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Committee Environment Committee
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Floodplain Management Plan Implementation: Annual Progress Report to June 2015

1. Purpose

To advise the Environment Committee (the Committee) of progress made to June 2015, in implementing the Hutt, Otaki and Waikanae Floodplain Management Plans, and the Lower Wairarapa Valley Development Scheme (LWVDS) upgrade.

2. Background

This is the thirteenth annual report on the implementation of the Western Floodplain Management Plans and the eighth annual report on the Wairarapa capital works.

2.1 Western Floodplain Management Plans

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 (GWRC) has adopted a 40-year time frame to fully implement the three FMPs. Implementation of the FMPs commenced in 2000 and \$50 million has been spent up to the end of June 2015. The Flood Protection Department's 2015-2025 Operating Plan (the Plan) provides a further \$88 million for implementing the three FMPs.

2.2 Pinehaven FMP

The FMP development for the Pinehaven Stream is progressing with the target of completing the FMP by February 2016. The total estimated cost of the FMP works is \$10 million and the implementation is programmed to commence in 2015/16. This is a joint GWRC/Upper Hutt City Council (UHCC) project with UHCC leading the implementation. GWRC will fund 50% of these works through the normal General and Targeted rates and UHCC will fund the other 50% through their own rates. The Plan provides \$5.6 million (including

inflation) for implementing the project. Three properties have been purchased in advance of the completion of the Plan at a cost of \$1.3 m. Settlement on two properties will be completed in 2015/16.

2.3 Wairarapa Capital Works

2.3.1 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 Wairarapa valley. The original programme was for implementation over 8 years, commencing in 2007/08 and estimated to cost \$8.82 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 2013 dollars) and extended the completion date to 2022. A total of \$6.25 million has been spent to June 2015. The Plan provides a further \$11 million to 2022 including budget for implementing outcomes from new FMP for the LWVDS.

2.3.2 Waiohine FMP

The process for developing a FMP for the Waiohine floodplain commenced in 2008/09 and is progressing. Implementation will commence once the FMP is completed and the Councils LTP provides \$11.5 million for completing the project by 2020/21. The programme for 2014/15 was deferred until the FMP is completed. Strategic property purchase opposite Fullers Bend on the Waiohine River has been undertaken in advance of completing the plan as an opportunity arose to purchase the property at a good price.

2.3.3 Te Kauru Upper Ruamahanga FMP

The process for developing a FMP for the upper Ruamahanga floodplain commenced in 2013/14 and is progressing. Implementation will commence once the FMP is completed. The Councils LTP provides \$12.5 million for completing the project by 2021/22.

3. Summary Progress

The FMP implementation is progressing well with the target of completing the western projects by 2040 and the Wairarapa projects by 2025. The Waiohine, Te Kauru and Pinehaven projects are yet to commence. **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 2025. The progress shown in Table 2, as ‘% complete’ to June 2015 and the forecast progress to 2025 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) ¹	Expenditure in 2014/15(\$M) ²	Expenditure to June 2015(\$M) ²	Total expenditure forecast to 2025 (\$M) ²
Hutt	78.00	1.3	37.6	106
Otaki	12.07	0.08	7.7	17

Waikanae	8.69	0.22	4.7	10
Pinehaven	10.00	0.38	0.38	5
Total western FMPS	108.76	1.98	50.4	138
LWVDS	8.8	0.78	6.25	17
Waiohine	5.5	0.65	0.65	12
Total Wairarapa	14.3	1.43	6.9	29
Total	123.06	3.41	57.3	167

Notes:

1. Hutt, Otaki, Waikanae and LWVDS budgets are based on 1999, 1998, 1997 and 2007 dollar (FMP dollars) values respectively. Waiohine and Pinehaven are 2008 and 2014 estimates.
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 shown are current, and have not been converted to FMP dollars.

Table 2: Progress Summary

River	Budget/Expenditure FMP dollars		% Complete		
	Total budget (\$M)	Expenditure to June 2015 (\$M)	Actual to June 2015 in dollar terms	Forecast to June 2025 in dollar terms	June 2015 (Flood damages saved)
Hutt	78	23.8	31%	79%	35%
Otaki	12.07	5.66	47%	88%	70%
Waikanae	8.69	3.98	46%	81%	69%
LWVDS	12.7*	6.25	49%	100%	
Pinehaven	5	0.38	8%	100%	
Waiohine	12	0.65	5%	100%	

*LWVDS progress is on the basis of the 2013 estimate

3.1 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. Inclusion of flood hazard information in the UHCC district plan is still progressing. The re-modelling of flood hazard information requested by UHCC is now substantially complete and currently under review.

3.2 Structural measures

3.2.1 Hutt River

By the end of June 2015, \$37.6 million had been spent in implementing the Hutt River FMP. The project is now about 31% complete on the basis of FMP dollars and progressing well.

The Ava to Ewen project, Belmont improvements, Whirinaki Crescent stopbank upgrade, the Bridge Road edge protection works and the Boulcott/Hutt stopbank project are complete.

The planning and design for the City Centre stopbank and channel improvements commenced in October 2012 and is progressing well. This project is currently scheduled for completion by 2025. Strategic land purchase at other critical locations in the Hutt River has continued.

The benefits in terms of flood damages 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.

3.2.2 Kapiti Rivers

By the end of June 2015, \$12.4 million had been spent implementing the Kapiti FMPs. The Otaki and Waikanae FMPs are 47% and 46% complete respectively 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.

3.2.3 LWVDS

Implementation of the LWVDS development works programme commenced in 2007/08. All works programmed up to 2014/15, amounting to approximately 46% of the revised total project cost, were completed. The total expenditure to June 2014 is \$6.25 million.

3.3 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.

3.4 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.

3.5 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 period from 2016 to 2025.

4. 2014/15 Targets and achievements

Good progress was made on all FMP projects during 2014/15. A total of \$3.4 million was spent during the year. The highlights for 2014/15 are summarised below.

4.1 Western FMPs

In the Hutt, good progress was made in developing the integrated concept design options for the City Centre Project. 10 Integrated Concept Design options combining the Making Places and Linkage components with the flood protection options were developed and evaluated. Two options were selected for community consultation. Two properties were purchased as part of the strategic land purchase for implementing the Hutt FMP. A re-modelling of the Managaroa flood hazard information has been completed and is currently being reviewed.

Council has approved a preferred alignment for the Jim Cooke Park stopbank reconstruction in Kapiti for the design and preparation of consents. Maintenance of edge protection works at Traceys in the Otaki River were completed.

4.2 LWVDS

The 2014/15 works programme was completed. Works completed include stage 2 of the Turanganui stopbank upgrade and land entry negotiations for the proposed improvements to the Whakawhiriwhiri Stream.

5. 2015/16 works programme

5.1 Western FMPs

The total western FMP budget for 2015/16 is \$5.3 million. The key western FMP projects for 2015/16 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
- Gaining Council approval of a preferred Integrated Concept Design option for the Hutt River City Centre Upgrade Project and progress with the preliminary design and preparation of NOR/Consents.
- Progressing with the Business Case process for the Melling Intersection Project
- Completing land transfers associated with the Boulcott/Hutt stopbank project
- Completing the Hutt River edge protections at Ebdentown and Belmont
- Lodging resource consents for the Jim Cooke Park stopbank reconstruction project in the Waikanae River
- Progressing with land entry negotiations for the lower Waitohu Stream channel works.

- Finalising an MOU with UHCC on cost sharing and progressing with the preliminary design for implementing the Pinehaven FMP.

5.2 Wairarapa

The total budget for 2015/16 is \$3.7 million. The key projects for 2015/16 include:

- Complete land entry negotiations for the Whakawhiriwhiri Stream upgrade project and commence construction.
- Progressing with the upgrade of Barrage gates.
- Complete the Tawaha culvert upgrade.

The total Waiohine FMP implementation budget for 2015/16 is \$2.9 million. The FMP is, however, still only in draft form so the implementation works will be deferred until 2016/17 to allow completion of the plan. Some strategic land purchase has been undertaken and the detailed design could commence once the FMP is advanced sufficiently.

6. Activities proposed to 2015 to 2025

The Flood Protection 2015-2025 Business Plan provides a total of \$127 million to implement the Hutt, Otaki, Waikanae, Pinehaven, Waiohine and Te Kauru FMPs and the LWVDS development works. The programme also includes completing the 10 yearly progress reviews of the western FMPs.

6.1 Hutt

The programme provides for progressing with upgrading of all stopbanks on both banks of the Hutt River and the river channel from Kennedy Good Bridge to Ewen Bridge to provide the Hutt River FMP recommended standard of protection to the Hutt CBD, the central residential areas and the western residential areas from Melling to Petone. The proposed Hutt River City Centre Upgrade Project includes all the remaining works in this reach. The project is currently scheduled for completion by 2025. However, the timing for completion is dependent on the Integrated Concept Design option selected, the land purchase strategy, funding and the progress with HCC's Making Places project and NZTA's Melling Intersection Project.

The projects programmed for Lower Hutt also include completion of the Waiwhetu FMP and works in the river channel from KGB to Taita in the Hutt River. No budget has been included for the implementation of the outcomes of the Waiwhetu FMP because of the uncertainty over any potential measures necessary or being reasonably able to be implemented

The Hutt River projects programmed for Upper Hutt include the Maoribank river bed stabilisation, Ebdentown edge protection works and Pinehaven Stream improvements.

6.2 Waikanae

In Waikanae, the Jim Cooke Park stopbank project is programmed for completion by 2017. Further environmental enhancement works will continue through the period.

6.3 Otaki

The programme provides for completing the Lower Waitohu Stream project, the south bank and north stopbank improvements and further bank edge protection works. Further environmental enhancement works will continue through the period.

6.4 Wairarapa

The programme provides for completing the Waiohine Project by 2021 and the LWVDS development works schedule by 2025. Te Kauru FMP implementation is currently programmed to commence in 2016/17 for completion by 2022.

7. Communication

This report is written primarily for internal purposes. However, a copy will be sent to HCC, UHCC and Kāpiti Coast District Council for their information. A copy of this report will also be presented to the November 2015 meeting of the Hutt Valley Floodplain Management Subcommittee and to the combined Wairarapa Councils meeting.

8. 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.

8.1 Engagement

Engagement on these matters is unnecessary.

9. Recommendation

That the Committee:

- 1. Receives the report.*
- 2. Notes the content of the report.*
- 3. Notes that the respective Territorial Local Authorities will be provided with an update of progress in their areas.*

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- Attachment 1:** Hutt FMP Summary Progress Table
- Attachment 2:** Otaki FMP Summary Table
- Attachment 3:** Waikanae FMP Summary Table
- Attachment 4:** LWVDS Summary Progress Table

Hutt FMP Summary Progress Table

Work Area	Plan Achievements			Programme	
Structural	Completed to June 2014	Completed 2014/15	Proposed for 2015/16	Proposed in 2015/2025 LTP	
Non-structural measures					
District Plan measures	Completed Hutt City Plan change	Hearing completed for the UHCC change 15	Follow up work with the UHCC plan change	Complete UHCC plan change	
Emergency Management Measures	Completed HRFMP projects		Further improvements proposed with 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	
Structural Measures					
River Mouth to Kennedy Good Bridge					
Ava to Ewen Project	River realignment and stopbank upgrades completed				
Boulcott/Hutt stopbank	Stopbank construction completed Golf Club progressing with development works	Land transfer surveys complete. The golf club progressed with development works	Complete land transfers		
City Centre Upgrade Project stopbanks, Pharazyn Street stopbank and associated channel works	Progressed with the development of Integrated concepts and strategic land purchase	Gained Council approval to consult with community on 2 options out of 10 ICD options	Complete community consultation and gain council approval of a preferred option and progress on the design and NOR	Progress with the construction of City Centre Upgrade Project.	
Estuary to Ava Bridge	Progressed with Strategic land purchase at Woollen Mills Point	Progressed with Strategic land purchase at Woollen Mills Point	Strategic land purchase if land owners offer to sell	Progress with implementing the Ava to Estuary upgrade works	
Kennedy Good Bridge to Silverstream Bridge					
Belmont Edge protections and Norfolk Street flood gate	Structural and district plan measures complete	Temporary works to manage erosion risk	Complete edge protections to reduce erosion risk		
Principal stopbanks from KGB to Pomare and associated channel works				No budget yet (post 2025) Stopbanks are in good condition and only minor works are necessary	

Silverstream to Maoribank				
Whirinaki Crescent (LB)	Stopbank reconstruction completed			
Ebdentown rock lining	Progressed with the concept design and negotiations with NZTA	Progressd with the design and rock supply	Construction of urgent edge protection works	Complete the proposed works
Principal stopbanks from Trentham to Maoribank and associated channel works				No budget yet (post 2025) Stopbanks are generally adequate except for a short length upstream of the Moonshine Bridge
Maoribank to Gemstone Drive				
Maoribank Riverbed stabilisation	Completed investigations and developed a management strategy. Completed urgent repair works			Complete project 2016/17 – 2018/19
Bridge Road edge protections	Edge protection works completed			
Akatarawa/Gemstone stopbanks				No budget yet (post 2025)
Environmental Strategy and FMP review				
Ranger Service	Continue with ranger service	Continue with ranger service	Continue with ranger service	Continue with ranger service
Enhancement works				
Ava to Ewen	Completed planting, walkways, the viewing platform, Inanga spawning habitat and lighting along the stopbanks			
Belmont	Completed all landscaping works			
Whirinaki Crescent	Completed landscaping works			
Bridge Road	Completed planting			
Boulcott/Hutt	Progressed with golf course landscaping, and completed landscaping and planting	Progressed with landscaping maintenance works and golf course development	Progressing with golf course development and maintenance of landscaping works	
Hutt River Trail				
Estuary Bridge Underpass	Completed			
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				Complete review

Otaki FMP Summary Progress Table

Work Area	Plan Achievements		Programme	
	Completed to June 2014	Completed 2014/15	Proposed for 2015/16	Proposed in 2015/2025 LTP
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 with land entry negotiations	Progressed with land entry negotiations	Progress with land entry negotiations and apply for stream works resource consents	Complete stream channel improvements low stopbank at 74 Convent Road and South Waitohu stopbank
North Bank Improvements				Complete
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			Complete works
Harpers Stopbank				No budget yet
Lutz Upper and Lower Stopbank	Completed 1999			
Katihiku Floodgates				No budget yet
Seaward Extension				No budget yet
River Management				
Katihiku	Concept designs completed			Progress
Gas Line	Concept designs completed			Progress
Batching/Campbells	Lethbridge edge protections completed			Progress
Bridges	Completed in 2009/10			
Ballast/Tracey	Edge protections at Traceys completed	Maintenance works at Traceys		
Chrystalls Bend	Completed 1994			
Hughes	North Bank only Concept designs completed			Progress
Hughes/Lutz	North Bank only			

	Concept designs completed			
Taylor/Mansell	North Bank only Concept designs completed			
Lower Gorge				No budget yet
Non-structural				
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
Environmental Strategy				
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
FMP Review				
FMP review				Complete review

Waikanae FMP Summary Progress Table

Work Area	Plan Achievements		Programme	
Structural	Completed to June 2014	Completed 2014/15	Proposed for 2015/16	Proposed in 2015-2025 LTP
Kauri-Puriri Works				
Stopbank	Completed 1997			
Greenaway Road Raising	Completed 1997			
Remove Riverside Lodge	Completed 1997			
Chillingworth Stopbank	Completed 1997			
Jim Cooke Park Stopbank reconstruction	Completed feasibility study	Completed consultation and gained Council approval of a preferred option	Prepare NOR/consents and lodge applications	Complete
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				progress
Lengthen Fieldway Bridge				progress
River Management				
Mouth				progress
Otaihanga	Rock edge protection 220 m completed			progress
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			

Non-structural				
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
Environmental Strategy				
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 complete	Publish Strategy	On going
FMP Review				
FMP Review	Review, analysis and consultation completed	Completed		

LWVDS Development Work Summary Progress Table

Work Area	Plan Achievements		Programme	
Structural	Completed to June 2014	Completed 2014/15	Proposed for 2015/16	Proposed in 2015/2025 LTP
Ruamahanga River				
Stopbank shifting	100%			
Top up stopbank	50%		Complete	
Tauherenikau River				
Stopbank upgrade	100%			
Turanganui River				
Stopbank upgrade	50%	100%		
Tauanui River				
Stopbank construction/shifting	60%			Complete
River Management				
Ruamahanga River				
Waiohine to Waihenga - Willow buffer zone Bank Protection Fencing	100%	80%	85%	Complete
Waihenga to Tuhitarata – Removal of overburden from berm		40%	60%	Complete
Tuhitarata to Lake Onoke – Boulder rip rap Planting	100%	80%	85%	Complete
Tauherenikau River				
Willow buffer zone Fencing	100%			
Tributaries				
Willow buffer zone Land purchase Whakawhiriwhiri	100%		50%	Complete
Non-structural				
No non-structural work				
Environmental Enhancement (Native Planting)				
Ruamahanga River	90%	5%		Complete
Whakawhiriwhiri Stream			50%	Complete
FMP Review				
FMP review				Complete review