

Report 12.245  
Date 12 June 2012  
File N/04/09/01

Committee Hutt Valley Floodplain Management Subcommittee  
Author Sharyn Westlake, Senior Engineer, Strategy and  
Advisory Specialist

## The Wainuiomata River Flood Hazard Information Update

### 1. Purpose

To advise the Subcommittee of outcomes from the community consultation regarding the Wainuiomata River flood hazard, and seek endorsement of the final Flood and Erosion Hazard Information Sheets for the Wainuiomata River floodplain.

### 2. The decision-making process and significance

The matter requiring decision in this report has been considered by officers against the requirements of Part 6 of the Local Government Act 2002 (the Act).

#### 2.1 Significance of the decision

Officers have considered the significance of the matter, taking the Council's significance policy and decision-making guidelines into account. Officers recommend that the matter be considered to have low significance.

Officers do not consider that a formal record outlining consideration of the decision-making process is required in this instance.

In making this assessment Officers are not seeking to assess the importance placed on the issue by specific individuals, groups or agencies in the community. Officers acknowledge that the matters referenced in this report may have a high degree of importance to affected or interested parties.

### 3. Background

On 23 June 2011 options for updating the Wainuiomata River flood hazard were put to the Hutt Valley FloodPlain Management Subcommittee (Report 11.228).

The Subcommittee subsequently recommended to Council that budget was made available for Option 2 in the 2011/12 Annual Plan. Option 2 is detailed as follows:

*Plot current flood levels into LiDAR to get refined flood extents and depths. Re-publish the information sheets with the updated information, mail out to all affected landowners, and make available for HCC LIMS.*

- *Plot current flood hazard extent over LiDAR using 2000 hydraulic model levels.*
- *For missing LiDAR area use the historic terrain from the original model.*
- *Use existing erosion hazard and structural damage lines, with minor refinements.*
- *Present the information as the more accurate flood hazard area and without the water depth classes shown.*
- *Re-publish the information sheets with the updated information, mail out to all affected landowners, and make available for HCC LIMS.*

Council approved additional funding for this work along with other hazard mapping across the region at the Council meeting of 29 June 2011 (Report 11.278).

Council undertook remapping of the flood hazard for the Wainuiomata River floodplain as recommended to the Hutt Valley FloodPlain Management Subcommittee on 23 June 2011 (Report 11.228). The hydraulic modelling process carried out exceeded the requirements detailed in Option 2 (above). The main points of variance were as follows:

- An updated hydrological analysis was carried out using the 13 years of extra data available (since the 1998 analysis used in the original model) and the rating curve for the flow meter at Leonard Wood Park updated.
- The model was recalibrated and refined using the available data that was collected from the 2004 flood event.
- Further flood level data was collected following meetings with a number of the local residents and used in the recalibration of the model.

Based on the results of comparison of the calibration runs and the comparison of the aerial photos with the flood spread, we have a high level of confidence that the model has produced results within an acceptable level of accuracy for the production of flood hazard maps.

The remapping of the flood hazard resulting from the updated hydraulic modelling, and the proposed community consultation process, were reported to the Hutt Valley FloodPlain Management Subcommittee on 1 December 2011 (Report 11.564).

The final Flood and Erosion Hazard Information Sheets and suggested Hutt City Council Land Information Memorandum (LIM) statement, which have been compiled following consultation feedback, will be presented to the Subcommittee at the meeting on 26 June 2012. An example sheet is contained

in **Attachment 1** to this report, and the suggested LIM statement is contained in **Attachment 2**.

The updated Flood and Erosion Hazard Information Sheets will then be forwarded to Hutt City Council for inclusion on Land Information Memoranda, and posted on Greater Wellington's web site.

#### **4. Consultation**

As part of reviewing the flood hazard information, we have consulted with:

- The community, via a drop-in session at the Wainuiomata Golf Club on 15 February 2012. A letter was sent to all people within the flood and erosion hazard area inviting them to participate (235). This meeting was attended by Hutt City Council representatives, Councillors and at least 23 residents and interested parties. Following feedback received at this meeting, specific investigation of several areas where the flood hazard was queried, including site survey was carried out.
- Further discussions have been had with residents including Bill Voisey, Ian Turner and Margot Fry, Godfrey Fernandez, Ken Jackson, Shane Edwards and Mike Curtis.
- Hutt City Council Officers.
- John Philpott, a River Engineer engaged by a number of residents to undertake site-specific assessments.
- Further e-mail feedback suggesting additional changes to the draft Information Sheets and the suggested Hutt City Council Land Information Memorandum (LIM) statement was also received.

Following the public meeting, comments received and specific feedback, the draft Flood Hazard Information Sheets and suggested LIM statement were changed and mailed out to attendees of the public meeting and John Philpott with an opportunity to provide further feedback before 25 May 2012. These were also sent to Hutt City Council.

Considerable further feedback and discussion has also been received from individuals regarding the erosion hazard lines. The revision of the flood hazard information sheets was not intended to be included as part of this process, but we have made some changes and agreed a method of including further information as it comes available.

#### **5. Comment**

Feedback from residents through the community consultation process has been taken into account in compiling the final Flood and Erosion Hazard Information Sheets and suggested Hutt City Council Land Information Memorandum (LIM) statement, and is commented on below.

##### **Flood Hazard Information**

From feedback received, it is clear that opinions differ on the best way to show the flood hazard information. With the more detailed model results available, officers had tried to depict the flood hazard by showing water depth as a

graduated change in colour. However, feedback through the consultation period showed that it is difficult to interpret the water depths with the underlying aerial photo colour. Officers have, therefore, decided that at this stage the flood hazard is to be shown as a single-shaded area on the maps, which is consistent with the other flood hazard information being produced by GW, such as maps for the Waiwhetu and Pinehaven Streams (see <http://www.gw.govt.nz/pinehavenstream/> and <http://www.gw.govt.nz/waiwhetustream/>).

As the purpose of the data sheets is to inform regarding the potential flood and erosion hazard on the floodplain, officers consider that the single shaded blue area achieves the aim of indicating that the property may be affected by flood hazard. Further, officers are able to provide additional information on request regarding location-specific flood water depth information. If property owners (or others) would like maps at a different scale showing the 'depth' information over their properties on a graduated blue scale, this can also be provided on request and interpretation of the information discussed.

### **Erosion Hazard Information**

Updating the Erosion Hazard information was not included in the work budget approved by Council to be carried out as part of updating Wainuiomata flood hazard information. Officers have recommended that individuals engage their own expert if they wish to get a better understanding of the erosion risks on their property.

### **Site-specific Erosion Hazard Assessments**

Officers have considered how to deal with the situations where site-specific information is obtained by the owners, and how this should be managed. If the information is kept by the owner, people viewing information on the GW website or obtaining a LIM from HCC would not be aware that further information exists.

Officers have discussed this with HCC Officers and agreed that site-specific information obtained by property owners would be able to be sent by the owner to GW, who will verify that the information has been carried out by a suitably qualified person and that there are no obvious omissions. GW officers will then forward the information with a cover letter to HCC. HCC could then include it on the LIM so that it would be part of any LIM report request by an owner or prospective owner. The GW website will also be annotated to indicate that 'further site-specific information is available for this property'.

### **Site-specific Erosion Hazard Assessments for Properties at 1100B, 1100C, 1248 and 1276 Coast Road**

Site-specific erosion hazard assessments have been commissioned by residents and carried out by John Philpott & Associates for the properties at 1100B, 1100C, 1248 and 1276 Coast Road. These site-specific assessments were received by GW on 1 June 2012. GW has verified these reports, and is confident that there are no obvious omissions. These reports have been forwarded with a cover letter to HCC to include on LIMs for these properties. Additionally, the Flood and Erosion Hazard Information Sheet 3 has been amended to indicate that there is 'Site-specific Erosion Hazard Information

Available' for these properties. Example final Flood and Erosion Hazard Information Sheets are included as **Attachment 1**.

### **Hutt City Council Land Information Memorandum (LIM) Statement**

Feedback was received at the Consultation meeting, and following the meeting, that wording changes should be made to the HCC LIM statement. During the consultation process proposed wording suggestions were also sought on the statement as HCC Officers have indicated a willingness to consider suggestions on the wording put forward by GW, resulting from the consultation. The LIM statement to be suggested to HCC is given in **Attachment 2**.

The Subcommittee should note that the final decision on wording to use for the HCC LIM statement lies with Hutt City Council.

## **6. Communication**

Further communication proposed regarding the Wainuiomata River Flood and Erosion Hazard Information is that the new Information Sheets with changed maps are to be republished, sent to HCC and put on the GW website.

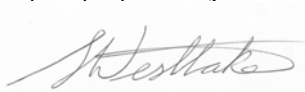
The suggested wording for the HCC Land Information Memorandum statement is to be sent to HCC.

## **7. Recommendations**

*That the Subcommittee*

1. **Receives** the report.
2. **Notes** the content of the report.
3. **Endorses** the Amendments to the Flood and Erosion Hazard Information Sheets for the Wainuiomata River as proposed in Section 5.

Report prepared by:



**Sharyn Westlake**

Senior Engineer, Strategy and  
Advisory Specialist

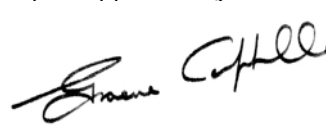
Report approved by:



**Jan van der Vliet**

Team Leader Investigations,  
Strategy and Planning

Report approved by:



**Graeme Campbell**

Manager  
Flood Protection

Report approved by:



**Wayne O'Donnell**



## Example Final Flood and Erosion Hazard Information Sheets

Quality for Life



# Flood and Erosion Hazard Wainuiomata River

Information sheet 3

June 2012

One of Greater Wellington’s key roles is to help communities protect themselves from the effects of natural hazards. To do this, our communities need to understand the risk from natural hazards and have affordable and acceptable management solutions in place. We also want to ensure that inappropriate developments don’t create new problems.

Identifying hazards, such as those caused by river flooding and erosion, is the responsibility of local and territorial authorities under the Resource Management Act. This information sheet tells you about the flood and erosion hazard identification work Greater Wellington has undertaken on the Wainuiomata River, what the risks are, and what you can do to manage them.

### The Wainuiomata River catchment

The Wainuiomata River catchment has an area of 133km<sup>2</sup> and a river length of about 22km (as shown in Figure 1 below). The location and shape of the Wainuiomata catchment makes it more responsive to southerly based rainstorm events.

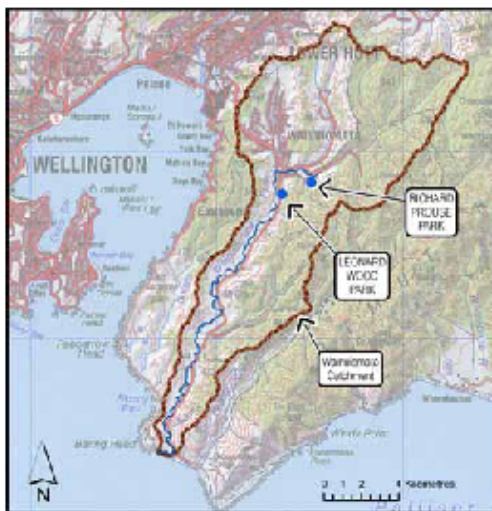


Figure 1: Location of the Wainuiomata River (in blue)

### How we measure floods

The amount of water flowing in a river is measured by a unit called a cumec (cubic metre per second), which is a measure of how much water flows past a given point every second.

Flood frequency is measured by how often a flood of a particular size is likely to happen, such as a 5, 50 or 100-year return period flood event. A 100-year return period flood event (100-year flood) has a 1% chance of being equalled or exceeded in any year.

On average, one of these events will occur every 100 years based on past records. But don’t be misled into thinking that a 100-year flood can only happen once in 100 years – two big floods could happen soon after each other!

### Floods on the Wainuiomata River

The six largest historic events measured at Leonard Wood Park since 1977 are summarised in the table below. Their current estimated return period is shown, as well as the predicted new return period, including the effects of climate change up to 2090.

Date	Maximum flow (cumecs)	Estimated flood return period (years)	
		Current	With climate change
21 May 1981	116	12	7
10 Jun 2003	127	19	9
16 Feb 2004	192	97	42
19 Aug 2004	111	11	6
7 Jul 2006	129	18	10
24 Oct 2006	100	8	5



Figure 2: The lower Wainuiomata valley on 16 Feb 2004

#### Why this information is useful

The hazards associated with flooding and the natural evolution of the floodplain should be considered when new development is being considered on the floodplain. This approach is useful as it helps to:

- Minimise the future damage from flood events to property
- Identify any potential threat to life
- Allow evaluation of any impact on the river environment
- Alert people to any potential flood and erosion risk

#### What it means

The hazard assessment shows areas along the Wainuiomata River and floodplain that could be affected by flood and erosion. A typical map is shown on page 3. *Flood and Erosion Hazard Information Sheets* are available with maps covering the main channel of the Wainuiomata River from the township to the mouth, as shown in the inset on the page 3 map.

**100-year flood extent:** is shown pale blue over the extent of flooding. The flood extent results from the modelled 100-year flood including 0.6m freeboard and an allowance for increased flood flows arising from climate change through to the year 2090.

**Potential erosion hazard area:** is the area which the lower Wainuiomata River channel could continue to migrate naturally within over time if no river control works were undertaken to limit channel movement. The time period could range from a small number of years to hundreds of years.

Before any new development in the potential erosion hazard area, site-specific advice should be obtained from a suitably qualified person to verify the erosion hazard at the proposed development site. Development may be permitted if the risk to the new development is no more than minor, taking into consideration the characteristics of the natural hazard, its magnitude and frequency, potential impacts and the vulnerability of development.

**Site-specific erosion hazard information:** Site-specific advice has been obtained for this property (by others). Note: Other site-specific advice obtained after these maps were published may be available. Site-specific erosion hazard information is held by the Hutt City Council.

#### How does Greater Wellington manage the Wainuiomata River?

The Wainuiomata River is administered by Greater Wellington. In some areas along the river Greater Wellington also manages flood protection and erosion. However, the approach depends on where you are along the river:

- Upper catchment – much of the upper catchment is designated for water supply and managed by Greater Wellington. The public is excluded from the water supply area for health reasons.

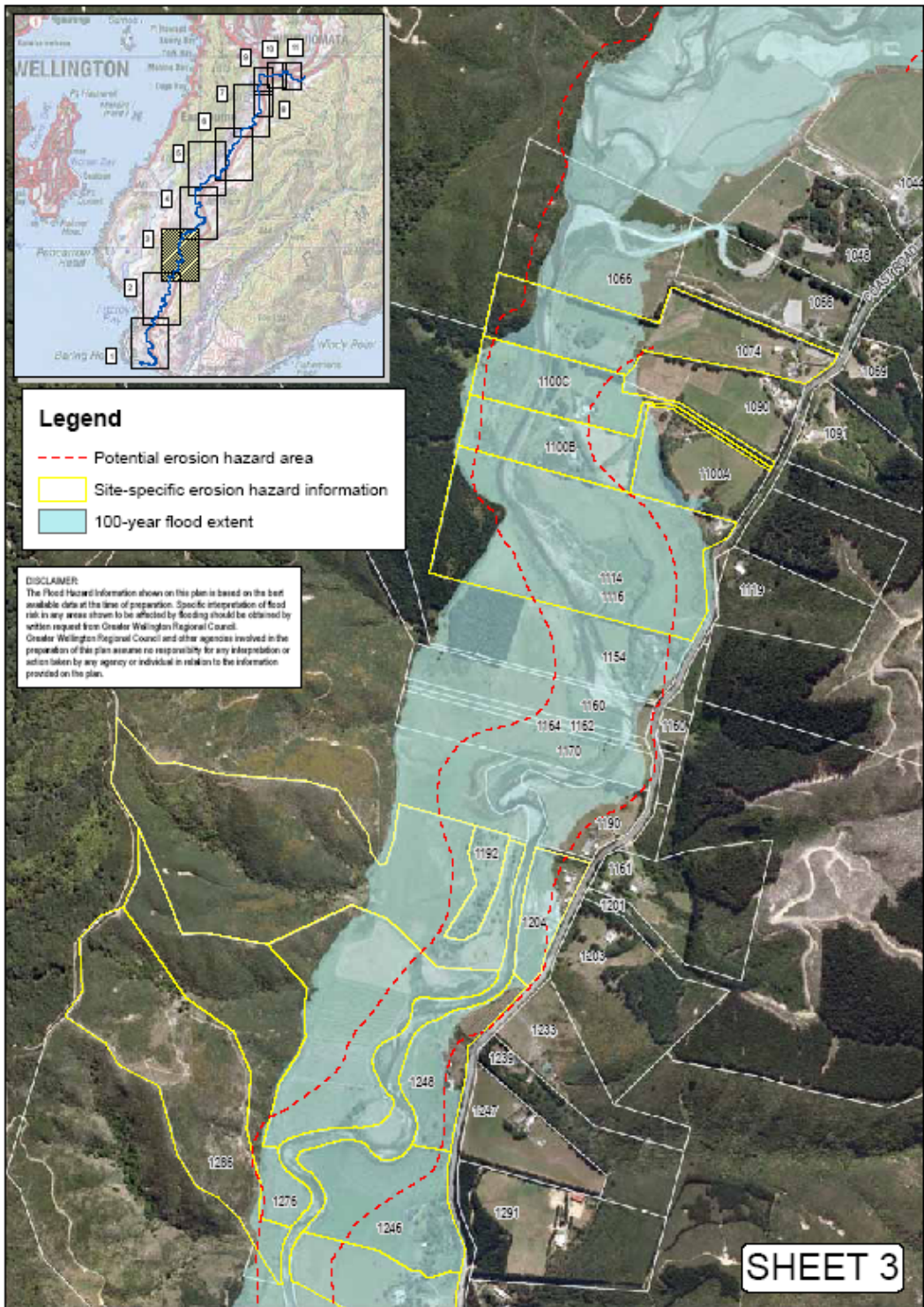
Maintenance of the watercourses above Richard Prouse Park is the landowner's responsibility.

- Richard Prouse Park to Leonard Wood Park – from Richard Prouse Park the river flows through the Wainuiomata Township to Leonard Wood Park. The floodplain is largely developed with two stopbanks (at Parenga Street and from Peel Place to Wood Street). The river channel is managed by bank protection works to maintain its current alignment. Greater Wellington maintains the channel from Richard Prouse Park to Leonard Wood Park, and has a cost-share arrangement in place with the Hutt City Council for maintenance work. No further structural works are proposed for the Wainuiomata River in this reach.

Possible future upgrading or replacement of the Coast Road Bridge could remove a constriction to floodwaters which causes flooding in the Gibbs Crescent area in a greater than 100-year flood.

- Leonard Wood Park to the sea – the river flows through rural land and the river channel is free to move within the wider floodplain. There are no river control works, other than isolated protection works where Coast Road is threatened by erosion. In this rural section of the river Greater Wellington provides advice but does not carry out any physical works; protecting private property or assets from erosion is the responsibility of the landowner.





WAINUIOMATA RIVER  
 100-Year Flood Extent including Climate Change & Potential Erosion Hazard Area

## Flood and Erosion Hazard Information Sheet

Wainuiomata River

### Will this information affect my property value or insurance?

We have been advised by Quotable Value that valuations follow the market rather than set the market. They would not expect to discount a valuation without there being market data to support that approach, and this was not the case from their observations of the market at the time of their valuations. This advice was based on work they have undertaken in the Mangaroa Valley which is in a similar situation.

Many areas in the Wellington Region are subject to flood risk. We advise that any known facts relating to the physical risk to a property should be disclosed to an insurer. This includes whether the property is exposed to any particular hazard by virtue of its location (eg, flood). An insurer requires these facts when evaluating whether or not to underwrite the risk and, if so, on what terms.

### What you need to do if you live in this area

Consider the following actions if you are building or renovating in a flood or erosion hazard area:

- Speak to the Hutt City Council (04 570 6666 – ask for Environmental Consents) before you start building
- Avoid the area affected by flood hazard. If it is not possible to avoid the flood hazard, such as for an existing dwelling, Greater Wellington can provide you with site-specific advice regarding the flood water depths
- Raise your building platform or floor levels, or build to two storeys. The underside of the floor joists or concrete slab should be clear of the 100-year flood level (including 0.6m freeboard and climate change to 2090). Remember that the design flood event could be exceeded
- Consider access issues and provide safe evacuation routes. Elevating access routes is not recommended as these may act as barriers to flood waters
- Ideally, new dwellings should be positioned on the Coast Road side of the river unless appropriate safe access can be provided
- Before any new development in the Potential Erosion Hazard Area, site-specific advice should be obtained from a suitably qualified person to verify the erosion hazard at the proposed development site. Development may be permitted if the risk to the new development is no more than minor, taking into consideration the characteristics of the natural hazard, its magnitude and frequency, potential impacts and the vulnerability of development
- If available, site specific Erosion Hazard information will be held by the Hutt City Council
- Know your risk. Decide whether you would be better staying put in an emergency, and where you can go to escape the flood water. Greater Wellington, the Hutt City Council and Civil Defence can help you with this
- Be prepared. Make yourself an emergency kit that will last you for at least 3 days (water, canned food, torch, first-aid and spare medication, camp-stove and fuel, battery or wind-up radio, dry blankets/sleeping bag and warm clothing). For more information, check the Yellow Pages or contact a Civil Defence emergency management advisor at your local council

Greater Wellington is always available to provide advice, site-specific information and recommendations for individual properties whether they are for specific development proposals or simply in regard to enquiries from residents or interested parties. So please do not hesitate to contact us on the numbers below.

#### For more information, contact

Flood Protection department  
Greater Wellington  
PO Box 11646  
Manners Street  
Wellington 6142



T 04 384 5708  
F 04 385 6960

[www.gw.govt.nz](http://www.gw.govt.nz)  
[info@gw.govt.nz](mailto:info@gw.govt.nz)



GWFP-G-12/160  
June 2012

# Flood and Erosion Hazard Wainuiomata River

Information sheet 4

June 2012

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**Potential erosion hazard area:** is the area which the lower Wainuiomata River channel could continue to migrate naturally within over time if no river control works were undertaken to limit channel movement. The time period could range from a small number of years to hundreds of years.

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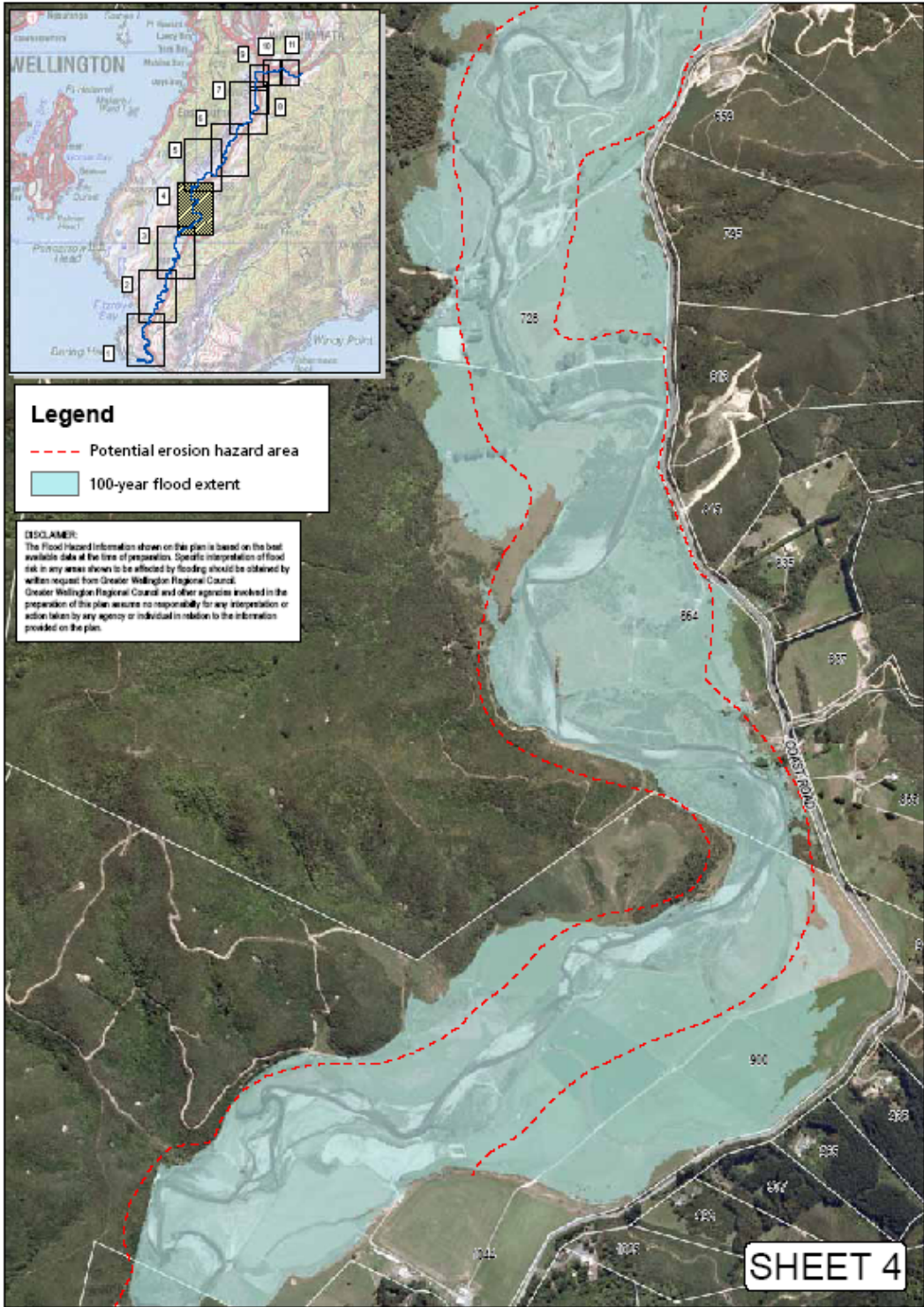
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WAINUIOMATA RIVER  
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Wainuiomata River

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#### For more information, contact:

Flood Protection department  
Greater Wellington  
PO Box 11646  
Manners Street  
Wellington 6142



T 04 384 5708  
F 04 385 6960

[www.gw.govt.nz](http://www.gw.govt.nz)  
[info@gw.govt.nz](mailto:info@gw.govt.nz)



GWFP-G-12/160  
June 2012

## Attachment 2 to Report 12.245

### **Wording suggested to Hutt City Council for Land Information Memorandum (LIM) Statement**

Council records show part or all of this property is in the Wainuiomata River 100-year flood and erosion hazard area (see enclosed map). The map is based on modelling work carried out by Greater Wellington Regional Council.

The 100-year flood extent results from the modelled 100-year return period event including 0.6m freeboard and an appropriate allowance for increased flood flows arising from impacts due to climate change through to the year 2090.

The Potential Erosion Hazard Area is the area which the lower Wainuiomata River channel could continue to migrate naturally if no river control works were undertaken to limit channel movement. The time period could range from a small number of years to hundreds of years. Before any new development in the Potential Erosion Hazard Area site-specific advice should be obtained from a suitably qualified person to verify the erosion hazard at the proposed development site. Development may be permitted if the risk to the new development is no more than minor, taking into consideration the characteristics of the natural hazard, its magnitude and frequency, potential impacts and the vulnerability of development. Site-specific erosion hazard information held by Hutt City Council is included in this LIM.

Greater Wellington Regional Council provided this modelling information to Hutt City Council, and recommends you contact staff at the Regional Council on (04) 384 5708 who are available to discuss issues and provide more information relating to the flood hazard.