



Report 10.64
Date 25 February 2010
File WO/02/01/22

Committee Catchment Management Committee
Author Ranjan Cyril, Engineer Southern

Lower Wairarapa Valley Development Scheme - Study of Private Structures around Lake Wairarapa

1. Purpose

To advise the Committee of the request made by landowners around Lake Wairarapa following the July 2006 flood event, to seek assistance from the Council to upgrade and maintain their Private Structures, and to inform the Committee of the subsequent investigations undertaken.

2. Significance of the decision

The matters for decision in this report do not trigger the significance policy of the Council or otherwise trigger section 76(3) (b) of the Local Government Act 2002.

3. Background

Lake Wairarapa is an integral part of the Lower Wairarapa Valley Development Scheme (LWVDS). Prior to the development of the Scheme the Ruamahanga River flowed directly into Lake Wairarapa. During construction of the Scheme the Ruamahanga River was diverted through a cut-off channel such that over 90% of all river waters now flow directly to the sea. Only excess floodwaters during a flood event from the Ruamahanga River are now directed into Lake Wairarapa by a floodway system.

The “original” LWVDS included the increased development of farmland on the eastern foreshore of Lake Wairarapa. This was known as the Polder Scheme. Due to the potential environmental impacts of the polders and other considerations, this final part of the scheme was abandoned.

Since the completion of the LWVDS, landowners around the lake have sought to protect their fertile land from either or both floodwaters and erosion caused by wind driven waves from the lake. The stopbank in the Bidwell/Wall area was constructed pre-Scheme and there were also stopbanks constructed on parts of the old Ruamahanga River channel prior to the Scheme. The latter

“protection works” have been constructed to a variety of standards, dependant on the financial resources of the landowner concerned. All structures are plotted on the aerial map marked Attachment 1.

Prior to the recent Scheme review, the LWVDS had made contributions to the construction and maintenance of some “Private Structures” because these properties were paying higher rates than others but getting less benefits for that class of rates, and this contribution was seen as a way of balancing some of the anomalies in the old classification. The new scheme classification completed in 2008 is based on benefits and this has now rectified the anomalies associated with the previous rating classification.

The lakeshore landowners receive a number of benefits from the creation and ongoing operation of the Scheme as follows;

1. Lower average, minimum and maximum lake levels (see Attachment 2) typically lying within a band from 9.8 to 10.8metres above datum now compared to 10.1 to 11.5metres above datum pre-Scheme reduced extreme high lake levels. These lower lake levels have enabled more land to be used in farming operations.
2. The mechanical opening of the river mouth at Lake Onoke.
3. The maintenance and rip rap protection of the Ruamahanga river channel downstream of the Barrage Gates. This has enabled the capacity in the river to be maintained at a higher level thus reducing the amount of water needed to be back flowed into Lake Wairarapa.
4. Maintenance and development works in the Pukio area to reduce the risk of any stopbank failures. If there is any failure of stopbanks in this area, the floodwaters will flow directly into Lake Wairarapa.
5. The construction and operation of the Barrage Gates to achieve the “target” level guidelines.
6. The routing of over 90% of the Ruamahanga River flows, especially during flood times, directly to the sea as a result of the Diversion Channel.

As indicated above, only excess floodwaters are now directed into Lake Wairarapa via the floodway. The lake level takes typically a week to ten days to fall after the Ruamahanga River has receded. This delay is an improvement on pre scheme conditions.

The floods of 2004 and 2006 resulted in maximum Lake Wairarapa levels being recorded since completion of the cut-off diversion and the Barrage Gates. These high lake levels, although much lower than the pre-Scheme high water levels, severely stressed the integrity of significant areas of the “private protection works network” e.g. the Barton-Moran stopbank failed resulting in a large area of flooding on both properties. It is clear that any “protection works” need to be constructed to a specific standard and must have an ongoing maintenance programme. During discussions with Councillors and staff,

affected landowners requested that GW consider how they might assist in the protection of the “private stopbank network”.

The “Private Stopbank Network”

The network comprises:

- some isolated stopbanks and lake edge erosion protection works on the western side of the lake,
- stopbanks and/or connection of low hills/dunes on the eastern side of Allsops Bay leading to the Barrage Gates, and protection of the toe of land in front of the low banks on both the eastern and western side of Allsops Bay;
- stopbanks associated with the old Ruamahanga River channel and some erosion protection works;
- stopbanks and low banks on the eastern side of the lake situated between Oporua Floodway up to and including the Tauherenikau River delta and some erosion protection works.

These structures and works were discussed extensively as part of the LWVDS Review and it was concluded that they do not form part of the LWVDS asset base. The stopbanks on the eastern lakeshore are situated in front of the line of sand dunes which form a natural edge to the lake. These land owners do own title out into the bed of the lake. Landowners on the western side of the lake have constructed stopbanks and in recent times have been requesting assistance for protection from erosion. Erosion protection has been the prime focus of works in the Allsops Bay area.

Research was undertaken and considerable discussion took place during the LWVDS Review to determine the actual origin of the stopbanks associated with the old Ruamahanga river channel. However, no clear documentation was found. They are thought to have been constructed either by the old river board in that area or by individual landowners with subsidy money from the river board. In either case they have not been constructed to a particular uniform standard. These old structures have received no maintenance from the Scheme.

The issue of differentiating stopbanks in various areas for the purpose of assistance was discussed at length and decided at the end that the consequences of flooding and damages to properties were the same whether the stopbanks were pre-scheme or post-scheme, or whether they were constructed by individual landowner or by the old river board. Further, it would make it very difficult to administer any funding assistance if it is not applied uniformly.

4. Investigations undertaken

Eastern Consulting Ltd was engaged to investigate and record the condition of existing private structures and to identify what the landowners wanted from GW. The investigation included an evaluation of what engineering works are required, estimates of the cost of any upgrades, and ongoing maintenance requirements of the “private stopbank network”. Landowners were telephoned and site visits arranged as appropriate.

The “private protection works” are shown on Attachment 1. As expected the condition of the “protection works” varied considerably.

Two evaluations were carried out. One to bring the stopbanks to a uniform “as constructed standard” and the other to bring them to the LWVDS standard.

The works and estimated costs are listed below:

	As Constructed Standard	LWVDS Standard
Stopbank upgrade (4,200 m	\$ 419,000	\$2,206,000
Rock rip rap protection	\$ 156,000	\$ 156,000
Flaxes/willows for edge protection	\$ 454,200	\$ 554,200
Maintenance/repairs to stopbanks	\$ 23,000	\$ 20,000
Other maintenance work	\$ 88,000	\$ 88,000
Floodgates/culverts	\$ 39,500	\$ 39,500
Total	\$1,179,700	\$3,063,700

The main areas of expenditure in the first evaluation are protecting both land and stopbanks from erosion, and stopbank upgrade. However, in the second evaluation the upgrade of stopbanks to LWVDS standard is the most significant expenditure.

Landowners expressed a variety of views to the consultant, as follows:

- the majority have requested assistance from GW. There is confusion about how the LWVDS has allocated assistance over the past years;
- those with no requirements for upgrading are happy with the current situation and most of them do not support additional rates being raised to maintain the “private stopbank networks”.
- some are unhappy that their rates have increased as a result of the new rating classification as they feel the use of the lake for flood storage is a significant dis-benefit;

- in some cases the adjoining landowners receive the benefits of the “private stopbank network” without being directly responsible or able to undertake maintenance work;
- there is a view from some that the rate of drainage through the Barrage Gates is decreasing over time.

5. The options

The “Private Stopbank Network” has been constructed both pre and post the completion of the LWVDS. Some rip rap protection works were constructed with the assistance of the LWVDS but others have received no assistance from the scheme. The basis of any contribution from the LWVDS in the past has usually been whether the landowners were paying Class “A” rates or not. Class “A” rates were the highest class and reflected a high degree of benefit from the scheme’s construction. If these landowners requested assistance with maintenance work then some was generally provided.

Other landowners with land extending out onto the eastern bed of Lake Wairarapa argued with the Wairarapa Catchment Board (WCB) that when the polders were abandoned their rates should be reduced. Eventually the WCB did lower the rating classification for that land. These landowners have designed and constructed their stopbanks themselves. The objective of these structures for the lakeside landowners is to maximise the use of the fertile soils falling within their land title, ie. they are for the benefit of the landowner.

The new rating classification has removed the anomalies which existed in the old rating classification, especially around Lake Wairarapa.

The LWVDS has contributed to the protection of parts of the bank network” in other areas within the scheme area eg. at Shelton’s and Guscott’s. At these locations it was decided to protect and reconstruct such structures because of the benefits to the Scheme. At both of these locations if the river had breached the design fairway alignment the river would have developed a totally new channel causing major damage to the scheme assets situated downstream. Therefore, maintaining the existing river alignment has clear benefits to the LWVDS. In the case of the “private stopbank network” around the lake there are no such benefits to the scheme.

There is now a requirement to develop a policy on how the LWVDS will handle requests for the funding of the “private stopbank network” in the vicinity of Lake Wairarapa.

Four options have been considered:

- Option 1 – Do Nothing
- Option 2 – Consider use of the Isolated Works Policy for such works

- Option 3 – Incorporate parts of the old stopbanks along the old Ruamahanga cut-off channel into the LWVDS and use the isolated works policy for maintenance of the remainder of the “private stopbank network”.
- Option 4 – LWVDS takes over the improvements and management of all of the “Private Stopbank Network” in the vicinity of Lake Wairarapa.

5.1 Do Nothing

The LWVDS has no obligations relating to the “private stopbank network”. There are no direct or indirect benefits to the LWVDS. The land adjoining Lake Wairarapa clearly benefits from the operation of the LWVDS. The new rating classification is based on the benefits and dis-benefits the specific land receives from a variety of factors.

During a large flood event all landowners in the LWVDS get affected to a varying degree depending on the location of their land. It should be noted that landowners out side Lake Wairarapa do not get affected during small flood events or during lake blockages. However the lakeshore landowners get adversely affected during a prolonged wet period combined with a series of small flood events, or due to prolonged river mouth blockages combined with a small flood event.

The landowners who have developed the “private stopbank network” around the lake are being treated differently to landowners who wish to construct river protection structures in areas outside of river schemes. The latter are eligible for a contribution from the isolated works budget, but the budget is limited and contestable across the region.

5.2 Introduce the additional Isolated Works Funding specifically for such works.

Landowners who are located outside of river schemes anywhere in the Wellington region who wish to construct “private protection works” are eligible to bid for funds from the Isolated Works Budget. A total of \$26,100 is available per annum. The landowner receives a maximum 30% contribution from GW towards any approved works. The landowner is required to obtain the necessary resource consents and Flood Protection staff approval of the works.

If such an option was adopted by GW, the programme of works as detailed from the investigation could be spread over 10 years or longer. This would mean an annual commitment from the general rates of either \$35,000 or \$92,000 per year depending on the standard of stopbank upgrade adopted (i.e. as constructed or LWVDS standard). This proposal would ensure consistent standards are used when constructing or maintaining such works.

5.3 LWVDS takes over the upgrade and management of parts of the old stopbanks along the Ruamahanga Cut-off Channel

Under this option the LWVDS would take over the old stopbanks along the Ruamahanga cut-off channel and upgrade and manage them like other Scheme assets. The rest of the areas would be managed using the isolated works policy. The reasoning behind this option is that these stopbanks provide protection to a number of properties.

As mentioned earlier there was no clear documentation found regarding the origin of the stopbanks along the Ruamahanga cut-off channel. They may have been constructed by the former river board or by individual landowners with subsidy money from the river board. In either case they have not been constructed to a particular uniform standard.

If these stopbanks are taken over by the LWVDS, it would require the rating classification to be reviewed to assess who receives the benefits from the works. The comments made under 5.4 below also apply to this option, and it would affect all the ratepayers in the scheme.

It is to be noted that the flooding in this area is now due to high lake levels and not high river flows as in the past. The effects of flooding on the land in this area are the same as other land around the lake. Therefore, for consistency purposes all areas should be treated equally.

There are no direct or indirect benefits to the LWVDS from taking over these old stopbanks, and it will involve reviewing the classification again. The cost of such works would be funded up to 50% by the LWVDS and 50% from the general rates.

5.4 LWVDS takes over the total upgrade and management of the “Private Protection Network”.

Under this option the LWVDS would take full responsibility for the upgrading and maintenance of the “private protection network”. This would require the rating classification to be reviewed to assess who receives benefits from the works. This would affect all of the ratepayers within the Scheme, requiring increases in rate contributions. Given the recent adoption of the new rating classification it is considered that most ratepayers will view such changes negatively.

Further, it should be noted that the LWVDS does not provide protection for the whole scheme at the same level. There is a large difference in the level of protection between various areas. Therefore, there is no justification for special treatment of one area without considering the whole scheme.

As the LWVDS receives a contribution of 50% from the general rates the impact of this option over a 10 year improvement plan, would be to increase the general rate requirement by either \$59,000 or \$153,200 per annum, depending on the standard of stopbank upgrade adopted.

There are no direct or indirect benefits to the LWVDS from upgrading the “private protection network”, and it will involve reviewing the classification again.

6. Consultation with Interested Parties

A discussion paper has been prepared and submitted to the LWVDS Advisory Committee Members and the affected landowners to consider and comment on the various options.

It is proposed:

- to call a meeting of the Advisory Committee in early March 2010 to discuss feedback from the members and affected landowners.
- to prepare a report considering the feedback from the meeting and present it to the LWVDS Advisory Committee in May 2010 for their consideration.
- to bring the recommendation of the LWVDS Advisory Committee back to the Catchment Management Committee for consideration.

7. Recommendations

That the Committee:

1. **Receives the report.**
2. **Notes the contents of the report.**
3. **Notes the consultation process outlined above.**

Report prepared by:



Ranjan Cyril
Engineer, Southern

Report endorsed by:



Graeme Campbell
Manager, Flood Protection

Report approved by:

Wayne O'Donnell
General Manager,
Catchment Management

Attachment 1: aerial map
Attachment 2: lake levels