



**greater WELLINGTON**  
REGIONAL COUNCIL  
Te Pane Matua Taiao

If calling please ask for: Democratic Services

10 October 2018

## **Te Kāuru Upper Ruamahanga River Floodplain Management Plan Subcommittee**

Order Paper for meeting to be held in the Choice Room, Greater Wellington Regional Council, 34 Chapel Street, Masterton on

**Monday, 15 October 2018 at 10.00am**

### **Membership of Committee**

Bob Francis (Chair)

Cr Barbara Donaldson

Cr Adrienne Staples

Deputy Mayor Graham McClymont

Cr Brian Deller

Stephanie Gundersen-Reid

Kate Hepburn

David Holmes

Janine Ogg

Rawiri Smith

Michael Williams

Greater Wellington Regional Council

Greater Wellington Regional Council

Masterton District Council

Carterton District Council

***Recommendations in reports are not to be construed as Council  
policy until adopted by Council***

## Te Kāuru Upper Ruamahanga River Floodplain Management Plan Subcommittee

Order paper for the meeting held on Monday, 15 October 2018 in the Choice Room, Greater Wellington Regional Council, 34 Chapel Street, Masterton at 10.00am

### Public Business

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1.	Apologies	
2.	Declarations of conflict of interest	
3.	Public participation	
4.	<a href="#">Confirmation of the minutes of 5 June 2018</a>	<b>Report 18.220</b> <b>3</b>
5.	<a href="#">Te Kāuru Upper Ruamahanga FMP Stage 1 Engagement Summary</a>	<b>Report 18.444</b> <b>5</b>
6.	<a href="#">Te Kāuru Upper Ruamahanga FMP Project Manager's Report</a>	<b>Report 18.446</b> <b>16</b>



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**Please note that these minutes remain unconfirmed until the meeting of the Te Kāuru Upper Ruamahanga River Floodplain Management Plan Subcommittee on 15 October 2018**

**Report 18.220**

5/06/2018

File: CCAB-12-301

**Minutes of the Te Kāuru Upper Ruamahanga River Floodplain Management Plan Subcommittee meeting held in the Choice Room, Greater Wellington Regional Council, 34 Chapel Street, Masterton, on Tuesday, 5 June 2018 at 10:06am**

**Present**

Bob Francis (Chair), Councillor Donaldson (Greater Wellington Regional Council), Siobhan Garlick, Stephanie Gundersen-Reid, Kate Hepburn, David Holmes, and Michael Williams.

**Public Business**

**1 Apologies**

*Moved*

*(Mr Francis/ Cr Donaldson)*

*That the Subcommittee accepts the apologies for absence from Councillors Deller, McClymont, and Staples, Rawiri Smith, and Janine Ogg.*

The motion was **CARRIED**.

**2 Declarations of conflict of interest**

There were no declarations of conflict of interest.

**3 Public Participation**

There was no public participation.

4 **Confirmation of the minutes of 8 May 2018**

*Moved* (Cr Donaldson/ Mr Holmes)

*That the Subcommittee confirms the minutes of 8 May 2018, Report 18.184.*

The motion was **CARRIED**.

5 **Te Kāuru Upper Ruamahanga FMP draft Volumes 1 and Volume 2 - endorsement for public consultation**

Francie Morrow, Project Manager, Floodplain Management Plans. spoke to the report.

**Report 18.188** File: CCAB-12-292

*Moved* (Mr Holmes/ Ms Hepburn)

*That the Subcommittee:*

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

The motion was **CARRIED**.

*Moved* (Mr Holmes/ Ms Gundersen-Reid)

3. *Endorses the draft Te Kāuru Upper Ruamahanga Floodplain Management Plan - Volume 1 and Volume 2, subject to minor editorial amendments approved by the Chair of the Subcommittee.*

The motion was **CARRIED**.

*Moved* (Mr Holmes/ Mr Williams)

4. *Recommends that the Environment Committee approves the draft Te Kāuru Upper Ruamahanga Floodplain Management Plan - Volume 1 and Volume 2 for public engagement.*

The motion was **CARRIED**.

The meeting closed at 11:06am.

Bob Francis  
(Chair)

Date:



**Report** 2018.444  
**Date** 25 September 2018  
**File** CCAB-12-309

**Committee** Te Kāuru Upper Ruamahanga FMP Subcommittee  
**Author** Francie Morrow, Project Manager – Floodplain Management Plans

## Te Kāuru Upper Ruamahanga FMP Stage 1 Engagement Summary

### 1. Purpose

To present the feedback received from the community during Stage 1 of the Te Kāuru Upper Ruamāhanga Floodplain Management Plan (Te Kāuru) engagement process.

### 2. Background

The Te Kāuru Upper Ruamāhanga Floodplain Management Plan Subcommittee is responsible for the development and adoption of Te Kāuru.

The FMP is being developed in collaboration with Masterton District Council (MDC), Carterton District Council (CDC), Ngāti Kahungunu ki Wairarapa, Ngāti Rangitāne o Wairarapa, and the wider community, primarily through the Te Kāuru Upper Ruamāhanga River Floodplain Management Subcommittee.

Good progress has been made with the development of ‘Volume 1 – Background and Overview’, and ‘Volume 2 – Rural Responses’. ‘Volume 3 - Waipoua Urban Responses’ is being developed separately and an option assessment process is currently being undertaken.

The three volumes will be combined into a single document (“proposed FMP”) prior to the final round of consultation.

The contents of the three draft FMP volumes are:

- Volume 1 – Background and Overview (including Common Methods descriptions)
- Volume 2 – Reach Values, Issues and Rural Responses
- Volume 3 – Waipoua Urban Responses

### 3. Comment

Stage 1 of public engagement on the draft Te Kāuru Upper Ruamāhanga Floodplain Management Plan (Te Kāuru) ran from 16 July 2018 to 16 September 2018. The purpose of this period of engagement was to seek feedback on draft versions of 'Volume 1: Background and Overview' and 'Volume 2: Location Specific Values, Issues and Responses' of Te Kāuru. Feedback on Volume 3 will be sought in late 2018/early 2019.

During Stage 1 Engagement, the Te Kāuru project team and Subcommittee members attended various engagement activities throughout the Upper Ruamāhanga catchment to explain the proposals and encourage feedback from the community.

The engagement took a number of forms, including:

- 22 small group discussions, called 'coffee groups', which were hosted by members of the community for riverside landowners
- Stalls at the Masterton and Carterton Farmers Markets
- Three drop-in centres; one in Gladstone, one in Carterton and one in Masterton
- A district wide brochure drop to Masterton and a brochure drop to those in the Te Kāuru catchment in the Carterton district
- Letters sent to riverside landowners
- Information in the local papers
- Social media campaigns
- Paid radio interviews with Chair of the Te Kāuru Subcommittee Bob Francis and Councillor Adrienne Staples
- Information on the Te Kāuru website

Overall approximately 400 people were engaged with at various events, with many more reached through the external publications such as social media, the website and radio interviews.

A summary of the key themes from the feedback noted at the various engagement events and received via email of using a feedback form, is included as [Attachment 1](#) to this report. These key themes include:

- Design line appropriateness
- Vegetated buffer approach
- Allowing the river room to move within the buffer

- Economic implications
- Designation process
- Local knowledge and input
- Western vs Eastern rivers

#### **4. Next steps**

The project team will work with the Subcommittee to develop the pieces of further work that have been identified as outcomes of this engagement process. Several pieces of work have been identified that can commence while others will require further development and work with the Subcommittee.

The immediate work streams identified include:

- Buffer benefit assessment
- Pest plant plan
- Analysis of buffers
- Buffer implementation plan
- Design line review
- More clarity regarding the different management approach to the Eastern and Western Rivers

#### **5. Consideration of climate change**

The matters addressed in this report have been considered by officers in accordance with the process set out in the GWRC Climate Change Consideration Guide.

##### **5.1 Mitigation assessment**

*Mitigation assessments are concerned with the effect of the matter on the climate (i.e. the greenhouse gas emissions generated or removed from the atmosphere as a consequence of the matter) and the actions taken to reduce, neutralise or enhance that effect.*

Officers have considered the effect of the matter on the climate. Officers recommend that the matter will have an effect that is not considered significant.

Officers note that the matter does not affect the Council's interests in the Emissions Trading Scheme (ETS) or the Permanent Forest Sink Initiative (PFSI)

## **5.2 Adaptation assessment**

*Adaptation assessments relate to the impacts of climate change (e.g. sea level rise or an increase in extreme weather events), and the actions taken to address or avoid those impacts.*

GWRC plans for climate change in assessing the degree of future flood hazard and in determining an appropriate response. There are only specific, limited situations in which climate change is not relevant (for example, planning for present-day emergency management).

In assessing flood hazard and determining appropriate structural and/or non-structural responses in areas subject to flood risk, GWRC is applying a rainfall increase of 20% to the flood hydrology in the FMP to account for climate change over the next 100 years.

Guidance from the Ministry for the Environment will be updated from time to time and our approach will be revised in line with any updates.

## **6. 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 matters requiring decision in this report have 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.

### **6.1 Significance of the decision**

Part 6 requires Greater Wellington Regional Council 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 and engagement 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.

### **6.2 Engagement**

Engagement on the matters contained in this report aligns with the level of significance assessed. Stage 1 of the Te Kāuru engagement process has been outlined in this report.

## **7. Recommendations**

*That the Subcommittee:*

- 1. Receives the report.*



2. *Notes the content of the report.*

Report prepared by:	Report approved by:	Report approved by:	Report approved by:
<b>Francie Morrow</b> Project Manager – Floodplain Management Plans	<b>Mark Hooker</b> Senior Project Engineer – Floodplain Management	<b>Graeme Campbell</b> Manager, Flood Protection	<b>Wayne O'Donnell</b> General Manager, Catchment Management

**Attachment 1:** Summary of key themes from Stage 1 Engagement

*Te Kāuru Upper Ruamahanga Floodplain Management Plan*

# Summary of key themes from Stage 1 engagement

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## 1. Engagement process to date

Stage 1 of public engagement on the draft Te Kāuru Upper Ruamāhanga Floodplain Management Plan (Te Kāuru) ran from 16 July 2018 to 16 September 2018. The purpose of this period of engagement was to seek feedback on draft versions of 'Volume 1: Background and Overview' and 'Volume 2: Location Specific Values, Issues and Responses' of Te Kāuru. Feedback on Volume 3 will be sought in late 2018/early 2019.

During Stage 1 Engagement, the Te Kāuru project team and Subcommittee members attended various engagement activities throughout the Upper Ruamāhanga catchment to explain the proposals and encourage feedback from the community.

The engagement took a number of forms, including:

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- Information in the local papers
- Social media campaigns
- Paid radio interviews with Chair of the Te Kāuru Subcommittee Bob Francis and Councillor Adrienne Staples
- Information on the [Te Kāuru](#) website

Overall approximately 400 people engaged with us at various events, with many more reached through the external publications such as social media, the website and radio interviews.

## 2. Feedback received and associated responses

This report summarises the key feedback themes and initial (immediate) work streams to address comments or questions received.

The majority of the feedback was noted from conversations with 134 riverside landowners who attended the coffee groups or attendees at drop in centres. The remaining feedback has been collated from 12 emails, three posted feedback forms and 12 feedback forms submitted through the Te Kāuru website.

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Feedback was received from various members of the public, and also from the following key stakeholders:

- Department of Conservation
- Wellington Fish and Game
- Federated Farmers
- Sustainable Wairarapa

It is acknowledged that not every piece of feedback has been directly addressed below. This feedback will be addressed in a full report on Stage 1 Engagement which will be available on the [Te Kāuru](#) website by the end of October 2018.

### **3. Key themes**

Seven key themes have been identified as part of the engagement process. Each of these themes and associated questions will be considered by the project team and further work that is identified will be undertaken and workshopped with the Subcommittee to provide a response and/or resulting changes to the floodplain management plan.

#### **Design line (inner and outer management line) appropriateness**

The following key questions were commonly raised with regard to design lines:

- What is the review process for the design lines?
- Are the design lines negotiable?
- Will the design lines move further into private land if the river moves/into the future?
- Would like to see particular “hot spots” identified and more detail provided about how these will be managed

#### **Vegetated buffer approach**

The following key questions were commonly raised with regard to establishing vegetation consistently in buffers across the catchment:

- How will you manage increased pest plants/animals? Who will be responsible? How will the maintenance be funded?
- It is going to take a long time. How and where will you prioritise planting?
- Who pays for the planting/additional trees?
- Will you pay for survey and/or fencing costs?
- What species will you plant?
- How can we incorporate rongoa/medicinal plants?
- How much land is needed to be planted?
- What is the quality of the land to be planted?

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- How much is the land worth?
- Have you recognised that in areas where land has been subdivided into smaller parcels (often narrow along the river), planting the buffer could have a much greater impact on individual landowners?

### **Allowing the river room to move within the buffer**

The following key questions were commonly raised with regard to allowing the river room to move within the buffer:

- Are you basically saying you're going to walk away from managing the rivers?
- We've recently experienced a period of relatively few big floods. Will this approach still work when the pendulum swings the other way? (several people mentioned climatic cycles)
- I think the river management has been working very well. Hasn't it? What is the big driver for change?
- What are the scientific benefits of allowing the river more room?
- What are the comparative costs of intervening more often but smaller with less often but bigger?
- Do you have examples of where a planted buffer is working to compare with an unplanted buffer?
- How will you manage the increased sediment being eroded as a result of allowing the river more room to move? Can you explain how this will align with the Ruamāhanga Whaitua outcomes?
- How will you know if this approach is working?
- Are you really going to let established native bush erode? Why would anyone bother to plant more in that case?
- My river is different in [x] way and that hasn't been given enough recognition in your proposals.

### **Economic implications**

The following key points/questions were commonly raised with regard to economic implications of the proposed responses:

- Who are you proposing is rated for the local share of river management works? Will this be per capita? Or zone base?
- Is this going to cost less in the future? Or more?
- Is what you're proposing legal?
- How different will my rates be?
- Can you provide an affordability analysis of the proposed costs and funding structure?

## *Te Kāuru Upper Ruamahanga Floodplain Management Plan*

- How will the future governance arrangements make decisions about prioritising scheme works/spending across all the rivers?
- Concerned that with a much wider funding base, there will be less scrutiny or self-restraint on spending

### **Designation process**

The following key points/questions were commonly raised with regard to the designation process:

- Have you sought legal advice on how the designation process would work?
- What are the implications of designation?
- Will the public have access to my land?
- Can you force me to plant the buffer?
- What happens if I don't want to plant the buffer?

### **Local knowledge and input**

The following key question was commonly raised with regard to local knowledge and landowner input:

- Riverside landowners and local community members know these rivers better than anyone; will you still listen to us?

### **Western vs Eastern Rivers**

The following key question was raised with regard to the different river systems within the catchment:

- There are two distinct types of rivers within the upper Ruamāhanga catchment, are they being addressed differently within Te Kāuru? This isn't clear
- The gravel-bed rivers need clearer direction/specification and consents to allow easier extraction where it's appropriate

## **4. Outcomes and next steps**

Stage 1 of the Te Kāuru engagement process has highlighted a number of areas where further research, investigation, reporting or changes to the floodplain management plan will be required.

The Te Kāuru project team will develop a programme for addressing the issues raised by the community and workshop the various work streams with the Te Kāuru Upper Ruamahanga Floodplain Management Plan Subcommittee. The outcomes of this will be included in a summary report that will be provided to all riverside landowners and stakeholder groups.

A report that provides a specific response to each piece of feedback that was received will also be produced and made available to the public.

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### **Pieces of work to be undertaken immediately**

Several pieces of work have been identified by the project team as being able to commence immediately. Work will be undertaken on these aspects of the project while concurrently planning for further work streams resulting from engagement feedback. Additional pieces of work will require more definition and discussion with the Te Kāuru Subcommittee prior to commencing work.

Initial pieces of work include:

1. Buffer benefit assessment

A study will be commissioned from Massey University that will assess the impacts of giving the river more room within the buffer and vegetating the buffers. This report will specifically consider natural character, aquatic life, water quality and quantity, cultural values, erosion protection, plant species, and economic opportunities. It will also consider what we should monitor and review progress against.

2. Pest plant plan

The project team is aware of the risks of weeds and pest plants when establishing a vegetated buffer and will investigate options on how to resolve this. Feedback from existing river schemes indicates dissatisfaction with the level of weed management in existing buffers. Management outcomes, and cost implications, will be included in the proposed Floodplain Management Plan.

3. Analysis of buffers

More information has been requested regarding the nature of the buffers, including an assessment of area of land within the buffers, current land use, and potential economic value. This can be undertaken by the project team immediately which can then be used for input into a more detailed plan for planting trees within the buffers.

4. Buffer implementation plan

More detail is needed with regard to:

- How long buffer establishment is expected to take
- How we plan to go about it
- How much it will cost
- Where the priority areas are
- Who will do the planting and maintenance
- Fencing, survey, and decision-making framework for land purchase

5. Design line review – what it will involve

The inner and outer management lines (design lines) have generally been in their current locations since the late 1990s. We plan to review a number of erosion “hot spots” and areas that are known to not reflect river behaviour well. We will also include areas where the design lines appear to be inconsistent. We will seek landowner input into the review in the form of contributing knowledge about the specific sites. We will engage a consultant to provide updated design lines in these particular areas, who will work with the Flood Protection Operations staff as well as landowners of these particular areas. This work could

## *Te Kāuru Upper Ruamahanga Floodplain Management Plan*

also include developing more management detail at existing hot spots and confirming our management approach for each stopbank, in particular on the Waipoua River. More clarity regarding the difference between Western vs Eastern rivers

Work will be undertaken to assess where additional clarity regarding the difference between the Western gravel bed rivers and Eastern silt bed rivers can be included in Te Kāuru Volume 1.

### **Future stages of engagement**

#### **Stage 2 Engagement**

'Volume 3: Outcomes for the Masterton urban area' is currently in development. Te Kāuru Stage 2 Engagement will commence once Volume 3 is drafted. Stage 2 Engagement will seek feedback on Volume 1 and Volume 3, and is envisaged to take place in early 2019.

This will likely follow a similar format as Stage 1 consisting of various engagement events such as attendance at the Farmers Market, drop-in centres, and possible small group or 'coffee group' discussions.

#### **Stage 3 Engagement**

Once feedback has been received on all three volumes of Te Kāuru, the volumes and appropriate feedback will be incorporated into a single proposed Floodplain Management Plan. This will then be presented to the community for a formal consultation process.



**Report**                      **2018.446**  
**Date**                        25 September 2018  
**File**                         CCAB-12-311

**Committee**                **Te Kāuru Upper Ruamahanga FMP Subcommittee**  
**Author**                    **Francie Morrow, Project Manager – Floodplain Management Plans**

## **Te Kāuru Upper Ruamahanga FMP Project Manager's Report**

### **1. Purpose**

To update the Subcommittee regarding general items that influence or are a part of the Te Kāuru Upper Ruamahanga Floodplain Management Plan (Te Kāuru), as well as outlining other flood protection activities that are being undertaken within the catchment area by Greater Wellington Regional Council (GWRC).

### **2. Environment Committee endorsement**

Following endorsement of Volumes 1 and 2 from the Te Kāuru Subcommittee at a meeting on 5 June 2018, the documents were presented to the Environment Committee for endorsement and approval for public engagement on 21 June 2018.

Francie Morrow presented the key points of Volumes 1 and 2. Following questions and discussion, the Environment Committee endorsed the documents. This enabled the project team to proceed with Stage 1 of the engagement process for Te Kāuru. A summary of the feedback received from the community during this engagement process is included as a separate report at this meeting (report number 2018.444).

### **3. Wairarapa Committee workshop**

A workshop was held with the Wairarapa Committee on 7 August 2018. The workshop received feedback on the engagement undertaken to date and allowed an opportunity for the Committee to further discuss the contents of Volumes 1 and 2 of Te Kāuru. The feedback received has been noted and was reported at the Wairarapa Committee meeting on 14 August 2018. The Wairarapa Committee meeting resulted in an invitation to Councillors from MDC and CDC to participate in the engagement events.



#### **4. Project programme**

The Te Kāuru Subcommittee have previously emphasised the desire to have a completed floodplain management plan by mid-2019.

Agreement on the extent of the flood hazard maps has now been reached by the Waipoua Officers Working Group. The technical work and number of Officer Working Group meetings required to reach this agreement have put pressure on the project programme and this is acknowledged as a real risk to the project. The Te Kāuru project team and Waipoua Project Group are committed to working with the Subcommittee to progress option development efficiently whilst still ensuring a robust process is followed.

Stage 1 of the engagement process on Volumes 1 and 2 has also led to numerous pieces of additional work that will be need to be undertaken prior to the proposed floodplain management plan. There is also a risk that these could cause delays to the programme if not managed effectively.

#### **5. Operations and maintenance update**

The Flood Protection department has been engaged in a number of works within the Te Kāuru Upper Ruamahanga area. A summary of these works for each river is provided below.

##### **Waipoua**

- Planting programme 340 willow poles
- Layering of 460m of willow trees on problem riverside corners
- Beach clearing of vegetation of beaches in upper reach of Waipoua with bulldozer

##### **Waingawa**

- Groyne construction of six large groynes to protect ongoing erosion into buffer of native trees with high biodiversity values at cross section 26 (Photo 1)
- Two river erosion bays developing below South Rd that were threatening to go beyond outer buffer line, gravel groynes constructed & willows planted between to stabilise the sites (Photo 2)
- Gravel extraction on problem beaches below South Road
- Planting programme – 700 willow poles planted
- Island vegetation clearing with bulldozer in upper reaches of river



*Photo 1: Waingawa gravel groynes at cross section 26*



*Photo 2: Waingawa gravel groynes and planting*

### **Upper Ruamahanga – Mt Bruce**

- Planting 1300 willow poles
- Vegetation clearing of beaches with bulldozer

### **Upper Ruamahanga – Te Ore Ore**

- Gravel extraction off problem beach opposite MDC waste water treatment plant to take pressure off right bank erosion (Photo 3)



*Photo 3: Te Ore Ore gravel extraction from problem beach*

### **Upper Ruamahanga – Gladstone**

- Planting 1300 willow poles

## **6. Waiohine Floodplain Management Plan update**

The Waiohine Project Team has narrowed its consideration of structural options down to three variations based on a stopbank close to Greytown at North St. This was based both on technical considerations and community feedback. The options of building no stopbanks, or of building more substantial stopbanks closer to the river, have been removed from further consideration. The remaining questions to be answered are:

- Whether a stopbank extension or other works are required at the existing Saywells stopbank downstream of the railway bridge; and
- What works, if any, are needed at Fullers Bend. Both the retreat of an existing stopbank and the upgrade of rock protection on the outside of the bend have been previously proposed.

Progress has been made on understanding the main issues for ongoing river management, with information being provided to the Project Team by geomorphologists from Tonkin + Taylor, and Massey University. We have also heard from Russell Death, an ecologist at Massey University. Disturbance of the river's gravel armour layer by extraction, cross blading and beach ripping is emerging as a key concern. Once the Project Team has reached a recommendation on a preferred structural approach the focus will shift to operational management, emergency management, planning controls and the development of the "living" part of the FMP.

## **7. Ruamāhanga Whaitua update**

In June 2018 the Ruamāhanga Whaitua Committee agreed a draft Whaitua Implementation Programme (WIP) report which was made available for public

comment from 13 June to 11 July 2018. 41 email comments and 17 substantive survey responses were received. All comments received were collated, summarised and considered, and as a result the Committee agreed a small number of new recommendations and made many small clarification changes to the WIP.

In August 2018 the Ruamāhanga Whaitua Committee members agreed by consensus (all members agreed), all the recommendations and content in the final Ruamāhanga WIP. The WIP was then presented to Greater Wellington Regional Council on 16 August 2018. The WIP can be downloaded here: <http://www.gw.govt.nz/assets/Ruamahanga-Whaitua/Final-Ruamhanga-WIP-August-2018-Pdf-version.pdf>.

GWRC councillors have referred the regulatory recommendations from the WIP to Te Upoko Taiao – Natural Resources Plan Committee for incorporation into the Proposed Natural Resources Plan through a plan change/variation process. The non-regulatory recommendations will be further developed by GWRC in conjunction with relevant external organisations.

## **8. Water Wairarapa update**

Since October 2017, the Water Wairarapa project initiated a series of investigations to establish what effect the combination of climate change and the Whaitua's water limitation recommendations will have on activities and water uses that depend on water reliability in the Ruamahanga valley floor.

All component reports have been completed and collated into a summary report. The component reports covered: effects of climate change and the Ruamahanga Whaitua recommendations; aquatic ecological and iwi cultural perspectives; social and health; and future land use and regional economic impacts.

The most significant overarching finding is the relative effects of the Whaitua recommendations and climate change projections. The latter has a far more dominant detrimental effect on both supply and demand of water. This finding applies to both rural and urban catchments.

## **9. Consideration of climate change**

The matters addressed in this report have been considered by officers in accordance with the process set out in the GWRC Climate Change Consideration Guide.

### **9.1 Mitigation assessment**

*Mitigation assessments are concerned with the effect of the matter on the climate (i.e. the greenhouse gas emissions generated or removed from the atmosphere as a consequence of the matter) and the actions taken to reduce, neutralise or enhance that effect.*

Officers have considered the effect of the matter on the climate. Officers recommend that the matter will have an effect that is not considered significant.

Officers note that the matter does not affect the Council's interests in the Emissions Trading Scheme (ETS) or the Permanent Forest Sink Initiative (PFSI)

## 9.2 Adaptation assessment

*Adaptation assessments relate to the impacts of climate change (e.g. sea level rise or an increase in extreme weather events), and the actions taken to address or avoid those impacts.*

GWRC plans for climate change in assessing the degree of future flood hazard and in determining an appropriate response. There are only specific, limited situations in which climate change is not relevant (for example, planning for present-day emergency management).

In assessing flood hazard and determining appropriate structural and/or non-structural responses in areas subject to flood risk, GWRC is applying a rainfall increase of 20% to the flood hydrology in the FMP to account for climate change over the next 100 years.

Guidance from the Ministry for the Environment will be updated from time to time and our approach will be revised in line with any updates.

## 10. The decision-making process and significance

No decision is being sought in this report.

### 10.1 Engagement

Engagement on this matter is unnecessary.

## 11. Recommendations

*That the Subcommittee*

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

Report prepared by:

**Francie Morrow**  
Project Manager –  
Floodplain Management  
Plans

Report approved by:

**Mark Hooker**  
Senior Project  
Engineer – Floodplain  
Management

Report approved by:

**Graeme Campbell**  
Manager, Flood  
Protection

Report approved by:

**Wayne O'Donnell**  
General Manager,  
Catchment Management