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Committee Environmental Wellbeing Committee  
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## Flood Protection – Investigations Programme 2012-15

### 1. Purpose

To inform the Committee on:

- The progress of the Flood Protection Investigations 2012-13 programmes and re-prioritisation of the year's activities.
- Planned Flood Protection Investigations 2013-14 programmes, re-prioritisation of the activities and potential risk to the agreed allocated budgets.

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

Officers recognise that the matters referenced in this report may have a high degree of importance to affected or interested parties.

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). Part 6 sets out the obligations of local authorities in relation to the making of decisions.

#### 2.1 Significance of the decision

Part 6 requires Greater Wellington to consider the significance of the decision. The term 'significance' has a statutory definition set out in the Act.

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.

The re-prioritisation of the programme, i.e. deferral or slow down of other investigations, allows the focus of existing resources to be on the renewal of the Western Area river management consents and the development of the Upper Wairarapa Valley FMPs (UWVFMPs), required to allow the renewal of the Wairarapa river management consents in 2015.

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

### **3. Investigations, Strategy and Planning Programmes**

#### **3.1 Introduction**

The current LTP and Annual Plan Performance Targets are detailed in **Attachment 1**, along with specific comments about the status of each measure.

We need to defer work on our Floodplain Management Plan review work so as to allow resources to focus on developing the Upper Wairarapa Valley Floodplain Management Plans (UWVFMPs).

The UWVFMPs need to be completed by 2015 so that the outcomes can be fed into the river management resource consent renewal process.

The UWVFMPs are proving to be more extensive, and therefore require more resources than first thought. This has now been scoped out extensively and incorporated in the Project Plan (see Section 3.3)

#### **3.2 Programme 2012-13: Programme Re-Prioritisation**

The programmes that are recommended for deferral are summarised below:

- Otaki River Floodplain Management Plan Review to 2014-15
- Hutt River Floodplain Management Plan Review to 2014-15
- Waiwhetu Floodplain Management Plan: completion 2013-14
- Pinehaven Floodplain Management Plan: completion 2013-14
- Mangaroa Flood Hazard Assessment implementation phase to 2015/16.

#### **3.3 Upper Wairarapa Valley FMPs Scope**

##### **3.3.1 Summary**

The Upper Wairarapa Valley Floodplain Management Plan Scoping Report has been prepared and cost estimates have been calculated.

The Project Plan has been separated into two sections. Section A covers the project at a high level; Section B breaks the project down into its key tasks and contains more detail to assist the project team with completion of each of the work elements.

A copy of the Project Plan report, including the detailed programme, is available if Councillors would like more detail.

Planning, programme and cost estimates for Phase 2 can only be completed in detail once the Phase 1 project plan has been accepted, i.e. the outcome of Phase 1 determines the scope of Phase 2.

The Project Plan has been prepared in accordance with the Flood Protection Department's Guidelines for developing Floodplain Management Plans. An outline of the Guideline is contained in **Attachment 2**.

### 3.3.2 Phase 1 - Key Tasks

The scoping report identified 10 work elements for the UWVFMP project. These have been individually scoped, and cost estimations can be found in section B of the project plan:

- community engagement
- climatology and hydrology
- floodplain hydraulics
- geomorphology and river characteristics
- flood and erosion damages assessment
- current flood risk management
- ecological values
- cultural values
- recreation and landscape values
- current planning and land use.

### 3.3.3 Phase 1 - Programme

Project delivery is currently expected to be October 2013.

The programme identifies requirements of each of the Phase 1 elements, and plots a critical path. The key elements that dictate the critical path are:

- climatology and hydrology
- floodplain hydraulics
- flood and erosion damages assessment.

Other project elements sit outside or support this critical path and opportunities exist to a limited extent to move these around within the programme.

### 3.3.4 Phase 1 - Cost Estimation

Cost estimation was completed on a project element basis. These costs include a combination of in-house, secondment, internship and consultancy resources.

Efforts have been made to reduce the overall cost which now sits at an estimated \$525,000 (*of this \$525,000, an estimated \$360,000 is required for the 2012-13 financial year*).

### 3.3.5 Phase 1 – Key Risks

Key risks for this project have been identified as:

- Hydraulic Modelling Programme delivery by June 2013 (*including survey, model build and hydraulic investigations*)
- Regional Governance debate and its influence on the process
- Financial acceptance of the cost (*an un-scoped \$100,000 was flagged for Phase 1 of the project in the 2012-13 financial year*)
- Unknowns surrounding flood and erosion damages assessment and state of current data.

### 3.3.6 Phase 1 – Key Opportunities

- Synergies with the ongoing consent renewal work for the Waingawa project have been identified and incorporated in to the project plan to reduce the cost estimates of the ecological values work element.
- Earlier delivery and possible reduced cost of surveying contract work through supporting sightline clearing work where Wairarapa Flood

Protection staff is working in the vicinity of survey points using heavy machinery.

- Use of Waiohine damages modelling as a template for the damages assessment.

#### 4. Budgets and re-allocation

Allocated budgets for the Upper Wairarapa Valley Floodplain Management Plans, according to the Long-Term Plan, required budgets and proposed re-allocation of budgets:

	2012/13	2013/14	2014/15
<b>Capital Funded</b>			
UWVFMPs (originally labelled 'Environmental Code of Practice') <a href="#">Phase 1</a>	\$100,000	\$129,000	-
UWVFMPs <a href="#">Phase 2</a>		\$0	\$0
UWVFMPs <b>Phase 1 - Required Budget</b>	\$360,000	\$165,000	-
UWVFMPs <b>Phase 2 - Required Budget</b>	-	To be Scoped out during the latter stage of Phase 1	To be Scoped out during the latter stage of Phase 1
<b>Sub-Total Deficit</b>	\$260,000	\$36,000	-
Mangaroa Flood Hazard Assessment – Re-Allocation		\$103,000	\$0
<b>Additional Funding Requirements</b>	\$260,000	-\$67,000	<b>TBC</b>

The impact of these budgets, in the context of the overall department's capital expenditure programme, is contained in **Attachment 3**.

In summary the Flood Protection Department is currently forecasting a capital spend of \$9.279m in 2012-13, including the additional \$0.26m sought.

While there is additional budget being sought this year, as opposed to bringing forward expenditure, the department has succeeded in implementing significant parts of the overall capital works programme under budget to date.

The Hutt River FMP Projects completed to date have cost \$11.97m in 1999 dollars (\$) as opposed to the estimates included in the Hutt River FMP of \$16.3m (see **Attachment 4** for further detail).

#### 5. Measures taken

The following measures have been implemented to continue the investigations works for UWVFMPs:

- Investigations resourced by GWRC staff members (flood protection and other departments) and secondments from consulting engineers;
- Outsourcing of bespoke investigation packages;
- Deferral of current investigations programme;
- Explored use/re-allocation of existing operationally (rate) funded budgets.

## **6. Communication**

Communication about the overall programme changes will be notified through the regular Quarterly and Annual Reports.

Changes for next year (2013-14) will be communicated through the Annual Plan process.

The Hutt Valley Flood Management Sub-committee and the key stake holders of the Otaki Floodplain Management Plan, i.e. KCDC and the Friends of the Otaki River will be advised of the changes at their next respective meetings.

## 7. Recommendations

*That the Committee:*

1. **Receives** the report.
2. **Notes** the content of the report.
3. **Approves** the re-prioritisation of the Flood Protection Investigations Programme
4. **Recommends** that Council approves, through the quarterly review process, additional capital funding; \$260,000 (2012-13) and \$36,000 (2013-14) for the completion of Phase 1 of the Upper Wairarapa Valley Floodplain Management Plans project, to be partially offset by the re-allocation of the Mangaroa Flood Hazard Assessment – Implementation Phase budget (2013-14).

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### **Attachments:**

1. Performance Indicators specifically related to the Investigations Programme
2. Floodplain Management Plans for the Wairarapa
3. Financial Summary Variances
4. Hutt River Floodplain Management Plans Completed Projects

## Attachment 1

### Performance Indicators specifically related to the Investigations Programme

Performance Measure	Performance Target		Comment
	Baseline	2012/13	
Number of new flood hazard assessment completed	2 new assessments completed (2011/12 forecast) In total 14 out of 24 rivers and streams have been assessed	<b>0</b> (The focus is on floodplain management planning)	Although the focus is on Floodplain Management Plans (FMP) – flood hazard maps are being updated for the Wainuiomata (completed) and Porirua Stream (nearing completion).
Number of new floodplain management plans developed	1 new plan completed (2011/12 forecast) 5 out of 24 rivers have plans	<b>2</b>	<p>Waiohine and Pinehaven Stream FMPs are currently in Phase 3; detailed options investigations. Both are envisaged to have a preferred river/stream management option completed and reported to Council.</p> <p>Waiohine is on target to be completed on the agreed time frame.</p> <p>Pinehaven Stream is now anticipated to be fully completed in 2013-14.</p> <p>Waiwhetu FMP is currently at the end of Phase 2; a detailed preferred option(s) to be completed by the end of the fiscal year.</p> <p>Full completion of the Waiwhetu FMP is now anticipated to be completed in 2013-14.</p>
Number of requests for flood hazard advice	500 (2010/11)	Increase on previous year	Number of enquiries has reduced over the last quarter. Current trend would indicate that the total numbers could reach 400.

### Specific Areas of Investigation Work 2012/13

Specific areas of work 2012/13	Comment
Develop Waiwhetu Floodplain Management Plan	Waiwhetu FMP is currently at the end of Phase 2; a detailed preferred option(s) to be completed by the end of the fiscal year.
Prepare Pinehaven Floodplain Management Plan (in conjunction with the Upper Hutt City Council)	On programme and budget.
Prepare Waiohine Floodplain Management Plan	On budget, but the programme for final completion is extended to October 2013.
Prepare Ruamahanga, Waipoua and Waingawa Floodplain Management Plan <u>Project renamed to:</u> Upper Wairarapa Valley Floodplain Management Plans (UWVFMPs)	Additional resources have been recruited & secondments established. Project Team & Plan are being finalised. Scoping reports have been completed and detailed investigations have commenced.
Complete a scoping study on the impacts of climate change	Completed - to be presented to Council.
Commence obtaining statutory approvals for maintenance of infrastructure assets	Good progress made with projects to support resource consent applications due to be lodged in 2013.
Plan for Lower Hutt City Centre stopbank upgrade (Hutt River Floodplain Management Plan)	On target. Project scoping commenced by FP Implementation Team.
Plan for channel widening on the Hutt River from Melling Bridge to Kennedy Good Bridge (Hutt River Floodplain Management Plan)	On target. Project scoping commenced by FP Implementation Team.

### Floodplain Management Plans for the Wairarapa

#### 1. Step change Scheme Review to FMP

Why is a change necessary?

- Consistency of approach to managing our rivers and floodplains across the region
- Existing scheme objectives are not being met
- Help us to renew our existing river management consents

#### 2. What does this mean?

- We will prepare a floodplain management plan rather than a scheme review document.

#### 3. What is floodplain management planning?

Floodplain management planning is a process that results in a long-term strategy for managing flood risk, helping improve the security and quality of life for present and future generations living on a floodplain.

It better prepares them for coping with a flood when it occurs, and aims to ensure that any future development considers flood risk.

A floodplain management plan (FMP) emphasises the need to ‘keep people away from the river’ rather than ‘the river away from people’.

The outcome of the floodplain management plan process is a document that guides how a catchment should be managed to achieve the following:

- Minimising risks to life, health and safety
- Reducing severity of flood damage, and coming up with options to manage the flood risk
- Promoting sustainable use of flood and erosion prone land
- Promoting sustainable development of the wider catchment.

The outcomes above are achieved by:

- Using planning and community preparedness to ensure sustainable land use
- Looking at options to reduce the flood risk.

In general, an FMP provides long-term management strategy (e.g. 40 years), and provides guidance to those involved in making decisions about the management of the river, the floodplain and the wider catchment.

#### 4. The Floodplain Management Planning Process

We use a comprehensive Floodplain Management Planning process

The process for developing the floodplain management plan involves three steps:



- Phase 1: Establish the context
- Phase 2: Understand the risk and treatment options
- Phase 3: Selecting sustainable solutions.

To a level of detail appropriate to the location and circumstances of the community.

To “establish the context” we might include studies in Phase 1 on:

Hydrology and climatology, river and floodplain hydraulics, Sedimentation and river characteristics, channel management and protection works, geotechnical assessments, floodplain damages and losses, risk assessment, environmental investigations, Tikanga Maori, public involvement procedures, scheme management and land related matters, flood warning.

There are other factors that are included but this gives an indication of the type of work we do as part of the preliminary investigations for a FMP.

Phase 2 is to understand the risk and the development of options. The basis for our river management is included in this phase.

We generally develop design channel alignments to work to. The parameters involved in their development are:

Existing meander patterns, channel slope, resistance, gravel size, flow (volume and depth), sediment transport, slides on the meander patterns

Among other things, we would look at a range of options from wide to narrow fairways.

The selected option will consider: what’s already in place, what’s at risk, ability to fund and resource.

The outcome will be options for design channel alignment, one of the outcomes of Phase 3, which will be consulted upon to the wider community.

## **5. How does this affect the Schemes?**

The ‘establishment’ of a new Floodplain Management Committee:

We will have a broader focus on:

- Environmental and recreational objectives, achieving buffer zones, affordability, funding, consenting

## Financial Summary Variances

### Summary of capital expenditure to 31 December 2012

Category	Actual \$000	YTD Budget \$000	FY Budget \$000	Forecast \$000	Comment
<b>Investigations</b>					
Pinehaven Flood Hazard Study	36	25	50	50	Combination of options presented to be presented to the Hutt Valley Floodplain Management Subcommittee. Individual affected landowners consultation ongoing.
Waiwhetu FMP	81	50	100	100	Option detailing and cost estimations have been completed.
Resource Consent Project	6	50	100	100	Most of the expenditure will be in 3 <sup>rd</sup> and 4 <sup>th</sup> quarters. Additional \$250,000 sought to fund investigations needed to complete Phase 1 work
Upper Ruamahanga FMP (currently labelled Environmental Code of Practice in the LTP Capex Table)	1	50	100	350	
<b>Investigations Sub Total</b>	<b>124</b>	<b>175</b>	<b>350</b>	<b>600</b>	
<b>Hutt Flood Protection</b>					
City Centre Upgrade	34	75	150	735	Additional \$385,000 requested to complete Mills Street land purchase.
Boulcott/Hutt Stopbank Construction	6,071	2,050	4,500	7,100	Total construction budget increased by \$1.2 million and it is also proposed to bring forward \$1.4 million from 2013/14 to complete the project this financial year.
Hutt Environmental Strategy Imp.	9	57	113	50	
Waiwhetu Flood Improvements	90	50	100	100	
<b>Hutt Valley sub total</b>	<b>6,204</b>	<b>2,232</b>	<b>4,863</b>	<b>7,985</b>	
<b>Otaki river</b>					
Lower Waitohu Improvements	57	350	850	100	Land entry and stream management negotiations stalling work programme.
Chrystalls Extended Stopbank	(762)	200	400	0	Land purchase accrued to last year. No expenditure anticipated this year.
Otaki environmental strategy implementation	0	28	55	0	Enhancement works postponed to be carried out with capital work next year.
River Works Mouth to SH1	6	0	0	6	A management strategy is under preparation.
<b>Otaki river sub total</b>	<b>(699)</b>	<b>578</b>	<b>1305</b>	<b>106</b>	
Lower Wairarapa Valley Development Scheme Upgrade and other scheme works	136	220	441	441	Bulk of programme to be carried out in the second and third quarter.
Waiohine Stopbank Design	39	75	147	147	Phase 2 complete. Phase 3 to be completed by October 2013.
<b>Wairarapa sub total</b>	<b>175</b>	<b>295</b>	<b>588</b>	<b>588</b>	
<b>TOTAL</b>	<b>5,804</b>	<b>3,280</b>	<b>7,106</b>	<b>9,279</b>	

### Hutt River FMP Completed Projects

Project	Expenditure \$'000		
	HRFMP budget 1999\$	Expenditure Current \$	Expenditure 1999\$
Ava to Ewen Project	14,600	14,334	10,296
Belmont Improvements	1,063	973	795
Whirinaki Crescent	470	1,028	665
Bridge Road edge protections	180	373	214
<b>Total for completed projects</b>	<b>16,313</b>	<b>16,708</b>	<b>11,970</b>