

# APPENDIX 1 MetService Severe Weather Warning Criteria

(From: [http://www.metservice.co.nz/forecasts/email\\_lists\\_definitions.asp](http://www.metservice.co.nz/forecasts/email_lists_definitions.asp))

To help you decide which weather warnings are suitable for your purposes, please read the definitions below, and then consult Table A1.1 at the bottom of the page.

## Severe Weather Warning

MetService will issue a **Severe Weather Warning** whenever there is an expectation that any of the following weather conditions will occur within the next 24 hours:

- Widespread\* rainfall greater than 50 mm within 6 hours or 100 mm within 24 hours;
- Widespread\* snowfall below 1000 metres on the North Island or 500 metres on the South Island with a snow depth of 10 centimetres within 6 hours or 25 centimetres within 24 hours;
- Widespread\* severe gales with a minimum mean speed of 90 km/hr or frequent gusts exceeding 110 km/hr.

\*"Widespread" means over an area of 1000 square kilometres or more.

---

## Severe Weather Watch

MetService will issue a **Severe Weather Watch** whenever there is an expectation that conditions may deteriorate to the thresholds specified for the issue of a Severe Weather Warning:

- After the next 24 hours but within 48-72 hours, or
- If there is a high level of uncertainty within the next 24 hours.

---

## Special Weather Advisory

MetService will issue a **Special Weather Advisory** whenever a weather event is likely to cause significant disruption to the general public or specific industry groups within the next 48 hours, **but** the weather is not expected to deteriorate to an extent that would require the issue of a Severe Weather Warning.

MetService may also issue a Special Weather Advisory following a severe storm that caused widespread disruption and damage in order to assist with any post-storm operations.

## Road Snowfall Warning

MetService will issue a **Road Snowfall Warning** for the Desert Road, the Porter's Pass Road, the Lindis Pass Road, the Rimutaka Hill Road or the Milford Road whenever there is a likelihood of snow settling on one or more of those roads within the next 24 hours.

## Snow Otago Warning

MetService will issue a **Snowfall Warning for South Canterbury and Otago** whenever snow is expected to accumulate to a depth of 20 cm or more within the next 24 hours at or below an altitude of 1500 metres **and** conditions are not severe enough to warrant the issue of a Severe Weather Warning.

Snow Otago Warnings are primarily for the high country farming communities of South Canterbury and Otago.

**Table A1.1 Weather warning criteria chart**

Weather Event		Within the next 24 hours	Within the next 24 hours, but with a low level of certainty	Between 24 hours and 48-72 hours from now
1	Rain (over an area of 1000 square kilometres or more): <ul style="list-style-type: none"> <li>• 50 mm or more in a 6-hour period</li> <li>• 100 mm or more in a 24-hour period</li> </ul>	Severe Weather Warning	Severe Weather Watch	Severe Weather Watch
2	Wind — severe gales (over an area of 1000 square kilometres or more) with: <ul style="list-style-type: none"> <li>• Minimum mean speed of 90 km/h, or</li> <li>• Frequent gusts exceeding 110 km/h</li> </ul>	Severe Weather Warning	Severe Weather Watch	Severe Weather Watch
3	Snow — North Island, below altitude of 1000 metres (over an area of 1000 square kilometres or more): <ul style="list-style-type: none"> <li>• 10 cm or more in a 6-hour period</li> <li>• 25 cm or more in a 24-hour period</li> </ul>	Severe Weather Warning	Severe Weather Watch	Severe Weather Watch
4	Snow — South Island, below altitude of 500 metres (over an area of 1000 square kilometres or more): <ul style="list-style-type: none"> <li>• 10 cm or more in a 6-hour period</li> <li>• 25 cm or more in a 24-hour period</li> </ul>	Severe Weather Warning	Severe Weather Watch	Severe Weather Watch
5	Snow — South Canterbury and/or Otago, below altitude of 1500 metres (over an area of 1000 square kilometres or more): <ul style="list-style-type: none"> <li>• 20 cm or more in a 24-hour period</li> <li>• And not as heavy or to as low an altitude as in 4</li> </ul>	Snow Otago Warning		
6	Snow — settling on the Desert Road and/or the Porter's Pass Road and/or the Rimutaka Hill Road and/or Milford Road and/or the Lindis Pass Road	Road Snowfall Warning		
7	Weather likely to cause significant disruption to the general public or specific industry groups but not expected to deteriorate to the extent of 1, 2, 3, or 4 (for example, following a severe storm that caused widespread disruption and damage)	Special Weather Advisory		

## APPENDIX 2 Demographic data

Table A2.1 Respondent demographics (over 18 years old)

(%)	All	2001 Cens.	Sou. Waik.	2001 Cens.	Coro. Low	2001 Cens.	Coro. Bach	Coro. High	2001 Cens.
<b>Gender</b>									
Male	49.6	49.1	47.6	49.0	55.8	49.1	52.2	48.3	49.5
Female	50.4	50.9	52.4	51.0	44.2	50.9	47.8	51.7	50.5
<b>Age</b>									
Under 20	-	6.5	-	9.3	-	6.1	-	-	4.5
20-30	2.6	9.5	4.8	13.2	4.7	9.0	1.5	1.5	7.4
31-40	8.1	15.5	14.4	17.9	16.3	15.3	4.4	4.5	12.7
41-50	18.8	17.6	21.2	17.9	18.6	17.6	20.6	17.0	17.2
51-60	24.0	17.0	19.2	12.8	27.9	17.7	38.2	19.5	18.6
Over 60	46.6	33.9	40.4	28.9	32.6	34.2	35.3	57.5	39.4
<b>Household ownership</b>									
Own or buying, to live in	77.1	*	86.3	*	95.2	*	29.2	84.2	*
Own or buying, but only for use as a holiday home	12.9	*	-	*	-		64.6	4.9	*
Rent, to live in it	9.3	*	13.7	*	4.8	*	1.5	10.8	*
Rent, but only for use as a holiday home	0.7	*	-	*	-	*	4.6	-	*
<b>Household composition</b>									
Family with children	30.5	32.2	35.6	40.7	35.7	30.9	41.2	23.3	29.8
Family without children	44.2	35.4	42.3	28.0	50.0	36.8	41.2	44.6	35.1
Alone	22.2	28.8	19.2	27.1	11.9	28.9	11.8	29.7	30.4
With other people, not family	2.6	2.0	1.9	2.3	2.4	1.9	4.4	2.5	2.8
Other	0.5	1.6	1.0	1.9	-	1.5	1.5	-	1.9
<b>Ethnicity</b>									
Maori	8.0	15.0	15.0	26.1	2.1	13.0	1.4	8.3	13.4
Pacific Islander	0.2	1.1	-	1.7	2.1	1.0	-	-	0.9
European	85.2	79.0	78.5	67.7	87.3	80.9	86.1	87.4	81.6
(Pakeha/European)	(75.9)	-	(70.1)	-	(83.0)	-	(79.2)	(76.7)	-
(New-Zealander/kiwi)	(9.3)	-	(8.4)	-	(4.3)	-	(6.9)	(10.7)	-
Asian	-	0.8	-	1.1	-	0.7	-	-	0.9
Other/unknown	2.5	4.2	5.6	3.4	-	4.5	2.8	1.5	3.2
<b>Highest educational qualification</b>									
No school qualifications	18.0	38.0	19.6	44.9	12.2	30.3	12.1	21.2	30.6
School qualifications	30.8	30.6	39.2	29.0	26.8	31.4	21.2	31.0	26.6
Trade certificate, professional certificate or diploma	34.6	15.9	33.3	13.5	39.0	16.2	34.8	32.6	17.6
University undergraduate degree	12.3	3.2	7.8	1.8	22.0	3.4	19.7	10.3	3.7
University postgraduate degree (Other)	4.3	1.2	-	0.7	-	1.2	12.1	4.9	2.6
	-	(17.7)	-	(18.1)	-	(17.5)	-	-	(19.0)
<b>Income</b>									
Below \$5 000	2.4	0.7	4.2	2.2	-	0.2	-	2.8	2.2
\$5 000 to 15 000	17.6	19.7	18.9	17.6	5.1	19.8	3.4	24.6	21.6
\$15 001 to 20 000	14.7	14.1	16.8	11.6	15.4	14.3	3.4	17.3	16.8
\$20 001 to 30 000	16.0	21.1	8.4	17.8	12.8	21.7	13.8	21.2	21.3
\$30 001 to 40 000	8.5	12.1	9.5	13.5	7.7	12.0	6.9	8.9	10.1
\$40 001 to 50 000	10.1	9.7	8.4	10.2	17.9	9.7	19.0	5.6	8.6
Over \$50 000	30.6	22.7	33.7	27.1	41.1	22.2	53.5	19.5	19.4
(\$50 001 to 60 000)	(8.5)	-	(13.7)	-	(10.3)	-	(5.2)	(6.1)	-
(Over \$60 000)	(22.1)	-	(20.0)	-	(30.8)	-	(48.3)	(13.4)	-
<b>Employment Status</b>									
Employed full-time	32.0	39.0	37.3	41.3	39.0	39.3	44.1	22.8	32.1
Employed part-time	17.6	14.4	18.6	13.8	26.8	14.7	23.5	12.7	11.7
Not in paid employment	50.4	46.6	44.1	44.9	34.1	45.9	32.4	64.5	56.3

\*Census household ownership data is only easily accessible for New Zealand as a whole and is as follows for 2001: "Dwelling Owned or Partly Owned by the Usual Resident(s)" 64.7%, "Dwelling is Not Owned or Partly Owned by the Usual Resident(s)" 30.7%, "Response Unidentifiable" 1.0% and "Not Stated" 3.6%.

**Table A2.2 Length lived in community and home**

<b>(years)</b>	resp.	%	min	max	sum	mean	s.d.
Community (All n=439)	413	94.1	0.1	85.0	<b>8179.4</b>	<b>19.8</b>	17.8
Home (All n=439)	409	93.2	0.1	85.0	<b>5389.8</b>	<b>13.2</b>	12.8
Community (South Waikato n=107)	105	98.1	1.0	80.0	<b>2622.2</b>	<b>25.0</b>	19.7
Home (South Waikato n=107)	104	97.2	0.3	47.0	<b>1402.2</b>	<b>13.5</b>	12.0
Community (Coromandel Low n=47)	42	89.4	1.0	54.0	<b>797.2</b>	<b>19.0</b>	14.8
Home (Coromandel Low n=47)	42	89.4	0.2	40.0	<b>440.6</b>	<b>10.5</b>	10.5
Community (Coromandel Bach n=72)	57	79.2	1.0	70.0	<b>1110.0</b>	<b>19.5</b>	14.9
Home (Coromandel Bach n=72)	56	77.8	0.9	42.0	<b>851.4</b>	<b>15.2</b>	12.0
Community (Coromandel High n=206)	202	98.1	0.1	85.0	<b>3557.0</b>	<b>17.6</b>	17.9
Home (Coromandel High n=206)	200	97.1	0.1	85.0	<b>2617.6</b>	<b>13.1</b>	13.9

## APPENDIX 3

### Residential Economic Impacts

**Table A3.1 Home, contents or any other household possessions suffered from flood damage**

	All n=439	S_Waik n=107	Cor_L n=47	Cor_B n=72	Cor_H n=206
Damaged	<b>48.3</b>	<b>44.9</b>	<b>29.8</b>	<b>4.2</b>	<b>70.9</b>
Not damaged	<b>51.7</b>	<b>55.1</b>	<b>70.2</b>	<b>95.8</b>	<b>29.1</b>

**Table A3.2 Parts of property flooded (of those with property damaged)**

% (of those damaged)	All n=212	S_Waik n=48	Cor_L n=14	Cor_B n=3	Cor_H n=146
Section	<b>87.3</b>	<b>72.9</b>	<b>85.7</b>	<b>100.0</b>	<b>92.5</b>
Out-buildings	<b>53.3</b>	<b>54.2</b>	<b>28.6</b>	<b>100.0</b>	<b>54.8</b>
Garage	<b>71.2</b>	<b>64.6</b>	<b>50.0</b>	<b>100.0</b>	<b>74.7</b>
House	<b>35.8</b>	<b>20.8</b>	<b>35.7</b>	<b>66.7</b>	<b>40.4</b>
Car	<b>30.2</b>	<b>29.2</b>	<b>7.1</b>	<b>0.0</b>	<b>33.6</b>
Caravan	<b>4.2</b>	<b>2.1</b>	<b>0.0</b>	<b>33.3</b>	<b>4.8</b>
Boat	<b>3.8</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>5.5</b>
Other	<b>21.6</b>	<b>29.2</b>	<b>4.2</b>	<b>2.8</b>	<b>15.5</b>

**Table A3.3 Percent of houses with each type of room flooded, and mean number of flooded rooms of each type in the house (of those with property damaged)**

All damaged n=212	% houses with this room flooded	mean # these rooms flooded	s.d. # These rooms flooded
Living Rooms	22.6	<b>1.1</b>	0.4
Bedrooms	21.7	<b>2.1</b>	0.8
Kitchens	18.4	<b>1.0</b>	-
Bathrooms	22.2	<b>1.1</b>	0.3
Basements/cellars	19.3	<b>1.8</b>	1.0
Hallways/landings	19.8	<b>1.0</b>	0.2
Garages	55.1	<b>1.3</b>	0.7
Other	2.4	<b>1.0</b>	-

**Table A3.4 Maximum depth of flooding (per room) in rooms of each type in the house (of those with property damaged)**

All damaged n=212	mean (cm)	s.d. (cm)
Living Rooms	<b>59.5</b>	<b>125.2</b>
Bedrooms	<b>68.4</b>	<b>166.4</b>
Kitchens	<b>53.0</b>	<b>90.5</b>
Bathrooms	<b>88.7</b>	<b>187.0</b>
Basements/cellars	<b>140.4</b>	<b>241.3</b>
Hallways/landings	<b>81.0</b>	<b>190.0</b>
Garages	<b>80.7</b>	<b>136.7</b>

Each of these ranges from 1cm up to at least 7 m deep – this is likely an error due to a few respondents filling in their depths in mm.

**Table A3.5 Household insured against flooding damage (of those with property damaged)**

% (of those damaged)	All n=212	S_Waik n=48	Cor_L n=14	Cor_B n=3	Cor_H n=146
Building structure	<b>78.8</b>	<b>64.6</b>	<b>57.1</b>	<b>100.0</b>	<b>85.6</b>
Contents	<b>75.9</b>	<b>70.8</b>	<b>57.1</b>	<b>100.0</b>	<b>79.5</b>
Car	<b>61.3</b>	<b>58.3</b>	<b>42.9</b>	-	<b>65.8</b>
Boat	<b>13.2</b>	<b>12.5</b>	-	-	<b>15.1</b>
Caravan	<b>4.2</b>	<b>6.3</b>	-	-	<b>4.1</b>
Tools of trade	<b>21.7</b>	<b>22.9</b>	<b>14.3</b>	<b>33.3</b>	<b>21.9</b>
Landlord's responsibility	<b>7.5</b>	<b>8.3</b>	<b>14.3</b>	<b>33.3</b>	<b>6.2</b>
Don't know	<b>4.2</b>	<b>12.5</b>	-	-	<b>2.1</b>

**Table A3.6 Total amount paid out (if any) by insurance company(s)**

(a) All n=439	resp.	min (\$)	max (\$)	sum (\$)	mean (\$)	s.d. (\$)
Building/structure damage	43	60	85,000	<b>775,648</b>	<b>18,038</b>	24,028
Contents damage	86	150	60,000	<b>859,730</b>	<b>9,997</b>	13,439
Building and contents damage	27	40	125	<b>585,265</b>	<b>21,676</b>	28,400
Removal of silt or debris	43	80	25,000	<b>136,777</b>	<b>3,181</b>	5,473
Vehicle/boats/caravans/trailer damage	54	150	500,000	<b>876,645</b>	<b>16,234</b>	67,444
Other	21	1	18,000	<b>66,073</b>	<b>3,146</b>	5,287
				<b>TOTAL:</b>	<b>\$3,300,138</b>	

(b) South Waikato n=107	resp.	min (\$)	max (\$)	sum (\$)	mean (\$)	s.d. (\$)
Building/structure damage	5	500	40,000	<b>68,500</b>	<b>13,700</b>	15,778
Contents damage	16	150	60,000	<b>153,555</b>	<b>9,597</b>	16,077
Building and contents damage	3	2,500	50,000	<b>58,500</b>	<b>19,500</b>	26,472
Removal of silt or debris	5	80	20,797	<b>21,377</b>	<b>4,275</b>	9,236
Vehicle/boats/caravans/trailer damage	10	1,000	12,000	<b>59,245</b>	<b>5,925</b>	4,011
Other	6	1	18,000	<b>34,101</b>	<b>5,684</b>	7,361
				<b>TOTAL:</b>	<b>\$394,878</b>	

(c) Coromandel Low n=47	resp.	min (\$)	max (\$)	sum (\$)	mean (\$)	s.d. (\$)
Building/structure damage	3	200	12,000	<b>14,200</b>	<b>4,733</b>	6,357
Contents damage	4	500	4,000	<b>8,000</b>	<b>2,000</b>	1,581
Building and contents damage	1	5,000	5,000	<b>5,000</b>	<b>5,000</b>	-
Removal of silt or debris	-	-	-	-	-	-
Vehicle/boats/caravans/trailer damage	-	-	-	-	-	-
Other	-	-	-	-	-	-
				<b>TOTAL:</b>	<b>\$27,200</b>	

(d) Coromandel Batch n=72	resp.	min (\$)	max (\$)	sum (\$)	mean (\$)	s.d. (\$)
Building/structure damage	0	-	-	-	-	-
Contents damage	2	5,000	11,200	<b>16,200</b>	<b>8,100</b>	4,384
Building and contents damage	1	500	500	<b>500</b>	-	-
Removal of silt or debris	0	-	-	-	-	-
Vehicle/boats/caravans/trailer damage	1	500,000	500,000	<b>500,000</b>	-	-
Other	0	-	-	-	-	-
				<b>TOTAL:</b>	<b>\$516,700</b>	

<b>(e) Coromandel High n=206</b>	resp.	min (\$)	max (\$)	sum (\$)	mean (\$)	s.d. (\$)
Building/structure damage	35	60	85,000	<b>692,948</b>	<b>19,799</b>	25,689
Contents damage	64	400	60,000	<b>681,975</b>	<b>10,656</b>	13,307
Building and contents damage	22	40	125,000	<b>521,265</b>	<b>23,694</b>	29,871
Removal of silt or debris	38	175	25,000	<b>115,400</b>	<b>3,037</b>	4,959
Vehicle/boats/caravans/trailer damage	43	150	39,000	<b>317,400</b>	<b>7,381</b>	7,672
Other	15	72	16,000	<b>31,972</b>	<b>2,131</b>	4,088
<b>TOTAL:</b>				<b>\$2,360,960</b>		

**Table A3.7 Households bearing any financial cost not covered by insurance**

%	All n=439	S_Waik n=107	Cor_L n=47	Cor_B n=72	Cor_H n=206
Households bearing financial cost not insured	<b>34.0</b>	<b>26.8</b>	<b>22.7</b>	<b>4.8</b>	<b>51.1</b>

**Table A3.8 Total expenditure not covered by insurance company(s)**

<b>(a) All n=439</b>	resp.	min (\$)	max (\$)	sum (\$)	mean (\$)	s.d. (\$)
Building/structure damage	25	60	20,000	<b>55,215</b>	<b>2,209</b>	4,416
Contents damage	36	100	30,000	<b>129,850</b>	<b>3,607</b>	5,670
Building and contents damage	14	100	100,000	<b>146,850</b>	<b>10,489</b>	26,416
Removal of silt or debris	60	50	20,000	<b>91,875</b>	<b>1,531</b>	3,193
Vehicle/boats/caravans/trailer damage	38	100	15,000	<b>79,240</b>	<b>2,085</b>	3,301
Other	48	50	57,600	<b>220,067</b>	<b>4,585</b>	9,771
<b>TOTAL:</b>				<b>\$723,097</b>		

<b>(b) South Waikato n=107</b>	resp.	min (\$)	max (\$)	sum (\$)	mean (\$)	s.d. (\$)
Building/structure damage	7	60	2,500	<b>4,210</b>	<b>601</b>	855
Contents damage	2	100	1,500	<b>1,600</b>	<b>800</b>	990
Building and contents damage	4	100	1,000	<b>1,500</b>	<b>375</b>	427
Removal of silt or debris	7	50	20,000	<b>21,700</b>	<b>3,100</b>	7,455
Vehicle/boats/caravans/trailer damage	6	200	15,000	<b>19,950</b>	<b>3,325</b>	5,749
Other	8	100	1,200	<b>3,550</b>	<b>444</b>	428
<b>TOTAL:</b>				<b>\$52,510</b>		

<b>(c) Coromandel Low n=47</b>	resp.	min (\$)	max (\$)	sum (\$)	mean (\$)	s.d. (\$)
Building/structure damage	5	100	1,800	<b>2,950</b>	<b>590</b>	702
Contents damage	4	250	5,000	<b>10,250</b>	<b>2,563</b>	1,983
Building and contents damage	1	5,100	5,100	<b>5,100</b>	-	-
Removal of silt or debris	3	1,000	2,000	<b>4,000</b>	<b>1,333</b>	577
Vehicle/boats/caravans/trailer damage	1	500	500	<b>500</b>	-	-
Other	6	500	13,000	<b>22,800</b>	<b>3,800</b>	4,969
<b>TOTAL:</b>				<b>\$45,600</b>		

<b>(d) Coromandel Batch n=72</b>	resp.	min (\$)	max (\$)	sum (\$)	mean (\$)	s.d. (\$)
Building/structure damage	0					
Contents damage	0					
Building and contents damage	0					
Removal of silt or debris	1	2,000	2,000	<b>2,000</b>	-	-
Vehicle/boats/caravans/trailer damage	1	100	100	<b>100</b>	-	-
Other	1	50	50	<b>50</b>	-	-
<b>TOTAL:</b>				<b>\$2,150</b>		

(e) Coromandel High n=206	resp.	min (\$)	max (\$)	sum (\$)	mean (\$)	s.d. (\$)
Building/structure damage	13	100	20,000	<b>48,055</b>	<b>3,697</b>	5,786
Contents damage	30	150	30,000	<b>118,000</b>	<b>3,933</b>	6,128
Building and contents damage	9	100	100,000	<b>140,250</b>	<b>15,583</b>	32,402
Removal of silt or debris	49	50	13,000	<b>64,175</b>	<b>1,310</b>	2,271
Vehicle/boats/caravans/trailer damage	30	130	12,000	<b>58,690</b>	<b>1,956</b>	2,765
Other	32	50	57,600	<b>193,607</b>	<b>6,050</b>	11,517
<b>TOTAL:</b>				<b>\$622,777</b>		

**Table A3.9 Time taken to get home back to normal (Days)**

Days	resp.	%	min	max	Sum	mean	s.d.
All (n=439)	208	47.4	1	545	<b>22,170</b>	<b>106.6</b>	127.6
South Waikato (n=107)	47	43.9	1	420	<b>2,382</b>	<b>50.7</b>	81.3
Coromandel Low (n=47)	16	34.0	1	180	<b>856</b>	<b>53.5</b>	54.3
Coromandel bach (n=72)	5	6.9	1	120	<b>243</b>	<b>48.6</b>	49.5
Coromandel high (n=206)	138	67.0	1	545	<b>18,686</b>	<b>135.4</b>	139.5

Months converted to 30 days, years converted to 365 days

**Table A3.10 Percent of households where householder(s) had to leave the house during the flood**

%	All n=439	S_Waikato n=107	Cor_L n=47	Cor_B n=72	Cor_H n=206
Households where householders had to leave	<b>16.9</b>	<b>10.3</b>	<b>7.1</b>	<b>3.4</b>	<b>26.6</b>

**Table A3.11 Time taken before the whole household could live in the property again (of those households where householder(s) had to leave) (days)**

Days (of those households where someone had to leave)	resp.	%	min	max	sum	mean	s.d.
All (n=68)	56	<b>82.4</b>	1	545	<b>4,286</b>	<b>76.5</b>	103.6
South Waikato (n=10)	6	<b>60.0</b>	1	120	<b>376</b>	<b>62.7</b>	40.4
Coromandel Low (n=3)	2	<b>66.7</b>	24	120	<b>144</b>	<b>72.0</b>	67.9
Coromandel bach (n=2)	2	<b>100.0</b>	60	120	<b>180</b>	<b>90.0</b>	42.4
Coromandel high (n=53)	46	<b>86.8</b>	1	545	<b>3,586</b>	<b>78.0</b>	112.9

Months converted to 30 days, Years converted to 365 days

**Table A3.12 Levels of assistance from institutions and people that helped or supported households during and/or after a flood episode.**

(a) All n=439	resp.	%	min	max	sum	mean	s.d.
<b>Volunteer help (hours)</b>							
Family or friends (from another address), neighbours	112	25.5	1	1,100	<b>11,341</b>	<b>101.3</b>	188.3
Community groups	16	3.6	1	240	<b>663</b>	<b>41.4</b>	74.3
District Council	7	1.6	1	4	<b>14</b>	<b>2.0</b>	1.0
Charities	3	0.7	1	5	<b>8</b>	<b>2.7</b>	2.1
Church	7	1.6	1	8	<b>19</b>	<b>2.7</b>	2.6
Local businesses/shops	5	1.1	1	24	<b>36</b>	<b>7.2</b>	9.8
Police	1	0.2	1	1	<b>1</b>	<b>1.0</b>	-
Fire brigade	30	6.8	1	30	<b>97</b>	<b>3.2</b>	5.3
Mayoral relief fund	1	0.2	10	10	<b>10</b>	<b>10.0</b>	-
<b>TOTAL:</b>					<b>12,189</b>		

<b>(a) All n=439</b>	resp.	%	min	max	sum	mean	s.d.
<b>Paid help (hours)</b>							
Family or friends (from another address), neighbours	17	3.9	4	5,000	<b>5,833</b>	<b>343.1</b>	1202.2
Community groups	0	-	-	-	-	-	-
District Council	6	1.4	1	36	<b>68</b>	<b>11.3</b>	13.8
Charities	0	-	-	-	-	-	-
Church	0	-	-	-	-	-	-
Local businesses/shops	2	0.5	6	20	<b>26</b>	<b>13.0</b>	9.9
Police	1	0.2	1	1	<b>1</b>	<b>1.0</b>	-
Fire brigade	0	-	-	-	-	-	-
Mayoral relief fund	0	-	-	-	-	-	-
<b>TOTAL:</b>					<b>5,928</b>		

<b>(a) All n=439</b>	resp.	%	min	max	sum	mean	s.d.
<b>Donations (\$)</b>							
Family or friends (from another address), neighbours	8	1.8	200	18,000	<b>21,900</b>	<b>2,738</b>	6,175
Community groups	13	3.0	10	500	<b>2,160</b>	<b>166.2</b>	125.4
District Council	8	1.8	50	500	<b>2,250</b>	<b>281.3</b>	164.6
Charities	8	1.8	25	400	<b>1,150</b>	<b>143.8</b>	134.1
Church	5	1.1	20	400	<b>790</b>	<b>158.0</b>	164.7
Local businesses/shops	3	0.7	10	30	<b>70</b>	<b>23.3</b>	11.5
Police	0	-	-	-	-	-	-
Fire brigade	0	-	-	-	-	-	-
Mayoral relief fund	50	11.4	100	15,010	<b>52,970</b>	<b>1,059</b>	2,098
<b>TOTAL:</b>					<b>\$81,290</b>		

<b>(b) S_Waikato n=107</b>	resp.	%	min	max	sum	mean	s.d.
<b>Volunteer help (hours)</b>							
Family or friends (from another address), neighbours	13	12.1	1	300	<b>983</b>	<b>75.6</b>	103.6
Community groups	0						
District Council	0						
Charities	0						
Church	0						
Local businesses/shops	1	0.9	2	2	<b>2</b>	-	-
Police	0						
Fire brigade	1	0.9	3	3	<b>3</b>	-	-
Mayoral relief fund	0						
<b>TOTAL:</b>					<b>989</b>		

<b>(b) S_Waikato n=107</b>	resp.	%	min	max	sum	mean	s.d.
<b>Paid help (hours)</b>							
Family or friends (from another address), neighbours	3	2.8	20	259	<b>479</b>	<b>159.7</b>	124.5
Community groups	0						
District Council	0						
Charities	0						
Church	0						
Local businesses/shops	0						
Police	0						
Fire brigade	0						
Mayoral relief fund	0						
<b>TOTAL:</b>					<b>479</b>		

<b>(b) S_Waikato n=107</b>	resp.	%	min	max	sum	mean	s.d.
<b>Donations (\$)</b>							
Family or friends (from another address), neighbours	0						
Community groups	0						
District Council	0						
Charities	0						
Church	0						
Local businesses/shops	0						
Police	0						
Fire brigade	0						
Mayoral relief fund	1	0.9	500	500	<b>500</b>	-	-
<b>TOTAL:</b>					<b>\$500</b>		

<b>(c) Coro_Low n=47</b>	resp.	%	min	max	sum	mean	s.d.
<b>Volunteer help (hours)</b>							
Family or friends (from another address), neighbours	6	12.8	5	400	<b>792</b>	<b>132.0</b>	189.0
Community groups	0						
District Council	0						
Charities	0						
Church	0						
Local businesses/shops	0						
Police	0						
Fire brigade	1	2.1	1	1	<b>1</b>	-	-
Mayoral relief fund							
<b>TOTAL:</b>					<b>793</b>		

<b>(c) Coro_Low n=47</b>	resp.	%	min	max	sum	mean	s.d.
<b>Paid help (hours)</b>							
Family or friends (from another address), neighbours	2	4.3	20	100	<b>120</b>	<b>60</b>	56.6
Community groups	0						
District Council	0						
Charities	0						
Church	0						
Local businesses/shops	0						
Police	0						
Fire brigade	0						
Mayoral relief fund							
<b>TOTAL:</b>					<b>120</b>		

<b>(c) Coro_Low n=47</b>	resp.	%	min	max	sum	mean	s.d.
<b>Donations (\$)</b>							
Family or friends (from another address), neighbours	0						
Community groups	1	2.1	150	150	<b>150</b>	-	-
District Council	1	2.1	300	300	<b>300</b>	-	-
Charities	0						
Church	0						
Local businesses/shops	0						
Police	0						
Fire brigade	0						
Mayoral relief fund	2	4.3	300	1,500	<b>1,800</b>	<b>900.0</b>	848.5
<b>TOTAL:</b>					<b>\$2,250</b>		

<b>(d) Coro_Bach n=72</b>	resp.	%	min	max	sum	mean	s.d.
<b>Volunteer help (hours)</b>							
Family or friends (from another address), neighbours	2	2.8	8	200	<b>208</b>	<b>104.0</b>	135.8
Community groups	0						
District Council	0						
Charities	0						
Church	0						
Local businesses/shops	0						
Police	0						
Fire brigade	1	1.4					
Mayoral relief fund	0						
<b>TOTAL:</b>					<b>208</b>		

<b>(d) Coro_Bach</b> n=72	resp.	%	min	max	sum	mean	s.d.
<b>Paid help (hours)</b>							
Family or friends (from another address), neighbours	1	1.4	8	8	<b>8</b>	-	-
Community groups	0						
District Council	0						
Charities	0						
Church	0						
Local businesses/shops	0						
Police	0						
Fire brigade	0						
Mayoral relief fund	0						
<b>TOTAL:</b>					<b>8</b>		

<b>(d) Coro_Bach</b> n=72	resp.	%	min	max	sum	mean	s.d.
<b>Donations (\$)</b>							
Family or friends (from another address), neighbours	0						
Community groups	0						
District Council	0						
Charities	0						
Church	0						
Local businesses/shops	0						
Police	0						
Fire brigade	0						
Mayoral relief fund	0						
<b>TOTAL:</b>					<b>0</b>		

<b>(e) Coro_High</b> n=206	resp.	%	min	max	sum	mean	s.d.
<b>Volunteer help (hours)</b>							
Family or friends (from another address), neighbours	91	44.2	1	1,100	<b>9,358</b>	<b>102.8</b>	199.8
Community groups	16	7.8	1	240	<b>663</b>	<b>41.4</b>	74.3
District Council	7	3.4	1	4	<b>14</b>	<b>2.0</b>	1.0
Charities	3	1.5	1	5	<b>8</b>	<b>2.7</b>	2.1
Church	7	3.4	1	8	<b>19</b>	<b>2.7</b>	2.6
Local businesses/shops	4	1.9	1	24	<b>34</b>	<b>8.5</b>	10.8
Police	1	0.5	1	1	<b>1</b>	-	-
Fire brigade	27	13.1	1	30	<b>91</b>	<b>3.4</b>	5.5
Mayoral relief fund	1	0.5	10	10	<b>10</b>	-	-
<b>TOTAL:</b>					<b>10,198</b>		

(e) Coro_High n=206	resp.	%	min	max	sum	mean	s.d.
<b>Paid help (hours)</b>							
Family or friends (from another address), neighbours	11	5.3	4	5,000	<b>5,226</b>	<b>475.1</b>	1500.9
Community groups	0						
District Council	6	2.9	1	36	<b>68</b>	<b>11.3</b>	13.8
Charities	0						
Church	0						
Local businesses/shops	2	1.0	6	20	<b>26</b>	<b>13.0</b>	9.9
Police	1	0.5	1	1	<b>1</b>	<b>-</b>	-
Fire brigade	0						
Mayoral relief fund	0						
<b>TOTAL:</b>					<b>5,321</b>		

(e) Coro_High n=206	resp.	%	min	max	sum	mean	s.d.
<b>Donations (\$)</b>							
Family or friends (from another address), neighbours	8	3.9	200	18,000	<b>21,900</b>	<b>2,738</b>	6,175
Community groups	12	5.8	10	500	<b>2,010</b>	<b>167.5</b>	130.9
District Council	7	3.4	50	500	<b>1,950</b>	<b>278.6</b>	177.6
Charities	8	3.9	25	400	<b>1,150</b>	<b>143.8</b>	134.1
Church	5	2.4	20	400	<b>790</b>	<b>158.0</b>	164.7
Local businesses/shops	3	1.5	10	30	<b>70</b>	<b>23.3</b>	11.5
Police	0						
Fire brigade	0						
Mayoral relief fund	47	22.8	100	15,010	<b>50,670</b>	<b>1,078</b>	2,160
<b>TOTAL:</b>					<b>\$78,540</b>		

**Table A3.13 Time in total members of household spent responding to the flood and/or helping with the cleanup? (e.g. 3 people helping for 1 day each equals 3 days) (hours)**

All n=439 (hours)	resp.	%	min	max	sum	mean	s.d.
Cleaning up their property	221	50.3	1	3600	<b>47532</b>	<b>215.1</b>	417.5
As unpaid volunteer	88	20.0	1	1440	<b>7746</b>	<b>88.0</b>	170.2
As part of paid work	17	3.9	3	720	<b>1545</b>	<b>90.9</b>	174.1
<b>TOTAL:</b>					<b>56,823</b>		

Standard hours, each day converted to 12 hours.

South Waikato n=107 (hours)	resp.	%	min	max	sum	mean	s.d.
Cleaning up their property	42	39.3	<b>1</b>	<b>1440</b>	<b>4514</b>	<b>107.5</b>	246.3
As unpaid volunteer	12	11.2	<b>3</b>	<b>288</b>	<b>902</b>	<b>75.2</b>	89.2
As part of paid work	6	5.6	<b>5</b>	<b>720</b>	<b>933</b>	<b>155.5</b>	283.6
<b>TOTAL:</b>					<b>6,349</b>		

Standard hours, each day converted to 12 hours.

Coromandel Low n=47 (hours)	resp.	%	min	max	sum	mean	s.d.
Cleaning up their property	18	38.3	1	288	<b>1,110</b>	<b>61.7</b>	77.9
As unpaid volunteer	7	14.9	1	60	<b>181</b>	<b>25.9</b>	23.0
As part of paid work	2	4.3	40	72	<b>112</b>	<b>56.0</b>	22.6
<b>TOTAL:</b>					<b>1,403</b>		

Standard hours, each day converted to 12 hours.

<b>Coromandel bach</b> n=72 (hours)	resp.	%	min	max	sum	mean	s.d.
Cleaning up their property	9	12.5	3	200	<b>420</b>	<b>46.7</b>	66.4
As unpaid volunteer	4	5.6	20	84	<b>212</b>	<b>53.0</b>	30.0
As part of paid work	0						
<b>TOTAL:</b>					<b>632</b>		

Standard hours, each day converted to 12 hours.

<b>Coromandel High</b> n=206 (hours)	resp.	%	min	max	sum	mean	s.d.
Cleaning up their property	150	72.8	4	3600	<b>41,452</b>	<b>276.4</b>	477.1
As unpaid volunteer	64	31.1	1	1440	<b>6331</b>	<b>98.9</b>	194.5
As part of paid work	9	4.4	3	240	<b>500</b>	<b>55.6</b>	73.8
<b>TOTAL:</b>					<b>48,283</b>		

Standard hours, each day converted to 12 hours.

**Table A3.14 Number of people capable of helping in household**

(# people)	resp.	%	min	max	sum	mean	s.d.
All (n=439)	227	51.7	1	8	<b>461</b>	<b>2.0</b>	1.0
South Waikato (n=107)	40	37.4	1	5	<b>89</b>	<b>2.2</b>	1.0
Coromandel Low (n=47)	24	51.1	1	4	<b>49</b>	<b>2.0</b>	0.7
Coromandel Bach (n=72)	12	16.7	1	4	<b>31</b>	<b>2.6</b>	1.0
Coromandel High (n=206)	151	73.3	1	8	<b>292</b>	<b>1.9</b>	1.1

**Table A3.15 Amount spent by households which had undertaken these flood prevention measures before the weather bomb event**

(a) All n=439	Had under-taken resp.	Had under-taken (%)	Had spent resp.	Had spent (%)	min spent (\$)	max spent (\$)	total spent (\$)	mean spent (\$)	s.d. spent (\$)
Took out household insurance against flooding	165	37.6	70	15.9	100	5,000	<b>45,988</b>	<b>657.0</b>	703.4
Raised the floor level of house	23	5.2	7	1.6	1,000	180,000	<b>222,500</b>	<b>37,083</b>	70,311
Kept ditches and drains around the property clean	194	44.2	12	2.7	20	1,200	<b>5,545</b>	<b>462</b>	446
Protected septic tank	47	10.7	8	1.8	150	9,000	<b>16,307</b>	<b>2,038</b>	3,028
Avoided keeping irreplaceable items or goods of sentimental value on ground floor of home	97	22.1	n/a	n/a	n/a	n/a	<b>n/a</b>	<b>n/a</b>	n/a
<b>TOTAL:</b>							<b>\$290,340</b>		

Deleted four insurance cases (\$100,000 and \$200,000 from S Waikato, and \$20,000 and \$10,000 also deleted)

<b>(b) South Waikato</b> n=107	Had under- taken resp.	Had under- taken (%)	Had spent resp.	Had spent (%)	min spen t (\$)	max spent (\$)	<b>total spent (\$)</b>	<b>mean spent (\$)</b>	s.d. spent (\$)
Took out household insurance against flooding	34	31.8	12	11.2	100	5,000	<b>11,272</b>	<b>939.3</b>	1,307.9
Raised the floor level of house	2	1.9	1	0.9	1000	1000	<b>1000</b>	-	-
Kept ditches and drains around the property clean	36	33.6	3	0.3	25	500	<b>725</b>	<b>241.7</b>	240.2
Protected septic tank	3	2.8	0	-	-	-	<b>0</b>	-	
Avoided keeping irreplaceable items or goods of sentimental value on ground floor of home	17	15.9	n/a	n/a	n/a	n/a	<b>n/a</b>	<b>n/a</b>	n/a
<b>TOTAL:</b>							<b>\$12,997</b>		
<b>(c) Coromandel low</b> n=47	Had under- taken resp.	Had under- taken (%)	Had spent resp.	Had spent (%)	min spent (\$)	max spent (\$)	<b>total spent (\$)</b>	<b>mean spent (\$)</b>	s.d. spent (\$)
Took out household insurance against flooding	14	29.8	8	17.0	300	800	<b>3,804</b>	<b>475.5</b>	175.5
Raised the floor level of house	4	8.5	2	4.3	3,500	18,000	<b>21,500</b>	<b>10,750</b>	10,253
Kept ditches and drains around the property clean	24	51.1	3	6.4	100	1,100	<b>1,450</b>	<b>483.3</b>	539.3
Protected septic tank	5	10.6	3	6.4	300	9,000	<b>12,300</b>	<b>4,100</b>	4,453
Avoided keeping irreplaceable items or goods of sentimental value on ground floor of home	10	21.3	n/a	n/a	n/a	n/a	<b>n/a</b>	<b>n/a</b>	n/a
<b>TOTAL:</b>							<b>\$39,054</b>		

<b>(d) Coromandel Bach</b> n=72	Had under-taken resp.	Had under-taken (%)	Had spent resp.	Had spent (%)	min spent (\$)	max spent (\$)	total spent (\$)	mean spent (\$)	s.d. spent (\$)
Took out household insurance against flooding	17	23.6	9	12.5	100	900	<b>3,790</b>	<b>421.1</b>	216.5
Raised the floor level of house	4	5.6	0						
Kept ditches and drains around the property clean	15	20.8	1	1.4	50	50	<b>50</b>	-	-
Protected septic tank	3	4.2	0						
Avoided keeping irreplaceable items or goods of sentimental value on ground floor of home	4	5.6	n/a	n/a	n/a	n/a	<b>n/a</b>	<b>n/a</b>	n/a
<b>TOTAL:</b>							<b>\$3,840</b>		

<b>(e) Coromandel High</b> n=206	Had under-taken resp.	Had under-taken (%)	Had spent resp.	Had spent (%)	min spent (\$)	max spent (\$)	total spent (\$)	mean spent (\$)	s.d. spent (\$)
Took out household insurance against flooding	100	48.5	41	19.9	150	3,000	<b>27,122</b>	<b>661.5</b>	570.3
Raised the floor level of house	13	6.3	3	1.5	6,000	180,000	<b>200,000</b>	<b>66,667</b>	98,231
Kept ditches and drains around the property clean	115	55.8	5	2.4	20	1,200	<b>3,320</b>	<b>664.0</b>	491.4
Protected septic tank	35	17.0	5	2.4	150	2,500	<b>4,007</b>	<b>801.4</b>	1,016
Avoided keeping irreplaceable items or goods of sentimental value on ground floor of home	65	31.6	n/a	n/a	n/a	n/a	<b>n/a</b>	<b>n/a</b>	n/a
<b>TOTAL:</b>							<b>\$234,449</b>		

**Table A3.16 Amount spent by households which undertook these flood prevention measures after the weather bomb event**

(a) All n=439	Have under-taken resp.	Have under-taken (%)	Had spent resp.	Had spent (%)	min spent (\$)	max spent (\$)	total spent (\$)	mean spent (\$)	s.d. spent (\$)
Took out household insurance against flooding	88	20.0	24	5.5	100	3,500	<b>16,552</b>	<b>690</b>	667
Raised the floor level of house	15	3.4	6	1.4	1,000	4,500	<b>123,000</b>	<b>20,500</b>	14,923
Kept ditches and drains around the property clean	162	36.9	10	2.3	100	2,500	<b>8,000</b>	<b>800</b>	865
Protected septic tank	38	8.7	2	0.5	400	15,000	<b>15,400</b>	<b>7700</b>	10,324
Avoided keeping irreplaceable items or goods of sentimental value on ground floor of home	119	27.1	n/a	n/a	n/a	n/a	<b>n/a</b>	<b>n/a</b>	n/a
<b>TOTAL:</b>							<b>\$162,952</b>		

(b) South Waikato n=107	Have under-taken resp.	Have under-taken (%)	Had spent resp.	Had spent (%)	min spent (\$)	max spent (\$)	total spent (\$)	mean spent (\$)	s.d. spent (\$)
Took out household insurance against flooding	15	14.0	6	5.6	100	750	<b>2,733</b>	<b>455.5</b>	260.9
Raised the floor level of house	0	-	0	-					
Kept ditches and drains around the property clean	31	29.0	2	1.9	200	300	<b>500</b>	<b>250.0</b>	70.7
Protected septic tank	4	3.7	0	-	-	-	<b>0</b>	<b>-</b>	-
Avoided keeping irreplaceable items or goods of sentimental value on ground floor of home	20	18.7	n/a	n/a	n/a	n/a	<b>n/a</b>	<b>n/a</b>	n/a
<b>TOTAL:</b>							<b>\$3,233</b>		

<b>(c) Coromandel Low n=47</b>	Have under- taken resp.	Have under- taken (%)	Had spent resp.	Had spent (%)	min spent (\$)	max spent (\$)	<b>total spent (\$)</b>	<b>mean spent (\$)</b>	s.d. spent (\$)
Took out household insurance against flooding	6	12.8	2	4.3	700	800	<b>1,500</b>	<b>750.0</b>	70.7
Raised the floor level of house	2	4.3	1	2.1	20,000	20,000	<b>20,000</b>	-	-
Kept ditches and drains around the property clean	14	29.8	1	2.1	100	100	<b>100</b>	-	-
Protected septic tank	4	8.5	0				<b>0</b>		
Avoided keeping irreplaceable items or goods of sentimental value on ground floor of home	9	19.1	n/a	n/a	n/a	n/a	<b>n/a</b>	<b>n/a</b>	n/a
<b>TOTAL:</b>							<b>\$21,600</b>		

<b>(d) Coromandel Bach n=72</b>	Have under- taken resp.	Have under- taken (%)	Had spent resp.	Had spent (%)	min spent (\$)	max spent (\$)	<b>total spent (\$)</b>	<b>mean spent (\$)</b>	s.d. spent (\$)
Took out household insurance against flooding	6	8.3	1	1.4	900	900	<b>900</b>	-	-
Raised the floor level of house	1	1.4	0						
Kept ditches and drains around the property clean	10	13.9	1	1.4	700	700	<b>700</b>	-	-
Protected septic tank	0								
-Avoided keeping irreplaceable items or goods of sentimental value on ground floor of home	4	5.6	n/a	n/a	n/a	n/a	<b>n/a</b>	<b>n/a</b>	n/a
<b>TOTAL:</b>							<b>\$1,800</b>		

<b>(e) Coromandel High n=206</b>	Have under -taken resp.	Have under -taken (%)	Had spent resp.	Had spent (%)	min spent (\$)	max spent (\$)	<b>total spent (\$)</b>	<b>mean spent (\$)</b>	s.d. spent (\$)
Took out household insurance against flooding	60	29.1	15	7.3	200	3,500	<b>11,419</b>	<b>761.3</b>	821.0
Raised the floor level of house	12	5.8	5	2.4	1,000	45,000	<b>103,000</b>	<b>20,600</b>	16,682
Kept ditches and drains around the property clean	104	50.5	6	2.9	100	2,500	<b>6,700</b>	<b>1,116.7</b>	1,002.8
Protected septic tank	26	12.6	2	1.0	400	15,000	<b>15,400</b>	<b>7,700</b>	10,324
Avoided keeping irreplaceable items or goods of sentimental value on ground floor of home	85	41.3	n/a	n/a	n/a	n/a	<b>n/a</b>	<b>n/a</b>	n/a
<b>TOTAL:</b>							<b>\$136,519</b>		

# APPENDIX 4 Business Economic Impacts

## 4.1 Business demographics

**Table A4.1 Business type (category)**

(%)	Accommodation	Food & Beverage	Health	Office	Other	Retail	Trade
All (n=69)	<b>10.1</b>	<b>7.2</b>	<b>4.3</b>	<b>17.4</b>	<b>14.5</b>	<b>29.0</b>	<b>17.4</b>
Thames (n=45)	<b>8.9</b>	<b>11.1</b>	<b>6.7</b>	<b>22.2</b>	<b>4.4</b>	<b>31.1</b>	<b>15.6</b>
Coast (n=15)	<b>13.3</b>	-	-	<b>6.7</b>	<b>40.0</b>	<b>26.7</b>	<b>13.3</b>
Other (n=9)	<b>11.1</b>	-	-	<b>11.1</b>	<b>22.2</b>	<b>22.2</b>	<b>33.3</b>

**Table A4.2 How long business has been trading (years)**

(years)	resp.	%	min	max	sum	mean	s.d.
All (n=69)	68	98.6	1	130	<b>1496</b>	<b>22.0</b>	27.1
Thames (n=45)	45	100.0	1	130	<b>1019</b>	<b>22.6</b>	28.5
Coast (n=15)	14	93.3	3	100	<b>375</b>	<b>26.8</b>	29.5
Other (n=9)	9	100.0	3	30	<b>102</b>	<b>11.3</b>	8.9

**Table A4.3 Position in business**

(%)	Owner	Proprietor	Director	Manager	Principal	Employee	Self Employed	Trustee	Secretary	Unknown
All (n=69)	44.9	5.8	18.9	14.5	1.4	4.3	5.8	1.4	1.4	1.4
Thames (n=45)	46.7	4.4	20.0	15.6	-	6.7	4.4	2.2	-	-
Coast (n=15)	46.7	6.7	13.3	20.0	6.7	-	-	-	6.7	-
Other (n=9)	33.3	11.1	22.2	-	-	-	22.2	-	-	11.1

**Table A4.4 Full-time employees**

(people)	resp.	%	min	max	sum	mean	s.d.
All (n=69)	63	91.3	1	18	<b>241</b>	<b>3.8</b>	3.7
Thames (n=45)	40	88.9	1	17	<b>157</b>	<b>3.9</b>	3.7
Coast (n=15)	14	93.3	1	9	<b>48</b>	<b>3.4</b>	2.5
Other (n=9)	9	100	1	18	<b>36</b>	<b>4.0</b>	5.5

**Table A4.5 Part-time employees**

(people)	resp.	%	min	max	sum	mean	s.d.
All (n=69)	46	66.7	1	6	<b>98</b>	<b>2.1</b>	1.5
Thames (n=45)	30	66.7	1	6	<b>63</b>	<b>2.1</b>	1.5
Coast (n=15)	11	73.3	1	6	<b>21</b>	<b>1.9</b>	1.6
Other (n=9)	5	55.6	1	5	<b>14</b>	<b>2.8</b>	1.8

**Table A4.6 Business's total 2002 turnover (before tax)**

(%)	<\$50,000	\$50,000 to \$100,000	\$100,001 to \$250,000	\$250,001 to \$500,000	>\$500,000
All (n=62)	14.5	16.1	21.0	12.9	35.5
Thames (n=45)	13.2	10.5	26.3	7.9	42.1
Coast (n=15)	6.7	26.7	20.0	20.0	26.7
Other (n=9)	33.3	22.2	-	22.2	22.2

## 4.2 Business impacts

**Table A4.7 Insured stock losses**

(\$)	resp.	%	min	max	sum	mean	s.d.
All (n=69)	14	20.3	1,000	85,000	<b>174,200</b>	<b>12,443</b>	21,738
Thames (n=45)	7	15.6	1,500	10,000	<b>42,000</b>	<b>6,000</b>	3,500
Coast (n=15)	7	46.7	1,000	85,000	<b>132,200</b>	<b>18,886</b>	30,245
Other (n=9)	0						

**Table A4.8 Uninsured stock losses**

(\$)	resp.	%	min	max	sum	mean	s.d.
All (n=69)	7	10.1	200	6,000	<b>16,600</b>	<b>2,371</b>	2,034
Thames (n=45)	4	8.9	400	4,000	<b>8,400</b>	<b>2,100</b>	1,474
Coast (n=15)	3	20	200	6,000	<b>8,200</b>	<b>2,733</b>	2,969
Other (n=)	0						

**Table A4.9 Insured other losses**

(\$)	resp.	%	min	max	sum	mean	s.d.
All (n=69)	16	23.2	250	100,000	<b>372,350</b>	<b>23,272</b>	32,743
Thames (n=45)	8	17.8	700	100,000	<b>280,700</b>	<b>35,088</b>	41,161
Coast (n=15)	7	46.7	400	47,000	<b>91,400</b>	<b>13,057</b>	17,537
Other (n=9)	1	11.1	250	250	<b>250</b>	-	-

**Table A4.10 Uninsured other losses**

(\$)	resp.	%	min	max	sum	mean	s.d.
All (n=69)	13	18.8	150	50,000	<b>112,070</b>	<b>8,621</b>	13,479
Thames (n=45)	6	13.3	150	50,000	<b>70,650</b>	<b>11,775</b>	19,521
Coast (n=15)	6	40	300	10,420	<b>41,220</b>	<b>6,870</b>	5,015
Other (n=9)	1	11.1	200	200	<b>200</b>	-	-

**Table A4.11 Trading time lost (hours)**

(hours)	resp.	%	min	max	sum	mean	s.d.
All (n=69)	42	60.9	5	960	<b>3372</b>	<b>80.3</b>	221.1
Thames (n=45)	31	68.9	5	960	<b>2774</b>	<b>89.5</b>	249.7
Coast (n=15)	11	73.3	6	384	<b>598</b>	<b>54.4</b>	111.2
Other (n=9)	0						

Each 'day' converted to 8 hours

**Table A4.12 Loss of revenue from trading time lost (dollars)**

(\$)	resp.	%	min	max	sum	mean	s.d.
All (n=69)	39	56.5	200	30,000	<b>202,725</b>	<b>5,198</b>	7,522
Thames (n=45)	29	64.4	200	30,000	<b>149,525</b>	<b>5,156</b>	8,045
Coast (n=15)	10	66.7	200	15,000	<b>53,200</b>	<b>5,320</b>	6,126
Other (n=9)	0						

**Table A4.13 Value of any increased business (dollars)**

(\$)	resp.	%	min	max	sum	mean	s.d.
All (n=69)	15	21.7	150	100,000	<b>261,850</b>	<b>17,456</b>	27,722
Thames (n=45)	13	28.9	150	100,000	<b>219,350</b>	<b>16,873</b>	28,900
Coast (n=15)	2	13.3	2,500	40,000	<b>42,500</b>	<b>21,250</b>	26,517
Other (n=9)	0						

**Table A4.14 Staff time spent getting business back to normal (hours)**

(hours)	resp.	%	min	max	sum	mean	s.d.
All (n=69)	33	47.8	2	2600	<b>6434</b>	<b>195.0</b>	470.1
Thames (n=45)	18	40.0	2	2600	<b>4231</b>	<b>235.1</b>	615.0
Coast (n=15)	13	86.7	6	720	<b>2187</b>	<b>168.2</b>	210.5
Other (n=9)	2	22.2	8	8	<b>16</b>	<b>8.0</b>	0.0

Each 'day' converted to 8 hours

**Table A4.15 Time staff were unable to attend work (hours)**

(hours)	resp.	%	min	max	sum	mean	s.d.
All (n=69)	29	42.0	4	168	<b>867.8</b>	<b>29.9</b>	34.3
Thames (n=45)	24	53.3	4	168	<b>667.9</b>	<b>27.8</b>	34.9
Coast (n=15)	5	33.3	16	96	<b>200</b>	<b>40.0</b>	33.9
Other (n=9)	0						

Each 'day' converted to 8 hours

**Table A4.16 Number of staff unable to attend work (people)**

(people)	resp.	%	min	max	sum	mean	s.d.
All (n=69)	28	40.6	1	12	<b>84</b>	<b>3.0</b>	2.4
Thames (n=45)	23	51.1	1	7	<b>64</b>	<b>2.8</b>	1.7
Coast (n=15)	5	33.3	1	12	<b>20</b>	<b>4.0</b>	4.5
Other (n=9)	0						

**Table A4.17 Amount spent by businesses which had undertaken these flood prevention measures before the weather bomb event**

(a) All n=69	Had under-taken resp.	Had under-taken (%)	Had spent resp.	Had spent (%)	min spent (\$)	max spent (\$)	total spent (\$)	mean spent (\$)	s.d. spent (\$)
Took out household insurance against flooding	29	42.0	14	20.3	150	12,000	<b>34,800</b>	<b>2,486</b>	3,144
Raised the floor level of house	7	10.1	4	5.8	2,000	50,000	<b>58,000</b>	<b>14,500</b>	23,685
Kept ditches and drains around the property clean	30	43.5	6	8.7	100	5,000	<b>7,850</b>	<b>1,308</b>	1,847
Avoided keeping irreplaceable items or goods of sentimental value on ground floor of home	26	37.7	n/a	n/a	n/a	n/a	<b>n/a</b>	<b>n/a</b>	n/a
<b>TOTAL:</b>							<b>\$100,650</b>		
(b) Thames n=45	Had under-taken resp.	Had under-taken (%)	Had spent resp.	Had spent (%)	min spent (\$)	max spent (\$)	total spent (\$)	mean spent (\$)	s.d. spent (\$)
Took out household insurance against flooding	20	44.4	10	22.2	150	3,000	<b>15,100</b>	<b>1,510</b>	1,079
Raised the floor level of house	5	11.1	2	4.4	4,000	50,000	<b>54,000</b>	<b>27,000</b>	32,527
Kept ditches and drains around the property clean	16	35.6	1	2.2	250	250	<b>250</b>	<b>-</b>	-
Avoided keeping irreplaceable items or goods of sentimental value on ground floor of home	17	37.8	n/a	n/a	n/a	n/a	<b>n/a</b>	<b>n/a</b>	n/a
<b>TOTAL:</b>							<b>\$69,350</b>		
(c) Coast n=15	Had under-taken resp.	Had under-taken (%)	Had spent resp.	Had spent (%)	min spent (\$)	max spent (\$)	total spent (\$)	mean spent (\$)	s.d. spent (\$)
Took out household insurance against flooding	9	60.0	4	26.7	500	12,000	<b>19,700</b>	<b>4,925</b>	5,312
Raised the floor level of house	2	13.3	2	13.3	2,000	2,000	<b>4,000</b>	<b>2,000</b>	0.0
Kept ditches and drains around the property clean	12	80.0	5	33.3	100	5,000	<b>7,600</b>	<b>1,520</b>	1,982
Avoided keeping irreplaceable items or goods of sentimental value on ground floor of home	8	53.3	n/a	n/a	n/a	n/a	<b>n/a</b>	<b>n/a</b>	n/a
<b>TOTAL:</b>							<b>\$11,620</b>		

<b>(d) Other</b> n=9	Had under-taken resp.	Had under-taken (%)	Had spent resp.	Had spent (%)	min spent (\$)	max spent (\$)	<b>total spent (\$)</b>	<b>mean spent (\$)</b>	s.d. spent (\$)
Took out household insurance against flooding	0		0						
Raised the floor level of house	0		0						
Kept ditches and drains around the property clean	2	22.2	0						
Avoided keeping irreplaceable items or goods of sentimental value on ground floor of home	1	11.1	n/a	n/a	n/a	n/a	<b>n/a</b>	<b>n/a</b>	n/a
<b>TOTAL:</b>							<b>\$0</b>		

**Table A4.18 Amount spent by businesses which undertook these flood prevention measures after the weather bomb event**

<b>(a) All</b> n=69	Have under-taken resp.	Have under-taken (%)	Had spent resp.	Had spent (%)	min spent (\$)	max spent (\$)	<b>total spent (\$)</b>	<b>mean spent (\$)</b>	s.d. spent (\$)
Took out household insurance against flooding	12	17.4	6	8.7	150	8,000	<b>25,650</b>	<b>4,275</b>	3,182
Raised the floor level of house	3	4.3	2	2.9	2,000	3,000	<b>5,000</b>	<b>2,500</b>	707.1
Kept ditches and drains around the property clean	25	36.2	5	7.2	100	5,000	<b>7,900</b>	<b>1,580</b>	2,054
Avoided keeping irreplaceable items or goods of sentimental value on ground floor of home	23	33.3	n/a	n/a	n/a	n/a	<b>n/a</b>	<b>n/a</b>	n/a
<b>TOTAL:</b>							<b>\$38,550</b>		

<b>(b) Thames n=45</b>	Have under-taken resp.	Have under-taken (%)	Had spent resp.	Had spent (%)	min spent (\$)	max spent (\$)	<b>total spent (\$)</b>	<b>mean spent (\$)</b>	s.d. spent (\$)
Took out household insurance against flooding	7	15.6	4	8.9	150	7,000	<b>16,150</b>	<b>4,038</b>	3,099
Raised the floor level of house	0								
Kept ditches and drains around the property clean	12	26.7	2	4.4	300	5,000	<b>5,300</b>	<b>2,650</b>	3,323
Avoided keeping irreplaceable items or goods of sentimental value on ground floor of home	14	31.1	n/a	n/a	n/a	n/a	<b>n/a</b>	<b>n/a</b>	n/a
<b>TOTAL:</b>							<b>\$21,450</b>		

<b>(c) Coast n=15</b>	Have under-taken resp.	Have under-taken (%)	Had spent resp.	Had spent (%)	min spent (\$)	max spent (\$)	<b>total spent (\$)</b>	<b>mean spent (\$)</b>	s.d. spent (\$)
Took out household insurance against flooding	5	33.3	2	13.3	1,500	8,000	<b>9,500</b>	<b>4,750</b>	4,596
Raised the floor level of house	3	20.0	2	13.3	2,000	3,000	<b>5,000</b>	<b>2,500</b>	707.1
Kept ditches and drains around the property clean	10	66.7	3	30.0	100	2,000	<b>2,600</b>	<b>866.7</b>	1,002
Avoided keeping irreplaceable items or goods of sentimental value on ground floor of home	7	46.7	n/a	n/a	n/a	n/a	<b>n/a</b>	<b>n/a</b>	n/a
<b>TOTAL:</b>							<b>\$17,100</b>		

<b>(d) Other</b> n=9	Have under-taken resp.	Have under-taken (%)	Had spent resp.	Had spent (%)	min spent (\$)	max spent (\$)	<b>total spent (\$)</b>	<b>mean spent (\$)</b>	s.d. spent (\$)
Took out household insurance against flooding	0								
Raised the floor level of house	0								
Kept ditches and drains around the property clean	3	33.3	0						
Avoided keeping irreplaceable items or goods of sentimental value on ground floor of home	2	22.2	n/a	n/a	n/a	n/a	<b>n/a</b>	<b>n/a</b>	n/a
<b>TOTAL:</b>							<b>\$0</b>		

## APPENDIX 5 Social data

### 5.1 Interpretation of prior experience

A general set of questions about prior experience and state of readiness for natural hazards was asked (Tables A5.1-5.2). In the high impact area of Coromandel, 20 % of respondents had experienced a previous flood event and 19 % two or more events (Table A5.1). This was significantly higher than in the other areas; the next highest was South Waikato, where only 9 % of the respondents had experienced one or more floods.

**Table A5.1 Number of times your household has experienced flooding above floor level in this home while living at this address, including basements but excluding outhouses and garages.**

All n=439	%
One	<b>11.4</b>
Two	<b>5.2</b>
Three	<b>2.5</b>
Four	<b>1.6</b>
Five	<b>0.5</b>
More than five times	<b>0.7</b>

South Waikato n=107	%
One	<b>6.5</b>
Two	<b>0</b>
Three	<b>0.9</b>
Four	<b>0.9</b>
Five	<b>0</b>
More than five times	<b>0</b>

Coromandel low n=47	%
One	<b>2.1</b>
Two	<b>6.4</b>
Three	<b>6.4</b>
Four	<b>2.1</b>
Five	<b>0</b>
More than five times	<b>0</b>

Coromandel bach n=72	%
One	<b>0</b>
Two	<b>4.2</b>
Three	<b>0</b>
Four	<b>0</b>
Five	<b>0</b>
More than five times	<b>0</b>

Coromandel high n=206	%
One	<b>20.4</b>
Two	<b>8.3</b>
Three	<b>3.4</b>
Four	<b>2.4</b>
Five	<b>1.0</b>
More than five times	<b>1.5</b>

**Table A5.2 Worst (i.e. the biggest impact) flooding household has experienced at this property was the weather bomb**

%	All n=345	South	Coromandel	Coromandel	Coromandel
		Waikato n= 87	Low n=33	Bach n=34	High n=186
Worst flood	<b>73.6</b>	<b>80.5</b>	<b>51.5</b>	<b>38.2</b>	<b>80.6</b>

## 5.2 Risk perceptions

In their model of hazard preparedness Paton et al. (2001) identified two important precursors of readiness—risk perceptions and hazard cognitions (the extent to which people discuss and think about hazards). Table A5.3 describes the extent to which people perceive the hazard as posing a specific threat to them or to their daily activities. In regard to risk perception, the results indicate low to moderate levels of perceived potential threat from flood hazards. With regard to hazard cognitions, Table A5.3 also indicates low to moderate levels of thought and discussion about flood hazards.

**Table A5.3 Level of concern of respondent about the risk of floods:**

All	n	mean*	s.d.
I think about floods	<b>401</b>	<b>2.80</b>	<b>1.37</b>
I talk about floods	<b>379</b>	<b>2.64</b>	<b>1.30</b>
I get information on floods	<b>350</b>	<b>2.23</b>	<b>1.29</b>
I think a flood could pose a threat to my personal safety	<b>368</b>	<b>2.21</b>	<b>1.41</b>
I think a flood could pose a threat to my daily activities (e.g. work, leisure, property)	<b>383</b>	<b>3.04</b>	<b>1.49</b>
*Scale from 1='Not at all' to 5='A great deal'			
South Waikato	n	mean*	s.d.
I think about floods	<b>94</b>	<b>2.31</b>	<b>1.32</b>
I talk about floods	<b>89</b>	<b>2.11</b>	<b>1.19</b>
I get information on floods	<b>84</b>	<b>1.58</b>	<b>0.95</b>
I think a flood could pose a threat to my personal safety	<b>88</b>	<b>2.01</b>	<b>1.32</b>
I think a flood could pose a threat to my daily activities (e.g. work, leisure, property)	<b>94</b>	<b>2.78</b>	<b>1.44</b>
Coromandel Low	n	mean*	s.d.
I think about floods	<b>45</b>	<b>2.71</b>	<b>1.34</b>
I talk about floods	<b>42</b>	<b>2.50</b>	<b>1.94</b>
I get information on floods	<b>40</b>	<b>2.35</b>	<b>1.19</b>
I think a flood could pose a threat to my personal safety	<b>41</b>	<b>2.12</b>	<b>1.31</b>
I think a flood could pose a threat to my daily activities (e.g. work, leisure, property)	<b>41</b>	<b>3.22</b>	<b>1.51</b>
Coromandel Bach	n	mean*	s.d.
I think about floods	<b>65</b>	<b>2.00</b>	<b>0.95</b>
I talk about floods	<b>57</b>	<b>1.96</b>	<b>0.84</b>
I get information on floods	<b>54</b>	<b>1.57</b>	<b>0.92</b>
I think a flood could pose a threat to my personal safety	<b>56</b>	<b>1.79</b>	<b>1.06</b>
I think a flood could pose a threat to my daily activities (e.g. work, leisure, property)	<b>58</b>	<b>2.19</b>	<b>1.18</b>

	Coromandel High	n	mean*	s.d.
I think about floods		<b>190</b>	<b>3.33</b>	<b>1.32</b>
I talk about floods		<b>184</b>	<b>3.16</b>	<b>1.28</b>
I get information on floods		<b>165</b>	<b>2.78</b>	<b>1.33</b>
I think a flood could pose a threat to my personal safety		<b>176</b>	<b>2.46</b>	<b>1.53</b>
I think a flood could pose a threat to my daily activities (e.g. work, leisure, property)		<b>183</b>	<b>3.41</b>	<b>1.48</b>

**Table A5.4 Respondent has seen any flood hazard maps for their community**

%	All n=430	South Waikato n=107	Coromandel Low n=43	Coromandel Bach n=69	Coromandel High n=203
Yes	<b>44.9</b>	<b>9.5</b>	<b>26.1</b>	<b>8.7</b>	<b>80.3</b>
Not sure	<b>5.8</b>	<b>8.6</b>	<b>2.2</b>	<b>8.7</b>	<b>3.9</b>
No	<b>49.3</b>	<b>81.9</b>	<b>71.7</b>	<b>82.6</b>	<b>15.8</b>

### 5.3 Perceived readiness

Another important facet of readiness is the extent to which people *perceive* themselves, and others, as being prepared. Analysis of perception can identify behavior and attitudes that may be counterintuitive or contrary to the goals of education initiatives. Understanding perceptions allows us to assess how people are likely to receive hazard information and use it to put readiness measures in place, and how they will respond to warnings. The data in Table A5.5 reveal that Coromandel high and low impact respondents tended to rate their own individual readiness as being greater than that of their community as a whole and, most interestingly, also greater than that of the central and local government. For South Waikato and Coromandel bach owners this was the opposite—the readiness of the central and local government was perceived as being higher than that of the respondent.

**Table A5.5 Level the respondent believes the following groups are prepared for future floods affecting their community**

All	Don't know (%)	Of those who didn't answer 'Don't know'	n	mean*	s.d.
Your household	<b>2.7</b>	<b>398</b>	<b>2.02</b>	<b>0.85</b>	
Your community	<b>14.4</b>	<b>340</b>	<b>2.32</b>	<b>0.76</b>	
Central government Ministries (Civil Defence and Emergency Management, Health, Social Development etc.)	<b>17.4</b>	<b>317</b>	<b>2.29</b>	<b>0.88</b>	
Regional Council (Environment Waikato) including regional civil defence	<b>18.4</b>	<b>323</b>	<b>2.38</b>	<b>0.91</b>	
District council (Thames/Coromandel) including district Civil Defence	<b>16.9</b>	<b>325</b>	<b>2.33</b>	<b>0.90</b>	
Lifeline service providers (roading, electricity, telecommunications etc.)	<b>21.0</b>	<b>309</b>	<b>2.28</b>	<b>0.88</b>	

\*Scale from 1='Very prepared' to 4='Not at all prepared'

South Waikato	Don't know (%)	Of those who didn't answer 'Don't know' n	mean*	s.d.
Your household	4.0	95	2.29	0.77
Your community	17.7	79	2.47	0.66
Central government Ministries (Civil Defence and Emergency Management, Health, Social Development etc.)	22.1	74	2.16	0.84
Regional Council (Environment Waikato) including regional civil defence	17.5	80	2.21	0.90
District council (Thames/Coromandel) including district Civil Defence	25.9	63	2.05	0.85
Lifeline service providers (roading, electricity, telecommunications etc.)	22.4	76	2.24	0.80

Coromandel Low	Don't know (%)	Of those who didn't answer 'Don't know' n	mean*	s.d.
Your household	0	40	1.98	0.77
Your community	4.9	39	2.18	0.68
Central government Ministries (Civil Defence and Emergency Management, Health, Social Development etc.)	16.7	35	2.23	0.77
Regional Council (Environment Waikato) including regional civil defence	25.6	32	2.56	0.95
District council (Thames/Coromandel) including district Civil Defence	11.6	38	2.37	0.91
Lifeline service providers (roading, electricity, telecommunications etc.)	14.0	37	2.32	0.94

Coromandel Bach	Don't know (%)	Of those who didn't answer 'Don't know' n	mean*	s.d.
Your household	9.5	57	2.58	0.98
Your community	33.3	40	2.62	0.87
Central government Ministries (Civil Defence and Emergency Management, Health, Social Development etc.)	30.5	41	2.24	0.86
Regional Council (Environment Waikato) including regional civil defence	36.1	39	2.21	0.77
District council (Thames/Coromandel) including district Civil Defence	34.9	41	2.27	0.78
Lifeline service providers (roading, electricity, telecommunications etc.)	33.9	39	2.05	0.72

Coromandel High	Don't know (%)	Of those who didn't answer 'Don't know' n	mean*	s.d.
Your household	0.5	199	1.72	0.73
Your community	8.2	178	2.23	0.76
Central government Ministries (Civil Defence and Emergency Management, Health, Social Development etc.)	11.0	162	2.36	0.92
Regional Council (Environment Waikato) including regional civil defence	11.6	167	2.46	0.92
District council (Thames/Coromandel) including district Civil Defence	8.2	178	2.44	0.92
Lifeline service providers (roading, electricity, telecommunications etc.)	17.7	153	2.34	0.93

**Table A5.6 Members of household have ever done**

All n=439	%
Been a member of a local community group related to flooding	<b>13.9</b>
Written letters to relevant authorities about flooding	<b>15.7</b>
Attended meetings related to flooding	<b>41.2</b>
None of these	<b>44.0</b>
South Waikato n=107	%
Been a member of a local community group related to flooding	<b>3.7</b>
Written letters to relevant authorities about flooding	<b>15.0</b>
Attended meetings related to flooding	<b>14.0</b>
None of these	<b>69.2</b>
Coromandel low n=47	%
Been a member of a local community group related to flooding	<b>17.0</b>
Written letters to relevant authorities about flooding	<b>12.8</b>
Attended meetings related to flooding	<b>14.9</b>
None of these	<b>55.3</b>
Coromandel bach =72	%
Been a member of a local community group related to flooding	<b>2.8</b>
Written letters to relevant authorities about flooding	<b>0</b>
Attended meetings related to flooding	<b>9.7</b>
None of these	<b>72.2</b>
Coromandel high n=206	%
Been a member of a local community group related to flooding	<b>22.3</b>
Written letters to relevant authorities about flooding	<b>22.8</b>
Attended meetings related to flooding	<b>72.8</b>
None of these	<b>18.0</b>

## 5.4 Searching for information

The data in Table A5.7 indicate that in the high impact Coromandel area, people had high levels of intention to seek information on flood risk and reduction activities, and to become involved with others to explore reduction options. Conversely, the levels of these intentions are low in all the other areas.

**Table A5.7 As a result of this weather bomb event the respondent intends to:**

All (%)	n	No	Possibly	Definitely
Seek information on flood risk to their community	<b>390</b>	<b>29.5</b>	<b>36.7</b>	<b>33.8</b>
Seek information on things to do to prepare for a possible flood	<b>384</b>	<b>25.8</b>	<b>43.2</b>	<b>31.0</b>
Become involved with a local group to discuss how to reduce flood risk to their community	<b>382</b>	<b>43.7</b>	<b>33.0</b>	<b>23.3</b>
Increase their level of insurance	<b>365</b>	<b>80.0</b>	<b>14.5</b>	<b>5.5</b>
Raise the floor level of their house	<b>365</b>	<b>95.3</b>	<b>1.6</b>	<b>3.0</b>

South Waikato (%)	n	No	Possibly	Definitely
Seek information on flood risk to their community	99	42.4	42.4	15.2
Seek information on things to do to prepare for a possible flood	96	35.4	45.8	18.8
Become involved with a local group to discuss how to reduce flood risk to their community	93	60.2	29.0	10.8
Increase their level of insurance	97	75.3	18.6	6.2
Raise the floor level of their house	95	96.8	2.1	1.1

Coromandel Low (%)	n	No	Possibly	Definitely
Seek information on flood risk to their community	41	48.8	41.5	9.8
Seek information on things to do to prepare for a possible flood	41	41.5	46.3	12.2
Become involved with a local group to discuss how to reduce flood risk to their community	39	61.5	35.9	2.6
Increase their level of insurance	39	79.5	15.4	5.1
Raise the floor level of their house	38	94.7	2.6	2.6

Coromandel Bach (%)	n	No	Possibly	Definitely
Seek information on flood risk to their community	62	46.8	46.8	6.5
Seek information on things to do to prepare for a possible flood	62	38.7	51.6	9.7
Become involved with a local group to discuss how to reduce flood risk to their community	60	76.7	21.7	1.7
Increase their level of insurance	60	85.0	13.3	1.7
Raise the floor level of their house	59	98.3	0	1.7

Coromandel High (%)	n	No	Possibly	Definitely
Seek information on flood risk to their community	181	12.2	27.6	60.2
Seek information on things to do to prepare for a possible flood	179	12.3	38.0	49.7
Become involved with a local group to discuss how to reduce flood risk to their community	184	20.7	38.0	41.3
Increase their level of insurance	163	81.0	12.3	6.7
Raise the floor level of their house	167	93.4	1.8	4.8

## 5.5 Insurance

Tables A5.8 and A5.9 explore issues relating to insurance. Generally there was a very high level of insurance coverage reported (over 90 %) in all areas. Over 95 % of all respondents with insurance claims reported that their insurance companies have settled in a fair way. Around a third of high impact Coromandel residents reported that their insurance premiums had gone up (the level of the rise was not requested in the questionnaire) and 20 % claim to have had ‘difficulty’ getting insurance cover since the event. These figures are significantly higher than in the other areas, but the other areas still reported a significant level of increased premiums (18-20 % of respondents in non-high impact areas reported premium increases). The reported portion of respondents who found it difficult to get insurance cover since the event was very low in non-high impact areas (2-3 %). Given these indications of premium rises and ‘difficulty’ with insurance cover, further work to quantify and better describe these changes would be worthwhile.

Insured versus uninsured losses, and the impact of these losses on the local and regional economy are discussed in more detail in Section 3.

**Table A5.8 Which of the following the respondent personally has and pays for themselves/jointly**

All (%)	n	Yes	No	Don't know
House Insurance	422	92.9	6.2	0.9
Contents Insurance	422	91.9	7.3	0.7

South Waikato (%)	n	Yes	No	Don't know
House Insurance	104	89.4	9.6	1.0
Contents Insurance	105	90.5	8.6	1.0

Coromandel Low (%)	n	Yes	No	Don't know
House Insurance	42	95.5	2.3	2.3
Contents Insurance	39	90.7	7.0	2.3

Coromandel Bach (%)	n	Yes	No	Don't know
House Insurance	67	98.5	1.5	0
Contents Insurance	67	97.0	3.0	0

Coromandel High (%)	n	Yes	No	Don't know
House Insurance	200	92.0	7.0	1.1
Contents Insurance	200	91.5	8.0	0.5

**Table A5.9 The respondent's insurance situation**

All (%)	n	Does not apply	Yes	No
My insurance company has settled my claim in a fair way	356	57.6	38.5	3.9
My insurance rates have gone up since the event	334	38.3	28.1	33.5
I have found it difficult to get insurance cover since the event	314	47.8	10.8	41.4
I cannot afford insurance cover	293	53.9	9.9	36.2

South Waikato (%)	n	Does not apply	Yes	No
My insurance company has settled my claim in a fair way	87	72.4	21.8	5.7
My insurance rates have gone up since the event	81	50.6	19.8	29.6
I have found it difficult to get insurance cover since the event	75	58.7	2.7	38.7
I cannot afford insurance cover	75	52.0	14.7	33.3

Coromandel Low (%)	n	Does not apply	Yes	No
My insurance company has settled my claim in a fair way	37	73.0	21.6	5.4
My insurance rates have gone up since the event	37	48.6	18.9	32.4
I have found it difficult to get insurance cover since the event	33	60.6	3.0	36.4
I cannot afford insurance cover	33	57.6	3.0	39.4

Coromandel Bach (%)	n	Does not apply	Yes	No
My insurance company has settled my claim in a fair way	48	89.6	6.3	4.2
My insurance rates have gone up since the event	49	57.1	18.4	24.5
I have found it difficult to get insurance cover since the event	49	65.3	2.0	32.7
I cannot afford insurance cover	46	71.7	0	28.3

Coromandel High (%)	n	Does not apply	Yes	No
My insurance company has settled my claim in a fair way	178	37.1	60.1	2.8
My insurance rates have gone up since the event	161	23.6	36.6	39.8
I have found it difficult to get insurance cover since the event	152	32.9	19.7	47.4
I cannot afford insurance cover	134	46.3	12.7	41.0

**Table A5.10 Volunteer organisations the respondent is involved in**

(%)	All n=439	South Waikato n=107	Coromandel Low n=47	Coromandel Bach n=72	Coromandel High n=206
Neighbourhood watch	30.5	19.6	23.4	20.8	41.3
Friends of the River	0.9	0	0	0	1.5
Volunteer fire brigade	3.9	2.8	8.5	4.2	3.4
Lions	3.2	6.5	6.4	1.4	1.5
Rotary	1.4	0.9	4.3	4.2	0
Other	18.0	19.6	25.5	6.9	19.1
None	46.2	57.0	40.4	58.3	36.9

## 5.6 Perceived responsibility

Misunderstandings in regard to perceived responsibility are also evident in Table A5.11, which indicates that respondents perceived the District Council and the Regional Council as being more responsible than themselves for their protection. Further work is required to assess the basis for this perception (e.g., the extent to which respondents differentiate structural mitigation from the need for them to deal with immediate personal consequences). Although this correlates with legislative roles and responsibilities for flood management for local government, it shows that the communities do not accept high levels of responsibility for protecting themselves and instead look to others to provide protection.

**Table A5.11 Who's responsibility the respondent thinks it is to protect them from floods**

All	n	mean*	s.d.
Central government	355	3.42	1.31
Regional Council	381	3.98	1.09
District Council	401	4.17	1.04
Individual households	346	3.51	1.24
There is no use preparing as we can't do much anyway	271	2.28	1.35

\*Scale from 1='Not at all' to 5='A great deal'

South Waikato	n	mean*	s.d.
Central government	76	3.30	1.22
Regional Council	89	3.89	1.06
District Council	95	4.20	1.04
Individual households	80	3.44	1.18
There is no use preparing as we can't do much anyway	61	2.30	1.33

Coromandel Low	n	mean*	s.d.
Central government	42	3.36	1.46
Regional Council	44	3.93	1.25
District Council	44	4.11	1.67
Individual households	41	3.68	1.33
There is no use preparing as we can't do much anyway	36	2.19	1.58

Coromandel Bach	n	mean*	s.d.
Central government	55	2.75	1.31
Regional Council	58	3.84	1.06
District Council	62	3.92	1.09
Individual households	56	3.61	1.09
There is no use preparing as we can't do much anyway	41	2.02	1.35

Coromandel High	n	mean*	s.d.
Central government	176	3.67	1.23
Regional Council	184	4.07	1.07
District Council	193	4.24	1.00
Individual households	163	3.44	1.30
There is no use preparing as we can't do much anyway	129	2.39	1.30

## 5.7 Sense of community

Communities with a high level of social involvement are likely to have a higher level of readiness (Mileti 1999). Feelings of belonging and attachment for people and places encourage involvement in community mitigation (Bishop et al. 2000). However, this process may be linked more closely to the sense of shared fate that exists within a given vulnerable area. Levels of sense of community were reported at moderate to high levels (Table A5.12). The highest level being in the Coromandel high and low impacts areas, followed by South Waikato and finally by Coromandel bach owners with a moderate level of sense of community.

**Table A5.12 How the respondent feels about living in their community**

All	n	mean*	s.d.
I feel 'at home' in this community	413	4.07	1.03
I am satisfied living in this community	409	4.01	1.04
I am a useful member of this community	390	3.34	1.26
I have the same values and beliefs as my neighbours	389	3.38	1.19
I feel I don't belong in this community	370	1.36	0.25
I am interested in knowing what goes on in this community	401	3.87	1.09
I would be happy to leave this community	371	1.71	1.15
I know my neighbours and/or other community members	408	3.96	1.11
I have no active involvement in this community	382	2.03	1.17

\*Scale from 1='Doesn't apply' to 5='Applies strongly'

South Waikato	n	mean*	s.d.
I feel 'at home' in this community	104	3.89	1.02
I am satisfied living in this community	100	3.88	1.00
I am a useful member of this community	98	3.51	1.51
I have the same values and beliefs as my neighbours	99	3.28	1.18
I feel I don't belong in this community	90	1.43	0.93
I am interested in knowing what goes on in this community	101	3.76	1.13
I would be happy to leave this community	91	2.00	1.27
I know my neighbours and/or other community members	101	3.90	1.07
I have no active involvement in this community	94	1.96	1.12

Coromandel Low	n	mean*	s.d.
I feel 'at home' in this community	45	4.31	0.82
I am satisfied living in this community	45	4.22	0.85
I am a useful member of this community	44	3.77	1.03
I have the same values and beliefs as my neighbours	45	3.49	1.10
I feel I don't belong in this community	44	1.25	0.75
I am interested in knowing what goes on in this community	44	4.09	0.94
I would be happy to leave this community	44	1.70	1.05
I know my neighbours and/or other community members	45	4.02	1.12
I have no active involvement in this community	43	1.98	1.26

Coromandel Bach	n	mean*	s.d.
I feel 'at home' in this community	61	3.34	1.25
I am satisfied living in this community	59	3.31	1.28
I am a useful member of this community	54	2.33	1.29
I have the same values and beliefs as my neighbours	55	2.89	1.24
I feel I don't belong in this community	56	1.46	0.83
I am interested in knowing what goes on in this community	59	3.46	1.16
I would be happy to leave this community	56	1.59	1.08
I know my neighbours and/or other community members	60	3.50	1.30
I have no active involvement in this community	60	2.07	1.29

Coromandel High	n	mean*	s.d.
I feel 'at home' in this community	196	4.33	0.86
I am satisfied living in this community	199	4.23	0.91
I am a useful member of this community	188	3.46	1.22
I have the same values and beliefs as my neighbours	185	3.56	1.17
I feel I don't belong in this community	174	1.33	0.80
I am interested in knowing what goes on in this community	191	4.00	1.04
I would be happy to leave this community	174	1.61	1.05
I know my neighbours and/or other community members	196	4.12	1.04
I have no active involvement in this community	179	2.07	1.13

## 5.8 Self-efficacy

Another key determinant of intention formation is people's judgment regarding their capabilities to organize and execute courses of action required to achieve objectives or to act in specific ways (self-efficacy). The data in Table A5.13 indicates moderate levels of self-efficacy in all response areas.

**Table A5.13 What the respondent thinks about life in their community**

All	n	mean*	s.d.
I feel I have control over the things that happen in my life and in the community	381	3.21	1.12
There is no way I can solve some of the problems I have by myself	376	2.86	1.31
I can't do much to change what happens in my life or in the community	377	2.54	1.17
Somehow problems in my life usually solve themselves	359	2.62	1.17

\*Scale from 1='Disagree strongly' to 5='Agree strongly'

South Waikato		n	mean*	s.d.
I feel I have control over the things that happen in my life and in the community		95	3.14	1.06
There is no way I can solve some of the problems I have by myself		97	2.75	1.18
I can't do much to change what happens in my life or in the community		93	2.44	1.11
Somehow problems in my life usually solve themselves		92	2.79	1.09
Coromandel Low		n	mean*	s.d.
I feel I have control over the things that happen in my life and in the community		42	3.24	1.12
There is no way I can solve some of the problems I have by myself		43	2.60	1.24
I can't do much to change what happens in my life or in the community		43	2.58	1.16
Somehow problems in my life usually solve themselves		42	2.71	1.18
Coromandel Bach		n	mean*	s.d.
I feel I have control over the things that happen in my life and in the community		54	3.20	1.20
There is no way I can solve some of the problems I have by myself		52	2.69	1.26
I can't do much to change what happens in my life or in the community		55	2.53	1.30
Somehow problems in my life usually solve themselves		54	2.52	1.13
Coromandel High		n	mean*	s.d.
I feel I have control over the things that happen in my life and in the community		183	3.22	1.13
There is no way I can solve some of the problems I have by myself		179	3.01	1.38
I can't do much to change what happens in my life or in the community		180	2.57	1.17
Somehow problems in my life usually solve themselves		166	2.52	1.23

## 5.9 Response efficacy

A moderating factor is respondents' perceptions of the physical, time and collaborative resources they have at their disposal (response efficacy). Mileti (1999) discusses the relationship between socio-economic factors and levels of readiness, with households with higher social economic status and non-minorities being better prepared than others. Given the mixed socio-economic status of the respondents in this study, we could expect relatively mixed levels of response efficacy. Table A5.14 indicates only moderate constraints for all items and indicates that these factors will exercise a moderate constraint on readiness and preparation. The slightly elevated standard deviation (s.d. generally 1.2 to 1.5) of responses in Table A5.14 relative to other qualitative responses in Tables A5.11 through A5.13 (s.d. generally 0.8 to 1.2) highlights the highly mixed response to this question.

**Table A5.14 Extent to which the following might each prevent the respondent from preparing for floods**

All	n	mean*	s.d.
Cost	369	3.41	1.46
Skill required to prepare	353	2.64	1.33
Other things to think about instead	338	2.19	1.22
Need for co-operation with others	362	2.99	1.45

\*Scale from 1='Not at all' to 5='A great deal'

South Waikato	n	mean*	s.d.
Cost	92	3.52	1.37
Skill required to prepare	86	2.88	1.30
Other things to think about instead	80	2.38	1.25
Need for co-operation with others	83	2.87	1.36

Coromandel Low	n	mean*	s.d.
Cost	42	3.12	1.47
Skill required to prepare	42	2.29	1.29
Other things to think about instead	42	2.24	1.25
Need for co-operation with others	42	2.60	1.47

Coromandel Bach	n	mean*	s.d.
Cost	50	2.62	1.37
Skill required to prepare	52	2.44	1.21
Other things to think about instead	50	2.64	1.27
Need for co-operation with others	48	2.96	1.29

Coromandel High	n	mean*	s.d.
Cost	179	3.65	1.45
Skill required to prepare	166	2.66	1.37
Other things to think about instead	160	1.94	1.13
Need for co-operation with others	160	3.14	1.52

## 5.10 Outcome expectancy

In the model outlined above, the principal determinant of readiness was the respondent's outcome expectancy. Table A5.15 describes the level of outcome expectancy in the sample. These data indicate moderate levels of positive outcome expectancy in regard to the likely outcome or value of individual efforts to reduce risk. The level of expectation that a damaging flood is something that could occur in the future is high in all areas and the expectancy that they are too destructive to bother preparing for is low in all areas.

**Table A5.15 Extent to which the respondent thinks that:**

All	n	mean*	s.d.
Floods are too destructive to bother preparing for	<b>367</b>	<b>1.97</b>	<b>1.23</b>
A flood is unlikely to occur during their lifetime	<b>372</b>	<b>2.35</b>	<b>1.51</b>
It is unnecessary to prepare for floods as assistance will be provided by the Council and/or the emergency services	<b>372</b>	<b>1.84</b>	<b>1.20</b>
A damaging flood is something that could occur in the future	<b>396</b>	<b>4.17</b>	<b>1.10</b>
*Scale from 1='Not at all' to 5='A great deal'			
South Waikato	n	mean*	s.d.
Floods are too destructive to bother preparing for	<b>86</b>	<b>2.17</b>	<b>1.32</b>
A flood is unlikely to occur during their lifetime	<b>90</b>	<b>2.59</b>	<b>1.41</b>
It is unnecessary to prepare for floods as assistance will be provided by the Council and/or the emergency services	<b>90</b>	<b>2.03</b>	<b>1.24</b>
A damaging flood is something that could occur in the future	<b>92</b>	<b>4.03</b>	<b>1.05</b>
Coromandel Low	n	mean*	s.d.
Floods are too destructive to bother preparing for	<b>43</b>	<b>1.58</b>	<b>1.03</b>
A flood is unlikely to occur during their lifetime	<b>44</b>	<b>2.20</b>	<b>1.61</b>
It is unnecessary to prepare for floods as assistance will be provided by the Council and/or the emergency services	<b>44</b>	<b>1.64</b>	<b>1.10</b>
A damaging flood is something that could occur in the future	<b>44</b>	<b>4.32</b>	<b>1.14</b>
Coromandel Bach	n	mean*	s.d.
Floods are too destructive to bother preparing for	<b>57</b>	<b>1.79</b>	<b>1.00</b>
A flood is unlikely to occur during their lifetime	<b>58</b>	<b>2.47</b>	<b>1.57</b>
It is unnecessary to prepare for floods as assistance will be provided by the Council and/or the emergency services	<b>57</b>	<b>1.82</b>	<b>0.98</b>
A damaging flood is something that could occur in the future	<b>57</b>	<b>3.68</b>	<b>1.27</b>
Coromandel High	n	mean*	s.d.
Floods are too destructive to bother preparing for	<b>175</b>	<b>2.01</b>	<b>1.28</b>
A flood is unlikely to occur during their lifetime	<b>174</b>	<b>2.23</b>	<b>1.53</b>
It is unnecessary to prepare for floods as assistance will be provided by the Council and/or the emergency services	<b>175</b>	<b>1.80</b>	<b>1.26</b>
A damaging flood is something that could occur in the future	<b>196</b>	<b>4.36</b>	<b>1.00</b>

# APPENDIX 6 Domestic survey form

## WEATHER BOMB QUESTIONNAIRE

The first set of questions will focus on the 21 June 2002 "Weather Bomb" event and damage to your property. Please answer questions 1 through 19 for your household as a whole. If your property was not damaged go to question 5.

Firstly we will focus on flood damage.

1. **Did your home, contents or any of your household's other possessions suffer from flood damage? (Tick only one)**

- <sub>1</sub> Yes  
<sub>2</sub> No (Go to question 5)

2. **What parts of your property were flooded? (Tick all that apply)**

- <sub>1</sub> Section  
<sub>2</sub> Out-buildings  
<sub>3</sub> Garage  
<sub>4</sub> House (fill in details in the next question (3))  
<sub>5</sub> Car  
<sub>6</sub> Caravan  
<sub>7</sub> Boat  
<sub>8</sub> Other (Please specify) \_\_\_\_\_

3. **What was the maximum depth of flooding in the house as a whole? Please enter the depth of water, if any, in each room. (Fill in all that apply on each line)**

	Number of rooms	Depth of water in centimetres
<input type="checkbox"/> <sub>1</sub> Living room	_____	_____
<input type="checkbox"/> <sub>2</sub> Bedroom	_____	_____
<input type="checkbox"/> <sub>3</sub> Kitchen	_____	_____
<input type="checkbox"/> <sub>4</sub> Bathroom	_____	_____
<input type="checkbox"/> <sub>5</sub> Basement/cellar	_____	_____
<input type="checkbox"/> <sub>6</sub> Hallway/landing	_____	_____
<input type="checkbox"/> <sub>7</sub> Garage	_____	_____

4. **Was your household insured against flooding damage for the following? (Tick all that apply)**

- <sub>1</sub> Building structure  
<sub>2</sub> Contents  
<sub>3</sub> Car  
<sub>4</sub> Boat  
<sub>5</sub> Caravan  
<sub>6</sub> Tools of trade  
<sub>7</sub> Landlord's responsibility  
<sub>8</sub> Don't know

5. **Please estimate the total amount paid out (if any) by insurance company(s) for:**

A: Building/structure damage: \$ \_\_\_\_\_ and

B: Contents damage: \$ \_\_\_\_\_, or

C: Both building /structure and contents damage: \$ \_\_\_\_\_.

- D: Removal of silt or debris: \$ \_\_\_\_\_
- E: Vehicles/boats/caravans/trailer damage: \$ \_\_\_\_\_
- F: Other (Please specify) \_\_\_\_\_ \$ \_\_\_\_\_

6. Did you or your household bear any financial costs as a direct result of the “Weather Bomb” event, that were not covered by insurance (excluding loss of earnings, if any)? (Tick only one)

- <sub>1</sub> Yes
- <sub>2</sub> No (Go to question 8)

7. Please estimate the total cost of your household’s expenditure (in dollars) not covered by insurance for:

- A: Building/structure damage: \$ \_\_\_\_\_ and
- B: Contents damage: \$ \_\_\_\_\_, or
- C: Both building /structure and contents damage: \$ \_\_\_\_\_.
- D: Removal of silt or debris: \$ \_\_\_\_\_
- E: Vehicles/boats/caravans/trailer damage: \$ \_\_\_\_\_
- F: Other (Please specify) \_\_\_\_\_ \$ \_\_\_\_\_

8. How long did it take to get your home back to normal?

\_\_\_\_\_ days or \_\_\_\_\_ months or \_\_\_\_\_ years

9. Did you or anyone in your household have to leave your home during or after the flood?

(Tick only one)

- <sub>1</sub> Yes
- <sub>2</sub> No (Go to question 11)

10. How long was it before the whole household could live in the property again?

\_\_\_\_\_ days or \_\_\_\_\_ months or \_\_\_\_\_ years

11. Which of the following institutions and people helped or supported your household during and/or after a flood episode, and to what level was help given? (Tick or fill in all that apply in each line)

	We received no help	Volunteer help (number of hours)	Paid help (number of hours)	Donations received (Value in \$)
Family or friends (from another address), neighbours	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/>
Community groups	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/>
District Council	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/>
Charities	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/>
Church	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/>
Local businesses/shops	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/>
Police	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/>
Fire brigade	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/>
Mayoral relief fund	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/>

12. How much time in **total** did members of your household spend on responding to the flood and/or helping with the cleanup? (e.g. 3 people helping for 1 day each equals 3 days) (Fill in one per line)

1. Cleaning up your property: \_\_\_\_\_ hours **or** \_\_\_\_\_ days
2. As an unpaid volunteer: \_\_\_\_\_ hours **or** \_\_\_\_\_ days
3. As part of paid work: \_\_\_\_\_ hours **or** \_\_\_\_\_ days
4. Number of people capable of helping in your household: \_\_\_\_\_ people

13. Had your household undertaken any of these flood prevention measures before the “Weather Bomb” event, and if so how much had been spent?  
(Circle and fill in all that apply in each line)

		If yes, approximately how much was spent?
Taken out household insurance against flooding	Yes / No	\$ _____
Raised the floor level of your house	Yes / No	\$ _____
Kept ditches and drains around the property clean	Yes / No	\$ _____
Protected your septic tank	Yes / No	\$ _____
Avoided keeping irreplaceable items or goods of sentimental value on ground floor of your home?	Yes / No	n/a

14. Has your household undertaken any of these flood prevention measures after the “Weather Bomb” event, and if so how much has been spent?  
(Circle and fill in all that apply in each line)

		If yes, approximately how much has been spent?
Taken out household insurance against flooding	Yes / No	\$ _____
Raised the floor level of your house	Yes / No	\$ _____
Kept ditches and drains around the property clean	Yes / No	\$ _____
Protected your septic tank	Yes / No	\$ _____
Avoided keeping irreplaceable items or goods of sentimental value on ground floor of your home?	Yes / No	n/a

15. Have members of your household ever done any of these things?  
(Tick all that apply)

- <sub>1</sub> Been a member of a local community group related to flooding
- <sub>2</sub> Written letters to relevant authorities about flooding
- <sub>3</sub> Attended meetings related to flooding
- <sub>4</sub> None of these

16. How many times has your household experienced flooding above floor level in this home while living at this address, including basements but excluding outhouses and garages? (Tick only one)

- <sub>1</sub> Never been flooded
- <sub>2</sub> One
- <sub>3</sub> Two
- <sub>4</sub> Three
- <sub>5</sub> Four
- <sub>6</sub> Five
- <sub>7</sub> More than five times

17. Was the “Weather Bomb” event the worst (i.e. biggest impact) flooding your household has experienced at this property? (Tick only one)

- <sub>1</sub> Yes (Go to Question 19)
- <sub>2</sub> No

18. If not, when was the worst flooding experienced? (Please give details)

---

---

**PLEASE ANSWER ALL QUESTIONS FROM HERE ONWARD FOR YOURSELF ONLY**

19. Were you aware of the heavy rain warning issued by the MetService before the flood? (Tick only one)

- <sub>1</sub> Yes
- <sub>2</sub> No (Go to question 21)

20. If yes, did your household consider taking any special actions in response to the warning? (Please give details)

---

---

---

---

---

21. Approximately how long before the flood waters entered this property did you receive the first warning? (Tick only one)

- <sub>1</sub> I did not receive any warning
- <sub>2</sub> Less than 10 minutes
- <sub>3</sub> 10-30 minutes
- <sub>4</sub> 30 minutes to one hour
- <sub>5</sub> One to six hours
- <sub>6</sub> More than six hours

22. From whom did you receive warning(s)? (Tick all that apply)

- <sub>1</sub> I did not receive any warning
- <sub>2</sub> District Council (includes local Civil Defence)
- <sub>3</sub> Regional Council (includes regional Civil Defence)
- <sub>4</sub> MetService
- <sub>5</sub> Police
- <sub>6</sub> Fire Service
- <sub>7</sub> Radio
- <sub>8</sub> Television
- <sub>9</sub> I can't remember

**THE FOLLOWING QUESTIONS ARE INCLUDED TO HELP US FIND OUT  
WHAT YOU THINK ABOUT FLOODS.**

23. How concerned are you about the risk of floods? (Tick one in each line)

	Not at all ←.....(Scale) A great deal.....→				
I think about floods	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
I talk about floods	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
I get information on floods	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
I think a flood could pose a threat to my personal safety	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
I think a flood could pose a threat to my daily activities (e.g. work, leisure, property)	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

24. Have you seen any flood hazard maps for your community? (Tick only one)

- <sub>1</sub> Yes  
<sub>2</sub> Not sure  
<sub>3</sub> No

25. How prepared do you believe the following groups are for future floods affecting your community? (Tick one in each line)

	Very prepared	Somewhat prepared	Not very prepared	Not at all prepared	Don't know
Your household	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Your community	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Central government Ministries (Civil Defence and Emergency Management, Health, Social Development etc.)	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Regional Council (Environment Waikato) including regional Civil Defence	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
District Council (Thames/Coromandel) including district Civil Defence	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Lifeline service providers (roading, electricity, tele-communications etc.)	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

26. As a result of this “Weather Bomb” event do you intend to: (Tick one in each line)

	No	Possibly	Definitely
Seek information on flood risk to your community	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
Seek information on things to do to prepare for a possible flood	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
Become involved with a local group to discuss how to reduce flood risk to your community	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
Increase your level of insurance	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
Raise the floor level of our house	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>

27. Please list any other actions you have undertaken as a result of this event:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

28. Of the following statements, which are correct in your case? (Tick only one per line)

	Does not apply	Yes	No
My insurance company has settled my claim in a fair way	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
My insurance rates have gone up since the event	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
I have found it difficult to get insurance cover since the event	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
I cannot afford insurance cover	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>

**THE FOLLOWING QUESTIONS ASK ABOUT YOUR VIEWS  
ON THE USEFULNESS AND ACCURACY OF WEATHER FORECASTS**

29. How often do you listen to or read a weather forecast? (Tick only one)

- <sub>1</sub> Hourly, or several times throughout the day
- <sub>2</sub> Daily
- <sub>3</sub> Weekly
- <sub>4</sub> Rarely
- <sub>5</sub> Never (Go to question 34)

30. What is the main reason you would listen to or read a weather forecast? (Tick only one)

- <sub>1</sub> To choose clothes for the day
- <sub>2</sub> To decide whether to take rain gear with you or not
- <sub>3</sub> To plan activities (sports, boating, tramping, gardening, shopping, etc.)
- <sub>4</sub> Because it interests me
- <sub>5</sub> For work purposes (e.g. to plan farm activities)
- <sub>6</sub> Other (Please specify) \_\_\_\_\_

31. Would you change plans for a weather-dependant activity (tramping, sport, gardening, etc.) two days ahead because the forecast is for bad weather? (Tick only one)

- <sub>1</sub> Yes, most often
- <sub>2</sub> Yes, but only sometimes
- <sub>3</sub> No, never

32. Where do you normally get your weather forecasts from? (Tick all that apply)

- <sub>1</sub> Radio
- <sub>2</sub> TV
- <sub>3</sub> Newspaper
- <sub>4</sub> 0900 phone
- <sub>5</sub> Website
- <sub>6</sub> Neighbour, friend, relative or family member
- <sub>7</sub> Look out the window
- <sub>8</sub> Other (Please specify) \_\_\_\_\_

33. How often do you think the weather forecasts are right? (Tick only one)

- <sub>1</sub> All of the time
- <sub>2</sub> Most of the time
- <sub>3</sub> Some of the time
- <sub>4</sub> Not very often
- <sub>5</sub> Never

**THE FOLLOWING QUESTIONS ASK ABOUT THE LEVEL OF PROTECTION  
YOU MIGHT EXPECT FROM THE DISTRICT COUNCIL**

34. Please indicate on the scale whose responsibility you believe it is to protect us from floods. (Tick one in each line)

	Not at all			A great deal	
	<i>(Scale)</i>				
Central Government	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Regional Council	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
District Council	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Individual households	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
There is no use preparing as we can't do much anyway	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

**35. Which volunteer organisations are you involved in? (Tick all that apply)**

- <sub>1</sub> Neighbourhood watch
- <sub>2</sub> Friends of the River
- <sub>3</sub> Volunteer fire brigade
- <sub>4</sub> Lions
- <sub>5</sub> Rotary
- <sub>6</sub> Other(s) (Please specify) \_\_\_\_\_
- <sub>7</sub> None

PEOPLE RESPOND IN DIFFERENT WAYS TO NATURAL DISASTERS.  
THE NEXT FEW QUESTIONS ARE DESIGNED TO HELP US BETTER  
UNDERSTAND HOW YOUR COMMUNITY MAY RESPOND TO A FUTURE EVENT. REMEMBER ALL  
INFORMATION GIVEN WILL REMAIN CONFIDENTIAL.

**36. Below is a list of statements on how you feel about living in your community. Please use the scale to the right to show how much each statement applies to you, or doesn't apply to you. (Tick one in each line)**

	Doesn't apply <i>(Scale)</i> Applies strongly				
	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
I feel 'at home' in this community	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
I am satisfied living in this community	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
I am a useful member of this community	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
I have the same values and beliefs as my neighbours	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
I feel I don't belong in this community	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
I am interested in knowing what goes on in this community	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
I would be happy to leave this community	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
I know my neighbours and/or other community members	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
I have no active involvement in this community	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

**37. Please think about your life in your community at present. Choose a number from the scale to the right that shows how much you agree or disagree with each of the following statements. (Tick one in each line)**

	Disagree Strongly <i>(Scale)</i> Agree Strongly				
	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
I feel I have control over the things that happen in my life and in the community	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
There is no way I can solve some of the problems I have by myself	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
I can't do much to change what happens in my life or in the community	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Somehow problems in my life usually solve themselves	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

**38. To what extent might each of the following prevent you from preparing for floods: (Tick one in each line)**

	Not at all <i>(Scale)</i> A great deal				
	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Cost	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Skill required to prepare	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Other things to think about instead	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Need for co-operation with others	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

**39. To what extent do you think that: (Tick one in each line)**

	Not at all		(Scale)	A great deal	
Floods are too destructive to bother preparing for	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
A flood is unlikely to occur during your lifetime	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
It is unnecessary to prepare for floods as assistance will be provided by the Council and/or the emergency services	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
A damaging flood is something that could occur in the future	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

**40. Do you personally have and pay for yourself/jointly? (Tick one in each column)**

House Insurance		Contents Insurance	
<input type="checkbox"/> <sub>1</sub> Yes	<input type="checkbox"/> <sub>1</sub> Yes	<input type="checkbox"/> <sub>2</sub> No	<input type="checkbox"/> <sub>2</sub> No
<input type="checkbox"/> <sub>3</sub> Don't know	<input type="checkbox"/> <sub>3</sub> Don't know		

THE NEXT SET OF QUESTIONS CONCERNS INFORMATION ABOUT YOU AND YOUR HOUSEHOLD. WE WILL ONLY USE THIS INFORMATION TO IMPROVE EMERGENCY PREPAREDNESS IN YOUR COMMUNITY. PLEASE REMEMBER THAT THE INFORMATION WILL BE KEPT ANONYMOUS.

**41. Do you, or someone in your house, own or rent the home you live in? (Tick only one)**

- <sub>1</sub> Own or buying, to live in it
- <sub>2</sub> Own or buying, but only for use as a holiday home
- <sub>3</sub> Rent, to live in it
- <sub>4</sub> Rent, but only for use as a holiday home

**42. How long have you lived in this community?**

\_\_\_\_\_ years

How long have you lived in this current home?

\_\_\_\_\_ years

**43. Are you?**

- <sub>1</sub> Male
- <sub>2</sub> Female

**44. Which best describes the situation you are living in now? (Tick only one)**

- <sub>1</sub> Family with children
- <sub>2</sub> Family without children
- <sub>3</sub> Alone
- <sub>4</sub> With other people, not family
- <sub>5</sub> Other (Please specify) \_\_\_\_\_

**45. Which ethnic group(s) do you belong to? (Tick all that apply)**

- <sub>1</sub> Maori
- <sub>2</sub> Pacific Islander
- <sub>3</sub> Pakeha/European
- <sub>4</sub> Asian
- <sub>5</sub> Other (Please specify) \_\_\_\_\_

**46. How old are you? (Tick only one)**

- <sub>1</sub> Under 20
- <sub>2</sub> 20-30
- <sub>3</sub> 31-40
- <sub>4</sub> 41-50
- <sub>5</sub> 51-60
- <sub>6</sub> over 60

**47. Are you? (Tick only one)**

- <sub>1</sub> Employed full-time
- <sub>2</sub> Employed part-time
- <sub>3</sub> Not in paid employment

**48. What was your household's total 2002 income (before tax)? (Tick only one)**

- <sub>1</sub> Under \$5000
- <sub>2</sub> \$5000 to \$15 000
- <sub>3</sub> \$15 001 to \$20 000
- <sub>4</sub> \$20 001 to \$30 000
- <sub>5</sub> \$30 001 to \$40 000
- <sub>6</sub> \$40 001 to \$50 000
- <sub>7</sub> \$50 001 to \$60 000
- <sub>8</sub> Over \$60 000

**49. What is your highest educational qualification? (Tick only one)**

- <sub>1</sub> No school qualifications
- <sub>2</sub> School qualifications
- <sub>3</sub> Trade certificate, professional certificate or diploma
- <sub>4</sub> University undergraduate degree (e.g. university diploma or bachelor's degree)
- <sub>5</sub> University postgraduate degree (e.g. Master's, Ph.D.)

# APPENDIX 7 Business survey form

## WEATHER BOMB BUSINESS QUESTIONNAIRE

The following questions focus on impacts on your business from the June 2002 'weather bomb' storm.

1. Please estimate the cost of damage to your business's stock (if any) caused by the 'weather bomb':

A: Insured: \$ \_\_\_\_\_

B: Uninsured: \$ \_\_\_\_\_

2. Please estimate the cost of damage to any of your business's other property or assets (if any) caused by the weather bomb:

A: Insured: \$ \_\_\_\_\_

B: Uninsured: \$ \_\_\_\_\_

3. For how many hours/days (that you would otherwise be open) were you unable to conduct business due to the weather bomb and/or damage from it?

\_\_\_\_\_ hours or \_\_\_\_\_ days

4. Please estimate your loss of revenue from the hours/days you were unable to conduct business due to the weather bomb (if any)?

\$ \_\_\_\_\_

5. Please estimate the value of any increased business (eg. purchase of repair material) you received as a result of the weather bomb (if any)?

\$ \_\_\_\_\_

And please give details (if any):

---

---

---

6. How much time in total did members of your staff spend getting your business back to normal due to the 'weather bomb'? (e.g. 3 people working for 1 day each equals 3 days)

\_\_\_\_\_ hours or \_\_\_\_\_ days

7. How much time in total were members of your staff unable to attend work due to the 'weather bomb'? (e.g. 3 staff away for 1 day each equals 3 days)

1. \_\_\_\_\_ hours or \_\_\_\_\_ days

2. Number of staff unable to attend work: \_\_\_\_\_ people

8. **Had your business undertaken any of these flood prevention measures before the ‘weather bomb’ event, and if so how much had been spent?**  
(Circle and fill in all that apply in each line)

		<b>If yes, approximately how much was spent?</b>
Taken out business insurance against flooding	Yes / No	\$ _____
Raised the floor level of your business	Yes / No	\$ _____
Kept ditches and drains around the property clean	Yes / No	\$ _____
Avoided keeping irreplaceable items or documents on ground floor of your business?	Yes / No	n/a

9. **Has your business undertaken any of these flood prevention measures after the ‘weather bomb’ event, and if so how much has been spent?**  
(Circle and fill in all that apply in each line)

		<b>If yes, approximately how much has been spent?</b>
Taken out business insurance against flooding	Yes / No	\$ _____
Raised the floor level of your business	Yes / No	\$ _____
Kept ditches and drains around the property clean	Yes / No	\$ _____
Avoided keeping irreplaceable items or documents on ground floor of your business?	Yes / No	n/a

10. **Describe any (a) impacts/effects from the weather bomb on your business and (b) mitigation against flood damage your business has done, that have not been covered by the questions above: (Please give details)**

---



---



---



---



---



---



---



---

THE NEXT SET OF QUESTIONS CONCERNS INFORMATION ABOUT YOUR BUSINESS, AND RESULTS WILL ONLY BE PRESENTED IN AN AGGREGATED FORM.

PLEASE REMEMBER THAT THE INFORMATION WILL BE KEPT ANONYMOUS AND INDIVIDUALLY IDENTIFIABLE RESPONSES WILL NEVER BE PASSED ON TO ANY THIRD PARTY.

11. **What does your business do?**

---

12. **How many years has your business been trading?**

\_\_\_\_\_ years

13. What is your own position in the business?

\_\_\_\_\_

14. How many employees does the business have?

1. Full time: \_\_\_\_\_ people

2. Part time: \_\_\_\_\_ people

15. What was your business's total 2002 turnover (before tax)? (Tick only one)

<sub>1</sub> Under \$50 000

<sub>2</sub> \$50 001 to \$100 000

<sub>3</sub> \$100 001 to \$250 000

<sub>4</sub> \$250 001 to \$500 000

<sub>5</sub> Over \$500 000

## APPENDIX 8 EQC insurance data

District	TOWN	CLAIM STATUS AS AT 19 June 2003	CLOSED /		OPEN AWAITING ACTION	OPEN, PARTIALLY QUANTIFIED	REOPENED, AWAITING ACTION	Grand Total
			FINALISED	DECLINED				
Coromandel	COROMANDEL	Count	14	16	1			31
		Sum	\$164,928	\$8,000	\$26,564			\$199,492
	HIKUIAI	Count				1		1
		Sum				\$18,002		\$18,002
	KAUAERANGA	Count		1				1
		Sum		\$336				\$336
	MANAIA	Count			1			1
		Sum			\$1,591			\$1,591
	NGARIMU BAY	Count	2	1			1	4
		Sum	\$8,773	\$314			\$2,330	\$11,417
	PORT CHARLES	Count	3	2				5
		Sum	\$62,340	\$2,860				\$65,200
	RUAMAHUNGA	Count	2	1				3
		Sum	\$21,807	\$1,949				\$23,757
	TAIRUA	Count	1	1				2
		Sum	\$15,892	\$459				\$16,351
	TAPU	Count	3	2				5
	Sum	\$55,095	\$631				\$55,726	
TARARU	Count	3	3				6	
	Sum	\$12,057	\$3,227				\$15,285	
TE KOUMA	Count	1	5				6	
	Sum	\$2,902	\$1,602				\$4,504	
TE MATA	Count	1	3			1	5	
	Sum	\$1,731	\$4,412			\$4,429	\$10,571	
TE PURU	Count	12	5				17	
	Sum	\$54,375	\$2,594				\$56,969	
THAMES	Count	52	31			1	84	
	Sum	\$282,902	\$15,700			\$2,053	\$300,656	
THORNTON BAY	Count	1	1				2	
	Sum	\$6,769	\$376				\$7,145	
WAIOMU	Count	12	4				16	
	Sum	\$95,776	\$3,007				\$98,784	
WHANGAMATA	Count							
	Sum							
<b>Coromandel Count</b>			<b>107</b>	<b>76</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>189</b>
<b>Coromandel Sum</b>			<b>\$785,348</b>	<b>\$45,467</b>	<b>\$28,154</b>	<b>\$18,002</b>	<b>\$8,812</b>	<b>\$885,783</b>
Hamilton City	HAMILTON	Count	3	2	1			6
		Sum	\$8,353	\$667	\$2,049			\$11,069
Matamata-Piako	MATAMATA	Count	2	2				4
		Sum	\$5,779	\$658				\$6,437
	TE AROHA	Count	2	3				5
	Sum	\$15,458	\$1,174				\$16,632	
	WALTON	Count		1				1
	Sum			\$327			\$327	

District	TOWN	CLAIM STATUS AS AT 19 June 2003	CLOSED / FINALISED	DECLINED	OPEN AWAITING ACTION	OPEN, PARTIALLY QUANTIFIED	REOPENED, AWAITING ACTION	Grand Total
<b>Matamata-Piako Count</b>			4	6				10
<b>Matamata-Piako Sum</b>			<b>\$21,236</b>	<b>\$2,159</b>				<b>\$23,396</b>
North Island	LOWER HUTT	Count		2				2
		Sum		\$623				\$623
	NEW PLYMOUTH	Count		1				1
		Sum		\$335				\$335
	NGONGOTAHA	Count	1					1
		Sum	\$5,866					\$5,866
	TAURANGA	Count		2				2
		Sum		\$326				\$326
	TE TEKO	Count		1				1
	Sum		\$313				\$313	
TITAHU BAY	Count		1				1	
	Sum		\$293				\$293	
UPPER HUTT	Count	1					1	
	Sum	\$2,194					\$2,194	
WELLINGTON	Count	1	1				2	
	Sum	\$3,258	\$267				\$3,525	
WHITBY	Count	1					1	
	Sum	\$2,409					\$2,409	
<b>North Island Count</b>			4	8				12
<b>North Island Sum</b>			<b>\$13,726</b>	<b>\$2,156</b>				<b>\$15,882</b>
Northland	KAEO	Count		1				1
		Sum		\$1,412				\$1,412
	KAIKOHE	Count						
		Sum						
	KAITAIA	Count	2	1		1		4
		Sum	\$16,306	\$1,373		\$31,549		\$49,228
	KOHUKOHU	Count		1				1
		Sum		\$1,801				\$1,801
	KOMOKORIKI	Count		1				1
		Sum		\$90				\$90
	LEIGH	Count		1				1
		Sum		\$1,303				\$1,303
	MAHINEPUA	Count			1			1
	Sum			\$6,633			\$6,633	
MANGONUI	Count	1	1				2	
	Sum	\$12,925	\$2,032				\$14,957	
MOTUKARAKA	Count			1			1	
	Sum			\$4,476			\$4,476	
OKAIHAU	Count				1		1	
	Sum				\$7,690		\$7,690	
OPUA	Count	1					1	
	Sum	\$3,750					\$3,750	
PARAWAI	Count	3	3				6	
	Sum	\$110,733	\$2,850				\$113,583	
RAWENE	Count	1					1	
	Sum	\$20,382					\$20,382	

District	TOWN	CLAIM STATUS AS AT 19 June 2003	CLOSED / FINALISED	DECLINED	OPEN AWAITING ACTION	OPEN, PARTIALLY QUANTIFIED	REOPENED, AWAITING ACTION	Grand Total
	RUAKAKA	Count		1				1
		Sum		\$451				\$451
	WHANGAREI	Count	2	2		2		6
		Sum	\$197,892	\$769		\$36,476		\$235,136
WHANGAREI HEADS	Count	1					1	
	Sum	\$5,332					\$5,332	
<b>Northland Count</b>			<b>11</b>	<b>12</b>	<b>2</b>	<b>4</b>	<b>29</b>	
<b>Northland Sum</b>			<b>\$367,320</b>	<b>\$12,081</b>	<b>\$11,109</b>	<b>\$75,715</b>	<b>\$466,225</b>	
South Island	CHRISTCHURCH	Count		1				1
		Sum		\$850				\$850
	DUNEDIN	Count	1					1
		Sum	\$9,060					\$9,060
GRANITY	Count	1					1	
	Sum	\$2,900					\$2,900	
<b>South Island Count</b>			<b>2</b>	<b>1</b>			<b>3</b>	
<b>South Island Sum</b>			<b>\$11,960</b>	<b>\$850</b>			<b>\$12,809</b>	
South Waikato	PUTARURU	Count	10	10		1		21
		Sum	\$56,172	\$6,066		\$3,147		\$65,384
	TIRAU	Count		5				5
		Sum		\$2,276				\$2,276
TOKOROA	Count	1	1				2	
	Sum	\$4,263	\$652				\$4,915	
<b>South Waikato Count</b>			<b>11</b>	<b>16</b>		<b>1</b>	<b>28</b>	
<b>South Waikato Sum</b>			<b>\$60,435</b>	<b>\$8,994</b>		<b>\$3,147</b>	<b>\$72,576</b>	
Taupo	KINLOCH	Count		1				1
		Sum		\$403				\$403
	TAUPO	Count	1	4				5
Sum		\$9,654	\$1,074				\$10,728	
<b>Taupo Count</b>			<b>1</b>	<b>5</b>			<b>6</b>	
<b>Taupo Sum</b>			<b>\$9,654</b>	<b>\$1,477</b>			<b>\$11,131</b>	
Waipa	KIHIKIHI	Count		1				1
		Sum		\$347				\$347
<b>Total Count</b>			<b>143</b>	<b>127</b>	<b>5</b>	<b>6</b>	<b>3</b>	<b>284</b>
<b>Total Sum</b>			<b>\$1,278,032</b>	<b>\$74,198</b>	<b>\$41,312</b>	<b>\$96,863</b>	<b>\$8,812</b>	<b>\$1,499,217</b>

## APPENDIX 10

### NZIER CGE Model Specification

The model employed in this work is similar to that used in other economic impact analyses undertaken by NZIER. However, it is distinguished from previous CGE analyses by being a model of the Thames Coromandel District economy, rather than a model of the national economy.

The TCDC area model in fact has two key components: a TCDC area social accounting matrix (SAM), and the CGE model itself. The TCDC SAM was derived using the 1996 national input-output tables published by Statistics New Zealand in August 2001, and relevant regional statistics, notable population census and business demographic data. More information about the construction of the TCDC SAM can be obtained from the authors.

The remainder of this section discusses the structure of the CGE model used in the analysis of the indirect impacts of the weather bomb. Again, more details are available from the authors.

#### 10.1 Introduction

In this section we present a description of the used to conduct the quantitative analysis. The model is a ‘standard’ computable general equilibrium (CGE) model along the lines of de Melo and Tarr (1992), Karadag and Westaway (1999), and Rutherford and Paltsev (1999).<sup>1</sup> These models, and many others like them, can trace their roots to the formalisation by Arrow and Debreu (1954) of the Walrasian general economic structure.<sup>2</sup>

The main reason for using a CGE model is to provide a quantitative evaluation of economic ‘shocks’, where such a shock might be a change in government policy, an overseas stimulus (such as an exogenous change in commodity prices) or a natural hazard event. Economic theory, and a good dose of common sense, provides guidelines for judging the impacts of such a shock. However, it is not possible to produce quantitative results from such a qualitative analysis. The principal advantage of using a *general*

---

<sup>1</sup> De Melo, Jaime and David Tarr. *General equilibrium analysis of U.S. foreign trade policy*. Cambridge, MA: MIT Press, 1992.

Karadag, Metin and Tony Westaway. “A SAM-based computable general equilibrium model of the Turkish economy”. *Economic Research Paper no. 99/18*, Department of Economics, Loughborough University, Leicester, U.K.

Rutherford, Tom and Sergey Paltsev. “From an input-output model to a general equilibrium model: assessing the excess burden of indirect taxes in Russia”. University of Colorado (available at <http://debreu.colorado.edu/papers/exburden.html>).

<sup>2</sup> Arrow. K.J. and G. Debreu. “Existence of an equilibrium for a competitive economy”, *Econometrica* 22(1954):265-90.

equilibrium model, rather than a partial equilibrium (single sector or market) model, is that it enables interactions throughout the economy to be taken account of in a consistent manner.

CGE models are inherently technical, and this poses a challenge in describing them. While we wish this description to be of assistance to technical analysts, we also hope that the non-technical audience will find it useful. Hence, we augment the algebraic presentation of each component of the model with diagrammatic depictions and a written description. Our intention is that one way or another we can convey enough of the flavour of the model so that the results we have generated can be placed in an appropriate context.

## 10.2 Model basics

As with any economic model, a CGE model is an abstraction that is complex enough to capture the essential features of an economic setting, yet simple enough to be tractable. Our model characterises a small regional economy – Thames-Coromandel District – and comprises four key sectors: consumers, producers, the government and the rest of the world.

Just like in the real world, consumers in our model purchase goods from producers, and in return, they supply the factors of production. The sale of their labour and the ‘renting out’ of their capital (including land) forms the major source of household income. Consumers, whom we frequently refer to as households, also pay taxes to the government. Final demand by private households arises from nested constant elasticity of substitution (CES) utility functions, i.e. households are assumed to demand goods and services such that they maximise utility subject to a budget constraint. This allows consumer decision making to occur in the form of multi-stage budgeting. At the top level of the household decision, consumers decide which goods and services to purchase from the total pool of products available. At the second level, the consumer decides how much to spend on domestic and imported varieties of each good.

Firms produce goods using primary factors and intermediate inputs. Primary factors in our model include land, labour, and capital. Intermediate inputs can be purchased locally or from imported sources. Production activities are assumed to exhibit constant returns to scale and individual firms behave competitively, selecting a level of output such that marginal cost at that output level equals the given market price. Output is differentiated between goods destined for domestic and export markets.

Government expenditures and investment demand are exogenous. Funding of government expenditures is provided by various tax revenues and import tariffs. Real government expenditure is held constant under all counterfactual scenarios via lump sum transfers to households. Hence, the effect of

such transfers is neutral. Because private consumption equals the income from primary factors plus net transfers to the consumer by the government, Walras law is satisfied.

In the TCDC context, the rest of the world encompasses everything outside of the TCDC area. Thus, the TCDC economy imports from and exports to other New Zealand district council areas. However, in the model the TCDC economy is treated as if it were effectively borderless, such that no barriers to trade exist between TCDC and the rest of New Zealand, and that no rate of exchange exists to equilibrate prices between TCDC and other regions.

The model includes an explicit treatment of unemployed labour: unemployed labour is available for hire, subject to the constraint of 'downward sticky' wages; that is, the real wage is prohibited from falling. This has the practical consequence that the unemployed will be encouraged into the workforce before the price of labour is bid up.

A CGE model works by using data to describe the economy in a benchmark year, and by specifying hundreds of mathematical equations to represent the relationships between all such data values. By then varying one or more elements so as to 'shock' the economy, we can trace throughout the economy the changes in the values of the data items. We say the model is 'calibrated' when it is specified and configured in such a way that a solution to the mathematical system replicates the benchmark data. Choosing the appropriate elements to shock is the process by which a policy simulation is undertaken.

The mechanism by which the model derives a new solution, following a shock, is to find the set of prices that clears all markets. For example, the price of all goods in the economy change so that all goods markets are cleared. Market clearing simply means that supply equals demand.

For this study, we have aggregated the data base to reflect 9 production sectors and commodities. These are: agriculture and other primary production; manufacturing; utilities and construction; retail and wholesale trade; finance, insurance and business services; owner-occupied dwellings; government administration; health, education and other personal services; and, other services.

As noted above, the basis for the CGE analysis contained in this report is a social accounting matrix (SAM) for the TCDC economy, which in turn has been constructed using the *Inter-Industry Study 1996*, the *New Zealand Institutional Sector Accounts Experimental Series 1987 – 1998* and a range of regional statistics, all published by Statistics New Zealand..

## 10.3 Detailed description of the model

In this section we present a more detailed description of the model. The model is coded using the GAMS/MPSGE software.<sup>3</sup> Accordingly, just three sets of ‘central variables’ are required to formulate the model:

- A vector of non-negative commodity prices, including one for each good (intermediate and final) and primary factor of production;
- A non-negative vector of activity levels representing production activities; and
- A vector of income levels, one for each household and government entity in the model.

An equilibrium in these variables must satisfy a system of three classes of nonlinear inequalities: zero-profit conditions, market clearance conditions, and income balance equations. While the MPSGE software allows the model to be formulated in a compact manner, it is not particularly revealing to the uninitiated. Hence we do not present the code here.<sup>4</sup>

### 10.3.1 Production

Production sectors are assumed to (potentially) produce two types of commodities: domestic goods  $D_i$  and goods for export  $X_i$ . These two goods are assumed to be imperfect substitutes, and have a constant elasticity of transformation. In the production process, each sector uses capital, labour, and intermediate goods. As such, the  $i^{\text{th}}$  sector’s production function can be given by:

$$Y_i = g(D_i, X_i) = f(K_i, L_i, A_{ji}) \quad (1)$$

where  $g$  is the output transformation function and  $f$  is the input transformation function. As previously noted, output transformation is assumed to be via the constant elasticity of transformation (CET) function, which can be written:

$$Y_i = g(D_i, X_i) = \left[ \theta_i^D \left( \frac{D_i}{\bar{D}_i} \right)^{\phi_i} + (1 - \theta_i^D) \left( \frac{X_i}{\bar{X}_i} \right)^{\phi_i} \right]^{\frac{1}{\phi_i}} \quad (2)$$

where  $\bar{D}_i$  and  $\bar{X}_i$  are the benchmark levels of output destined for the domestic and export markets, respectively, and  $\theta_i^D$  is the benchmark value

<sup>3</sup> Rutherford, T.F. (1999). “Applied general equilibrium modelling with MPSGE as a GAMS subsystem: An overview of the modelling framework and syntax”, *Computational Economics*; and [www.gams.com](http://www.gams.com).

<sup>4</sup> The MPSGE code and a complete technical description of the model can be requested from the authors.

share of domestic sales in total output for sector  $i$ . The elasticity of transformation is given by  $\eta_i = \frac{1}{1 - \varphi_i}$ .

The input combination function is a combination of two aggregator functions, and for sector  $i$  can be specified as follows:

$$f(K_i, L_i, A_{ji}) = LF(CES(K_i, L_i), LF(A_{1i}, A_{2i}, \dots, A_{ji})) \quad (3)$$

where  $LF$  is a ‘Leontief’ aggregate and  $CES$  denotes a constant elasticity of substitution aggregate. A Leontief production function implies an elasticity of substitution equal to zero, and is a special case of the more general CES family of functions. We can state equation (3) algebraically according to the following expression:

$$Y_i = f(K_i, L_i, A_{ji}) = \min\left(\frac{1}{a_{0i}} CES(K_i, L_i), \frac{A_{1i}}{a_{1i}}, \dots, \frac{A_{ji}}{a_{ji}}\right) \quad (4)$$

where  $A_{ji}$  denotes the quantity of intermediate input from sector  $j$  required to produce a unit of output in sector  $i$ , and  $a_{ji}$  represents the fixed input-output coefficients.

The CES aggregation of capital and labour can be written algebraically as:

$$CES(K_i, L_i) = \left[ \delta_i^K \left(\frac{K_i}{\bar{K}_i}\right)^{\gamma_i} + \delta_i^L \left(\frac{L_i}{\bar{L}_i}\right)^{\gamma_i} \right]^{\frac{1}{\gamma_i}} \quad (5)$$

where  $\bar{K}_i$  and  $\bar{L}_i$  are, respectively, the benchmark levels of capital and labour used in sector  $i$ ,  $\delta_i$  is the share parameter of capital and labour, respectively, and the elasticity of substitution between capital and labour is given by  $\sigma_i^{KL} = \frac{1}{1 - \gamma_i}$ ; for all sectors this elasticity has a value of 0.7.<sup>5</sup>

Finally, we come to the algebraic representation of intermediate goods,  $A_{ji}$ . As depicted in equation (3), the input transformation function combines intermediate goods with a composite ‘value added’ good, i.e. the value-added composite good refers to the combination of capital and labour. But the intermediate goods,  $A_{ji}$ , are themselves an aggregation of domestically produced and imported goods. We use  $A_{ji}$ , where the  $A$  stands for

<sup>5</sup> The value of capital-labour elasticities of substitution (in fact, as with all elasticity values) is subject to much debate, and there exists little empirical work specific to the New Zealand economy to support particular values. The elasticity of substitution values assumed in this study are based on a wide review of the substitution elasticity literature.

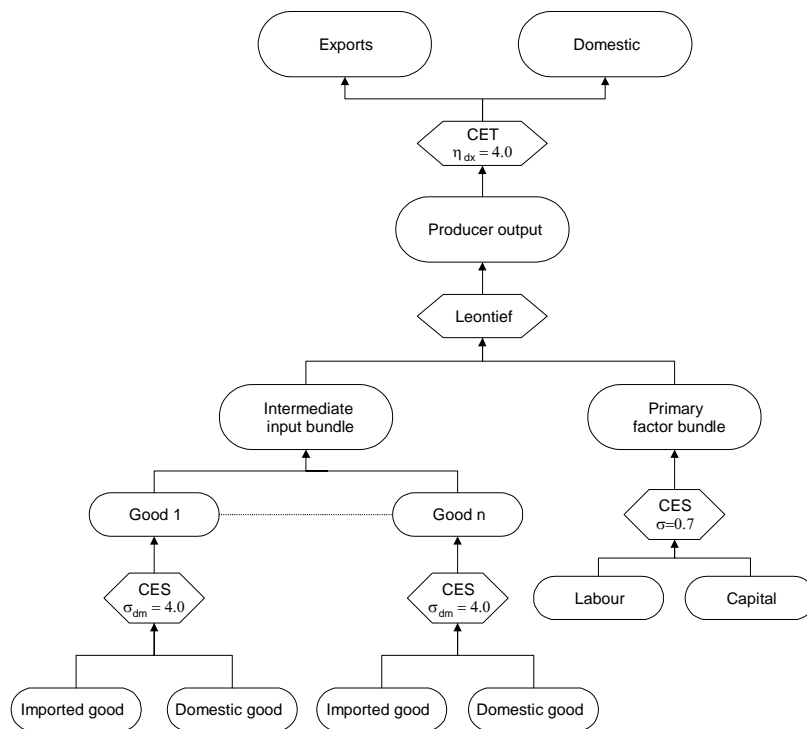
‘Armington’, to represent the intermediate goods.<sup>6</sup> The Armington aggregation of domestic and imported varieties of a good may be stated algebraically as:

$$A_{ji}(Z_{ji}^D, Z_{ji}^M) = \left[ \beta_{ji} \left( \frac{Z_{ji}^D}{Z_{ji}^D} \right)^{\rho_i} + (1 - \beta_{ji}) \left( \frac{Z_{ji}^M}{Z_{ji}^M} \right)^{\rho_i} \right]^{\frac{1}{\rho_i}} \quad \forall j \quad (6)$$

where  $Z^D$  and  $Z^M$  denote, respectively, the domestic and imported varieties of the intermediate good,  $Z$ , used in sector  $i$ . The elasticity of substitution between domestically available and imported goods is denoted  $\sigma_i^{DM}$  and is equal to  $\frac{1}{1 - \rho_i}$ .

The structure of the production function is illustrated in Figure 1.

**Figure 1 Production**



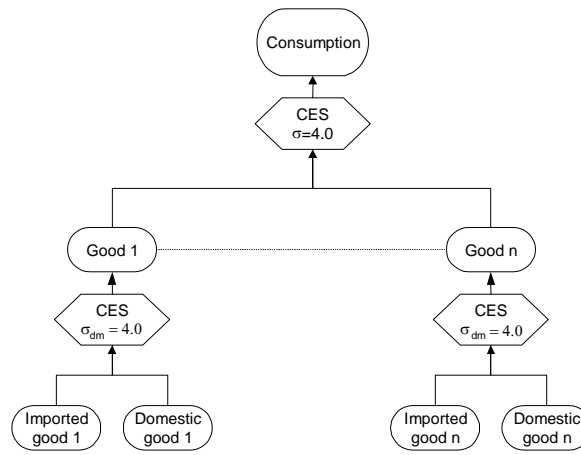
Source: NZIER

<sup>6</sup> Armington, P.A. (1969). “A theory of demand for products distinguished by place of production”. *IMF Staff Paper* 16(1):159-178.

### 10.3.2 Households

For this study the model is configured with a single ‘representative agent’. In essence, this means that the all households in the economy are assumed to behave identically. Households are assumed to maximise utility subject to a budget or income constraint. We aggregate all of the consumption goods in a manner analogous to the preceding production activities. The household then ‘consumes’ the aggregate consumption good, which can be thought of as a consumer price index (CPI) basket of goods. The ‘production’ of the CPI good is shown in Figure 2.

**Figure 2 Household consumption**



Source: NZIER

In the same way that intermediate goods enter the production function as an Armington aggregate of imported and domestically produced goods, all goods entering the consumption activity are also combined in line with the Armington assumption.

### 10.3.3 Investment and savings

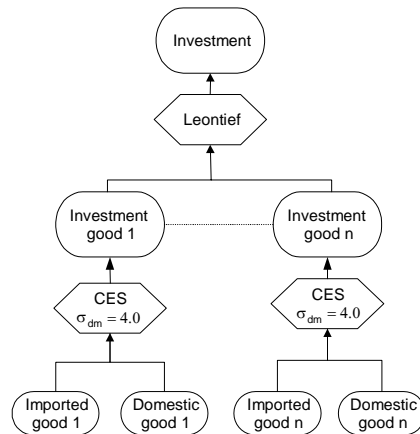
Even though the model is static, it is necessary to account for the investment and savings that take place during the period of analysis. Generally speaking it is assumed that the capital stock is fixed, as is standard practice in a comparative static analysis. Hence, investment does not add to the current capital stock, but for accounting purposes, we need to specify the size and composition of the investment demand.

The model does not distinguish between public and private investment. Instead, fixed and inventory investment is combined into a single set of sectoral investment accounts. The aggregate level of investment is determined by the available supply of savings in the economy, where the latter is the sum of private, public and foreign savings, plus depreciation.

Investment demand is depicted in Figure 3. The interpretation is self evident following that for production and household consumption.

---

**Figure 3 Investment demand**



Source: NZIER

---

### 10.3.4 The government sector

Finally, we have a government sector. The government in our model purchases a range of goods on behalf of households, for example, education and health services. The structure of government demand is conceptually identical to investment demand. Of course, the value shares of goods entering the demand activity are not the same as for investment, and like all other value shares, are determined from the benchmark data.

# APPENDIX 11 Residential questionnaire answers to free-response questions

## Other parts of respondent's property flooded

- 2 cars
- 2 holiday cottages
- annex
- area in vicinity of house
- back patio
- basement
- basement
- basement
- basement fountain
- basement under house
- basement, laundry, garage, storage
- car port
- carport & workshops
- conservatory
- conservatory
- dog kennels
- dog kennels (8 puppies drowned)
- drive way
- driveway
- "erosion to land removal of fences"
- fences
- fences
- fences - 3 sides
- fences washed out
- flat (but not house)
- flooded basement
- front porch
- full basement
- Garden pots & gnomes
- horse float
- hotel ground floor-50cm
- house truck
- laundry, store room under house
- Motor mower, home brew
- my tourist attraction-Waiiau Waterworks
- outside garage
- paint damage outside house; lost back fence
- retaining wall
- rumpus/laundry/foyer/bedroom all below in basement
- side & back of section slipped
- Sleep out
- sleepout
- small slip 20m from house
- spa room
- under house
- underneath house

- Ute Rodeo
- van
- vintage motor cycle
- Washouts-tracks & fencing
- water pumps

<b>Estimate of the total amount paid out (if any) by insurance company(s) for “other” categories</b>	<b>Value</b>
All the above	\$16,000
back fence, paint for house	\$900
bridge & structure	\$1,500
can't remember	
car	
fence	
fence	\$800
fence and 8 mtr land	\$5000
fences	\$1,700
fences	\$600
fences, gates driveway metal	\$500
fencing	\$2,500
Fencing	\$1,100
fencing, retaining wall	\$18,000
garden shed	\$200
letterbox	\$72
machinery; EQC	\$866; \$4175
motor mower	\$600
mower	\$700
outbuildings; driveway	\$500
repair to fence	
retaining wall	\$1,000
septic tanks & water	\$900
spa pump	\$1,000
tools in workshop	\$6,000
tools, mowers	\$11,500
total	\$21460

<b>Estimate of total cost of household's expenditure not covered by insurance for “other” category</b>	<b>Value</b>
\$2000 all up	
accommodation	\$ 1,000
build retaining wall, removal of silt/debris	
cleaning water tank; waterblasting drive etc	\$ 800
cleanup - garden replacement	\$ 2,500
digger/protection works	\$ 5,000
drainage	\$ 200
driveway	\$ 500
driveway metal	\$ 60
driveway; gardens; culvert	\$ 1,500
drying/power	\$ 500
fences	

fences, culver, tidy up	\$ 2,000
fences, gates, roadways, drains, culverts, land	\$ 15,000
fencing	\$ 500
Fencing	\$ 3,000
firewood supply, coal	\$ 100
floor sanded & polished	\$ 2,500
for access	
roading + clear up of lifestyle block	\$ 13,000
freezer food-no power	\$ 100
Frig & Dryer	\$ 1,200
garden plants	
garden shrubs, fish pond	\$ 280
garden work	\$ 300
Garden, replace certificates-birth,death etc	\$ 150
gardens	\$ 200
heater to dry out basement	\$ 250
hire trailer	
lifting house	\$ 15,000
loss of rent	\$ 1,760
Metal for	
driveway 1 km	\$ 600
native tree nursery	\$ 1,500
new pump	\$ 1,000
plants	
plants, trees, fences	\$ 5,000
private access road; culverts	\$ 5,000
property reinstatement	\$ 250
raise house	\$ 25,000
raised house	\$ 3,000
raising house	2m
raising house	\$ 22,542
re paint	\$ 1,000
reinstate fencing	\$ 2,500
reinstatement of stream bank, plants	\$ 15,600
removal of silt from section	\$ 175
rent	\$ 57,600
retaining wall	\$ 100
retaining wall	\$ 700
securing laundry & flood door	\$ 600
shrubs, bark garden	\$ 150
storage household goods	\$ 6,000
T.V ariel blown down	\$ 50
trees	\$ 250
Trees and plants	
wallpaper & paint	
Washing maching; freezer; toys; plants	\$ 4,000
water supply	\$ 50
what price do you put on garden replacment	

**If the respondent was aware of the heavy rain warning issued by the MetService before the flood, any special actions they considered taking in response to the warning**

- A weather "bomb" was a completely unknown term and meant very little to us. Also where it was going to happen and when was very vague.

- Already had drains covered so thought we were at last safe from surface floods
- as in question 13
- As we are on a rise above flat water level, and above river height I did not consider it necessary to take precautions
- At the time was travelling, Dargaville to Kerikeri. Had to avoid floods plus railway was out at Tirau. The weather bomb, so called is not unusual. Seems to happen about every 7 years in local areas
- Away in Australia
- Because the property has not been flooded for at least 100 yrs we felt reasonably secure
- blocked entrance to basement
- Brought outside things in under cover and into garage. Lifted some things up in garage but not all
- But it wasn't for our area it was for up "North"
- Check drain, lifted goods off floor, shifted car to higher ground
- Check drains ok
- check property
- Check with neighbours to keep watch on vacant property
- "Checked drains, gutters etc for debris. Ensured loose items around section secured or put away."
- Checked pets. Emergency cooking, heating.
- Checked road cesspit grates and stormwater outlets
- clean drains around the property
- clearing drain inlets
- Considered none required
- did nothing different
- Didn't think we would be flooded
- Drinking water, torches, gas cooker, battery radio, candles
- ensure gutterings and catchpits clear
- Every precaution there was but it still didn't stop anything happening
- Filled bath with water. Got torches and candles ready. Checked animals outside
- Further to 18 above, 1) during June 02 we had 377mls of rain. The highest dailt total was on the 1st 53, 19th 55, 20th 115 and 28th 55mils. 2) Could the MetService consider dropping the Beaufort Scale as an indicator of wind speeds. Admiral Beaufort was a contemporary of Lord Nelson and I am sure that his scale is meaningless to most NZers outside the MetService. A simple speed measurement in mph or even knots would be better
- got candels & torches out in readiness for possible power failure
- "Had fresh water in containers, candles and matches, batteries for radio. Tinned food.
- Picked up children from school early."
- Had my civil defence bag packed, candles handy, car up to higher ground, new batteries in torch, kept cat inside. Informed all our neighbours of the warning, kept checking creek level
- Had staff monitor water level
- I don't consider the Metservice reliable. However having spent all our lives on the peninsular the so called weather bomb was not unexpected. Most of the floods happen over summer re 1981 etc
- I have a metre - 5 flood gates & fence & sand of bags keep in cupboard for all doors. All useless if noone at home when flood happens, or late at night or early morning when household asleep
- If I had might have checked spouting wasn't blocke

- irreplaceable items off floor
- Just andles in case of power cut
- Just general overview to make sure everything was in correct order
- just made sure drains were clear
- Keep away from the peninsula unless absolutely necessary
- Lifted all articles in the garage including pressure pump & motor to a safe position.  
Very difficult as electric power was off
- Lifted furniture, garage equipment (freezer etc)
- Lifted goods in outer sheds
- Lifted up spoileable items in 4 outbuildings moved vehicles to higher ground
- Make sure drains are clear & nothing flying around like tins etc
- moved non fixed items to high ground
- moved stock
- Moved the car to higher ground. As I was involved in warning the rest of the community of the impending disaster I didn't have time to take any other precautions
- Moved vehicles, got out emergency kit
- Never thought it would be so high
- No - more worried about the high winds than the water
- No - northern side of Putaruru on raised terrain with good run off
- no - not considered as a danger
- No - our property is a holiday home on the East Coast of the Coromandel Peninsula and so far has not had an issue with flooding
- No - the house is new and elevated
- No - we didn't know what it meant or that the river would be blocked and so high
- No - we get so many warnings & had never been flooded before this
- No - We have had heavy rain warnings before - that never eventuated - but flooding also goes with the territory we live in
- no - we live on a hill and drains are kept clear
- No - we were in Napier during period of water bomb
- No & we only flooded due to major slips causing a dam action when released our small drain was only half full the water came across propertys to our house hit the road which is higher than our section then back ponded into our basement, spare bedroom toilet wash house outer buildings
- No action would have prevented the water coming through our home
- No actions taken. Our house is on top of a hill, not prone to flood
- No as I was living alone and over 80 yrs
- No as not in flood zone
- No as we did not think it would come here, but only in Coromandel
- No as we have built up our section
- No as we often get heavy rain warnings. The power went off & the wall of water was everywhere so quick no system could notify people unless there was a local siren. I tried going round some neighbours but it is hopeless in the middle of the night. They won't respond
- No because household located on hillside
- No because my house is approx 200 meters from the creek, so I didn't think it would reach this far
- No because the flooding came from a creek that was supposed to have been deepened after the last flood

- No because we only watched the sea as the creek was half block away & we had no warning whatsoever locally
- No didn't realize it would be such a bad flood. What could be done? You can't pick up your garage etc and take them away
- No for house. Yes for work in rail road. Flooding could affect where working.
- No I was away from home
- No I was away from home
- No idea we would be flooded
- No in residence only 3 months. Didn't know what to expect
- No more than usually. We ensure culverts are open, water supply intakes are out of the creek etc, stock safe
- no need to, out of danger
- no not necessary
- No other than checking torches etc
- no other than making sure the section was clear of litter
- "no particular need perceived. The damage resulted from overland flow down a neighbours driveway from other land on the other side of the road. There was inadequate road storm water control. The council has finally done some work to rectify that situation? 2 rear jumps were placed in the road channel."
- No planned to stay at home
- No reason. We live on the Thames Coast - weather reports are given for Coromandel which is 2 totally different areas
- No special actions, never experienced flooding while living at this address
- No the warning had been forecast for at least 24 hours. Our power went out early evening (6.30pm?) and we set up a few safety things then - candles, checked food, water, battened down things outside
- no this is a holiday home
- No we have never been flooded before and never imagined that we would
- No we live in a pole house well away from the creek
- No we live in Hamilton. This is a beach holiday cottage
- No we often have heavy rain warnings, we would usually keep a check on the level of the creeks, but this was totally unexpected and the flood hit in the middle of the night
- no, checked with "local" neighbours shortly after
- No, do not reside there - holiday cottage only
- No, everything normal. Blockage further up river caused the wave of water. Authorities been warned numerous times about blockages. Trees in creek but never cleared out
- no, have spent considerable capital (\$70,000) to safe guard our property
- No, my lawn gets flooded. Never the house. The area I live in is not flood prone
- no, never been flooded
- No, never thought it would reach me. But was up all night & know something was going to happen, like flooding
- no, residence is built above sandy surface which drains surplus water quite quickly
- No, we live away from the property & could not get through the roads till after the event. Water was within lynch of the floor boards. Damage was to the garden & the building needed water blasting to clear as did paths & driveway to remove silt
- No, we were in Rotorua until that afternoon
- none
- none

- None really, not in an area that normally floods. Kept close eye on weather updates and local conditions
- none required
- not at house
- not necessary
- not really
- Not really as we had no idea that the river could come up like that
- nothing - we are in Auckland
- nothing special as had not been flooded before
- Nothing to be done
- No-we are at least 12 feet above water level in the adjoining creek. All we need to do is turn off our water pump as the water always becomes muddy during prolonged rain
- Opadded under front door
- Organised a 'rescue box' with essentials needed for evacuation and/or power cuts
- out of town
- Out of town at time
- owner/occupier away on holiday at time of weather bomb
- Picked my child up from school early as the school rang me & asked me to do this. Made sure our cat was inside. Checked we had supplies and gas in the bbq
- Picking up valuables off floor of shed and putting on shelves, tables
- place boards on doors to underhouse. Checked warnings on computer. Power out at 9pm so unable to get updated situation from computer & lack of power made inspection of property difficult
- Prayed. Shifted vulnerable gear
- prepare to be evacuated
- Prepared for possible evacuation, gathered clothes, medications etc
- property only holiday home
- Put as much as we coul on higher places on tables etc
- Put everything inside, closed all wimdows, checked gutters and drains
- Put fridge & equipment up in shed
- Put new batteries in radio. Checked torches, candles etc. Prepared cat cage
- Put water in buckets & pots etc. Got torches & candles out ready
- remove items from lower level
- Removed all gear around property, tied boat to carport, put my animal up onto back deck, parked vehicles up the road
- Removed car from garage. Flooding was caused by adjacent pump having no power & EW had no auxilary pump despite repeated requests from householders in case same thing like bomb happened. NB June 03 still no auxilary fitted
- Removed my car upto the bank corner in Coromandel. When water reached my car hubcaps & left over night till safe to bring home after both floods April 03 & June 02
- Removed vehicles to other locations. Resituated pot plants, bbq etc to higher locations. Generally shifted any items of value to higher locations
- removing & safe guarding outdoor furniture & itemd. Minimizing outdoor wind damage
- river watech, cleaned drains
- slept upstairs
- Stayed up that night to monitor situation but the speed with which the flood water rose took everyone by surprise. The fact that there was a power black out merely added to the magnitude of the problem

- taped windows
- The house is too high off the ground to flood. As we had just shifted into our home excess items were put in the garage. We were doing alterations to the house so extra items put in garage
- There is little one can do apart from move vehicles to higher ground - which was done both times in 2003. Items of furniture & laundry electronics lifted onto 100x50 blocks of wood
- They are wrong so often. A typical example is predicting heavy rain etc and have blue skys all day. There reports are a waste of time with the current data they work with
- Tied things down where possible. Put things (outside furniture etc) into garage & basement
- To far away from house. Contacted son who was on site. No problems
- took car and parked it on hiher ground up the road
- Took Jim Hickeys advice on TV One & made usual precautions. Water tanks filled , no tools etc were left exposed to flooding
- torches ready for power being cut
- wasn't necessary
- We checked drains, shifted farm gear to higher ground, shifted stock to safety
- We closed off the basement, got the car out to higher ground, got valuable contents up from the basement
- We don't live there all the time
- We get heavy rain warnings here on a monthly basis. 15-20mm per hour of rain triggers warning. This flood saw over 200mm fall in an hour. This was a hugh flood. Bigger than 1985 flood, cyclones Bola, Fergus & Drena
- We haven't flooded before during heavy rain warnings
- We knew there was a heavy rain warning but not to that extent
- we live on a high hill away from the river
- We took no special action as we were not warned the 'weather bomb' would be any threat - we just thought we would have heavy rain. No way did we realise how much & what impact it would have
- We were at our Auckland home
- we were away from town and travelling back
- We were doing building work at the time-builders leaving sections of our roof poorly covered caused the flooding-even though we had especially asked to be well protected due to warnings
- We were in Auckland and unable to respond
- We were too far away
- Weather warning was for Thames, Coromandel area, from memory Putaruru was not mentioned
- "Woken by heavy rain and saw our flooding. It was a one/off situation where the bark from our bark garden floated and blocked the down pipe. We have since contained the bank."
- Yes cleared all drains and culverts
- Yes we made sure first aid kit was stocked, bottles some water, bought ne batteries for radio & torch
- Yes, came home early from Thames
- Yes, cleared drains and culverts
- yes, ensure everyone home, animals safe, spouting etc cleaned out
- Yes, however I was not in the area at the time

- Yes, put 'floodboards' at entrances to basement. Put equipment up high in basement & garage. Obtained fresh water & stored. Checked we had civil defence procedures in place
- Yes, removed everything from back sunporch due to the roof not being the best
- Yes, staying awake to check river
- Yes, to make sure livestock was above flood level
- Yes, took cows off paddocks
- Yes, we moved as much from the garage floor as we could before flood waters hit. We had only been living in the area for 2 months & were not aware of the level of risks & had not been able to get to know neighbours before the event. No-one came to our house & told us to move our cars to higher ground even though they had moved their own cars
- yes. Checked gates closed but returned to work & gates open at time of flood
- Yes-made sure all windows & doors were closed securely. That nothing was lying around outside that could have blown away. Have experienced cyclones so had drinking water, torches, candles available. Have plenty of food supplies

### **Any other actions the respondent has undertaken as a result of this event**

- Added further drainage to property to channel water away
- Additional strengthening to rebuilt retaining wall
- All downstairs doors get boarded up. Remove vehicles to higher ground. Keep water, camp cooker etc. Have portable toilet
- Am a lot more aware of weather forecasts
- answered this questionnaire
- As a group of affected people we asked many questions of the local council & Environment Waikato. They all ran for cover
- At our own cost, we are building a flood protection wall between the stream & our house, on our property (Rural area behind village)
- At work - shifted all expensive utilities, storage & plant parking up higher - alert/call staff when flooding pending
- Attended meetings, dig new drains, considered moving. Stopped using basement
- "Attended a meeting and written a letter in support of proposed flood management scheme - TC DC + Environment Waikato"
- attended local meetings
- Attended meetings on flood control
- Attended meetings to discuss options for engineering projects to reduce risk of future flooding
- Because my neighbours above me, deliberately channeled the water into our property causing the property damage. I have banked soil up to ensure it never happens again
- Being a Marae community where two & possibly a third dwelling being directly affected. Arranged a meeting with the District and Regional Council
- Belong to Civil Defence. Warden for our street
- bought a higher car
- bought taller gumboots and rainwear
- Brought laundry upstairs, secured a protection door over glass doors downstairs, put platforms up for storing goods
- building a solid wall on the flood side of our property

- Built a new house above flood level. Raised section and put a concrete block wall all the way around
- Built flood gates. Rung council re ponding area not working
- built retaining walls
- candles in the house, gas bottle full, radio batteries available
- can't do any more
- changed position of clothes line. Reduced amount stored in basement. Less garden in flood prone area
- checked storm drain is kept clear of leaves & taken down a large tree that was too close to buildings
- cleaned the town storm water drain running alongside the property
- Clear the tennis club next doors drains as they were the main cause of our flood.
- Cleared trees and gardens to open up unopposed flow path on the section. Sealed garage corners & basement blocks on house
- closed, bricked off garage with a solid wall - made into a room
- "Contacted S.W. D.C. and neighbour behind who filled in the national storm drain (or turned a blind eye) and lawyer re how to correct the situation."
- discussed with council to lower the road or increase culvert size under the road to prevent back ponding
- Done because my residence is on high ground with no possibility of being flooded or eroded
- Done extra drainage, was always going to do it but worked in well with wall repairs
- Don't keep so many
- Drain at rear of property has been cleared and restructured - work carried out by District Council
- Entered into written correspondence with the South Waikato District Council to get them to sort out flood protection issues (still going)
- Erect a strong light that shines on the stream so the other neighbours can see
- Flood boards on gates & in front of flat external door & garage door
- flood gates at ready for under house
- For this area it was a one off due to council ignoring the disgusting conditions of open drains
- Got a spare battery for my cell phone
- Got to know neighbours. Been to flood meetings, became vigilant about weather forecasts
- Had an engineer prepare at my cost an improved storm water system for my property (\$800). Cost of works approx \$8,000
- Had batch repaired and new floor covering in affected rooms. Bought new bedding for flooded room. Septic tank cleared out
- Had meetings & discussion with council re culvert sizes & drainage - very little has been listened to by Sth Waikato DC or Waikato RC
- Have a fence at the back where flood came through
- Have been to council about drain. Drain has been dug deeper, not sure this will make a difference as I feel pipes further down are too small and will cause back build up which could cause flooding for me again
- Have installed 120m of rock buttressing to protect property from erosion from Pohua Stream
- Have s--- big floods before - design/build/ Live in the knowledge that it will happen again
- I can't think of anything except lifting rugs etc from the floor or moving house

- I cannot get flood or storm cover insurance
- I have a sealed container for workshed & tools. In house most electrical & important things are higher than the last flood
- I have asked council to clean out culvet across the road
- I have asked questions and hope the council are more prepared to alert people to the problem
- I have had to get counselling for my daughter who has nightmares when it rains & is windy
- "Improved guttering and storm water. Improved roofing (sheds)
- security"
- In another heavy rain warning I would move my car and empty my garage
- increase culvert size, undermining of road from creek
- "Installed webcam to monitor the river level. Contacted Environment Waikato to seek advice about minimizing erosion"
- Insurance, tents, wet weather gear, fresh water stored, radio, medical kits
- It did not hit the East Coast (Whitianga) as badly
- joined civil defence
- keep gutters cleared
- Keep hammering council to put in larger pipes & to strat at the outlet end not at the town end
- keep things off floor in garage
- Kept the banks of creek cleared & free of trees etc
- Laid a drain from our old soakholes to council drain
- Lifted and removed things of value from lower levels
- Lifted freezer up. Lifted gear up off garage floor
- lifted household appliances above the level of last flood
- Lifted items like pots etc off garage floor. Ensure gumboots kept handy
- "Looking at ways to protect the creek bank on our side from erosion during big floods. E.g. gabions"
- Make sure drains ok
- Make sure I keep supplies of fresh water handy & candles, torches & food supplies
- meetings with affected farmers and council
- More aware and more prepared to take action earlier if warned
- Moved all living areas upstairs doing away with spare bedroom & downstairs laundry
- moved garage to higher level on the property
- moved house
- Moved personal possessions to higher ground
- My care giver watches out for me
- My house is on high ground & not at no risk of flooding , only my section, but I am concerned for other people & property in the community
- my household wasn't physically affected
- My neighbour is Carter Holt Harvey. Have asked them to keep their stormwater pipes clear
- Myself & others tried to stop Transit lifting the level of our road to no avail & the cause of our flooding
- never been flooded
- new ranchsliders with better seals. New segmentised rollwer door. Rubber water seals under & around internal doors in basement area

- Nil this section is below road level. Short of raising the house, there is little we can do
- no more building in winter
- None. Intend to make a deeper drain in front of the basement
- Nothing we do council does not want to know us they want our rates only
- Numerous approaches to TCDC re the illegal raising of the Patikirikiri Reserve which was the natural flood overflow plain
- Once again no precautions necessary, the whole valley would need to flood to get our property
- Plans in place to raise car parking area and garage over time
- Prepared a hydrological report on the Pohue Creek catchment & am available for consultation with other catchment groups give some funding. I have worked enough for nought
- Purchased power inverter (230v). Regularly inspect drainage on property. Stocked more tinned food.
- Put in larger pipe below drive, put in culvert, have reshaped drive, put in large cesspit for drain
- raised appliances, tools, motor mowers above the previous flood level
- Raised heat pump to 62cm above ground. Raised fridge & freezer
- Raised house to 1 metre above Tararua Datum
- Rebuilt the creek bank at my own expense
- reduced garden flowers & areas. Improved fencing - water abriier
- Re-piping driveway drain
- Replace fence as a flood barrier
- reported to local council re sewage overspill
- Ring the council when it rains to clean the grates out on the road
- risen height of bank
- "Secure item around property cut down high trees.
- (Wind was the worst problem)"
- sent submissions to Council re stopbanks,clearing creeks - to no avail
- shifted washing machine upstairs
- Soakhole on driveway is now installed but we were going to do it regardless
- sold my property
- "Sold property. Planted 200 flaxes to deflect and slow water from stream"
- sold runoff
- store items in garage & outbuilding above weather bomb flood level
- Taken irreplaceable items off the floors
- taken time to make sure the families children understand what to do & where to go in the event of an emergency
- Tried to get flood insurance-can't. Raised items above flood line
- Until matter sorted out by local/central government we ar doing nothing
- Upgraded emergency kit, opened drains
- vote green party
- Waiting with hope for what TCDC & Environment Waikato plan
- wanted to raise floor level, was declined by council, 2 weeks later was approved but to late
- We always have extra food just in case
- We are not in a flood prone zone
- We bought our house at the top of a hill so flooding impossible

- We cleaned property of most of trees that drop leaves
- We have already spent \$45,000 to raise the level of our home
- "We have built in back garden so water will not build up as before.
- It was 10" high - no drainage."
- We have completely weatherproofed our home, septic tank and drains
- We have had work done on our creek at our own expense
- We leave our car on a high area during heavy rain. Washing machine & dryer on platforms. High shelving along wall, only use shelves above previous flood level. Keep firewood supplies on upstairs terrace
- We live in a retirement village and would like to do our own protective scheme (but would we be allowed) not be part of TCDC
- We treat every warning as serious just as we always have
- We were constructing an outside wall to keep water out - that was ineffective in Easter floods. Had plans to raise building
- "We were not flooded. We had a partial lifting of the roof of our shed.
- The section was a bit waterlogged. Our power was cut for 14 hours."
- will be lifting driveway & garage
- Wooden floors, marine ply walls, building made to be as little affected by floods above the floor level as possible. We have asked the TCDC to maintain the streams better & to remove rubbish from them
- Written to Transit NZ both in Wellington & Hamilton
- Wrote a letter to council asking them to put bigger drains under the road which they raised 10 years ago and since then has flooded a number of times. As yet no action

### **Other reason(s) the respondent would listen to or read a weather forecast**

- access to work & back
- anticipate rainfall-is flooding likely
- as part of the news
- aware of weather warnings
- Because I am afraid
- because of the flood
- check for heavy rain warnings
- daily welfare/wellbeing
- flood risk
- flood warning
- flooding
- flooding
- flooding; rain warnings
- gardening/washing
- Habit
- if rain will cause flooding
- in case of flooding
- in case there's a warning
- not visit Coromandel
- outings, hanging washing
- possibility of road closure
- rain warnings
- Really 2, 3 4 all apply
- so know when to move items
- take action, case of flood

- they don't know what they're talking about
- to be aware
- To check for floods
- to know what weather conditions to expect
- "To know what's going on"
- to know which way wind/rain coming from
- to listen for heavy rain warning
- to prepare for flood
- To protect your property
- to see if it will flood
- with news

### **Other places the respondent normally gets their weather forecasts from**

- barometer, rain guage
- cat washing behind ears!
- Civil Aviation, Airports
- civil defence
- civil defence
- hospital warnings
- know local patterns
- local knowledge
- marine radio
- "Ring reliable source in area to be visited"
- ring store at Cooks Beach
- ship to shore radio
- sight, sound
- sky weather
- "Someone phones if there's a heavy rain warning"
- Teletext
- teletext
- think what it might do
- tv
- VHF
- VHF Marine

### **Other volunteer organisations the respondent is involved in**

- Alzhiemers
- ambulance
- "As a farmer one keeps an eye on things"
- beaching recovery
- CBD
- church
- church
- church
- Church groups
- Citizens advice bureau
- civil defence
- civil defence
- civil defence
- civil defence
- civil defence
- civil defence

- civil defence
- civil defence
- Civil Defence
- civil defence; NZ Hydrological Soc
- civil defence; victim support
- Civil Defence; Zonta
- coastguard
- community centre; Red Cross
- CWI
- district council
- education committees
- ex civil defence
- Grow NZ Inc; Framework Trust
- Guardians of Pa... Bay
- Guides
- help where I can
- kindergarten
- Little Theatre
- Local fundraising organisations
- local marae community
- local school, civil defence
- local water supply
- Lyes Lookout
- Masonic Lodge
- Meals on Wheels
- meals on wheels
- meals on wheels
- music group; arts council
- organic co-op
- Pohutukawa Environment Centre
- Police Volunteer
- PTA
- Putaruru Citizens & Ratepayers
- R & R
- R.O.A.B Coromandel
- Rate Payers Assoc
- Ratepayer Assn
- Ratepayers Asn
- Red Cross
- Red Cross; Hospice
- retired
- RSA
- RSA; RAOB
- Save the children
- Secretary of local squash club
- SPCA
- SPCA
- SPCA
- SPCA
- St John
- St Johns
- Surf lifesaver
- Te Puru Hall Committee
- Tennis Vets
- Territorial Force-NZ Army
- Thames Coast Flood Protection
- Thames Coast Protection Soc

- Thames Coast Protection Soc
- Thames Coast Protection Soc
- to old
- Victim Support
- victim support
- victim support

## Other comments

- After the 1985 flood, there were all these CD meetings & plans & people would have radios for communication etc etc. 18 years later & nothing changed. All Talk. Flood walls, TCDC & EW flood plans - All Talk. Its every man for himself. UNLESS the whole flooding issue is looked at holistically especially the effect the State Highway & bridges have in impeding the flow of water to the sea, nothing will change. The community cannot bear the cost of this flood protection. Central Govt & TransitNZ must pay or nothing will happen.
- "Although we had severe flooding in the ""weather bomb"" our catchment suffered much more severe damage in a more localised cloudburst that occurred some months previously. Therefore the weatherbomb run off had a huge passage to flow through. Therefore my answers are little cross contaminated."
- As we live in Hahei had withdrawal effects from weather bomb - live on hill so flooding not a problem. Road closure/flooding my main worry with flooding
- As we were not residents of Thames at the time of the Weather Bomb, we have not answered questions 1-28
- EQC denied damage to out property which cost us \$3241 to restore and we still pay through our insurance for what??
- Gary Blake (07) 8682336
- holiday home only
- I feel you missed some relevant questions. At no point did you ask how many children we have. During the flood I had 1 under 2 & 5 & 8 yr old. Due to the fact that I needed to keep caring for them, especially my youngest, at no point could I aid my husband or the community in any clean up activities. Having no other family here was also important in the equation, and this effects how much you are able to help & cope in a flood situation.
- In relation to some of these questions, I think it only fair to mention that our power and phone were out of action for 24hrs before the flood & another 24hrs after the flood. Most of the insurance money covers fences, sleepout and contenbts, fridge, freezer, washing machine, dryer, water pump motors etc. Our main house wasn't affected as we are up on a basement
- My first knowledge of the storm was when my daughter rang from Invercargill having heard of it on the radio. This is a strange questionnaire to be asked to complete when I am not in a flood prone area. I was only affected by power failure (to a minor degree)
- Our place is a bach, we don't live there
- Our property at 19 West Crescent, Te Puru and we are "absentee landowners" of which a large number are property owners on the peninsula. If it hadn't been for our neighbours at Te Puru we would not have received the enclosed questionnaire. Thank you for the opportunity.
- Our property at Coromandel is a holiday home and therefore not occupied on a permanent basis. In 2003 we had installed a major retaining wall at the rear of the property together with an upgraded stormwater disposal system, following weather related slips in the previous 2 years. This action has mitigated damage on occasions such as the 06/02 weather bomb

- Please note that one of the problems that I see is that we tend to hold someone responsible for what is both foreseeable and an act of nature. If I build something on ground that was put there by floodwaters, then it is only a matter of time before floodwaters get to go there again. This is not the Council's fault! However the Council could do better in advising people about the likelihood of flooding. Perhaps the insurance people should be consulted prior to buildings being put in flood prone places.
- refuse to answer Q48,49 unless told what bearing it has on a weather bomb survey
- Sorry we were not living here at the time so cannot assess damage to this property. We were in Coromandel Town. We did assist with cleaning up in Te Puru
- The water broke through the neighbour's 5'6" fence, broke the back door down, went right through the kitchen, lifted the fridge freezer over floating it into the lounge. My house was pulled down & replaced by a Keith Hay home.
- We are unable to answer all questions as we did not own this property at the time of the weather bomb. From what we were told by the previous owners, there was nothing to worry about just a bit of cleaning up of the section. They said they slept thru it.
- we did not own this home when the weather bomb occurred so we are unable to complete some of this form

## APPENDIX 12 Business questionnaire answers to free-response questions

Value	Details of any increased business due to the Weather Bomb event
	above 5 questions did not apply. Weather bomb did not effect us
\$3,000	Additional mower sales through insurance claims
	an overall business loss of approx \$3000 as people had much more important things to consider
	As plumbers we received many repair jobs. Tend not to like to do them as out of town tradespeople bought in by insurance companies and local tradespeople mostly used to patch up jobs as original contractors won't come back after jobs completed. Most annoying to most tradespeople
\$40,000	cleaning slips, digging repairs etc
\$2,500	contractors in area
	Difficult to give \$ figures, certainly increase in re-roofing and repair work
	filled a gap between jobs ie insurance work
\$150	food for fire service
\$5,000	Glazing and aluminium joinery repair
	Had a sign telling people to remove shoes. Increase in phone calls to see if we were open
	I don't think the day lost makes a difference in the long run
\$10,000	Installing new floor coverings
	Insurance industry - many people wanting "power" available. Large claim numbers increased. Claim payments in Thames
\$13,000	long term accommodation provided to flood victims
	minimal gain
\$ 200	Most flood/water damaged electronics are written off
	Peninsular People is a new business & commenced operation 1 September 2003 - after the weather bomb hit. I did experience some difficulty in setting up as all contractors/builders in the area were busy with the aftermath of the weather bomb. At the time everyone understood so it didn't affect my business
\$30,000	Repair damaged houses and new bathrooms etc
\$50,000	replacement of damaged flooring, bedding, furniture
\$2,000	Several telephone systems damaged by lightning required repair. A few houses required repairs to telephone points
\$2,000	Supplied a small amount material only
\$80-100,000	supplier of replacement goods for insurance companies

### Any (a) impacts/effects from the weather bomb on respondent's business and (b) mitigation against flood damage their business has done, that have not been covered by the questions above

- 2 wire electric fences - not 7 wire fixed
- All other businesses on block closed. Mud on footpaths. Increase in patients with injuries due to clean up. There have been 4 floods in the last 9 years in the businesses around us.
- Branches and other material either blown down or brought through part of the property at high water when the stream banked up against the high tide.
- Building was not suitable for use anylonger. Had to move to new premises, refit and recarpet. Old premises still vacant
- Costa to some of our clients

- Council needs to do more regarding keeping drains clean. They are re-active not pro-active & routine maintenance is no longer done. No accountability regarding engineers. Locals not taken any notice of regarding problems and remedies. In most instances if they had been listened to problems could be sorted out as it is they are compounded by consultants who think they know the best. We were fortunate in that we were on the other side of Thames
- Customers whos vehicles were parked on our property and not covered by our insurance (who had no insurance) wanted repairs at our expense. We paid to clean all these vehicles although we weren't legally liable. Insurance won't cover vehicles outside building as it is an Act of God!
- Delays in clearing mud from roadway & footpaths meant customers could not easily gain access to our business for 1 day
- Had substantial downturn in business because tourists etc did not come to the Coromandel. This was made worse because the news media kept on and on about it
- Hasn't affected us
- Have increases in material damage, insurance premiums and excesses
- Have lost business due to council uplifting property left out for cleaning and not being re-imbursed for 5 months (uninsured property) eg \$6000 worth of carpet. Property impossible to heat. Continual battle getting council to keep drains clear of debri. Organised public meeting with council re upgrade of systems. Which should have been done prior to weather bomb
- increase work load as a direct result
- It would be nice to see local tradespeople employed by insurance companies as complete contracts eg material and labour as then things would fit work and be less labour intensive (=cost) in the long run.
- Loss of stock mainly due to electricity knockout for one & half days. Resulting in loss of frozen food. Records of company washed out. Would never insure now against power failure as all policies are so loaded the only winners are the insurance companies
- Loss of trade
- Many months were spent handling additional claims. Customers requiring additional repairs due to new building & council requirements, caused confusion. Clear directions from council building inspectors proved to be "wrong" and this caused a lot of confusion issues for repaireres, tradesmen, customers, insureres
- Many patients at this clinic were unable to attend due to road damage and/or damage to their dwelling. This had a noticeable effect on our business for 5-7 days
- Occassionally a storm may create more work but generally not a significant amount
- Only more work. We were lucky, no damage to us
- Only very minor flooding to store room of our business premises. Main impact was time off due to flooding of my residential property
- Our access road (approx 1.5km) badly damaged - although all drains pipes kept clean - this was an exceptional torrent of rain. Our workshop on a hill was flooded because slips directed the water and blocked drainage
- Our only effect (outside of towns water supply & telephone lines) was one unit suffering back wall flooding
- Our only major problem was from dirt in the town supply water which stained laundry and everything else for many many weeks
- Our properties are well sited on ridges free from the danger of flooding. However our driveways and trees are very vulnerable to torrebtil rain and high winds, which seem to me to becoming more frequent. It is hard to assess how much time and effort are needed to remetal driveways and clear trees. It is an ongoing problem every year
- Pressured TCDC for flood protection work in form of new drainage
- Property is leasehold. (crown land) We have lease of 33 years with right of renewal. Council now will not renew land as they are unsure of properties safety. Before

flooding (weather bomb) property was for sale for \$500,000.00 with 2 persons waiting for new lease. Now property is possibly unsaleable.

- Silt, sticks, logs, rocks had to be cleared off paddocks to enable grass to grow again. Silt, sticks, logs, rocks moved off roads to accommo
- some school families left the area, resulting in a roll drop & therefore less funding
- The damage to this business would not have happened had the local council (TCDC) implemented plans to upgrade the Noke Noke drain system. I understand these plans were thwarted by demands maori had put on work to be done. A totally unsatisfactory & unnecessary situation & one that still needs to be remedied
- The indirect effect of the weather bomb was power cut (loss of food) loss of income due to ono customers, negative advertising of region in news, decrease of visitors to the region.
- Town was closed for the day. No work was done except assist with clean up
- We are unable to get flood insurance even though we have never been flooded before. Even new building which is raised cannot be insured nor can the block that was not flooded
- We have protected ourselves against future flooding by constructing flood protection where waters could cause damage
- We were not directly affected by the weather bomb itself as we are based in Whitinaga. We experienced "another" day of heavy rain in Whitinaga however no real disturbances

### **What the respondent's business does**

- Accountancy
- Architectural design
- Boat & general hardstand & undercover storage
- book & stationery store
- book seller
- Building
- café
- Camping ground & accommodation
- Chartered Accountants
- Chinese Takeaway
- Chiropracter health care clinic
- computer programming
- Domestic Insurance
- electrical contracting
- electrical contracting
- engineering
- Environmental effects consulting
- farm
- Farming, horse trekking, tourism
- Floor sanding & coating. Install floor coverings
- general store
- glass & glazing
- Grocery retail (Food)
- hairdressing
- Hardware/garden centre
- Health Care
- Hire company
- Hireage Industrial & Home handyman equipment
- home appliances
- Install telecommunications equipment

- Insurance & Financial Advisors
- Insurance Broker
- International backpackers
- LMVD
- Manufacturer & supply concrete
- motel
- Motel
- Motel accommodation
- motel-accommodation
- Outdoor bowling club
- party hire & architecture
- picture framing/retail
- Plumber & Heating retail & Trade
- plumbers
- primary school
- provide accommodation
- provides accommodation & pottery
- public library
- Quarry & roading contractors, excavators
- Radio station
- Realy contratctors
- Recruitment & staff consultancy
- Rental car operator
- restaurant/takeaways
- retail
- retail
- Retail
- retail - furniture / flooring
- retail gifts
- retail pharmacy
- retail sales
- roofing & waterproofing
- Sales service electronics
- Service station/shop/auto repairs
- Supply & fit glass-auto, residential, commercial
- Surveying, Engineering, Resource Mgmt
- tourist attraction
- tourist attraction
- travel agency
- trustee organisation
- veterinary clinic

### **Respondent's position in business**

- Boss
- company director
- company director
- Company Director
- Director
- director
- director
- director
- director
- director
- Director



- trustee
- vet nurse