.3	34.9	**30.9**
	Move upstairs/to attic	0	0	0.6	0	0	0	0	0	0	0.7	**0.2**
	Call someone to pick me up	0	0	0.6	0	0	0	0	0	0	0	**0.1**
Respondents who did not fully understand the question (%)	Stay at work	0	0	1.8	2.5	2.0	0	0	1.0	0	0.7	**1.1**
	Go home	0	0	0.6	1.7	1.0	0	1.6	0	1.2	2.1	**1.1**
Other types of reaction (not resulting in evacuation) (%)	Panic	0	0	0	0	0	0	0	2.0	0	0	**0.2**
	Check at sea level	0	0	0	0	0	0	0	0	1.2	0	**0.1**
	Nothing/Stay put	0	18.2	0	0.8	1.0	0	0	0	0	0	**0.5**

Table 45 **Q31.2a.** Is the respondent likely to evacuate? (Scenario 2 – Tsunami in 9 hours).

Community	n	Yes (%)	No (%)
Akitio	4	100	0
Castlepoint	11	54.6	27.3
Eastbourne	166	71.1	21.1
Haumoana	120	69.2	24.2
Lyall Bay	100	81.0	15.0
Riversdale	14	78.6	14.3
Seatoun	128	83.6	10.9
Te Awanga	99	80.8	19.2
Wainui	86	57.0	34.9
Westshore	146	80.1	14.4
TOTAL	**874**	**75.1**	**19.2**

Table 46 **Q31.2b.** Is the respondent likely to evacuate? (Scenario 3 - Tsunami in 1 hour).

Community	n	Yes (%)	No (%)
Akitio	4	100	0
Castlepoint	11	63.6	18.2
Eastbourne	166	84.3	6.6
Haumoana	120	89.2	5.0
Lyall Bay	100	90.0	3.0
Riversdale	14	85.7	7.1
Seatoun	128	92.2	0.8
Te Awanga	99	93.9	2.0
Wainui	86	83.7	7.0
Westshore	146	92.5	2.7
TOTAL	**874**	**89.0**	**4.1**

Table 47 **Q31.3a.** If not, what are the respondent's reason(s) for not evacuating? (Scenario 2 – Tsunami in 9 hours).

Community	n	Wait for more information (%)	May reduce in severity or never happen (%)	I will evacuate but later (9 hours : no immediate threat) (%)	I don't trust the warning (%)	I/we am/are above tsunami hazard zone (%)	I feel safer at home (%)	I would be at work (%)	I am too old or unable to walk fast (%)	Fatalistic answers (%)	I would evacuate only in case of a local earthquake/tsunami (%)
Akitio	4	0	0	0	0	0	0	0	0	0	0
Castlepoint	11	0	0	9.1	0	18.2	0	0	0	0	0
Eastbourne	166	11.5	4.8	2.4	0.6	0.6	0.6	0.6	0.6	0	0.6
Haumoana	120	10.0	3.3	4.2	3.3	0.8	0.8	0	0	0.8	0
Lyall Bay	100	7.0	3.0	2.0	0	0	1.0	2.0	2.0	1.0	0
Riversdale	14	7.1	0	0	0	7.1	0	0	0	0	0
Seatoun	128	7.0	2.3	4.7	0.8	0.8	0.8	0	0	0	0
Te Awanga	99	9.1	7.1	4.0	2.0	1.0	1.0	0	1.0	0	0
Wainui	86	16.3	9.3	1.2	3.5	1.2	0	1.2	0	0	0
Westshore	146	8.9	2.7	0.7	0.7	0	0.7	1.4	0	0	0
TOTAL	**874**	**9.6**	**4.2**	**2.8**	**1.4**	**0.9**	**0.7**	**0.7**	**0.5**	**0.2**	**0.1**

Table 48 **Q31.3b**. If not, what are the respondent's reason(s) for not evacuating? (Scenario 3 – Tsunami in 1 hour).

Community	n	Wait for more information (%)	I would be at work (%)	I/we am/are above tsunami hazard zone (%)	I feel safer at home (%)	I don't trust the warning (%)	I am too old or unable to walk fast (%)	Fatalistic answers (%)	May reduce in severity or never happen (%)	I would evacuate only in case of a local earthquake/tsunami (%)	Roads might be unsuable (%)
Akitio	4	0	0	0	0	0	0	0	0	0	0
Castlepoint	11	0	0	18.2	0	0	0	0	0	0	0
Eastbourne	166	2.4	0.6	0.6	0.6	0.6	0.6	0	0.6	0.6	0.6
Haumoana	120	0	0.8	0.8	0.8	0.8	0	0.8	0	0	0
Lyall Bay	100	1.0	3.0	0	0	0	3.0	1.0	0	0	0
Riversdale	14	0	0	7.1	0	0	0	0	0	0	0
Seatoun	128	0	0	0.8	0	0	0	0	0	0	0
Te Awanga	99	1.0	0	0	0	0	1.0	0	0	0	0
Wainui	86	3.5	1.2	1.2	0	1.2	0	0	1.2	0	0
Westshore	146	0.7	2.1	0	0.7	0	0.7	0	0	0	0
TOTAL	**874**	**1.1**	**1.0**	**0.8**	**0.3**	**0.3**	**0.7**	**0.2**	**0.2**	**0.1**	**0.1**

Table 49 **Q31.4a.** Actions undertaken by the respondent before evacuating (Scenario 2 – Tsunami arriving in 9 hours).

Community	n	Nothing - evacuate immediately (%)	Gather family (%)	Get life essentials (%)	Collect valuables (%)	Call family or friends (%)	Assist others in evacuation (%)	Seek further information (%)	Other* (%)
Akitio	4	0	50.0	100	50.0	25.0	75.0	100	0
Castlepoint	11	0	63.6	72.7	36.4	45.5	81.8	81.8	9.1
Eastbourne	166	0	65.7	92.8	68.1	75.3	77.7	89.8	7.8
Haumoana	120	0.8	65.0	88.3	65.8	65.8	75.8	87.5	14.2
Lyall Bay	100	2.0	63.0	91.0	61.0	72.0	72.0	86.0	10.0
Riversdale	14	0	64.3	78.6	50.0	78.6	78.6	71.4	0
Seatoun	128	0	72.7	93.0	74.2	75.8	78.9	90.6	9.4
Te Awanga	99	2.0	63.6	88.9	69.7	65.7	81.8	84.9	12.1
Wainui	86	2.3	66.3	86.1	68.6	65.1	74.4	91.9	14.0
Westshore	146	1.4	57.5	86.3	67.8	65.8	76.0	84.9	8.9
TOTAL	**874**	**1.0**	**64.7**	**89.4**	**67.3**	**69.5**	**76.9**	**87.6**	**10.3**

*Other reasons cited:

Reason cited	Count (n)
Find pet(s)	41
Secure house and belongings	16
Pack more items	13
Turn off power/gas	8
Leave note on door	4
Shopping (gas/food…)	3
Obligations post-event	2
Charge mobile phone	2
Check if roads are practicable	1
Go to church	1

Table 50 **Q31.4b.** Actions undertaken by the respondent before evacuating (Scenario 3 – Tsunami arriving in 1 hour).

Community	n	Nothing - evacuate immediately (%)	Gather family (%)	Get life essentials (%)	Collect valuables (%)	Call family or friends (%)	Assist others in evacuation (%)	Seek further information (%)	Other* (%)
Akitio	4	0	50.0	100	25.0	0	75.0	75.0	0
Castlepoint	11	9.1	54.6	63.6	9.1	27.3	54.6	36.4	9.1
Eastbourne	166	3.0	59.6	87.4	37.4	41.0	57.8	63.3	4.8
Haumoana	120	7.5	64.2	85.0	40.0	38.3	55.8	53.3	10.8
Lyall Bay	100	10.0	57.0	80.0	39.0	42.0	40.0	52.0	5.0
Riversdale	14	0	71.4	78.6	35.7	42.9	71.4	42.9	0
Seatoun	128	3.9	64.8	89.8	42.2	42.2	55.5	57.8	6.3
Te Awanga	99	11.1	58.6	79.8	41.4	32.3	54.6	48.8	10.1
Wainui	86	1.2	66.3	80.2	33.7	32.6	53.5	59.3	8.1
Westshore	146	11.0	50.7	74.7	34.3	32.9	50.7	56.2	8.2
TOTAL	**874**	**6.6**	**59.8**	**82.5**	**37.8**	**37.4**	**53.4**	**56.0**	**7.3**

*Other reasons cited:

Reason cited	Count (n)
Find pet(s)	33
Secure house and belongings	8
Pack more items	7
Turn off power/gas	3
Leave note on door	2
Obligations post-event	1
Charge mobile phone	1
Shopping (gas/food…)	1
Put on warm clothes	1

Table 51 **Q31.5a.** How long does the respondent think all of this (actions previously cited) is going to take? (Scenario 2 – tsunami arriving in 9 hours).

Community	n	One minute or less (%)	1-10 minutes (%)	10-30 minutes (%)	30 min - 1 hour (%)	1 - 3 hours (%)	Longer than 3 hours (%)
Akitio	4	0	0	50.0	25.0	25.0	0
Castlepoint	11	9.1	36.4	18.2	18.2	18.2	0
Eastbourne	166	0	13.9	30.7	21.1	23.5	7.2
Haumoana	120	0	15.0	35.0	19.2	20.0	5.0
Lyall Bay	100	1.0	8.0	25.0	23.0	33.0	5.0
Riversdale	14	0	21.4	35.7	0	14.3	21.4
Seatoun	128	0	7.0	23.4	31.3	29.7	6.3
Te Awanga	99	0	16.2	25.3	20.2	27.3	7.1
Wainui	86	1.2	15.1	22.1	19.8	29.1	8.1
Westshore	146	0	20.6	31.5	16.4	21.9	4.8
TOTAL	**874**	**0.3**	**14.2**	**28.3**	**21.2**	**25.5**	**6.3**

Table 52 **Q31.5b.** How long does the respondent think all of this (actions previously cited) is going to take? (Scenario 3 – tsunami arriving in 1 hour).

Community	n	One minute or less (%)	1-10 minutes (%)	10-30 minutes (%)	30 min - 1 hour (%)	1 - 3 hours (%)	Longer than 3 hours (%)
Akitio	4	0	25.0	50.0	25.0	0	0
Castlepoint	11	18.2	36.4	27.3	9.1	0	0
Eastbourne	166	2.4	48.8	39.2	3.6	0.6	0
Haumoana	120	4.2	41.7	38.3	7.5	0	0
Lyall Bay	100	3.0	42.0	38.0	11.0	1.0	0
Riversdale	14	0	28.6	50.0	7.1	0	0
Seatoun	128	0.8	45.3	38.3	7.8	0.8	0
Te Awanga	99	4.0	43.4	41.4	4.0	0	0
Wainui	86	4.7	40.7	41.9	5.8	0	0
Westshore	146	4.8	49.3	29.5	6.9	0.7	0
TOTAL	**874**	**3.4**	**44.6**	**37.8**	**6.6**	**0.5**	**0**

Table 53 **Q31.6.** Where would the respondent evacuate to? This is an open-question, answers were turned into categories and the following table summarizes them. Since every evacuation location is related to specific communities, one table per community was created.

Table 53a Evacuation places cited for Akitio:

Evacuation place	Scenario 2, tsunami in 9 hours Count (n)	%	Scenario 3, tsunami in 1 hour Count (n)	%
Beach Hill	1	25.0	1	25.0
Coast Hill	2	50.0	2	50.0
TOTAL	**4**	**-**	**4**	**-**

Table 53b Evacuation places cited for Castlepoint:

Evacuation place	Scenario 2, tsunami in 9 hours Count (n)	%	Scenario 3, tsunami in 1 hour Count (n)	%
Castlepoint station/wool shed	3	27.3	4	36.4
Masterton	3	27.3	3	27.3
End of Guthrie Crescent	2	18.2	2	18.2
Highest hill	1	9.1	1	9.1
Stay home (above tsunami zone)	1	9.1	1	9.1
TOTAL	**11**	**-**	**11**	**-**

Table 53c Evacuation places cited for Eastbourne:

Evacuation place	Scenario 2, tsunami in 9 hours Count (n)	%	Scenario 3, tsunami in 1 hour Count (n)	%
Hills behind Eastbourne	25	15.1	42	25.3
Upper Hutt	23	13.9	8	4.8
Muritai Park/track	18	10.8	30	18.1
Lower Hutt	14	8.4	5	3.0
Wainuiomata	10	6.0	5	3.0
Butterfly Creek	7	4.2	8	4.8
Wairarapa	7	4.2	1	0.6
Up McKenzie Road/track	6	3.6	12	7.2
Kowhai Street/track	5	3.0	12	7.2
Days Bay	5	3.0	3	1.8
Outside of Wellington region	5	3.0	0	0
Wellington	4	2.4	3	1.8
Muritai School	3	1.8	3	1.8
Rona Street	3	1.8	6	3.6
Johnsonville	2	1.2	0	0
Totara Street	1	0.6	2	1.2
York Bay	1	0.6	1	0.6
To someone I know	8	4.8	2	1.2
Far Inland	7	4.2	2	1.2
Higher ground	6	3.6	9	5.4
Where I would be told to	4	2.4	2	1.2
Stay at home	1	0.6	0	0
TOTAL	**166**	**-**	**166**	**-**

Table 53d Evacuation places cited for Haumoana:

Evacuation place	Scenario 2, tsunami in 9 hours Count (n)	%	Scenario 3, tsunami in 1 hour Count (n)	%
Haumoana Primary School	56	46.7	70	58.3
Hastings	14	11.7	7	5.8
Te Mata Peak	6	5.0	7	5.8
Havelock North	4	3.3	2	1.7
End of Parkhill Road	4	3.3	3	2.5
Taradale	3	2.5	2	1.7
Tuki Tuki Road	3	2.5	1	0.8
Paki Paki	1	0.8	0	0
Redmetal Vineyard	1	0.8	1	0.8
Waimarama Road	1	0.8	1	0.8
Puketapu	1	0.8	1	0.8
Other place outside of Hawkes Bay	1	0.8	0	0
High ground	12	10.0	8	6.7
To someone I know	5	4.2	2	1.7
Far inland	2	1.7	1	0.8
Where I would be told to	1	0.8	1	0.8
TOTAL	**120**	**-**	**120**	**-**

Table 53e Evacuation places cited for Lyall Bay:

Evacuation place	Scenario 2, tsunami in 9 hours Count (n)	%	Scenario 3, tsunami in 1 hour Count (n)	%
Melrose Heights	11	11.0	16	16.0
Outside of Wellington region	11	11.0	2	2.0
Tavistock Road	7	7.0	10	10.0
Hutt Valley	6	6.0	3	3.0
Newtown	5	5.0	7	7.0
Northland/Karori	5	5.0	3	3.0
Sutherland Road	4	4.0	5	5.0
Mt Victoria	3	3.0	4	4.0
View Road	3	3.0	3	3.0
Brooklyn	3	3.0	3	3.0
Kilbirnie	3	3.0	3	3.0
Buckingham Street	1	1.0	1	1.0
Kelburn	2	2.0	2	2.0
Wellington CBD	1	1.0	2	2.0
Hataitai	1	1.0	2	2.0
Miramar	1	1.0	1	1.0
Tawa/Johnsonville etc.	2	2.0	1	1.0
Houghton Bay Road	0	0	1	1.0
Houghton Valley School	0	0	1	1.0
Rongotai	0	0	1	1.0
Up Queens Drive	0	0	1	1.0
High ground/Inland	12	12.0	14	14.0
To someone I know	5	5.0	1	1.0
Where I would be told to	2	2.0	0	0
TOTAL	**100**	**-**	**100**	**-**

Table 53f Evacuation places cited for Riversdale:

Evacuation place	Scenario 2, tsunami in 9 hours Count (n)	%	Scenario 3, tsunami in 1 hour Count (n)	%
Top of Riversdale subdivision (official evacuation point)	5	35.7	5	35.7
Masterton	3	21.4	3	21.4
High ground	2	14.3	2	14.3
TOTAL	**14**	**-**	**14**	**-**

Table 53g Evacuation places cited for Seatoun:

Evacuation place	Scenario 2, tsunami in 9 hours Count (n)	%	Scenario 3, tsunami in 1 hour Count (n)	%
Seatoun Heights	25	19.5	35	27.3
Tio Tio Road	12	9.4	17	13.3
Outside of Wellington region	10	7.8	1	0.8
Tawa/Johnsonville etc.	7	5.5	2	1.6
Brooklyn	4	3.1	0	0
Miramar Heights	4	3.1	4	3.1
Karori	4	3.1	1	0.8
Pass of Branda	4	3.1	8	6.3
Beacon Hill	2	1.6	2	1.6
Awa Road	2	1.6	2	1.6
Mt Victoria	2	1.6	2	1.6
Worser Bay School	2	1.6	4	3.1
Strathmore	2	1.6	1	0.8
Hataitai	2	1.6	0	0
Upper Hutt	1	0.8	0	0
Top of Burnham Street	1	0.8	2	1.6
View Road, Lyall Bay	1	0.8	0	0
Melrose	1	0.8	0	0
Dundas Street	0	0	1	0.8
Wellington CBD	0	0	2	1.6
Hudson Street, Island Bay	0	0	1	0.8
High ground/Inland	16	12.5	20	15.6
To someone I know	8	6.3	3	2.3
Where I would be told to	3	2.3	2	1.6
Other places (not identified)	1	0.8	1	0.8
TOTAL	**128**	**-**	**128**	**-**

Table 53h Evacuation places cited for Te Awanga:

Evacuation place	Scenario 2, tsunami in 9 hours Count (n)	%	Scenario 3, tsunami in 1 hour Count (n)	%
Haumoana Primary School	28	28.3	35	35.4
Havelock North	15	15.2	11	11.1
Hills behind Te Awanga	12	12.1	11	11.1
Hastings	7	7.1	3	3.0
Outside of Hawkes Bay	3	3.0	3	3.0
Nilsson Farm, Cape Estate	2	2.0	4	4.0
Te Awanga Estate	2	2.0	0	0
Clearview Winery Parkhill	2	2.0	2	2.0
Tuki Tuki Valley	2	2.0	1	1.0
Summerlee	1	1.0	1	1.0
Cape Kidnapper	1	1.0	1	1.0
Te Mata Peak	1	1.0	1	1.0
Gordon Road	1	1.0	2	2.0
Elephant Hill	1	1.0	1	1.0
Napier	0	0	2	2.0
Taihape Road	0	0	0	0.0
High ground/Inland	8	8.1	9	9.1
To someone I know	6	6.1	2	2.0
TOTAL	**99**	**-**	**99**	**-**

Table 53i Evacuation places cited for Wainui:

Evacuation place	Scenario 2, tsunami in 9 hours Count (n)	%	Scenario 3, tsunami in 1 hour Count (n)	%
Hills Behind Wainui	25	29.1	36	41.9
Wheatstone Road	6	7.0	9	10.5
Gisborne	5	5.8	2	2.3
Winifred Street	4	4.7	3	3.5
Out of Gisborne area	4	4.7	3	3.5
Tuahine Point Hill	3	3.5	3	3.5
Poho-O-Rawiri Marae	2	2.3	1	1.2
School hall	1	1.2	2	2.3
Patutahi	1	1.2	0	0
Scarlys Way	1	1.2	1	1.2
Waimata Hill	1	1.2	0	0
Ngatapa	1	1.2	0	0
High ground/Inland	14	16.3	10	11.6
To someone I know	6	7.0	3	3.5
Where I would be told to	3	3.5	2	2.3
TOTAL	**86**	**-**	**86**	**-**

Table 53j Evacuation places cited for Westshore:

Evacuation place	Scenario 2, tsunami in 9 hours Count (n)	%	Scenario 3, tsunami in 1 hour Count (n)	%
Napier/Bluff Hill	34	23.3	40	27.4
Outside of Napier area	14	9.6	8	5.5
Poraiti hills	12	8.2	17	11.6
Bay View hills	10	6.9	12	8.2
Hospital Hill	7	4.8	9	6.2
Eskdale Hill	5	3.4	4	2.7
Taradale hills	5	3.4	2	1.4
Puketapu	5	3.4	4	2.7
Havelock North	4	2.7	2	1.4
Hastings	2	1.4	3	2.1
Wharerangi Hill	1	0.7	1	0.7
Other places (not identified)	1	0.7	1	0.7
Inland/high ground	22	15.1	21	14.4
To someone I know	5	3.4	1	0.7
Upstairs	2	1.4	2	1.4
Where I would be told to	2	1.4	2	1.4
TOTAL	**146**	**-**	**146**	**-**

Table 54 **Q31.7a.** How would the respondent travel to his/her destination? (Scenario 2 – Tsunami arriving in 9 hours).

Community	n	Car (%)	Foot (%)	Public transport (%)	Flight (%)	Bicycle or similar (%)	Other* (%)
Akitio	4	100	50.0	0	0	0	0
Castlepoint	11	90.9	45.5	0	0	0	0
Eastbourne	166	59.6	46.4	3.6	0.6	4.2	0
Haumoana	120	93.3	25.8	0.8	0	18.3	7.5
Lyall Bay	100	74.0	40.0	10.0	2.0	2.0	3.0
Riversdale	14	85.7	21.4	0	0	7.1	0
Seatoun	128	71.1	48.4	3.9	0	6.3	1.6
Te Awanga	99	90.9	26.3	0	1.0	10.1	7.1
Wainui	86	75.6	41.9	0	0	7.0	1.2
Westshore	146	90.4	28.1	0	0	19.9	2.7
TOTAL	**874**	**78.8**	**37.0**	**2.5**	**0.5**	**9.7**	**3.0**

* Other transportation modes cited:

Transportation mode cited	Count (n)
Motorhome	7
Motorbike	6
Quad bike	4
Wheelchair	2
Truck	1
Boat	1
Tractor	1
Buggy	1
Wheelbarrow	1

Table 55 **Q31.7b.** How would the respondent travel to his/her destination? (Scenario 3 – Tsunami arriving in 1 hour).

Community	n	Car (%)	Foot (%)	Public transport (%)	Flight (%)	Bicycle or similar (%)	Other* (%)
Akitio	4	100	50.0	0	0	0	0
Castlepoint	11	72.7	36.4	0	0	0	0
Eastbourne	166	31.3	78.9	1.8	0.6	2.4	0
Haumoana	120	89.2	26.7	1.7	0	18.3	7.5
Lyall Bay	100	65.0	66.0	6.0	0	6.0	4.0
Riversdale	14	85.7	21.4	0	0	7.1	0
Seatoun	128	53.1	74.2	2.3	0.8	6.3	1.6
Te Awanga	99	85.9	27.3	0	0	12.1	7.1
Wainui	86	68.6	54.7	0	0	5.8	2.3
Westshore	146	82.9	30.8	0.7	0	22.6	2.7
TOTAL	**874**	**66.5**	**51.7**	**1.7**	**0.2**	**10.4**	**3.2**

* Other transportation modes cited:

Transportation mode cited	Count (n)
Motorhome	6
Quad bike	6
Motorbike	4
Wheelchair	3
Truck	1
Tractor	1
Buggy	1
Wheelbarrow	1

Table 56 **Q32.** What would the respondents wait for before coming back into the tsunami hazard zone? This is an open-question, answers were turned into categories and the following table summarizes them.

Community	n	All clear given by authorities (%)	Receding water (%)	Other signs that danger has gone (%)	A reasonable time elapsed (%)	Own judgement (%)	Other natural signs (%)	Word of mouth (%)	Emergency services or someone who helps (%)	Other* (%)
Akitio	4	100	0	0	0	0	0	0	0	0
Castlepoint	11	100	0	0	0	0	0	0	0	0
Eastbourne	166	83.1	7.8	2.4	3.6	3.0	1.8	0	1.8	3.0
Haumoana	120	86.7	3.3	5.0	0	0	0	0	0	0
Lyall Bay	100	82.0	7.0	5.0	2.0	4.0	0	0	0	4.0
Riversdale	14	85.7	7.1	0	0	0	0	0	0	0
Seatoun	128	89.1	6.3	1.6	2.3	3.1	0.8	0.8	0	3.1
Te Awanga	99	85.9	8.1	1.0	0	1.0	0	2.0	1.0	1.0
Wainui	86	83.7	4.7	2.3	7.0	1.2	1.2	3.5	0	1.2
Westshore	146	87.7	4.8	3.4	1.4	1.4	3.4	0	0.7	1.4
TOTAL	**874**	**85.8**	**6.0**	**2.9**	**2.2**	**2.0**	**1.1**	**0.7**	**0.6**	**0.6**

* Other answers cited:

Reasons for waiting cited	Count (n)
Calm	2
Road open	2
House rebuilt	1

Table 57 **Q33.** Would the respondent consider vertical evacuation if there was no time to travel to a safe elevated area? (e.g. evacuating into a tall building)

Community	n	Yes, without hesitation (%)	Yes but with some conditions (%)	No, I would not consider vertical evacuation at all (%)
Akitio	4	50.0	0	25.0
Castlepoint	11	36.4	18.2	27.3
Eastbourne	166	41.6	31.3	22.3
Haumoana	120	44.2	20.8	23.3
Lyall Bay	100	44.0	31.0	18.0
Riversdale	14	35.7	7.1	42.9
Seatoun	128	44.5	33.6	19.5
Te Awanga	99	43.4	20.2	29.3
Wainui	86	39.5	29.1	26.7
Westshore	146	49.3	22.6	21.2
TOTAL	**874**	**43.8**	**26.5**	**23.0**

Table 58 **Q34.** Conditions that the respondent would require to consider vertical evacuation.

Community	n	Only if the building looks safe and resistant to earthquakes and tsunami (%)	Only if I knew the building has been specifically designed for that purpose (%)	Only if authorities ask me to do so (%)	Other* (%)
Akitio	4	0	0	25.0	0
Castlepoint	11	18.2	9.1	36.4	9.1
Eastbourne	166	27.7	9.6	16.3	5.4
Haumoana	120	22.5	11.7	15.0	5.0
Lyall Bay	100	26.0	15.0	18.0	9.0
Riversdale	14	7.1	21.4	28.6	0
Seatoun	128	28.1	17.2	14.8	3.1
Te Awanga	99	20.2	14.1	11.1	5.1
Wainui	86	26.7	14.0	17.4	16.3
Westshore	146	21.2	11.6	13.7	10.3
TOTAL	**874**	**24.3**	**13.0**	**15.7**	**7.2**

* Other conditions cited:

Reasons for waiting cited	Count (n)
If considered as the safest option or only option	10
Only if no time to reach the hills	7
Line of sight of tsunami approaching	4
Easily accessible for elderlies or wheelchair users	3
Not possible to evacuate by road	3
By helicopter	3
Depends on location	1

3.6 DEMOGRAPHICS

Table 59 **Q35.** What is the respondent's gender?

Community	n	Male (%)	Female (%)	Decline to answer (%)
Akitio	4	50.0	50.0	0
Castlepoint	11	18.2	81.8	0
Eastbourne	166	38.0	60.8	0.6
Haumoana	120	38.3	59.2	0
Lyall Bay	100	41.0	58.0	1.0
Riversdale	14	64.3	35.7	0
Seatoun	128	34.4	64.1	1.6
Te Awanga	99	49.5	49.5	1.0
Wainui	86	52.3	47.7	0
Westshore	146	53.4	45.2	0.7
TOTAL	**874**	**43.4**	**55.4**	**0.7**

Table 60 **Q36.** What is the respondent's ethnic group?

Community	n	New Zealander /European (%)	Maori (%)	Pacific island (%)	Middle Eastern (%)	Latin American (%)	Asian (%)	African (%)	Other* (%)	Decline to answer (%)
Akitio	4	100	0	0	0	0	0	0	0	0
Castlepoint	11	100	0	0	0	0	0	0	0	0
Eastbourne	166	94.0	3.0	0.6	0	0	0	0	1.2	0.6
Haumoana	120	85.0	7.5	0	0.8	0	0	0.8	2.5	1.7
Lyall Bay	100	87.0	5.0	1.0	0	0	4.0	0	1.0	2.0
Riversdale	14	100	0	0	0	0	0	0	0	0
Seatoun	128	91.4	3.1	0	0	0	3.1	0	1.6	0.8
Te Awanga	99	95.0	2.0	0	0	0	1.0	0	1.0	1.0
Wainui	86	93.0	4.7	0	0	0	0	0	2.3	0
Westshore	146	93.8	3.4	0	0	0	0	0	2.1	0.7
TOTAL	**874**	**91.8**	**3.9**	**0.2**	**0.1**	**0**	**1.0**	**0.1**	**1.6**	**0.9**

*Other ethnic groups cited:

Ethnic group	Count (n)
Indian	3
Australian	3
Half NZ/Maori	3
North American	2
Celtic	1
Caucasian	1

Table 61 **Q37.** What is the respondent's age class?

Community	n	18-30 years (%)	31-45 years (%)	46-65 years (%)	Over 65 years (%)	Decline to answer (%)
Akitio	4	0	0	50.0	50.0	0
Castlepoint	11	0	0	27.3	63.6	9.1
Eastbourne	166	1.2	15.7	36.1	39.2	6.6
Haumoana	120	3.3	17.5	47.5	22.5	5.8
Lyall Bay	100	2.0	27.0	40.0	23.0	8.0
Riversdale	14	0	0	42.9	57.1	0
Seatoun	128	1.6	23.4	44.5	25.0	5.5
Te Awanga	99	1.0	17.2	46.5	31.3	0
Wainui	86	5.8	15.1	43.0	30.2	3.5
Westshore	146	2.7	6.9	41.1	43.8	3.4
TOTAL	**874**	**2.3**	**16.5**	**42.1**	**32.6**	**4.8**

Table 62 **Q39.** What is the respondent's family situation?

Community	n	Family with children (%)	Family without children (%)	Alone (%)	With non-family (%)	Other* (%)
Akitio	4	0	100	0	0	0
Castlepoint	11	27.3	45.5	27.3	0	0
Eastbourne	166	31.3	41.6	23.5	2.4	0
Haumoana	120	35.0	35.0	23.3	4.2	0.8
Lyall Bay	100	36.0	21.0	40.0	2.0	1.0
Riversdale	14	14.3	57.1	21.4	7.1	0
Seatoun	128	52.3	29.7	16.4	0.8	0
Te Awanga	99	26.3	49.5	20.2	3.0	0
Wainui	86	38.4	40.7	17.4	2.3	1.2
Westshore	146	15.1	46.6	32.9	4.1	1.4
TOTAL	**874**	**32.4**	**38.8**	**24.8**	**2.8**	**0.6**

Table 63 **Q40.** Size of the households (including the respondent):

Community	n	1 people (%)	2 people (%)	3 people (%)	4 people (%)	5 people (%)	More than 5 people (%)
Akitio	4	0	75.0	25.0	0	0	0
Castlepoint	11	27.3	45.5	18.2	0	9.1	0
Eastbourne	166	23.5	42.2	9.0	13.3	5.4	3.0
Haumoana	120	20.8	38.3	14.2	13.3	3.3	5.0
Lyall Bay	100	11.0	12.0	19.0	20.0	8.0	2.0
Riversdale	14	21.4	57.1	7.1	7.1	0	7.1
Seatoun	128	9.4	29.7	9.4	14.8	18.8	10.2
Te Awanga	99	13.1	47.5	15.2	11.1	3.0	0
Wainui	86	12.8	37.2	16.3	15.1	10.5	1.2
Westshore	146	18.5	48.6	7.5	6.2	4.1	1.4
TOTAL	**874**	**16.5**	**38.0**	**12.2**	**12.7**	**7.3**	**3.4**

Table 64 **Q41.1.** Number of people over 65 years of age per household:

Community	n	0 people (%)	1 people (%)	2 people (%)	3 people (%)
Akitio	4	0	0	50.0	0
Castlepoint	11	0	36.4	36.4	0
Eastbourne	166	0	19.3	22.3	0
Haumoana	120	20.0	12.5	14.2	0
Lyall Bay	100	44.0	17.0	5.0	0
Riversdale	14	0	21.4	28.6	7.1
Seatoun	128	39.8	14.8	14.1	0
Te Awanga	99	16.2	20.2	15.2	0
Wainui	86	27.9	18.6	16.3	0
Westshore	146	16.4	26.7	21.2	0
TOTAL	**874**	**20.9**	**18.9**	**16.8**	**0.1**

Table 65 **Q41.2.** Number of disabled people per household:

Community	n	0 people (%)	1 people (%)	2 people (%)
Akitio	4	0	0	0
Castlepoint	11	0	0	0
Eastbourne	166	0	1.8	1.2
Haumoana	120	26.7	5.0	0.8
Lyall Bay	100	57.0	6.0	2.0
Riversdale	14	0	0	0
Seatoun	128	50.8	4.7	0
Te Awanga	99	26.3	1.0	0
Wainui	86	36.1	2.3	0
Westshore	146	33.6	2.7	0
TOTAL	**874**	**29.8**	**3.2**	**0.6**

Table 66 **Q41.3.** Number of children under 10 years of age per household:

Community	n	0 child (%)	1 child (%)	2 children (%)	3 children (%)	More than 3 children (%)
Akitio	4	0	0	0	0	0
Castlepoint	11	0	9.1	0	0	0
Eastbourne	166	0	10.2	6.6	1.2	0
Haumoana	120	20.0	9.2	6.7	0.8	2.5
Lyall Bay	100	49.0	10.0	14.0	2.0	0
Riversdale	14	0	0	0	7.1	0
Seatoun	128	38.3	10.9	7.0	7.0	1.6
Te Awanga	99	24.2	6.1	5.1	1.0	0
Wainui	86	26.7	11.6	7.0	2.3	0
Westshore	146	32.9	4.1	2.1	1.4	0.7
TOTAL	**874**	**24.8**	**8.6**	**6.4**	**2.3**	**0.7**

Table 67 **Q.43.** What is the highest level of education the respondent has completed?

Community	n	School (%)	Trade qualification (%)	Undergraduate (e.g. bachelor) (%)	Postgraduate (e.g. masters, PhD) (%)	Decline to answer (%)
Akitio	4	50.0	25.0	25.0	0	0
Castlepoint	11	18.2	36.4	9.1	27.3	9.1
Eastbourne	166	18.7	12.7	34.9	22.3	9.6
Haumoana	120	25.0	27.5	21.7	13.3	8.3
Lyall Bay	100	27.0	14.0	29.0	21.0	7.0
Riversdale	14	57.1	21.4	14.3	7.1	0
Seatoun	128	11.7	7.8	40.6	32.8	6.3
Te Awanga	99	21.2	30.3	28.3	11.1	6.1
Wainui	86	22.1	17.4	39.5	14.0	3.5
Westshore	146	29.5	28.1	27.4	6.9	6.2
TOTAL	**874**	**22.7**	**19.7**	**31.0**	**17.5**	**6.9**

Table 68 **Q44.** What is the respondent's household's income category?

Community	n	Under $20,000 (%)	$20,001 - $30,000 (%)	$30,001 - $50,000 (%)	$50,001 - $70,000 (%)	$70,001 - $90,000 (%)	$90,001 - $100,000 (%)	$100,001 - $150,000 (%)	Over $150,001 (%)	Decline to answer (%)
Akitio	4	25.0	0	0	0	25.0	0	0	0	25.0
Castlepoint	11	18.2	9.1	27.3	18.2	0	0	0	9.1	18.2
Eastbourne	166	3.0	7.8	7.8	12.1	9.0	4.2	12.1	19.3	21.1
Haumoana	120	5.0	9.2	15.8	8.3	13.3	3.3	15.0	6.7	20.0
Lyall Bay	100	12.0	10.0	8.0	6.0	11.0	6.0	17.0	10.0	17.0
Riversdale	14	0	21.4	0	0	7.1	14.3	7.1	14.3	35.7
Seatoun	128	0.8	5.5	9.4	6.3	3.9	2.3	14.8	32.0	22.7
Te Awanga	99	2.0	11.1	15.2	10.1	7.1	11.1	12.1	8.1	21.2
Wainui	86	1.2	7.0	9.3	12.8	16.3	8.1	12.8	14.0	16.3
Westshore	146	4.1	13.0	11.0	14.4	9.6	6.2	10.3	8.2	21.9
TOTAL	**874**	**4.1**	**9.3**	**10.8**	**10.1**	**9.6**	**5.6**	**12.9**	**14.4**	**20.6**

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APPENDICES

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A1.0 APPENDIX 1 – SURVEY QUESTIONNAIRE

Natural Hazards Awareness & Preparedness survey

North Island East Coast

QUESTIONNAIRE

Section I – Knowledge on natural hazards and previous experience:

1. What **two** possible natural hazards cause a concern for your safety or create a risk to your livelihood in this community?

☐ 1	Flooding (river or sea)	
☐ 2	Storm or cyclone with high winds	
☐ 3	Forest or bush fire	
☐ 4	Earthquake	(Tick only **two**)
☐ 5	Ashfall from a volcanic eruption	
☐ 6	Tsunami	
☐ 7	Coastal erosion	
☐ 8	Landslide	

2. According to you, what are the most likely causes of a tsunami along the North Island East Coast? **Please rank the following in the order in which you think they are most likely to cause a tsunami by writing a number from 1 (most likely) to 5 (least likely) for each option.**

		Example
Marine and/or coastal landslide	____	5
Volcanic eruption	____	2
Local earthquake	____	4
Meteor impact	____	1
Distant source earthquake	____	3

3. What qualities of an earthquake do you believe could cause a tsunami severe enough to evacuate?

☐ 1	Last longer than a minute	
☐ 2	Might not feel at all	(Tick **all** that apply)
☐ 3	Strong enough to collapse buildings	
☐ 4	Too strong to stand during	
☐ 5	Other (please describe): _____	

4. Have you ever (a) **personally experienced** any of the following natural hazard events in the past, (b) **if you have**, did you experience loss or damage as a result and (c), what was the **location** and **date** of the **worst/most damaging** of these events you experienced? (please specify the location: country, city and year)

	a) I've had personal experience of	**b) I experienced loss/damage due to**	**c) Place and year**
Severe earthquake	☐ 1	☐ 1	_____
Tsunami	☐ 2	☐ 2	_____
I have not experienced any of the above	☐		

Section II – Risk perception at your current location:

5. 5.1. **Is your house** in a tsunami evacuation/hazard zone?

☐ 1 Yes
☐ 2 No (Tick only **one**)
☐ 3 Don't know

5.2. How did you find out you were, or were not, in a tsunami evacuation/hazard zone?

_____

5.3. When did you first find it out?

(Please state): _____(day/month/year – **approximate** is fine)

6. For each statement, tick the box (**one** per line) which best describes your response:

	Never	Once per year or less	At least once per month	At least once per week	Everyday
I think about tsunami	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
I talk about tsunami	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
I get information on tsunami	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

7. To what extent do you agree that? Please use the scale below to show how much each statement matches your views**:** (Tick **one** per line)

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
Tsunami are too destructive to bother preparing for	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
A serious tsunami is unlikely to occur during the rest of my lifetime	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
It is unnecessary to prepare for tsunami as assistance will be provided by local/regional councils or Civil Defence	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
My property will never be damaged by a tsunami	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Preparing for tsunami will improve my everyday living conditions	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Preparing for tsunami will help save lives	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
I do not know how I can prepare for tsunami	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

8. Have you **heard or received** any information about preparing for tsunami hazards from any of the following?

☐ 1 Friends
☐ 2 Neighbours
☐ 3 Relatives
☐ 4 Central Government agencies
☐ 5 Regional council (Tick **all** that apply)
☐ 6 Local Council
☐ 7 Local Civil Defence group
☐ 8 Business establishments
☐ 9 Research organisations (e.g. NIWA, GNS, universities)
☐ 10 My workplace
☐ 11 My child's school
☐ 12 Other (please specify): _____

OR:

☐ 13 I haven't heard or received any information

9. How do you expect to be warned that a tsunami is coming **within the next 12 hours**?

☐ 1 By feeling an earthquake
☐ 2 Warning sirens
☐ 3 Loud speaker announcements
☐ 4 Flashing lights
☐ 5 Radio and TV announcements (Tick **all** that apply)
☐ 6 Via text message
☐ 7 Via smartphone application
☐ 8 Door-to-door visit by emergency services or civil defence staff
☐ 9 Word of mouth
☐ 10 Don't know
☐ 11 Other (please specify): _____

OR:

☐ 12 I do not expect to receive any kind of warning

10. How do you expect to be warned that a tsunami is arriving **within an hour**?

☐ 1 By feeling an earthquake
☐ 2 Warning sirens
☐ 3 Loud speaker announcements
☐ 4 Flashing lights
☐ 5 Radio and TV announcements (Tick **all** that apply)
☐ 6 Via text message
☐ 7 Via smartphone application
☐ 8 Door-to-door visit by emergency services or civil defence staff
☐ 9 Word of mouth
☐ 10 Don't know
☐ 11 Other (please specify): _____

OR:

☐ 12 I do not expect to receive any kind of warning

11. Have you seen any tsunami hazard zone maps for this community?

☐ 1 Yes
☐ 2 No (Tick only **one**)
☐ 3 Don't know

12. **If yes, where** did you find them?

☐ 1 Online
☐ 2 Flyer or booklet (Tick **all** that apply)
☐ 3 Billboard
☐ 4 Other (please specify): _____

13. Are there official tsunami evacuation routes for this community?

☐ 1 Yes
☐ 2 No (Tick only **one**)
☐ 3 Don't know

14. **If not**, do you think that an official evacuation route should be established?

☐ 1 Yes (Tick only **one**)
☐ 2 No

15. Please rank the following in the order in which you think responsibility for earthquake and tsunami preparedness in this community should lie, **by writing a number from 1 (most) to 4 (least responsible) in the space provided for each option.**

		Example
My responsibility	_____	3
Local Council responsibility	_____	2
Regional Council responsibility	_____	1
Emergency services responsibility	_____	4

16. What is the **likelihood** of a tsunami occurring that would cause major damage to this community?

	Extremely unlikely		Unlikely		Medium likelihood			Likely			Extremely likely
	0	1	2	3	4	5	6	7	8	9	10
Within the next year	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	☐ 10	☐ 11
Between 1 and 10 years from now	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	☐ 10	☐ 11
Within the rest of my lifetime	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	☐ 10	☐ 11

17. What place or places do you think a tsunami that threatens this location would originate from? (Please write here any specific locations – countries or regions - you may think of)

_____

_____

_____

18. If you feel a strong earthquake while at the beach, how much time will you have to move to safety from any approaching tsunami it may cause?

☐ 1 A few minutes
☐ 2 10 minutes to half an hour
☐ 3 Half an hour to one hour (Tick only **one**)
☐ 4 1 – 3 hours
☐ 5 More than 3 hours
☐ 6 Don't know

Section III – Your community involvement:

19. Thinking of the house in this community where this questionnaire was delivered to, which option best applies? (Tick only **one**)

☐ 1 I/we own and live in this house
☐ 2 I/we rent and live in this house
☐ 3 I/we own a house somewhere else, and are visiting [city name]
☐ 4 I/we rent a house somewhere else and are visiting [city name]
☐ 5 Other (please specify): _____

The following questions are specifically addressed to **residents**. Please answer questions 20 and 21 if you **live** in this community. If you are **visiting**, go to question 22.

20. How long have you lived in this community? _____(years)

21. How long have you lived in your current home? _____(years)

If you are **visiting**, please answer to questions 22, 23, and 24.

22. How long are you staying in this community?_____(weeks)

23. Where is your usual place of residence? (Please give details)

_____

24. How often do you visit this community?

☐ 1 First time
☐ 2 Weekly
☐ 3 Monthly (Tick only **one**)
☐ 4 A few times per year
☐ 5 Annually or less

Section IV– Hazard preparedness:

25. Do you think that you and your household are prepared enough to deal with a tsunami?

☐ 1 Yes (Tick only **one**)
☐ 2 No
☐ 3 I/we do not need to get prepared for that specific hazard

26. Do you **have** a **'getaway kit' or items** ready to evacuate your home quickly?

☐ 1 Yes (Tick only **one**)
☐ 2 No

27. What is in that kit / what are those items?

☐ 1 First aid kit/supply of any medicines needed
☐ 2 Food
☐ 3 Water
☐ 4 Torch
☐ 5 Portable radio (Tick **all** that apply)
☐ 6 Spare batteries
☐ 7 Change of clothes (wind/waterproof clothing)
☐ 8 Comfortable outdoor shoes
☐ 9 Important documents (or copies)
☐ 10 A household plan
☐ 11 Other (please specify): _____

28. Do you have a specific evacuation destination in mind if you had to evacuate after a tsunami warning?

☐ 1 Yes (Tick only **one**)
☐ 2 No

29. How long do you expect to be evacuated for after a tsunami hits the coast?

☐ 1 A few hours
☐ 2 Half a day
☐ 3 A day (Tick only **one**)
☐ 4 Between one day and three days
☐ 5 More than three days

Section V – Hazard scenarios:

In this section, three different scenarios will be presented successively. Please answer the following questions for the three scenarios assuming you are at the house this questionnaire was delivered to.

30. ***SCENARIO NUMBER ONE - Imagine a severe earthquake occurs (lasting longer than a minute or during which it is hard to stand) at 3pm on a weekday.***

30.1. What would you do? (Please give details)

_____

_____

_____

30.2. Would you evacuate?

☐ 1 Yes (Tick only **one**)
☐ 2 No

30.3. **If not**, what are your reasons for not evacuating? (Please give details)

_____

_____

_____

If you decided to evacuate… *(Please answer the following questions **even if** you do not think evacuation is needed)*

30.4. What would you do before evacuating? (Tick **all** that apply)

☐ 1 Nothing (evacuate immediately)
☐ 2 Gather family
☐ 3 Get life essentials (Food, water…) or grab your getaway kit
☐ 4 Collect valuables (jewelery, money, etc.)
☐ 5 Call family or friends
☐ 6 Assist others in evacuation (e.g. friends or neighbours)
☐ 7 Seek further information (from radio, TV, internet, other people etc.)
☐ 8 Other (please specify): _____

30.5. About how long would all of this take?

☐ 1 One minute or less
☐ 2 1-10 minutes
☐ 3 10-30 minutes (Tick only **one**)
☐ 4 30 min – 1 hour
☐ 5 1 – 3 hours
☐ 6 Longer than 3 hours

30.6. Where would you evacuate to? (Please be very specific – Print and include a Google map with travel itinerary if needed).

_____

_____

_____

30.7. How would you travel to your intended destination?

☐ 1 Car
☐ 2 Foot
☐ 3 Public transport (Tick **all** that apply)
☐ 4 Flight
☐ 5 Bicycle or similar (skateboard, etc.)
☐ 6 Other (please specify): _____

31. ***SCENARIOS NUMBER TWO AND THREE: Now imagine you hear an official warning at 3pm on a weekday of a tsunami arriving in the following timeframe…***

	*Tsunami arriving in **9 hours (a)***	*Tsunami arriving in **1 hour (b)***
31.1. What would you do?	_____ _____ _____ _____ _____ (Please give details)	_____ _____ _____ _____ _____ (Please give details)
31.2. Would you evacuate?	☐ 1 *Yes* ☐ 2 *No*	☐ 1 *Yes* ☐ 2 *No*
31.3. **If not**, what are your reasons for not evacuating?	_____ _____ _____ _____ _____ (Please give details)	_____ _____ _____ _____ _____ (Please give details)

If you decided to evacuate… *(Please answer the following questions **even if** you do not think evacuation is needed)*

	*Tsunami arriving in **9 hours (a)***	*Tsunami arriving in **1 hour (b)***
31.4. What would you do before evacuating?	☐ 1 Nothing (evacuate immediately) ☐ 2 Gather family ☐ 3 Get life essentials (Food, water…) or grab your getaway kit ☐ 4 Collect valuables (jewelery, money, etc.) ☐ 5 Call family or friends ☐ 6 Assist others in evacuation (e.g. friends or neighbours) ☐ 7 Seek further information (from radio, TV, internet, other people etc.) ☐ 8 Other (please specify): _____ _____ (Tick **all** that apply)	☐ 1 Nothing (evacuate immediately) ☐ 2 Gather family ☐ 3 Get life essentials (Food, water…) or grab your getaway kit ☐ 4 Collect valuables (jewelery, money, etc.) ☐ 5 Call family or friends ☐ 6 Assist others in evacuation (e.g. friends or neighbours) ☐ 7 Seek further information (from radio, TV, internet, other people etc.) ☐ 8 Other (please specify): _____ _____ (Tick **all** that apply)
31.5. About how long would all of this take?	☐ 1 One minute or less ☐ 2 1-10 minutes ☐ 3 10-30 minutes ☐ 4 30 min – 1 hour ☐ 5 1 – 3 hours ☐ 6 Longer than 3 hours (Tick only **one**)	☐ 1 One minute or less ☐ 2 1-10 minutes ☐ 3 10-30 minutes ☐ 4 30 min – 1 hour ☐ 5 1 – 3 hours ☐ 6 Longer than 3 hours (Tick only **one**)
31.6. Where would you evacuate to?	_____ _____ _____ _____ _____ (Please be very specific – Print and include a Google map with travel itinerary if needed)	_____ _____ _____ _____ _____ (Please be very specific – Print and include a Google map with travel itinerary if needed)
31.7. How would you travel to your intended destination?	☐ 1 Car ☐ 2 Foot ☐ 3 Public transportation ☐ 4 Flight ☐ 5 Bicycle or similar (e.g. skateboard) ☐ 6 Other (please specify): _____ (Tick **all** that apply)	☐ 1 Car ☐ 2 Foot ☐ 3 Public transportation ☐ 4 Flight ☐ 5 Bicycle or similar (e.g. skateboard) ☐ 6 Other (please specify): _____ (Tick **all** that apply)

32. What would you wait for before coming back into the tsunami hazard zone? (please give details)

_____

_____

33. Would you consider vertical evacuation if there was no time to travel to a safe elevated area? (e.g. evacuating into a tall building) (Tick **only** one)

☐ 1 Yes, without hesitation (go to question 35)
☐ 2 Yes but with some conditions (go to question 34)
☐ 3 No, I would not consider vertical evacuation at all (go to question 35)

34. What conditions would you require to consider vertical evacuation? (Tick **only** one)

☐ 1 Only if the building looks safe and resistant to earthquakes and tsunami
☐ 2 Only if I knew the building has been specifically designed for that purpose
☐ 3 Only if authorities ask me to do so
☐ 4 Other (please specify): _____

Section VI - Demographics:

35. What is your gender?

☐ 1 Male
☐ 2 Female (Tick only **one**)
☐ 3 Decline to answer

36. What is your ethnic group?

☐ 1 New Zealander/European
☐ 2 Maori
☐ 3 Pacific island
☐ 4 Middle Eastern
☐ 5 Latin American (Tick only **one**)
☐ 6 Asian
☐ 7 African
☐ 8 Other (please specify): _____
☐ 9 Decline to answer

37. In what year were you born? _____ **Or:** ☐ decline to answer

38. What is your home address? (or nearest intersection)
_____

39. Which best describes the situation you are living in now?

☐ 1 Family with children
☐ 2 Family without children
☐ 3 Alone (Tick only **one**)
☐ 4 With non-family
☐ 5 Other (please specify): _____

40. How many people are living with you? _____

41. How many people in your household are:

			Example
41.1.	Over 65 years old	_____	*1*
41.2.	Disabled	_____	*0*
41.3.	Under 10 years old	_____	*2*

42. What is your profession?

_____

43. What is the highest level of education you have completed?

☐ *1* School
☐ **2** Trade qualification
☐ 3 Undergraduate (e.g. Bachelor) (Tick only **one**)
☐ 4 Postgraduate (e.g. masters, PhD)
☐ 5 Decline to answer

44. What is your household income category?

☐ 1 Under $20,000
☐ 2 $20,001 - $30,000
☐ 3 $30,001 - $50,000
☐ 4 $50,001 – $70,000
☐ 5 $70,001 - $90,000 (Tick only **one**)
☐ 6 $90,001 - $100,000
☐ 7 $100,001 - $150,000
☐ 8 Over $150,001
☐ 9 Decline to answer

45. **Please write any additional comments that might be helpful for the study:**

_____

_____

_____

_____

Thank you for taking the time to complete this questionnaire.

The information will help us make your community more prepared for natural hazards.

Please return this in the enclosed freepost envelope within the next two weeks.