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Committee Environment Committee  
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## Flood Protection Asset Management Report for 2015/16

### 1. Purpose

To advise the Environment Committee of the progress made with the Flood Protection Department's asset management system and the overall condition of infrastructural assets.

To seek confirmation that assets have been maintained to the satisfaction of Council.

### 2. Background

Council is responsible for a variety of infrastructural flood protection assets located on 15 schemes across the region. These assets have a total value of \$262.8 million as at June 2012 and provide flood protection to the property and people located on the floodplains of these rivers. The assets will be revalued in June 2017.

The Environment Committee has been delegated the authority to monitor the maintenance and improvement of flood protection and environmental assets for the region's river schemes, corridors and associated watercourses on behalf of the Council.

The Flood Protection Department's asset management system allows for effective monitoring of assets to reassure Council that the various assets are being maintained to the required level of service, will perform as designed and, where required, are being enhanced.

### 3. Asset Management Highlights

A number of asset management improvements were made during the year. These included;

- **Mobile technology in the field:** A new app has been developed for field staff to capture asset condition and other information.
- **Improved business systems:** Streamlined data manipulation with enhanced use of Microsoft Power Pivot and Power Business Intelligence software platforms.
- **Database maintenance:** Ongoing cleaning and rationalisation of the SAP PM and GIS asset databases.

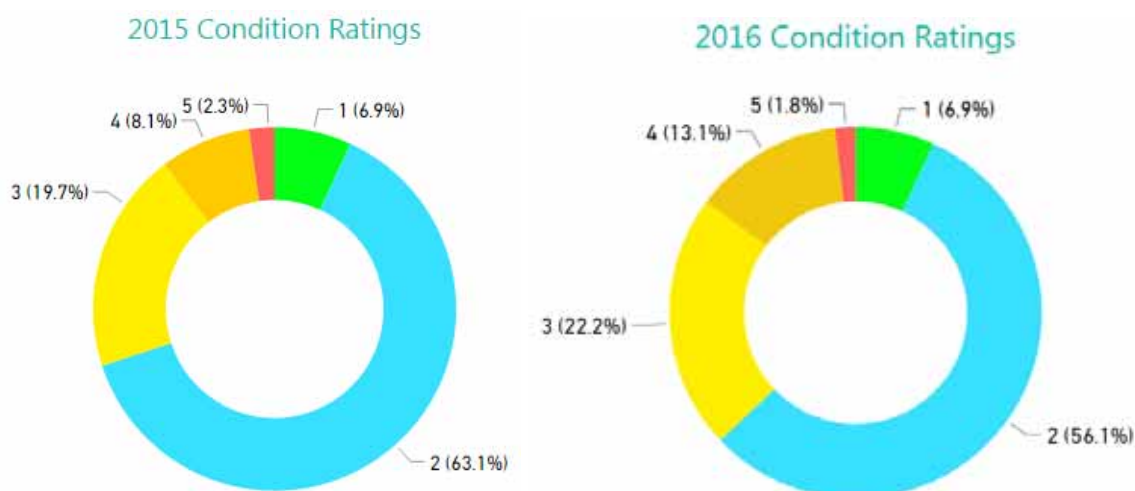
- **Detailed investigations into major assets.** Detailed investigations into the condition and performance of floodwalls and the Porirua detention dams.

## 4. Asset Condition

### 4.1 Region wide: All assets

There has been a change in the asset condition ratings from 2015 to 2016. This is due to improvements in the way we gather data and not a reduction in the overall asset condition.

GW Flood Protection Assets	2015	2016
Moderate –Very Good (1-3)	90%	85%
Poor to Very Poor (4-5)	10%	15%
Total Asset Count	4945	6216



Reasons for this shift include;

- A new mobile app based rating process was introduced this year which reduced subjectivity in assessment from the previous paper based system and increased the scrutiny of the asset assessment.
- An increase of 1271 (26%) assets into the database. Both new and existing were included for the first time (channels, drains, debris fence with rock head, amenity, native plantings)
- There are 415 additional assets in poor/very poor condition (4&5s) than last year. Most are groynes, willows and debris fences. This is to be expected as these assets degrade over time.

### 4.3 Assets by Count

2016 Condition Rating by Asset Type						
Asset Type	1 - Very Good	2 - Good	3 - Moderate	4 - Poor	5 - Very Poor	Total
Barrage Gate				2		2
Blockline	4	24	4	5		37
Bridge	2	6				8
Channel	5	817	201	37	2	1062
Culvert	1	26	6	3		36
Debris Arrestor	2	10	1	3	1	17
Debris Fence	1	117	89	242	25	474
Demolition Line		5	3	6	1	15
Detention Dam		2				2
Diversion Cut		2				2
Drain	16	59	3	1		79
Drop Structure	1	1				2
Ducksbill Structure		2				2
Fascine			1	1		2
Fence	3	29	12	2	3	49
Fence Rail Iron Net		1	1	14		16
Floodgate	14	80	29	9	9	141
Floodwall	15	19			1	35
Floodway Sill		8				8
Gate	3	5				8
Groyne	26	760	324	133	29	1272
Native Planting	12	58	38	6	4	118
Riprap	27	164	88	21	1	301
Seat	2	16	1			19
Sign		2				2
Stopbank	151	390	181	129		851
Track	124	315	100	4		543
Training Bank	7	4	2			13
Weir		10	4	1		15
Willow	6	551	293	193	33	1076
Wingwall	4	4	1			9
<b>Total</b>	<b>426</b>	<b>3487</b>	<b>1382</b>	<b>812</b>	<b>109</b>	<b>6216</b>

**Table 1: Rating by Asset Type.**

Table 1 shows the condition of each asset type. A discussion of critical assets in poor or very poor condition or of significance is detailed below.

### 4.3 Significant Assets of Value or Criticality

a) **Stopbanks** Asset Count: 851. Value: \$122.8m



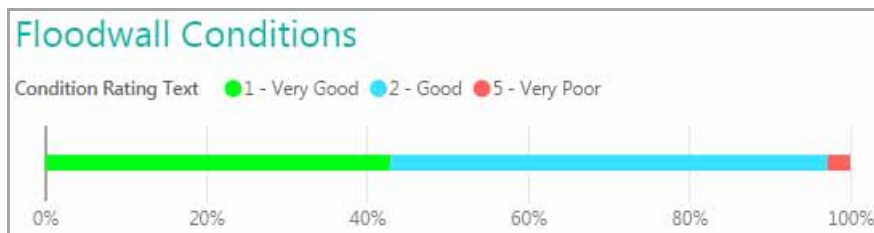
Over 85% of all stopbank assets are in moderate to very good condition. The remaining 15% are classed as poor and mainly located on the Otaki river. These stopbanks are part of the Otaki FMP review which will provide direction as to their ongoing management. 2% of stopbanks assessed as poor can be attributed to enhanced assessment techniques compared to last year.

b) **Floodgates.** Asset Count: 141. Value: \$1.4m



Nearly 87% of floodgates are in a moderate to very good condition. The remaining 13% are mostly located in the LWVDS and either underwater and are difficult to inspect or scheduled for repair.

c) **Floodwalls** Asset Count: 35. Value: \$6.8m



This year the floodwalls were assessed by Opus consultants for any signs of immediate concern. All floodwalls bar one were deemed in a good to very good condition. The one asset categorised as very poor is no longer required and is to be removed.

d) **Barrage Gates:** Asset Count: 2, Value: \$9m.

**Asset Rating: 4: Poor**

The Barrage Gates were rated as poor due to issues with the electrical control system, brakes on the electric motors are in need of repair and damage to railings. The electrical system has now been upgraded and the other items are programmed for repair in next year's work program.

e) **Porirua Detention Dams.** Asset Count: 2. Value \$4.6m,

**Asset Rating: 2: Good**

Both Dams remain in a very good state of condition. A Dam-break study by Tonkin and Taylor Ltd is being finalised as part of the ongoing improvements outlined in the 2015 Comprehensive Safety Review.

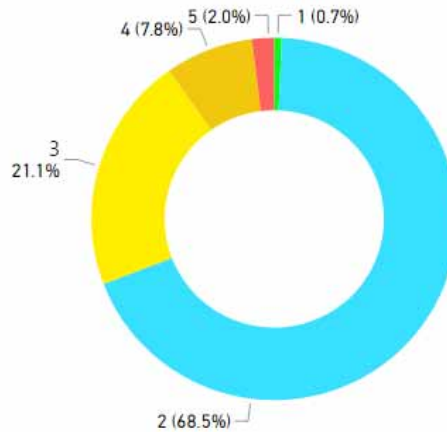
**4.3 Regional Comparison  
Wairarapa Region**

In the Wairarapa, there has been a shift in the asset condition from 96% rated moderate to very good in 2015 to 90% in 2016.

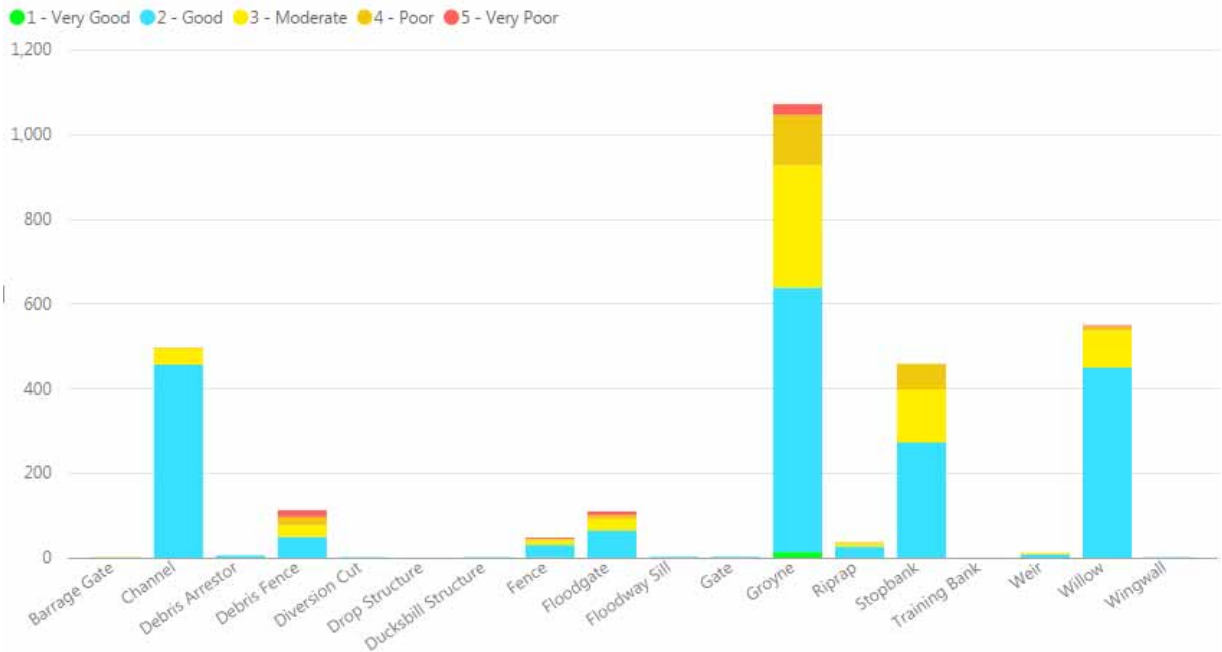
2015 Wairarapa Condition Ratings



2016 Wairarapa Condition Ratings



## Wairarapa Asset Condition by Type



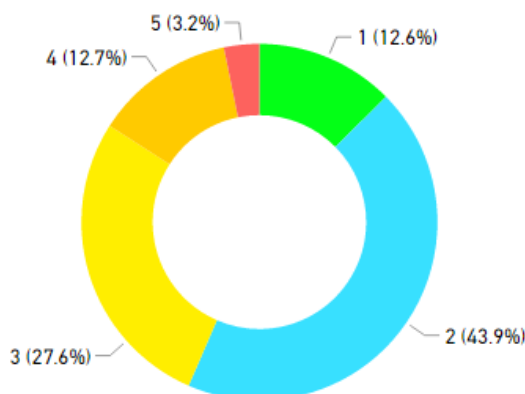
The Wairarapa region has seen a significant shift in how assets are rated. There has been a decrease in assets marked as ‘good’ and a corresponding increase in assets marked as moderate or poor. The biggest change is due to the rating of the condition of groynes and willows, with some decrease in the condition of channels and stopbanks.

Community consultation and landowner involvement is helping to identify key areas of maintenance and upgrade. Additional asset condition data is helping target limited budgets to those assets and river reaches.

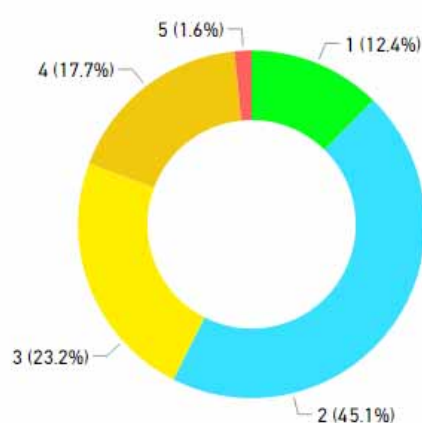
## Western Region

For the western region, there has been a slight shift in the asset condition from 84% rated moderate to very good in 2015 to 81% in 2016.

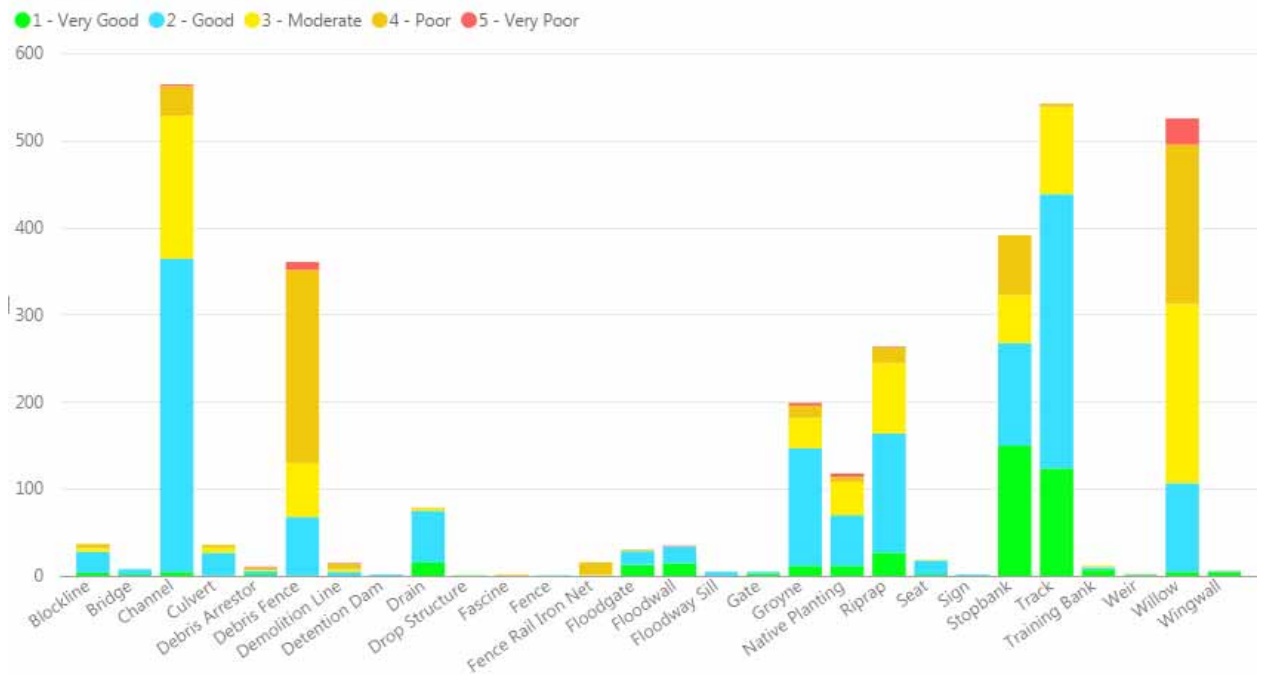
2015 Western Condition Ratings



2016 Western Condition Ratings



## Western Asset Condition by Type



The main change in condition has been a 4.4% decrease in assets marked moderate, and small increases in poor and very poor counts. The condition of channels, stopbanks, willows and debris fences have been the main contributors to this shift.

The inclusion of additional assets and the enhanced condition assessment is helping target operational spending, inform capital improvements and feed into high level strategic reviews such as the Otaki FMP.

## 5. Asset Management Planning Improvement

In the 2016/17 year, the following initiatives will be progressed to improve asset management systems and processes.

- **Criticality/Performance assessment tool**  
Utilise the criticality assessment methodology to identify and rank priority reaches of river according to economic, environmental and social criteria.
- **View asset data in field via mobile data**  
Develop a mobile solution to allow flood protection staff to view asset information in the field. Potentially this will allow field users to identify and program work.
- **Asset Management Plans**  
Develop individual asset management plans for complex assets such as the Barrage Gates and Wairarapa pump stations.
- **Database improvement**

Increase the quality and logic of information in both GIS and SAP PM databases to improve efficiency and prepare the department for a revised asset management system as part of the ERP review.

- Asset Management GAP analysis  
Annual GAP analysis will be undertaken to identify areas of improvement and align GWRC with national AM best practise.
- Porirua detention dams.  
The results of the Stebbings and Seton Nossitor dambreak analysis will help inform the next phase of work, which is to develop an Emergency Action Plan for both dams.

## 6. Scheme budgets and flood damage reserves

This year, seven of the Wairarapa Scheme Advisory Committees recommended an increase in river scheme rates for 2016/17 to maintain and improve asset condition. Maintenance budgets, together with the scheme reserves, in the remaining schemes are sufficient to ensure that assets can continue to be maintained to the required service level across the region in 2016/17.

A summary of the individual river schemes and total flood damage reserves are detailed in Table 2 below. There were no significant floods during the year and therefore no requirement to utilise any of the reserve funds during the year.

Scheme	June 2016		
	Scheme Reserve	Major Flood Investment Reserves	Total Reserves
Lower Valley	1,932,605	1,260,452	3,193,057
Waiohine	702,129	41,572	743,700
Mount Bruce	78,110	9,423	87,533
Upper Mangatarere	35,094		35,094
Te Ore Ore	289,745	9,423	299,168
Gladstone	75,571	9,423	84,994
Waingawa	138,894	27,714	166,609
Waipoua	175,742	27,714	203,456
Kopuaranga	-43,654		-43,654
Taueru	7,822		7,822
Whangaehu	8,920		8,920
<b>Eastern River Total</b>	<b>3,400,977</b>	<b>1,385,721</b>	<b>4,786,699</b>
<b>Western Rivers Total</b>	<b>2,685,257</b>	<b>1,385,721</b>	<b>4,070,978</b>
<b>Sub Total of River Schemes Reserves</b>	<b>6,086,235</b>	<b>2,771,442</b>	<b>8,857,677</b>
GW Flood Contingency Reserve	1,974,718		1,974,718
GW Major Flood Investment		2,771,443	2,771,443
<b>Total Reserves of River Schemes</b>	<b>8,060,953</b>	<b>5,542,885</b>	<b>13,603,838</b>

Table 2 : Scheme Reserves



## 7. LTP Performance Measures

The 2015 Flood Protection Asset Management Plan outlines various operations performance measures which link to the LTP. In the 2015/16 year, the Department achieved 3 out of 5 measures. The stopbank measure was not achieved by 2% due to improved assessment processes for stopbanks in the Otaki and Wairarapa areas. Consent compliance was not achieved due to four non-compliance issues as detailed in Table 3 below.

Level of Service	Performance Measure	Baseline (2014)	Target 2015/16	Target 2016/17	Target 2017/18	Target 2018-25	Commentary	Overall achieved Y/N
Infrastructure is managed to agreed levels of service	Annual maintenance programme completed so that schemes are maintained to their full service potential.	100 %	100 %	100 %	100 %	100 %	Yes, maintenance programme delivered to its full actual expenditure potential including spend .on 14/15 flood damage	<b>Y</b>
	% of stopbanks that meet design standard.	87%	87%	88%	89%	90%	No. 722/851 stopbank assets were rated as 3 or better = 85%.	<b>N</b>
	Flood damage identified, prioritised and repair programme agreed with the community	100 %	100 %	100 %	100 %	100 %	Yes flood damages were repaired as required.	<b>Y</b>
Minimise the environmental impact of flood protection works.	That all flood protection works are undertaken in accordance with COP checklist.	100 %	100 %	100 %	100 %	100 %	Yes, while new CoP is still being finalised, operational works are being undertaken in the broad scope of the CoP	<b>Y</b>
	Consent compliance	100 %	100 %	100 %	100 %	100 %	No 98%; Four minor non-compliance incidents recorded including: <ul style="list-style-type: none"> <li>• Maintenance outages at the Barrage Gates,</li> <li>• Pounui stream diversion</li> <li>• Timing of aerial photos in Wairarapa</li> <li>• An email notification miscommunication</li> </ul>	<b>N</b>

**Table 3 : LTP Performance Measures**

## **8. Community Engagement**

The Greater Wellington Regional Council manages 15 river schemes across the region. Staff report to Scheme Advisory Committees and Friends Groups who confirm they are satisfied with the standard of maintenance. The committees include;

- Lower Wairarapa Valley Development Scheme (LWVDS) Advisory Committee
- Waiohine River Floodplain Management Planning Advisory Committee
- Waingawa River Advisory Committee
- Upper Ruamahanga River - Mt Bruce Advisory Committee
- Upper Ruamahanga River Te Ore Ore Advisory Committee
- Upper Ruamahanga River Gladstone Advisory Committee
- Waipoua River Advisory Committee
- Taueru and Whangaehu Advisory Committees
- Kopuaranga River Advisory Committee
- Friends of the Otaki River
- Friends of the Waikanae River
- Hutt River Flood Management Subcommittee

During the year all Committees and Friends Groups confirmed resolutions stating that the respective river schemes had been maintained to their satisfaction.

## **9. Summary**

Council can be confident that all flood protection infrastructural assets are being adequately maintained to the required level of service. This is demonstrated by:

- The annual condition assessment process and staff inspection have improved over the year and established that the majority of Flood Protection's infrastructural assets are in good to moderate condition.
- The various Scheme Advisory Committees and Friends Groups have been consulted and confirm that the schemes are being maintained to their satisfaction.
- Sufficient financial provision has been made available through the maintenance budgets and scheme flood damage reserves to ensure completion of the maintenance programmes.

## **10. 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.

### **10.1 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 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.

### **10.2 Engagement**

Engagement on the matters contained in this report aligns with the level of significance assessed. Engagement has been undertaken in the Wairarapa River Advisory Committees and western river Friends’ Groups. In accordance with the significance and engagement policy, no further engagement on the matters for decision is required.

## **11. Recommendations**

*That the Committee:*

- 1. Receives the report.*
- 2. Notes the content of the report.*
- 3. Notes the confirmation of the 15 Scheme Advisory Committees and Friends Groups that the scheme assets have been maintained to their satisfaction.*
- 4. Confirms that the 15 River Management Schemes in the region have been maintained to a satisfactory level.*

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