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Committee Environmental Wellbeing Committee  
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## **Floodplain Management Plan Implementation: Annual Progress Report to June 2013**

### **1. Purpose**

To advise the Committee on progress made to June 2013, in implementing the Hutt, Otaki, Waikanae Floodplain Management Plans, and the Lower Wairarapa Valley Development Scheme (LWVDS) upgrade.

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

No decision is being sought in this report. This report provides an update on progress made with implementing the floodplain management projects and confirms that we are meeting the service improvement plans set out in the Council's Long Term Plan.

### **3. Background**

This is the eleventh annual report on the implementation of the western FMPs and the sixth annual report on the Wairarapa capital works.

#### **Western FMPs**

The Hutt, Otaki and Waikanae Floodplain Management Plans (Western FMPs) were completed in 2001, 1998 and 1997 respectively. They recommend structural, non-structural and environmental measures to reduce the flood risk to the respective floodplains and improve the environment. Greater Wellington Regional Council has adopted a 40-year time frame to fully implement the three FMPs. Implementation of the FMPs commenced in 2000 and \$44.5 million has been spent up to the end of June 2013. The Flood Protection, 2013-2022 Operating Plan provides a further \$51 million for implementing the three FMPs.

#### **LWVDS**

A major review of the LWVDS, completed in 2006, recommended a structural upgrade programme to improve the security of the flood defences in the lower

valley. The original programme was for implementation over 8 years, commencing in 2007/08 and estimated to cost \$7.82 million. Generally the work involved strengthening river bank protections and upgrading of stopbanks on the Ruamahanga and Tauherenikau rivers. In 2011, Council approved a revised cost estimate (\$12.7 million in current 2013 dollars) and extended the completion date to 2022. A total of \$4.7 million has been spent to June 2013. The Flood Protection 2013-2022 Operating Plan provides a further \$8 million to complete the project.

### Waiohine FMP

The process for developing a FMP for the Waiohine floodplain commenced in 2008/09 and is progressing. The Flood Protection 2013-2022 Operating Plan provides \$6.3 million for implementation of the project during the period from 2013/14 to 2015/16, once development of the Plan is complete.

## 4. Summary Progress

The FMP implementation is progressing well with the target of completing the western projects by 2040 and the Wairarapa project by 2022. **Attachments 1 to 5** provide a summary by project of implementation progress. Table 1 below shows the summary of financial progress to date and the forecast to 2022. The progress shown in Table 2, as ‘% complete’ to June 2013 and the forecast progress to 2022 was computed by discounting current dollars to dollars at the time of adoption of the respective FMPs.

Table 1 Expenditure Summary

River	Total 40 year budget (\$M) <sup>1</sup>	Expenditure in 2012/13(\$M) <sup>2</sup>	Expenditure to June 2013 (\$M) <sup>2</sup>	Total expenditure forecast to 2022 (\$M) <sup>2</sup>
Hutt	78.00	7.9	33.1	75.6
Otaki	12.07	0.12	7.1	13.4
Waikanae	8.69	-	4.3	6.7
Total western FMPS	<b>98.76</b>	<b>8.02</b>	<b>44.5</b>	<b>95.7</b>
LWVDS	8.8	0.44	4.7	12.7
Waiohine	5.5		-	6.3
<b>Total</b>	<b>112.08</b>	<b>8.46</b>	<b>49.2</b>	<b>114.7</b>

Notes:

1. Hutt, Otaki, Waikanae and LWVDS budgets are based on 1999, 1998, 1997 and 2007 dollar (FMP dollars) values respectively.
2. Expenditure figures are the sum of expenditure to date in current dollars and the budget (indexed) provided in the current Annual plan. The figures have not been converted to FMP dollars.

**Table 2 Progress Summary**

River	Budget/Expenditure FMP dollars		% Complete		
	Total budget (\$M)	Expenditure to June 2013 (\$M)	Actual to June 2013 in dollar terms	Forecast to June 2022 in dollar terms	June 2013 (Flood damages saved)
Hutt	78	21.38	27%	58%	35%
Otaki	12.07	5.32	44%	73%	70%
Waikanae	8.69	3.79	44%	58%	69%
LWVDS	8.8	4.7	53%	100%	

#### **4.1 Non-structural measures**

The Hutt and Kapiti flood hazard information has been included in Hutt City and Kapiti District Plans. The Kapiti flood hazard has been amended to reflect the reduced flood risk from the Chrystalls stopbank and Jim Cooke Park realignment works. The Wairarapa flood hazard information has been included in the Wairarapa Combined District Plan. A hearing on the proposed Upper Hutt District Plan change to include the Hutt River and Mangaroa flood hazard, was held in June 2013. A decision on including the information in the district plan is expected by October 2013.

#### **4.2 Structural measures**

##### **4.2.1 Hutt River**

By the end of June 2013, \$33.1 million had been spent in implementing the Hutt River FMP. The project is now about 27% complete on the basis of FMP dollars and progressing well.

The Ava to Ewen project, Belmont improvements, Whirinaki Crescent stopbank upgrade and the Bridge Road edge protection works are complete. The Boulcott/Hutt stopbank project was completed by June 2013, one year ahead of schedule.

The planning and design for the City Centre stopbank and channel improvements commenced in October 2012 and is progressing well. The City Centre Project, which includes stopbanks on both banks, is currently scheduled for completion by 2022.

The benefits in terms of flood damage saved are estimated at 35% on the basis of works completed to date. The benefits on the basis of flood damages saved will be 66% when the City Centre upgrade project is completed.

#### 4.2.2 Kapiti Rivers

By the end of June 2012, \$11.4 million had been spent implementing the Kapiti FMPs. The Otaki and Waikanae FMPs are both now 44% complete on the basis of FMP dollars. In Otaki, the Chrystalls stopbanks, the Rangiuru floodgates, the Mangapouri culverts and about 52% of the river management works upstream of SH1 are complete. In Waikanae, the Kauri Puriri works, Otaihanga Road raising, Jim Cooke Park realignment and part of Otaihanga edge protections are complete. About 59% of the planned river management works are now complete.

#### 4.2.3 LWVDS

Implementation of the LWVDS development works programme commenced in 2007/08. All works programmed up to 2012/13, amounting to about 53% of the revised total project, were completed. The total expenditure to June 2013 is \$4.7 million.

### 4.3 Environmental enhancement works

Significant environmental enhancement works have been completed with all the above capital projects. Environmental strategies have been completed for the Hutt, Otaki and Waikanae Rivers. These strategies generally include planting native trees, improving existing walkways or providing new walkways and general landscaping. The Boulcott/Hutt stopbank was designed and constructed to blend in with the golf course. A review of the Waikanae Environmental Strategy, undertaken as part of the 10 yearly review of the Waikanae FMP, is now complete. The Friends of the Waikanae and Otaki Rivers are playing a significant part in the implementation of these strategies.

### 4.4 Emergency Management

Most of the emergency management measures identified in the FMPs to enhance the existing systems have been completed. Providing flood warning to local authorities and selected land owners is continuing on an on-going basis.

### 4.5 FMP progress reviews

All three western FMPS have adopted a 40 year timeframe to fully implement with progress reviews proposed every 10 years. The 10 yearly progress review of the Waikanae FMP is now complete and the reviews of Otaki and Hutt FMPs are programmed for the three year period from 2014/15 to 2016/17.

## 5. 2012/13 Targets and achievements

Significant progress was made on all FMP projects during 2012/13. A total of \$8.5 million was spent during the year. The highlights for 2012/13 are summarised below.

### Western FMPs

In the Hutt, the Boulcott/Hutt stopbank project was completed one year ahead of schedule and the project scoping for the Hutt River City Centre Project was completed in consultation with the key stakeholders. The purchase of two Mills Street properties required for the City Centre stopbank was also completed. Good progress was made on the proposed plan change to include the Hutt

River and Mangaroa flood hazard in the UHCC district plan and a hearing was held in June 2013.

In Kapiti, a draft channel management strategy for the Otaki River, from mouth to gorge, was prepared and good progress was made on negotiating land entry agreements with private land owners along the lower Waitohu stream to allow channel improvement works to be undertaken.

### **LWVDS**

Boulder protection works to Pauls Bank at Lake Onoke are ongoing. In the Ruamahanga River the total amount of major works carried out in 2012/13 included:

- Boulder rip rap protection - 200 m
- Boulder groynes - 20 in total at 5 locations
- Top up of the Ruamahanga stopbank at Macland to bring it up to standard
- Planting native spp. -2,450 plants

## **6. 2013/14 works programme**

### **Western FMPS**

The total western FMP budget for 2013/14 is \$2.5 million. The key western FMP projects for 2013/14 include:

- Follow up work with UHCC to complete the **district plan change** to include the revised Hutt River and Mangaroa flood hazard in the Upper Hutt district plan;
- Completing land transfers associated with the **Boulcott/Hutt stopbank project**, completing a security fence at Safeway and handing over completed works for maintenance;
- Completing an integrated concept plan that combines **Hutt River City Centre Upgrade Project** with components of the HCC's Making Places Project and NZTA's Melling Intersection Project;
- Commencing investigations for the **Jim Cooke Park stopbank** in the Waikanae river;
- Progressing the **lower Waitohu stream** land entry agreements and completing the selected stream works;
- Completing the 2013/14 works programme for the **Otaki River channel works** in accordance with the channel management strategy.

### **LWVDS**

The total LWVDS budget for 2013/14 is \$0.787 million. The key projects for 2013/14 include:

- Top up of Ruamahanga stopbanks upstream of Lake Onoke to bring them to the same standard as Pauls Bank;
- Constructing boulder groynes and rip rap protection on the Ruamahanga River and at Pauls Bank;
- Upgrade of stopbanks on Turanganui River downstream of Lake Ferry Road;
- Completion of the stopbank at Tauanui Delta;
- Whakawhiriwhiri Stream upgrade work subject to getting Resource Consent and land entry permits in time;
- Planting native spp. on the lower Ruamahanga River for wave damage erosion protection and planting at Macland Farm for biodiversity purposes.

## **7. Activities proposed to 2022**

The Flood Protection 2013-2022 Business Plan provides a total of \$65 million to implement the Hutt, Otaki, Waikanae and Waiohine FMPs and the LWVDS development works. The programme also includes completing the 10 yearly progress reviews of the western FMPs.

### **7.1 Hutt**

The programme provides for completing all stopbanks on both banks of the Hutt River from Kennedy Good Bridge to Ava Rail Bridge to provide the HRFMP recommended standard of protection to the Hutt CBD, the central residential areas and the western residential areas from Melling to Ava Rail. The proposed Hutt River City Centre Upgrade Project includes all the remaining works in this reach. Upper Hutt projects including Maoribank bed stabilisation and Ebdentown protection works are also programmed for this period. The extent of both Upper Hutt projects will be determined in consultation with NZTA.

### **7.2 Waikanae**

In Waikanae, the Jim Cooke Park stopbank project will be completed by 2016. Further environmental enhancement works will continue through the period.

### **7.3 Otaki**

The programme provides for completing the Lower Waitohu Stream project and the north stopbank improvements by 2014. The programme also provides for south stopbank improvements and further bank edge protection works and environmental enhancement works to be completed from the mouth to the Otaki Gorge.

## 7.4 Wairarapa

The programme provides for completing the Waiohine Project by 2016 and the LWVDS development works schedule by 2022.

## 8. Communication

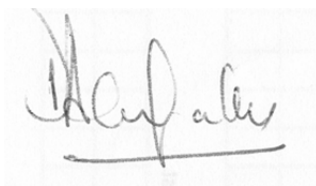
This report is written primarily for internal purposes. However, a copy will be sent to HCC, UHCC and KCDC for their information.

## 9. Recommendations

*That the Committee:*

1. *Receives the report.*
2. *Notes the content of the report.*

Report prepared by:



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Attachment 1: Hutt FMP summary progress table

Attachment 2: Otaki FMP summary progress table

Attachment 3: Waikanae FMP summary progress table

Attachment 4: Wairarapa Projects - LWVDS summary progress table

Attachment 5: Waiohine summary progress table



*Attachment 1*

**Hutt FMP Summary Progress Table**

Work Area	Plan Achievements		Programme	
	Completed to June 2012	Completed 2012/13	Proposed for 2013/14	Proposed in 2014/2022 LTP
<b>Non-structural measures</b>				
District Plan measures	Completed Hutt City Plan change	Progressed to a hearing with the UHCC change	Follow up work with the UHCC plan change	
Emergency Management Measures	Completed HRFMP projects		Further improvements proposed with the updating of the flood model and the improvements in flood forecasting information	
Voluntary Actions	Hutt River Flood Hazard Fact Sheet	Ongoing Providing hazard information	Ongoing Providing hazard information	Ongoing Providing hazard information
<b>Structural Measures</b>				
<b>River Mouth to Kennedy Good Bridge</b>				
Ava to Ewen Project	River realignment and stopbank upgrades completed			
Boulcott/Hutt stopbank	Progressed with the stopbank construction works	Stopbank construction completed one year ahead of schedule	Complete land transfers and hand over completed works for maintenance	
City Centre Upgrade Project	Progressed with land purchase at Mills Street on the basis of a Council approved alignment	Completed the scoping study.	Prepare an Integrated Project Plan that will combine the flood protection works with the other major projects in the City Centre	Complete the City Centre Upgrade Project.
Estuary to Ava Bridge stopbanks, Pharazyn Street stopbank and associated channel works				No budget yet (post 2022)
<b>Kennedy Good Bridge to Silverstream Bridge</b>				
Belmont Edge protections and Norfolk Street flood gate	Structural and district plan measures complete			



Principal stopbanks from KGB to Pomare and associated channel works				No budget yet (post 2022) Stopbanks are in good condition and only minor works are necessary
<b>Silverstream to Maoribank</b>				
Whirinaki Crescent (LB)	Stopbank reconstruction completed			
Ebdentown rock lining	Progressed with the design and negotiations with NZTA	Project postponed to 2017/18		Complete
Principal stopbanks from Trentham to Maoribank and associated channel works				No budget yet (post 2022) Stopbanks are generally adequate except for a short length upstream of the Moonshine Bridge
<b>Maoribank to Gemstone Drive</b>				
Maoribank Riverbed stabilisation	Completed investigations and developed a management strategy. Completed urgent repair works			Complete project 2014/15 – 2016/17
Bridge Road edge protections	Edge protection works completed			
Akatarawa/Gemstone stopbanks				No budget yet (post 2022)
<b>Environmental Strategy and FMP review</b>				
Ranger Service	Continue with ranger service	Continue with ranger service	Continue with ranger service	Continue with ranger service
<b>Enhancement works</b>				
Ava to Ewen	Completed planting, walkways, the viewing platform, Inanga spawning habitat in Opahu Stream and lighting along the Strand Park and Wakefield Street stopbank			
Belmont	Completed all landscaping works			
Whirinaki Crescent	Completed landscaping works			
Bridge Road	Completed planting			
Boulcott/Hutt	Progressed with golf course landscaping, pedestrian access and planting	Progressed with golf course landscaping	Complete landscaping and planting	
Hutt River Trail				
Estuary Bridge Underpass	Ongoing	Ongoing maintenance	Ongoing maintenance	
Planting Native Trees	Completed planting of natives associated with completed construction projects	Planting and maintenance continued	Continue planting natives	Continue planting natives

HRFMP progress Review				Commence the 10 yearly review in 2015/16
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Attachment 2

**Otaki FMP Summary Progress Table**

Work Area	Plan Achievements		Programme		
	Structural	Completed to June 2012	Completed 2012/13	Proposed for 2013/14	Proposed in 2014/2022 LTCCP
Chrystalls					
Stopbank		Completed 2000			
Extended Stopbank		Construction and land purchase completed			
Rangiuru Floodgates		Completed 2002			
Lower Waitohu Stream Project includes South Waitohu and Convent Road improvements		Developed flood mitigation options and progressed consultation with KCDC and landowners.	Progressed with land entry negotiations	Progress with land entry negotiations and complete selected stream works	Complete low stopbank at 74 Convent Road and South Waitohu stopbank
North Bank Repairs					Complete repairs
House Raising					
Lethbridge (02)					No budget yet
Rangiuru (22)					No budget yet
South Waitohu (06)					No budget yet
Mangapouri Stream					No budget yet
Culverts (by KCDC)		3 Culverts			No further budget
Stream widening					No budget yet
South Bank Stopbank			Investigated conceptual options for relocating the stopbank		Proposed to commence in 2016/17
Harpers Stopbank					No budget yet
Lutz Upper and Lower Stopbank		Completed 1999			
Katihiku Floodgates					No budget yet
Seaward Extension					No budget yet
<b>River Management</b>					
Katihiku			Concept designs completed		Progress
Gas Line		Progressing	Concept designs completed		Progress
Batching/Campbells		Lethbridge edge protections completed	Concept designs completed	Construct selected groynes	Progress
Bridges		Completed in 2009/10			
Ballast/Tracey		Concept designs for Traceys completed	Concept designs completed	Progress with edge protections upgrade at Traceys	Progress
Chrystalls Bend		Completed 1994			

Hughes	North Bank only	Concept designs completed		No further budget
Hughes/Lutz	North Bank only	Concept designs completed		Start South Bank edge protection works 2013/14
Taylor/Mansell	North Bank only	Concept designs completed		
Lower Gorge				No budget yet
<b>Non-structural</b>				
Non-structural in KCDC DP	Completed 1997 with updates in 2004 and 2009			Update as required
GWRC Advice	Ongoing	Ongoing	Ongoing	Ongoing
Community Preparedness	Achieved	Ongoing	Ongoing	Ongoing
<b>Environmental Strategy</b>				
Mouth	Weed clearing completed on north bank	Planting and maintenance Ongoing	Ongoing	Ongoing
Chrystalls Bend	Completed 1995 Further enhancement completed 2011			
Walkway through Winstones	Completed 2004			
Walkway to Chrystalls	Completed including the section under SH1 and rail bridge			
Walkway to Rahui				Continue with land entry negotiations
Environmental Strategy	Prepared 1999			Complete review
Friends initiatives	Ongoing support	Ongoing support	Ongoing support	Ongoing support
<b>FMP Review</b>				
FMP progress review				Complete review

## Waikanae FMP Summary Progress Table

Work Area	Plan Achievements		Programme	
	Completed to June 2012	Completed 2012/13	Proposed for 2013/14	Proposed in 2014-2022 LTCCP
<b>Structural</b>				
Kauri-Puriri Works				
Stopbank	Completed 1997			
Greenaway Road Raising	Completed 1997			
Remove Riverside Lodge	Completed 1997			
Chillingworth Stopbank	Completed 1997			
Jim Cooke Park Stopbank and flood wall			Complete options report	Complete 2015/16
Otaihanga Road Raising				
Stage 1	Completed 2000			
Stage 2	Deferred			
Stage 3	Completed 2003			
House Raising				
73 Makora Rd	Completed 2006			
11 & 13 Toroa Rd	Completed 2000			
15 Toroa Rd	Completed 2006			
21 Makora Rd	Completed 2006			
61 Makora Rd	Deferred			
1 -17 Makora Rd	1 house raised (Boating Club)			No further house raising budgeted
Lion Park Ringbank				No budget yet
Waikanae Beach				
Golf Course Stopbank				No budget yet
Lengthen Fieldway Bridge				No budget yet
<b>River Management</b>				
Mouth				No budget yet
Otaihanga	Rock edge protection 220 m completed			No budget yet for remaining work
El Rancho	Completed 1997			
Greenaway Road				
Jim Cooke Park	Completed 2008			
River Glade	Completed 2000			
Kebbels	Completed 2000			
Edgewater Park	Completed 2000			
State Highway One	Completed 2000			

<b>Non-structural</b>				
Non-structural in KCDC DP	Completed 1997 with updates in 2004 & 2007			Update as required
GWRC Advice	Ongoing	Ongoing	Ongoing	Ongoing
Community Preparedness	Ongoing	Ongoing	Ongoing	Ongoing
<b>Environmental Strategy</b>				
Pukekawa Reserve	Completed 1997			
SH1 to Maple Lane	Completed 2000			
Jim Cooke Park	Footbridge completed			
General	Tree clearing and track maintenance	Tree clearing and track maintenance	Tree clearing and track maintenance	Supporting Friends initiatives
Ecological Strategy	Prepared 1999	On going	On going	On going
Environmental Strategy	Prepared in 1999	Review substantially complete	Complete consultation with Iwi and publish updated strategy	On going
<b>FMP Review</b>				
FMP Review	Review, analysis and consultation completed	Completed outcomes and actions report	Distribute updated FMP with addendum	Implement review recommendations

## Wairarapa Projects

## LWVDS Summary Progress Table

Work Area		Progress	Programme	
River/Reach	Description	Completed to June 2013	Proposed for 2013/14	Proposed in 2014/2022 LTCCP
Ruamahanga - Waiohine to Waihenga	• Setback/upgrade stopbanks	100%	0%	100% completed
	• Willow buffer zones <sup>1</sup>	100%	0%	
	• Bank protection	70%	10%	
	• Fencing <sup>1</sup>	100%	0%	
Ruamahanga - Waihenga to Tuhitarata Bridge	• Boulder groynes	78%	2%	100% completed
	• Setback/upgrade stopbanks	90%	0%	
	• Removal of overburden from the berm	20%	20%	
Ruamahanga - Tuhitarata Bridge to Lake Onoke	• Boulder rip rap	65%	15%	100% completed
	• Planting	50%	20%	
Tauherenikau	• Upgrade stopbank	60%	0%	100% completed
	• Willow buffer zone <sup>1</sup>	100%		
	• Fencing <sup>1</sup>	100%		
Tributaries	• Willow buffer zone <sup>1</sup>	100%	0%	100% completed
	• Land Purchase	100%		
	• Stopbank	60%		
	• Whakawiriwiri			

Note: The LWVDS Development Works Programme has been revised from 2012/13. The percentages given are based on the revised programme. A significant item included is removal of overburden from the berm between Waihenga and Tuhitarata Bridges.

<sup>1</sup> Willow buffer zones and fencing has been removed from the revised Development Works Programme, and included in the Scheme Maintenance Programme.

## Waiohine FMP Summary Progress Table

Work Area		Progress	Programme	
Phase	Description	Completed to June 2013	Proposed for 2013/14	Proposed in 2014/2022 LTCCP
1	Investigations and planning	Complete		Complete
2	Options/Development	Complete		Complete
3	Options/Assessment	70%	100%	Complete
4	Floodplain Management Plan		15%	Complete
5	FMP Implementation Construction of structures			Complete