

Background, Statutory Requirements and Assessment of Effects

1. Location

The Geoffrey Blundell Barrage is located at the outlet of Lake Wairarapa on the Papatahi Road (East-West Access), 24.6km south east of Featherston. The scope of significant effects of this application reach from Lake Wairarapa down to Lake Onoke, and much of the land surrounding these waterbodies. Lake Wairarapa covers about 80 km², and is mostly around 2.5 metres deep. Prior to the current flood protection scheme¹ it covered about 100km² with up to 210km² more land being submerged during floods. The lake is largely bordered by farmland, but is also very important for a variety of commercial, ecological, recreational, and cultural uses.

The Lake Wairarapa wetlands, comprising Lakes Wairarapa and Onoke, and their associated wetlands, form the largest wetland complex in the lower North Island. The wetland complex supports important plant and birdlife communities, a factor that was recognised in 1989 by a National Water Conservation Order. However, Lakes Wairarapa and Onoke are also the habitat for numerous species of aquatic life, including flounder, mullet, paratya shrimps, inanga, torrentfish, koaro, bullies, mudfish and eels. While it is generally accepted that the regime currently serves the wildlife and shore vegetation well (with possible exceptions), some fish species are thought to be restricted or even excluded from Lake Wairarapa by the Barrage Gates.

2. Background

The Geoffrey Blundell Barrage Gates control flows into and out of Lake Wairarapa at its southern end, and therefore also control the Lake's levels.

Three applications relating to the operation and maintenance of the Barrage Gates were publicly notified together. This application, WAR 930149(01) is for a water permit to use the Barrage Gates to control the outlet flow, and Lake levels. The other two applications, WAR 930149(02) and (03) related to the sandblasting of the Barrage Gates to prepare them for repainting. The applications for blasting discharge permits were separated from the water permit application because the blasting issues were considered to be more straightforward and all parties agreed on them. These applications were granted in January 1999.

The most recent water right for the operation of the Barrage Gates, WAR 900071, was issued on 26 March 1991 under the Water and Soil Conservation Act 1967, and expired on 31 May 1994.

¹ P6, New Zealand Freshwater Fisheries Report No. 126, B.J. Hicks, June 1993.

An application to replace this water right under the Resource Management Act 1991 was made in November 1993, more than six months prior to the water right expiring. It is unclear whether this application was formally received by the Regional Council, or rejected for lack of information. Assuming the Planning and Resources Department formally received the application then the applicant was allowed to continue operating under that right until a decision had been made on the application.

Delays in processing the consent application were due to the applicant not providing sufficient information. On 31 March 1998, the applicant filed a complete application, and processing commenced at this stage.

After a pre-hearing meeting was held on 18 June 1998, the submitters agreed that the applicant would adjourn proceedings to discuss fish monitoring with those parties who had raised the issue; DOC and the two iwi authorities.

3. Proposal

Through mechanical operation of six radial gates, the Barrage controls water levels in Lake Wairarapa, the lower Ruamahanga River and Lake Onoke. Currently the gates are operated to achieve seasonal target levels which recognise differing seasonal flood control, and environmental and recreational requirements. The levels are termed "targets" because overriding factors such as floods and prolonged dry summers can see the targets being exceeded or unable to be met.

The current operating regime was established by the Lake Wairarapa Coordinating Committee. This Committee was convened by the Department of Conservation in 1990 with representation from bodies with statutory responsibilities related to the Lake Wairarapa wetlands, landowners, iwi, user groups and scientific advisors. The agreed operating regime can be found in the first schedule attached to the recommended resource consent conditions.

The regime will remain the same with the following exceptions:

- 1) There will be minor, seasonal variations from the normal operating parameters, within the overall current operating targets, to increase the opportunities for fish migration,
- 2) One gate at a time will be raised during the spring-to-autumn period for surface and general maintenance, and
- 3) Not one gate at a time, as previously suggested, but up to four gates will be raised during painting activities. This is because the paint has a seven day curing period.

4. Notification

The application was publically notified in the Wairarapa Times Age, on Saturday 2 May 1998. Signs were posted at the Lake Reserve, at the Barrage Gates themselves, and outside the Lake Ferry Hotel near Lake Onoke. Copies

of the application were made available for viewing at the offices of South Wairarapa District Council in Martinborough, the Lake Ferry Hotel, the Wairarapa Offices of the Wellington Regional Council in Masterton, and the Regional Council Centre in Wellington.

The Consents Management Department of the Regional Council individually notified by mail those persons it deemed to be directly affected by the proposal. These included the Department of Conservation and Wellington Conservation Board, the Wellington Fish and Game Council, the Lower Wairarapa Valley Development Scheme Advisory Committee, the South Wairarapa District Council, Rangitaane o Wairarapa, Wairarapa Maori Executive Taiwhenua, Hau Ariki Marae, Kohunui Marae, Ducks Unlimited, the Queen Elizabeth Trust, the NZ Ornithological Society, the Royal Forest and Bird Protection Society and those landowners or occupiers in immediate proximity to the lake and Barrage Gates.

5. Submissions

The submissions are summarised as follows:

Rangitaane o Wairarapa Inc.

During consultation for these consent applications, the South Wairarapa District Council's Maori Standing Committee asked the applicant to note the Standing Committee's support of Rangitaane o Wairarapa Inc.'s submission.

Reason for making submission

Oppose the application. Issues they presented during consultation had not been addressed in the application. The issues were repeated in the submission, as follows:

- Lake Wairarapa and the Ruamahanga River are of immense significance to tangata whenua;
- The lake level regime has resulted in a loss and change of vegetation, and has impacted on the food supply for fish; and
- Improvements to the fish-passage should be investigated by Wellington Regional Council and at the Regional Council's expense;

Seeks the following

- Consent conditions should require monitoring of fish, turf, and native plants;
- Consent conditions on the discharge permits should require the applicant to monitor the effects of the discharges, including cumulative effects;
- The requested 20 year consent term conflicts with Lake Wairarapa Guidelines and disadvantages people who have issues; and

- Tangata Whenua would like to actively participate in the management and monitoring of Lake Wairarapa.

Ngati kahununu ki Wairarapa Maori Executive Taiwhenua Inc.

Reasons for making submission

Oppose the application. This submission gave unequivocal support to the submission of Rangitaane o Wairarapa, and the issues mentioned above.

Department of Conservation

Reasons for making submission

Conditional support.

Seeks the following:

- A maximum consent period of 5 years be applied;
- The Regional Council analyse shore profile and vegetation data in order to assess the effects on native turf plant communities, after consultation with the Department of Conservation; and
- Fish surveys be undertaken above and below the barrage gates, after consultation with the Department of Conservation;

Wellington Fish and Game Council

Reasons for making submission

Oppose application, but will withdraw opposition if certain conditions are met.

Seeks the following

The Fish and Game Council requested that the term be limited to five years. This is to ensure that any effects on waterfowl that may come to light can be addressed adequately when a replacement consent is sought.

Lower Wairarapa Valley Development Scheme (LWVDS)

The LWVDS represents ratepayers and major interested parties associated with the Lake Wairarapa scheme. They liaise with the Regional Council on matters relating to the lake management and the Scheme's ratepayers fund 50% of the operating costs of the scheme. Membership consists of 8 elected ratepayer representatives, representatives from South Wairarapa District Council and the Department of Conservation, and about two members of the Regional Council Rural Services and Wairarapa Committees.

Reasons for submission

Support the application. The following points were made:

- The activity provides invaluable flood protection to landowners;
- The prime purpose of the scheme is flood control, and has already been compromised to address concerns relating to wading bird and native plant habitat;
- Further change, other than fine-tuning, will adversely affect the flood protection offered by the scheme;
- There is no legal obligation for the Barrage structure to be modified for environmental reasons, because it met the Freshwater Fisheries Regulations at the time it was constructed. Fine-tuning to improve passage for migrating fish is not ruled out;
- The iwi requests for participation in management relate to land-ownership issues, outside of this consent process; and
- The regime has been satisfactory for ten years, and has been arrived at through close consultation. Also, the consent process is costly to ratepayers.

Seeks the following

- a 20 year consent-term with opportunities for reviewing conditions should they be necessary.

Landcorp Farming Limited, Ducks Unlimited, and five landowners (Gooding, Smith, Barton, Lawrence, and Moran)

Reasons for submission

These submissions supported the application on the basis that the activity protects arable land and/or conservation values. Some noted that any deviation from the current scheme could have intolerable effects.

3. Pre-Hearing Meeting

A pre-hearing meeting was held on 18 June 1998 at the Greytown offices of the South Wairarapa District Council. The meeting was attended by the staff of the Council's Operations Department and Consents Management Department, Department of Conservation, Rangitaane o Wairarapa Inc., Ngati Kahungunu Iwi Authority, the Lower Wairarapa Valley Development Scheme, and four interested landowners. Draft consent conditions were offered for comment at this meeting. The pre-hearing meeting notes are attached as Appendix 1.

7. Addressing submitters' concerns through consent conditions.

Consent Term

A concern common to the submissions in opposition or conditional support of the application is that a twenty year consent term will not allow these groups to prompt remedial action, should adverse effects be identified.

The recommended review condition allows for formal review under the Resource Management Act 1991 at five-yearly intervals, and at other times for specific reasons. The Regional Council's Planning and Resources Department can use this condition to initiate a review if adverse effects are identified and a significant change in the consent will remedy or mitigate them.

I have also recommended a condition requiring the applicant to convene a liaison group. This group would be composed of those who submitted on this consent, the applicant, and staff of the Planning and Resources Department and would provide a forum where consent issues or new information can be discussed. Where a party produces compelling evidence of the need for a change, staff of the Planning and Resources Department then have a statutory responsibility to initiate a review if this is the most appropriate and effective means of addressing the effects. However, they may be able to suggest a less time- and cost-intensive approach if it is equally effective. The review does not require the permission of the Operations Department, and would generally involve those who submitted on the consent application.

I have recommended a condition that requires a liaison meeting with submitters each year prior to a five-year review opportunity.

Fish Passage

I consider that requests for the Barrage design to be reconsidered due to obstruction of fish passage are unreasonable. Other than the discharge applications, the applicant requires a *water permit to dam and divert*, as opposed to a *land use consent to construct or alter*. The water permit governs the action of damming and diverting through the gate regime, not the existence of the structure itself.

The applicant has stated that the structure was installed lawfully to the specifications of the time, and it can also be argued that, owing to the time the structure has been in place, the lake environment has reached a new equilibrium. Any effects the structure design may be having are therefore likely to be the same as they were prior to this consent being replaced.

However, the Barrage opening regime is covered by this application and is a process that should be managed for, among other things, acceptable fish passage. The applicant has agreed to install systems that maximise fish passage opportunities by prompting automated openings at optimum fish pass times. Also, the gates are presently being operated to give an agreed balance between the interests of fish, birdlife, turf, plants and flood protection.

If all parties in future desire changes in the regime, some changes to the operation are permitted within the proposed consent conditions. In some cases, a formal consent review may be needed to incorporate the changes.

Monitoring

Fish surveys could potentially provide valuable information about the species and populations of fish able to migrate through the gates. They are unlikely to indicate what effects the gates have had relative to the situation before they were installed, because there is little quantitative data from that time. They may, however, clarify the relationship between fish migration and gate openings and therefore indicate the value of proposed automated openings.

Given that the applicant does not expect to alter the gates regime significantly in future other than to improve fish passage aspects of the operation, it is arguable whether monitoring can be legitimately required by the water permit. However, I consider that in light of the limited fish information presently available, a condition can be imposed requiring the permit holder to monitor the effects that the various modes of gate operation have on fish passage. Although the 1993 Hicks report offered suggestions for operation, these appear to have been on a theoretical premise rather than measured effects, and the selected sample areas did not relate specifically to the Barrage Gates².

Submitters expressed concerns about the lack of information on the effects the gates are having on fish life. As a result, the Operations Department worked with the National Institute of Water and Atmospheric Science (NIWA) to gauge the feasibility of further fish monitoring. Gordon Glova of NIWA has visited the site and proposed as follows:

- Open lateral gates in conjunction with the tidal cycle, when minor head differences exist on an outgoing flow (ideally on peak tides, daily for an hour);
- This to be done from 1 September to 30 November, and 1 January to 31 March³;
- Monitor for three years at near shore sites above the Barrage and in tributaries

The submitters have agreed that their information requirements would be adequately addressed by these changes, which are to be implemented around June 1999, and the subsequent study.

Ngati Kahungunu asked that after six months the applicant prepare a summary of the number of openings that actually occur under this revised scheme. The applicant has agreed to this and I have recommended a condition relating to this requirement.

The Department of Conservation has volunteered to partner the Regional Council in the fish monitoring study, by providing equipment and personnel. The Regional Council, DOC, Rangitaane o Wairarapa and Ngati Kahungunu, agreed to meet at the end of June 1999 to decide on a monitoring strategy and

² Pers. com. Ian Gunn (WRC), 7 August 1998: Communications with NIWA noted that the Hicks report sampled in and around Lake Onoke and Lake Wairarapa, as opposed to immediate upstream and downstream locations.

³ These dates differ to those that NIWA originally proposed, and were presented by NIWA after discussions with submitters.

timetable. This agreement has been reflected in a recommended consent condition.

8. Negotiated Outcome

In March 1999, negotiated consent conditions which addressed concerns of the various submitters were circulated to all submitters. All submitters returned waiver forms agreeing to granting of the consent, subject to the recommended conditions. Their approvals are found in Appendix 2.

9. Statutory Reasons for Consent Requirement

Resource Management Act 1991

Under section 14(1)(a) of the Resource Management Act 1991 (the Act), *Restrictions relating to water*, a resource consent is required for damming and diverting of water unless allowed by section 14(3) of the Act. Section 14(3) states that a person is not prohibited by s14(1) if:

- the water is being taken for fire-fighting purposes, or
- the activity as allowed by a rule in a regional plan and any relevant proposed regional plan, or a resource consent.

The activity is not expressly allowed by a rule in the Transitional Regional Plan, or a rule in the Proposed Freshwater Plan, and therefore requires consent under section 14 of the Act. The activity has discretionary status.

Transitional Regional Plan (TRP)

The relevant section of the TRP is RP25, The Wairarapa Catchment Board and Regional Water Board Bylaws, 1979. Nothing in this provision expressly allows damming or diverting activities.

Proposed Regional Freshwater Plan (PFWP)

I consider the activity is *discretionary* under Rule 13 of the PFWP, which makes the damming and diversion of any fresh water discretionary unless specified elsewhere in the PFWP.

It could be argued that the damming and diversion activities are non-complying under Rule 14, or Rule 15 of the PFWP.

Rule 14 makes the damming of those rivers specified in Policy 4.3.2. of the Plan a non-complying activity. Policy 4.3.2 refers to Appendix 2 of the PFWP, which includes "Lake Wairarapa as generally shown in Figure 2.8". Although Figure 2.8 defines a boundary around the Lake, the boundary is open at the Lake outlet, near where the gates are sited.

The watercourse in which the gates are situated is the old Ruamahanga River, and its character was substantially modified by the 1974 diversion of the Ruamahanga River to bypass Lake Wairarapa, and the construction of the Barrage. Furthermore, Appendix 2 refers to the lake, not a river, and the gates therefore do not lie in a "river with a high degree of natural character" as intended by the PFWP.

Although the lake water supply to wetlands is controlled as an inevitable effect of the Barrage operation, I consider that the activity does not come under Rule 15, *Diverting water from wetlands with a high degree of natural character*. This is because the *primary* activity being proposed is the damming and diversion of waters in the Lake outlet.

10. Matters to be considered

10.1 The Resource Management Act 1991

Relevant sections of the RMA include:

- *Effect* as defined in section 3.
- Part II, Purpose and Principles.
- Section 104(1).

10.2 Planning Instruments to consider

- The Regional Policy Statement for the Wellington Region (RPS)
- The Transitional Regional Plan (TRP)
- Proposed Regional Freshwater Plan (PRFP)
- National Water Conservation (Lake Wairarapa) Order, 1989/51
- District Plan for South Wairarapa

11. Discussion of Matters to be Considered

11.1 Assessment of actual and potential effects on the environment

Effects of current target lake levels

The current regime of lake levels was arrived at by the Lake Wairarapa Co-ordinating Committee, which includes the Wellington Regional Council, the Department of Conservation, other bodies with statutory responsibilities related to the Lake Wairarapa wetlands, landowners, iwi, user groups and scientific advisors. The current regime should therefore be a balance of these varying viewpoints.

It can be argued that the focus of the Co-ordinating Committee has in the past been on protecting and enhancing birdlife and wetland values, as opposed to fishlife. Broadly speaking, management for wetland and birdlife values results in higher lake levels, and less variations than would result from management focused on flood protection or fishlife.

If Lake levels are allowed to fall to low levels, a greater flood storage capacity is then available. Therefore lower levels generally favour flood protection values.

A 1993 report on the Lake Wairarapa fisheries⁴ recommended that the gates should be open as often as possible to minimise any barrier to fish passage. There are two main ways in which this can be done:

- Investigate where opportunities exist to open the gates without affecting the levels significantly; and
- Maximise number and duration of gate openings, which would be aided by relatively low target lake levels.

There appears to be insufficient information available on lake-side turf populations to determine a regime that might favour these. However, as the applicant is not proposing to alter the target lake levels from those before those existing, it can be assumed that these will not be significantly affected by continued operation. Natural accumulation of sediments in and around the lake may have more impact on turf populations than minor alterations to the current regime would.

Effect of the Barrage on Flooding

The Barrage forms part of a greater scheme for Wairarapa flood protection, the Lower Wairarapa Valley Development Scheme. Prior to the scheme being established major floods could inundate up to 20,000 ha for about 8 days, resulting in significant stock losses, and damage to crops, pasture and farm assets. Under the scheme, the threat to property has greatly reduced. In 1994, a 50 year-return event was limited to only 700 ha of overland floodways built specifically to cope with flood flows. Submissions were received from a number of landowners expressing concern that a change in the Barrage regime could compromise the flood control scheme.

The Barrage results in a number of advantages, by:

- ensuring a storage capacity, the Barrage allows the Lake to accept flood waters from floodways, protecting upstream land;
- controlling the release of waters into the lower Ruamahanga, the Barrage reduces erosion and inundation of downstream land;
- controlling lake level variations, the gates allow for enhanced use of lake-side property;
- controlling backwater from Lake Onoke, the Barrage reduces flooding, assist in creating a sea opening at Lake Onoke, or relieve pressure on the lower system by allowing Lake Wairarapa to accept backwater.

Effects on Recreation

⁴ B.J.Hicks, Investigation of the fish and fisheries of the Lake Wairarapa Wetlands, NZ Freshwater Fisheries Miscellaneous Report No. 126, Published by NIWA, Christchurch, June 1993

Lake Wairarapa is associated with a number of recreational activities that are dependent on Lake levels:

- Duck hunting favours a lake level close to the natural shoreline level, to attract fowl to the shoreline but ensure maimais are not flooded or left high and dry.
- Boat owners require a summer level high enough for boats to be easily launched from the Lake Reserve Domain launching ramp.
- Walking the lake shore is made difficult at levels above 10.3.

Effects on Plants

Native turf communities occupy the area of the Lake's eastern shoreline that is regularly inundated and exposed. The habitat is occupied by around 55 species of small native plants, some of which are nationally threatened.

The Ornithological Society consider that two key ecological management issues for Lake Wairarapa are:

- Effective control of Lake levels, and
- Minimising colonisation by exotic grasses.

The applicant states that eastern shoreline farmers have observed a significant extension of the turf communities over the time the Barrage Gates have been in use.

Iwi have expressed a concern that Raupo and Flax communities be maintained and enhanced. These species exist in lagoons near the shoreline and are assisted by the higher summer lake levels afforded by the Barrage.

The vegetation on the eastern shoreline has been monitored since 1985 as part of shore-profile surveys, and the applicant proposes to continue these surveys. However, this information was gathered voluntarily by the Wellington Regional Council as it was convenient to include in work already being done, and as it was expected to be of interest to independent parties at some later date. No significant analysis has been carried out on this data to date. The analysis of this information or collection of different additional information on shoreline plant communities could possibly trigger changes to the level regime. I consider that a review condition in the water permit would allow for these types of changes.

Effects on Birds

The Lake Wairarapa wetlands are of international importance, and are covered by a National Water Conservation Order. This is due to their significant populations of water fowl and waders. They are the only *internationally important wetlands* in the southern and central North Island.

Prior to the scheme, high water levels resulted in loss of bird numbers and damage to habitat. Low summer water levels meant a depleted food source for

birds. Studies have determined that the optimum range of Wairarapa Lake levels for birdlife lies between 9.95m and 10.30m, the range since adopted as the operating regime's target levels. As a result, there is general support from birdlife interest groups for the current target levels.

Effects on Fish

Lake level targets have in the past arisen from a balance of flood protection and birdlife management, agreed upon by the Regional Council, DOC, Fish and Game and various interest groups. The result of this focus, combined with the lack of information on the Lake's fish, is that fishlife has not enjoyed the same consideration given to birdlife.

The installation of the Barrage is likely to have had significant fish-ecology effects in a number of ways. However, of this replacement application it is necessary to consider only the effects of ongoing operation of the Barrage, which fall into two main groups:

- The Barrage as a barrier to fish migration.
- Changes to fish habitat as a result of target levels and fluctuations.

(a) Effects of the Barrage Structure on fish

The activity applied for is a water permit for the operation of the gates, as opposed to a land use consent for the structure itself. It is therefore necessary to focus on those effects that arise from their operation and omit those effects that arise from the Barrage structure. This is difficult, particularly because external factors may also significantly contribute to changes in the variety and quantity of fish in Lake Wairarapa. These include:

- The completion of the Ruamahanga Diversion;
- Reclamation of lakeside land;
- Issue of commercial fishing licenses;
- Natural variations in fish numbers and food supplies; and
- Statistical or methodological errors in sampling programmes.

The recent NIWA report states that the Ruamahanga Diversion experienced around 90% of fish passage prior to the Barrage being installed, possibly because they were attracted to the greater flow. The installation of the Barrage is likely to have further prevented replenishment of the Lake's fish populations.

(b) Effects of Lake Level Management on fish

The initial introduction of the Barrage, along with the Ruamahanga diversion and Lakeside reclamation activities are likely to have had a substantial effect on the Lake's fishlife through changes to food supply or habitat, and changes or limitations to fish passage. Fish dependent

on shoreline conditions, such as the Brown Mudfish, would have been particularly affected.

I consider that it would be unreasonable to require the applicant to quantify the effects on fish arising from the establishment of the Barrage because:

- This application is for a replacement consent, and is for the operation of the gates as opposed to their placement;
- the Lake has had the opportunity to reach a new equilibrium and the applicant is not currently proposing to modify this; and
- an assessment would be difficult and unreliable as there is very little pre-Barrage fish information with which to compare the present situation to. It would also be of limited use because many of the changes are irreversible.

Changes in target levels and level control could lead to changes in shoreline habitat and aquatic food supply, and a change in the degree to which freshwater is flushed through. If in future the applicant seeks substantial changes to target levels or the way in which the levels are sought, then they may need to demonstrate what effects are likely to arise.

Fish monitoring information has not shown that the Barrage clearly has adverse effects on fishlife, although anecdotal evidence suggests that the catch numbers of certain fisheries has declined over the period the gates have been operating. Conversely, technical appraisal of the Barrage as a physical barrier to fishlife suggests that it could be a significant barrier to migration of diadromous species.

(c) *Effects of the Gate Opening Regime on fish*

A 1995 Department of Conservation report⁵ on fish passage through the gates states as follows:

... Water velocities through the outlet control structure are normally high, above the speeds at which most native fishes can swim for any significant period of time. At other times the floodgates are closed and there would obviously be no opportunity for fish to enter the lake.

It is incorrect to state that no passage exists when the gates are closed. The report itself acknowledges that a small fish pass was installed in the structure, although it highlights a number of concerns with the existing fish pass:

- the approaches are not hydraulically conducive to fish passage:

⁵ Mitchell, C, Fish passage past the Lake Wairarapa control structure, published by the Department of Conservation (1995), p1.

- the position of the pass means surface swimming fish are largely excluded; and
- the design of the pass means that velocities through it are too high for many fish to swim against, much of the time.

This is in contrast to an earlier Ministry of Agriculture and Fisheries report⁶, which concluded that the fish pass did allow migratory fish to pass, even under significant head differences.

In 1993 a report on fish of the Lake Wairarapa wetlands was prepared by B.J. Hicks for the Department of Conservation and the Ministry of Agriculture and Fisheries. The report discussed the degree to which the Barrage impeded fish passage, after undertaking fish monitoring, an analysis of historical data and also phone surveys. Relevant excerpts are given below:

(p17) The Barrage gates appear to be a partial barrier to yelloweyed mullet... There is no quantitative evidence for reduced abundance in other species upstream of the barrier.

(p27) "because of the combination of small number of sites, and high density of fish at Site 8, the densities above and below the barrage gates were not statistically different..."

(p28) "results must be interpreted with caution...the sampling effort was relatively small compared to the large area of Lake Wairarapa and its tributaries".

The Hicks study included fish sampling upstream and downstream of the Barrage. Hicks made the following recommendations for the protection and enhancement of the Lake fisheries:

- a) *Keep the barrage gates open as often and long as possible between August and April to maximise the number of migratory fish entering and leaving Lake Wairarapa.*
- b) *Automate, at a minimum, two additional barrage gates (those closest to the banks of the outlet channel), and preferably all four gates that cannot now be operated remotely. Open all gates simultaneously.*
- c) *At times when gates are open, ensure they are open to the surface or above to allow the passage of surface swimming juveniles with the least disturbance.*
- d) *Restore some flow to Lake Wairarapa via the Ruamahanga Cut-off.*

The applicant feels that they have addressed all of these recommendations. Point (d) is beyond their control as the cut-off is

⁶ Lake Wairarapa Barrage Fish Pass, published by the Ministry of Agriculture and Fisheries, May 1986

DOC administered land. The applicant has suggested further improvements that might be adopted outside of the scope of this consent application, once their feasibility has been established. These may include structural modification, or fine tuning of openings.

According to reports on the Lake Wairarapa environment, including the NIWA report that was prepared for this application, recommendation (a) has significant scope for improvement through fine tuning or revised target levels. Target level changes could also be considered but these will affect the focus of Lake management, which is presently wetland and wildlife management. There was agreement among submitters that such a shift in focus was not presently desired, but that the recommended review conditions allowed for some shift if it was agreed upon.

Hicks' report also suggests, with a level of uncertainty, that Brown Mudfish could be affected by the target Lake levels being high in winter and low in summer. This is because they are in direct contrast with the likely needs of the Mudfish. However, much of the past impact on Mudfish is attributed to other sources, such as drainage activities, and it is likely that an operating regime which serves the needs of Mudfish, will directly compromise flood protection and birdlife values.

11.2 Statutory Purpose

The effects of the proposal to continue lake level control at the Barrage do not contravene Part II of the Act. Appropriate conditions may serve to avoid, remedy or mitigate the potential and actual adverse effects on the environment of the activity.

11.3 Planning instruments

The proposed regime is consistent with the Proposed Regional Freshwater Plan, the Lake Wairarapa Management Guidelines 1991, the South Wairarapa District Council's Policy 7.9(5), and the National Water Conservation (Lake Wairarapa) Order 1989.

Regional Policy Statement (RPS)

A discussion of the issues, policies, objectives and measures relevant to this application are included in Appendix 3 to this report.

Proposed Regional Freshwater Plan (PRFP)

A discussion of the issues, policies, objectives and measures relevant to this application are included in Appendix 4 to this report.

National Water Conservation (Lake Wairarapa) Order, 1989/51

A copy of this can be found in Appendix 5 to this report. This Order declares that the wildlife habitat, created in part as a consequence of the natural fluctuations of water levels, particularly over the eastern shoreline, is an outstanding feature of Lake Wairarapa.

The order prohibits the granting of new water rights for diversion within Lake Wairarapa. However, clause 5(4) provides that the order shall not prevent the issue of water rights in connection with the barrage gates, subject to clause 5(1) which requires that such a right would not significantly diminish the outstanding wildlife features of any part of the lake.

The current operating regime was agreed upon by the Lake Wairarapa Coordinating Committee after the Order was made, to ensure the control of lake levels was consistent with the Conservation Order. The current regime does not contravene Clause 5(1) of the Order.

If target levels outside of the current range are in future desired, it may be necessary to seek a consent variation and possibly also a change to policy 8.3.11 of the Freshwater Plan. The decision-making body responsible for the condition or plan change would have to decide, on the information provided at that time, whether the shift would significantly diminish the specified *outstanding features* and hence contravene the Order.

District Plan for South Wairarapa

This Plan identifies a number of historical and current values linked to Lake Wairarapa. The Plan notes the significance of the Lake to Maori because of the important eel fishery in the area, and the presence of plant resources like flax, pingao and ti. The importance of the wetlands, and the resident birdlife is also highlighted.

Section 7.9, *Policy Areas*, states as follows:

(5) ... The Council will manage [Lake Wairarapa and its associated wetlands] in accordance with the objectives and policies of the "Lake Wairarapa Management Guidelines 1991" produced by the Lake Wairarapa Coordinating Committee.

12. Alternatives

The applicant has considered available alternatives to damming and diverting the Lake Outlet:

- Not limiting flow in any way by leaving the gates open, which could have major ecological and economic adverse effects; or
- Operating for different target levels and purposes. The effects of different target levels on the different values of the Lake were discussed in section 11.1 *Effects of current target lake levels*.

13. Consent Term

The applicant has requested a twenty year term for the consent. No substantial changes to the Lake level regime are specifically envisaged over the twenty year period, although all parties want the ability to revisit the consent if necessary during the twenty year period.

A twenty year consent term with review conditions is appropriate. The recommended consent condition allows the Regional Council, the applicant or any concerned party to prompt a formal review of the consent. However, it should be noted that a significant change could mean the National Conservation Order and policy 8.3.11 of the Proposed Freshwater Plan are contravened. Addressing these matters separately could conceivably take a long time. These matters would also have to be addressed. Even if a shorter term consent was granted, parties interested in revising target levels would be faced with similar difficulties.