

# **Transferable Water Permits: Two Case Studies of the Issues**

**Case Study 1 by Ministry for the Environment**

**Case Study 2 commissioned by MAF Policy and Tasman District Council**

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## Foreword

Both MAF Policy and MfE have a role to provide information to those working with or considering the use of economic instruments in resource management. Economic instruments essentially provide a financial incentive to consider the environmental implications of our actions. In certain situations they can be an important tool in the resource manager's "kitbag". Economic instruments can be a useful adjunct to regulation, encouraging efficient use of resources and providing flexibility for users.

There has, however, been little practical experience in New Zealand in the use of economic instruments such as transferable permits under the Resource Management Act 1991.

This report brings together two case studies relating to the implementation of Transferable Water Permits (TWP's) in Manawatu and Tasman regions.

The Oroua study was carried out by the Ministry for the Environment (Feb 1997), and aimed to identify the barriers to putting the Manawatu-Wanganui Regional Council's Oroua Catchment Water Allocation and River Flows Regional Plan in place. Suggestions are made about how these barriers can be overcome, as well as identifying initial problems in implementing such a system along with potential solutions. The study has been previously released as paper no.12 in the Ministry for the Environment Resource Management Ideas series.

The Tasman study was undertaken from May to June 1997 by Mike Kearney (NZ Horticultural Economic Service, Nelson) and Jim Sinner (Resource Management Consultant, Nelson) as part of MAF Policy's Sustainable Agriculture Facilitation Programme. Close cooperation with the Tasman District Council enabled the consultants to engage in two way discussion with the water users involved. It aimed to understand and document a community's views on the concept of TWPs as an option for water management. Like the Oroua study issues of concern to the community have been identified and suggestions made to address these concerns.

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## **Summary**

Emerging from both case studies are common issues which can be grouped into two interrelated headings:

- Issues surrounding the concept of TWPs
- Issues surrounding the operation of TWPs

There will be operational aspects of concern which will need to be worked through in conjunction with affected parties. For example, when and how permitted water takes are restricted when the permitted river low flows are reached, how the permits are allocated and the mechanisms of trading and monitoring, are all issues which need consideration and consultation between technical and policy people and users.

However, the case studies indicate that without an understanding of the fundamental concepts of economic instruments, there will also be other aspects of the operation of TWPs which will concern people. For example, one of the major concerns irrigation users in both case studies have is that of losing their permit irreversibly to urban/industrial users. In the case of Oroua, this fear resulted in restrictions on the type of water users to whom permits can be transferred. In the case of Tasman, this is one of the main issues holding back further progress.

One of the fundamental benefits attributed to TWPs is that transferability will actually ensure this control rests with the holders of the permits - the users - by defining their property right and conditions under which this would change, and allowing for realisation of the value of the permit in the form of purchase or lease. However, since this aspect is not well understood by the current users they appear to remain fearful and distrust the concept on this basis.

Policy makers and technical people within Councils who have gained an understanding of the concepts have tended to focus on the practical operation of the TWP regime in their promotional and consultative approaches to the users. Having continually been exposed to the concepts means policy makers may not appreciate that the community do not have this fundamental grasp of the concepts and therefore don't view the operational aspects in the way the policy makers expect. As the Oroua case study noted in its conclusion, community perceptions are vital to the success or otherwise of a transferable permit system.

Control of a resource in the way a TWP regime allows is not something users in these situations are likely to have experienced before. Consultation processes could be designed to incorporate learning about what is wrong with the current system, given restrictions will occur from time to time. In this way, users may learn to recognise more clearly the advantages of the transferable system offer, and that in the main their concerns are perceived rather than necessarily real.

## **Conclusion**

The two reports were written for different purposes, different audiences and under different terms of reference. While the styles of the two reports are consequently quite different, both studies identify issues which need consideration by those involved in formulating and implementing policy concerning TWPs. Some of these issues are likely to be applicable to policy involving other economic instruments, most notably the need for initial consultation with the affected parties to discuss with them:

- the problems with the present system, many of which may not be recognised by existing users;
- the potential advantages of a transferable permit system in dealing with these problems; the practicalities of such an approach;
- the philosophy of such an approach;
- users perceptions about equity, fairness and the regulator agency's "agenda".

Affected parties must be involved in the whole process and participate in policy development.

By providing this information, MAF Policy and Ministry for the Environment hope to ensure these issues are considered during the policy development phase.

Further issues include whether compensation is appropriate to permit holders, should the council decide at some future date that the total allocation or its distribution needs to change, and the most appropriate methods of initially allocating water permits.

This paper does not propose answers to these issues, other than for councils to bear them mind.

## ***Case Study 1: A Case Study of the Oroua Catchment Plan***

The Ministry for the Environment has published this paper as it may be helpful to those who are either working with or considering the use of economic instruments in resource management. All opinions expressed in this paper are the views of the authors and do not necessarily reflect those of the Ministry. Responses to any of the issues in this paper are welcomed.

### **Acknowledgements**

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### **1.0 Purpose**

The use of economic instruments in resource management has been the focus of considerable academic and media attention over recent years. There has, however, been little practical experience in New Zealand in the use of economic instruments such as transferable permits under the Resource Management Act 1991 (the RMA).

This paper examines the Manawatu-Wanganui Regional Council's Oroua Catchment Water Allocation and River Flows Regional Plan (the Plan) as an example of a regional plan prepared under the RMA which incorporates a transferable water permit system. The aim is to investigate what the barriers are to putting such systems in place and how these barriers might be overcome. The paper also seeks to identify the initial problems in implementing a transferable permit system and offers some potential solutions.

It is acknowledged that it is too early to comprehensively evaluate whether this system has resulted in improved resource management outcomes, given that the Plan only became operative in January 1995. It is hoped, however, that the lessons and experiences gained in the Oroua situation might be applicable to other regions where transferable permit systems are being considered.

The paper is designed to be useful for local authority staff, politicians and the public in areas where such systems are being considered.

## **2.0 Introduction**

Economic instruments essentially provide a financial incentive to consider the environmental implications of our actions. In certain situations they can be an important tool in the resource manager's ~ Economic instruments can be a useful adjunct to regulation, encouraging efficient use of resources and providing flexibility for users.

Many local authorities are developing plans under the Resource Management Act. The Act places a statutory obligation on these authorities to consider alternative methods of achieving environmental objectives. The Ministry for the Environment is also required to consider and investigate the use of economic instruments, under section 24(h) of the Act.

Some instruments, such as performance bonds and fines, which provide an economic incentive to comply with a particular regulatory regime, are being widely used under the RMA. However, other mechanisms, such as transferable permit regimes and environmental taxes, which have been well documented in theoretical literature and are used overseas, are generally not being implemented in New Zealand. Numerous studies have indicated the potential of such mechanisms in the New Zealand context, but there is limited practical experience in their use. Several obstacles to their implementation can be identified:

- lack of time and/or resources to investigate such options;
- inexperience in developing and using alternatives;
- resistance to change and prejudice against economic approaches;
- uncertainty as to what can be done under the Act, and
- lack of adequate data on the state of the resource being managed.

The Manawatu-Wanganui Regional Council's Oroua Catchment Plan is the first regional plan developed under the KNIA to include a transferable water permit system. The Plan is used here to indicate the type of situation where transferable permits might be appropriate to illustrate how one local authority overcame the barriers to implementing such a system, and to examine the subsequent issues that have arisen since the system was put in place.

It is acknowledged that the transfer system has not yet been fully tested. A further case study in several years' time may indicate more conclusively whether the system has achieved its objectives. It should be noted that the use of economic instruments must be carefully tailored to the particular situation and resource system in question. Despite this, many of the problems in implementing such systems are generic and the lessons learned from the Oroua situation may be applicable in other areas.

Sections of the paper discusses briefly the theory behind economic instruments and their use under the Act. Given the focus on transferable permit systems, some further background is provided on situations where such systems may be applicable. Section 5 examines the Oroua situation specifically, looking at the process of incorporating a transferable permit system into a regional plan, the problems that developed subsequently, and the ways these might be resolved. Section 10 draws some general conclusions on the use of transferable permit systems based on the Oroua experience.

### **3.0 What are Economic Instruments?**

Many environmental problems arise because of externalities. Externalities are costs (or benefits) resulting from our activities which affect others but are not taken into account by the market. For instance, a factory which pollutes the air does not include the adverse effects on its neighbours' health and amenity as a cost on its operating statement. One way of resolving the pollution problem is to ensure that such "hidden" costs are internalised, or made obvious to the decision maker so that they are incorporated into the factory' manager's decision-making. Economic instruments provide one way of doing this.

A pollution tax is one economic instrument to ensure that the "polluter pays" and considers the effects of their actions on others and on the environment. Another approach involves transferable permits. In the case of air pollution, a regulating body would set a limit on air pollution in, for example, a city. This 'quota' of pollution would be divided into a specific number of permits, which polluters would be able to purchase if they wish to continue polluting. Those holding permits but who have reduced their levels of pollution can trade their extra unused permits to others who are still polluting. This provides an incentive to reduce pollution. If permits become scarce or too expensive, it then becomes financially worthwhile for others to invest in pollution control technology.

Permits can also be used to place a value on scarce resources, thereby encouraging their efficient use. If water is in short supply, water managers can estimate the total amount which can be sustainably extracted. This amount can be translated into a set number of permits issued to water users, who are then able to transfer permits for any water they are not using. This provides an incentive to increase the efficiency of water use, as more careful use of water means more is available to transfer or sell to another user.

#### **4.0 Economic Instruments and the RMA**

Section 32 of the RMA specifically requires that local authorities consider alternative ways of achieving the sustainable management of natural and physical resources. Section 32 is intended to promote selection of the most efficient and effective means of achieving environmental objectives. In certain situations economic instruments are a valid alternative which may indeed be the most efficient and effective means of achieving those objectives. It should also be noted that section 7(b) of the act requires councils to have regard to "*the efficient use and development of natural and physical resources.*"

The RMA specifically allows the use of certain economic instruments, including:

- financial contributions, works and services to offset environmental impacts;
- non-compliance fees or fines imposed by the Courts;
- bonds to ensure conditions on resource consents are complied with;
- transferable development rights; and
- transferable coastal and water permits, if provided for in regional plans.

The imposition of environmental taxes by regional or district councils is not sanctioned by the RMA. Levying and taxation powers are limited to those provided under the Rating Powers Act 1988. Differential rating cannot be targeted more specifically than for categories of property use and may have limited potential for the accurate recovery of environmental costs. Any environmental taxes are therefore likely to be imposed at a national level. An example would be the imposition of a national carbon tax designed to encourage a reduction in carbon dioxide emissions. [Note this is an example, and does not represent or imply any particular Government policy.]

Although economic approaches based on transferable permits are clearly sanctioned by the RMA, there has been limited experience in their use. In addition to the general constraints on the use of economic instruments identified in the introduction, sections 134 to 137 of the Act set some limits on the transfer of permits or consents. Constraints are imposed to protect third party rights or to control environmental effects. These constraints include:

- coastal permits can only be transferred between sites if allowed in a coastal plan (s 135);
- water permits can only be transferred to another site within the same catchment area, if allowed by a regional plan or a resource consent (s 136); and
- discharge permits are tied to the site for which they were granted (s 137).

## **5.0 Where Transferable Permits Can Work**

There are a number of factors required if a transferable permit regime is to work.

- 1 The resource is fully allocated, with demand exceeding supply. Where this is not the case, new permits could be obtained simply by applying to the regional council and there would be no incentive to transfer existing permits. With a fully allocated or scarce resource, there is generally a need to improve the efficiency of resource use
- 2 There is sufficient knowledge of resource availability and the environmental effects of its use to enable the council to set effective constraints on transfer, and permit holders have certainty as to how those constraints will affect them.
3. Permits are enforceable and monitored, so that permit holders know unauthorised use will be prevented and that those transgressing permit conditions will be detected and penalised.
- 4 Private and community benefits exceed transaction (and other) costs. Establishing a transferable permit system involves administrative and legal costs. There are also transaction costs in conducting trade, and enforcement and management costs in maintaining the system (although the less obvious costs of wasting water or losses in production which occur under a non-transferable system should be weighed against these transaction costs).
5. The market for transfer is not constrained and is sufficiently diverse to allow flexibility in transferring permits.

## **6.0 Background - the Oroua Catchment**

The Oroua River drains a 900 square kilometre catchment on the western side of the Ruahine Ranges. The river's mean annual flow is 9058 litres per second. Fielding is the largest urban settlement within the catchment, with a population of 12000. An additional 5000 people live in smaller rural settlements. Agriculture is the predominant land use

The main water users are the Manawatu District Council (Fielding town water supply), the Manawatu Beef Packers Plant, and agricultural irrigators. There is a very high demand for water abstractions leading to unnaturally low flows during dry periods. The river is also used to assimilate treated sewage and industrial waste. In stream values include fisheries and recreation, amenity and natural values, and cultural and spiritual values.

In the late 1980s the growing demands of irrigators and the effects of abstraction and waste assimilation on the river ecosystem sparked concerns from a number of conservation groups. These groups lobbied the Manawatu-Wanganui Regional Council to impose a minimum flow regime on the river. The council took up their concerns and sought further public input with the release of a public discussion document in June 1990. Following public consultation, a voluntary water management agreement between the council and major water permit holders to limit abstractions at times of low flow was adopted in June 1991. This agreement, negotiated under the Water and Soil Conservation Act, expired in June 1994.

## **7.0 The Process of Plan Development**

During this period the council had begun preparation of resource management plans for the river, It was decided that two separate but complementary plans would be prepared - one addressing water quality across the entire Manawatu region, The other looking specifically at water quantity issues in the Oroua catchment. A discussion document on the effects of surface water abstractions on the river was prepared in November 1992. Public meetings were called to examine possible approaches and the Proposed Catchment Plan was notified in October 1993. The proposed plan noted that if river flows dropped below 1000 litres per second, The council could issue water shortage directions. This sparked concern among both irrigators and conservation interests that this system provided little certainty as to what would actually happen in times of low flow.

During hearings on the Plan, the Ministry for The Environment and the Ministry' of Agriculture presented submissions advocating an alternative approach - a water management system based on a minimum flow and incorporating the ability for water users to transfer water permits. The minimum flow regime would protect environmental mid other in stream values<sup>5</sup> in particular Maori cultural and spiritual values. The transferable permit aspect of the system would provide flexibility for water users within the limits defined in rules in the Plan.

The hearing committee adjourned to consider the possibility of incorporating a transferable permit system into the plan. It was decided that any new system had to do three fixings:

- set a minimum low flow limit to protect the life-supporting capacity of the river
- provide certainty for existing users; and
- allow flexibility for existing and new users.

Despite the fact that transferable permits have been seen as politically unpopular in other areas, The committee concluded that such a system had a good chance of success in the Oroua catchment. Not only did the general prerequisites for a viable transferable permit system appear to be satisfied, but several specific local factors were favourable to such a system.

- Given the high demand for abstractions and the possibility of limitations during periods of low flow, there was a proven need to improve the efficiency of water use.
- The resource, at least in periods of low flow, was fully allocated with potential demand exceeding supply.
- The catchment is geographically small with a good record of hydrological information.
- The relatively small number of individual users made it reasonably easy to monitor water use.
- The voluntary' agreement had already laid the foundations for a transferable system which would rely on some cooperation between permit holders.
- The diversity of agricultural uses within the catchment (dairy and sheep farms, and potato, cereal, pea and carrot crops), all with differing irrigation requirements, created the potential for permit transfers between irrigators requiring water at different times of the year.

The committee therefore decided to use a transferable permit system as a way of allocating water within its minimum flow regime. The Plan identifies two thresholds at which restrictions on abstraction rates come into force and specifies a minimum low flow of 1000

litres per second (1/s) to safeguard the life-supporting capacity of the river. The intention of these provisions is to manage the rate at which the river declines towards the minimum flow in such a way that it is not significantly accelerated above the natural level of decline.

## **7.1 Potential Advantages of A Transferable Water Permit System**

The hearing committee of the regional council considered that the provision for transferring water permits would provide a number of potential advantages over the previous non-transferable permit regime.

It would encourage greater efficiency of water use during periods of low flow.

- The system would appear less bureaucratic by giving more autonomy and flexibility to abstracters, while providing environmental protection through the implementation of minimum flow restrictions.
- The system would build on the history of cooperation between irrigators, and had the potential to help maintain a strong sense of rural community.
- Including a policy and rule in the Plan to enable permit transfer would be a relatively simple process.

## **7.2 Potential Difficulties of A Transferable Water Permit System**

The committee released its interim decision and reconvened hearings to allow submitters to express their views on the proposed system. At this point it became apparent that there were a number of potential difficulties with the inclusion of a transferable permit system.

- Irrigators were suspicious of the proposed system and feared that large urban abstracters (namely the Manawatu District Council which takes water for the Fielding water supply) would exert an influence and by virtue of its greater resources be able to purchase most water permits.
- Irrigators considered that the rights of existing permit holders should be protected in some way, without precluding potential new entrants into the area who might wish to abstract water (land prices paid by existing farmers in the area to some extent incorporated a "price" for water).
- The system would present administrative and monitoring challenges for the council.

## **7.3 Solutions**

To overcome these problems, the committee decided upon a number of additional provisions.

- The ability to transfer permits is limited to the agricultural irrigators, to avoid fears that larger interests might have been able to "buy out" permits. Abstraction limits for large

non-agricultural abstracters, such as the Manawatu beefpackers plant and the Manawatu district council town water supply, were negotiated separately. At times of low flow Manawatu beef packers must replace the amount of water taken with an equal quantity of clean cooling water. The Manawatu district council's take is also restricted at the two threshold points, however the district council is still able to take 85 l/s even when the river has dropped below the minimum flow point.

- Transfers can only occur once the river reaches the first threshold point. The first threshold point is based on 30 percent of the mean monthly flow of the river. At this point, irrigators holding new permits must suspend abstractions, and existing permit holders must apportion their take within a specified total water budget (120 l/s). When river flows reach 1100 l/s (which equates to both the one-in-five year expected seven-day mean low flow, and the minimum instantaneous low flow expected annually), the total water budget is further restricted to 50 l/s. Within these total water budgets, irrigators must arrange their abstractions on a roster to ensure that the total allowable take is not exceeded. To give permit holders more flexibility; permit transfers are also allowed as long as the total take is not exceeded.
- The two-tier permit system gives preference to existing permit holders without precluding new permit holders when the first threshold point is reached those holding existing (or category a) permits are restricted to a total of 120 l/s but are able to trade within this total allocation. Those holding new (or category b) permits must cease abstraction. This means that those who require more water in times of low flow, or who hold category b permits, must obtain category a permits from permit holders who do not require all their water allocation during that particular period. It also gives existing permit holders more certainty by allowing them to continue abstracting until the stated minimum low flow is reached.
- To recognise that existing permit holders have often paid a land price which implicitly included the "price" of attached water permits, existing permit holders have had their category a permits "grandparented". New entrants or people seeking a larger water allocation have the option of either purchasing transferable permits from existing holders, or applying for a non-transferable category b permit from the council. These provisions helped to further allay the fears of existing irrigators that permits would be bought out by big moneyed interests and a water monopoly created.
- To assist with council administration and monitoring, written notice of the transfer must be sent to the council. To aid this, a Memorandum of Agreement form is included as an appendix to the Plan.

The council has created what is, in effect, a limited transferable permit system. Transfer is possible only during periods of low flow, and only between members of the irrigators group.

## **8.0 Implementing the Transferable Permits Regime: the Experience to Date**

The Oroua Catchment Plan became operative in January 1995. Although the weather during

the first year of operation under the new Plan was fairly dry, at no time did the river drop to below the first threshold point. This meant that no restrictions were put in place and therefore no permit transfers occurred. The transferable permit system has yet to be tested. Furthermore, over that period many of the affected irrigators were still renewing their water permits.

While it is impossible to draw conclusions on the success of the system at this stage, there are some important lessons to be shared.

In terms of monitoring and administration requirements, the council is not expecting the new system to be any more or less difficult to enforce than the previous system. It should however be somewhat "self-policing", as irrigators have a vested interest in monitoring each others' compliance with the conditions on their water permits. This should relieve the council of some of the more detailed monitoring, but it will still need to monitor overall abstractions and to check river flow levels.

A proportion of the monitoring costs are recovered through the cost of permits. In the case of temporary transfers, these costs remain with the original permit holder. This may provide some basis and incentive for irrigators to put a monetary value on permits. The council is not intending, however, to become involved in attempting to set a price on any water transferred, Pricing is a matter for those transferring permits to determine.

In the short term, implementation of the transferable permit system may lead to an increase in administrative work for the council. A computer spreadsheet is being established so that the total water budgets and any permit transfers can be monitored in times of low flow. There is, however, some potential for less involvement over time as resource users become more familiar with the system.

The decision to adopt the transferable permit system was not motivated by the possibility of reducing direct involvement in managing the water resource. In the view of the hearings committee the potential advantages of the system lie rather in the efficiency and flexibility of resource use, and the scope for resource users to be actively involved in apportioning and managing the resource. This increased involvement was also seen to have potential social benefits in terms of encouraging cooperation between irrigators, and potential political benefits in making the council appears less interventionist.

## **9.0 Transferable Permits in Practice: A Water User's Perspective**

Members of the Oroua irrigators group, while supporting the potential flexibility that transferable permits offer, have raised concerns since the introduction of the system regarding practical impediments to permit transfer. Some of these concerns relate to technical difficulties in transferring permits, others to permit holders' mistrust of the system.

### **9.1 Perceived Inequities Between Water Users**

Some permit holders feel that agricultural abstractors have been unfairly singled out and subjected to water restrictions. The Manawatu Beef Packers and Manawatu District Council are both outside the transferable system and have separately negotiated abstraction permits which, in the case of the district council, allow water takes below the minimum flow. Whilst this was originally intended to allay fears that large urban interests would "buy out" irrigators, it is felt that this unfairly discriminates against irrigators.

### **9.2 Mistrust of Market Instruments**

Some permit holders have been reluctant to transfer water. They are not using in times of low flow because water is the "life blood" of their farm. Irrigators cannot always be sure that they will not need their full water allocation in times of low flow so there is a natural reluctance to agree on permit transfers. Consequently some would rather keep water in reserve in case of unexpected need, rather than transfer their rights and have the cash in the short term. This reluctance to transfer causes uncertainty for those hoping to obtain extra permits from other irrigators.

Despite permit transfer being limited to the irrigators' group, there remains some concern that water permits will become expensive and that only irrigators with large and highly profitable farms will be able to afford them. Furthermore, the permit system is seen as potentially giving value to those who "hold out" on transferring permits. Early indications show some people who hold unused water rights do not appear to be interested in transferring their permits. There is a perception that these people are waiting for a drought at which time they would be able to demand a higher price for their permits.

Finally, there are difficulties in putting a price on water permits, particularly as water has not previously considered as a "commodity". There is, of course the possibility that transfer could occur between irrigators on a non-monetary basis. That is, an irrigator may allow a neighbour to use the permit or part of the permit at times when that irrigator is not irrigating, in return for the right to use the neighbour's permit when she/he is not irrigating.

It is more likely, however, that some monetary value will be attached to permits. Irrigators anticipating that they will need extra water in the event of a dry summer have attempted to purchase permits at the beginning of the growing season as a form of insurance against crop failure. Uncertainty regarding what might constitute an appropriate price has complicated negotiations. There is also some concern that the value of water will rise exponentially as crops are endangered during periods of drought.

### **9.3 Investment Uncertainty Under the New Regime**

The minimum flow regime in the Plan, with the attendant possibility of restrictions on irrigation takes, has created concerns for a number of farmers in the area, who perceive they have a less certain supply of water than under the previous regime. This uncertainty has been exacerbated by the fact that, at least at present, there is some reluctance to enter into permit transfer.

Because agricultural abstractions will be suspended if the river reaches minimum flow, several irrigators are taking costly preventative measures, including:

1. building retention dams on their properties to ensure water is available at times of low flow;
2. changing the type of crops grown to those that require less water at likely dry periods of the year; and
3. changing irrigation systems from higher or medium application machinery to more efficient low pressure, low application systems.

A number of other irrigators are reluctant to invest in such measures given the perceived uncertainty regarding the continued availability of water. Some are even considering moving their farming operations elsewhere. Others have suggested that a shared retention dam storing water for all agricultural users in the event of low flows would be a more viable option.

### **9.4 Practical Problems**

Some irrigators claim that the Oroua River drops so rapidly in dry periods that permit transfer would only extend the ability to irrigate by another day before the low flow is reached and all abstractions must cease. This may mean that in dry periods the time between the river level dropping to the first threshold and the minimum low flow would be too short to make arranging permit transfer worthwhile.

Several implementation problems have emerged since the plan became operative. Differing pump capacities can reduce the ability for abstractors to transfer permits. For example, an irrigator with a small pump with a maximum capacity of three litres per second cannot transfer water to another with large pumps which have a minimum capacity of 30 litres per second. In some situations abstractors may have to buy new equipment to take advantage of the ability to transfer permits.

## **10.0 Discussion**

The concerns voiced by irrigators have raised several issues which need to be addressed if permit transfer is to be effective.

Some of these issues relate to the transferable permit system, and more to the imposition of a minimum flow regime with the accompanying restrictions at times of low flow. For example, perceptions of uncertainty are largely due to the fact that irrigators may have to cease irrigating altogether if the river reaches the minimum flow. Transferable permits actually represent one way of providing flexibility within these constraints, offering the potential for improved investment certainty.

Furthermore, the water management regime initially considered for the Oroua River had no fixed minimum flow and would have allowed restrictions to be imposed arbitrarily by the council by way of water shortage directions. The council would have been placed under pressure by environmental and other interests to restrict water abstractions, and by abstracters to avoid restrictions. This situation would have been less certain than the present system which clearly states when and how much irrigators can abstract at different river flow levels.

Other concerns relate more to a lack of familiarity or mistrust of the transferable permit system. As irrigators consider the opportunity costs of holding unused permits against the possible financial or other returns from transferring rights to take water, irrigator reluctance may be reduced. Reluctance to transfer may also reduce as irrigators seeking additional water evaluate the viability of arranging permit transfers, against obtaining new non-transferable permits from the council or taking preventative measures such as building retention dams, changing crops or upgrading irrigation system. Comparing these options may also help in setting a realistic price for permit transfer.

One option to help overcome some of these concerns would be for the council to take a more proactive role in encouraging or brokering permit transfer. Even if the council chooses not to take an active role in promoting transfers, it may need to provide more support and education to ensure irrigators understand the system in order for transfers to take place.

Practical or technical issues (such as different pump sizes) can act as barriers to the viability of the transferable permit system. Over time, however, these barriers may be overcome as equipment is upgraded, and as irrigators become more familiar with the system and how it can best be operated.

Another problem is that some permit holders fear that transferring water at times of low flow may be seen as an indication that they do not need water and therefore jeopardise their chances of renewing permits when they expire. These fears could be allayed by the council passing a resolution that transfer of water is a valid use in its own right and will not affect future allocation decisions.

It should also be noted that, once a transferable permit system is running smoothly, there is the potential to grant consents for longer periods. The only need for review would be to adjust the minimum flow (and this could be done by the pro rata adjustment of permits). Reviewing the overall system in order to reallocate water more efficiently would become unnecessary.

In the future it may be possible to widen the system to allow transfer of permits between a wider group of users. It is possible that a larger market would encourage permit transfer by enabling potentially greater efficiency gains. This may also reduce the feeling among

irrigators that they are being unfairly discriminated against. While transfer of permits has been limited to agricultural abstracters to alleviate concerns of a monopoly "buy out", it should be noted that irrigators would not be forced to sell permits.

Similarly, it may be possible to allow transfers during *any* flow period, rather than only during low flow periods. This would avoid the present scenario whereby some irrigators feel the period for allowing transfer is too narrow to be viable. It may also increase potential efficiency gains as some irrigators may wish to take more water outside of low flow periods, but would currently have to apply for new permits rather than simply transferring an unused permit (or portion of a permit) from another permit holder. Widening the ability to transfer permits to other user groups and during periods of higher flow will, however, depend on the way the limited transfer system works and on community perceptions regarding the system over time.

In recognition of problems and the probable need to "tune" the system, The council has opted for a five-year review period rather than the usual 10-year time frame. This will allow the early assessment of the system, at which time improvements can be made, and any constraints on permit transfer can be addressed. It is likely that it will be five years before there is any clear indication as to how well the system is performing. As discussed above, it is obviously taking some time for water users to become used to the concept of transferring permits. This indicates that a close consultative relationship between councils, water users and other interested parties is vital, not only during plan preparation, but in the period after the plan comes into effect.

## 11.0 Conclusions

It is still too early to be able to make any definitive judgement on whether the transferable permit system on the Oroua River is operating effectively. What this case study does show is that councils can overcome perceived barriers to including such a provision in a regional plan.

It also shows that the inclusion of provisions in a plan sanctioning permit transfer does not necessarily mean that users *will* transfer permits. There is an obvious need to ensure all of the conditions for successful transfer are present. Similarly, any transfer regime must be carefully tailored to the particular resource system. Perhaps more importantly, the Oroua experience highlights that community perceptions are vital to the success or otherwise of a transferable permit system. In this instance, transferable permits should be positively viewed as potentially providing some flexibility within a regulatory framework setting limits on resource use. It is vital, however that the entire system is perceived as being practical and equitable.

A number of the factors to be considered in establishing a transferable permit system are those that must be considered when developing any resource management approach. For instance, the requirement for good information, the need to monitor, review and enforce provisions, and the importance of consultation, are fundamental to the development and successful implementation of any resource management regime.

It takes time for permit holders to become used to the concept of transferable permits. The transferable permit system needs to be devised in full consultation with affected parties including tangata whenua, and it may require some post-operational consultation to assist permit holders in using the system. An early plan review period gives local authorities the opportunity to trial such a system while retaining the option of fine tuning it in the shorter term.

It is probable that the successful implementation of a transferable permit system in one area will increase the likelihood of the system being taken up in other areas. By transferring information amongst themselves, local authorities can avoid the need to "reinvent the wheel". It will certainly be well worthwhile revisiting the Oroua situation in order to follow the progress of this "pioneer" system.

Transferable permit regimes may also be used in the management of other resources. There has been some discussion of transferable development permits being used to control rural subdivision. At a national level, transferable carbon permits are being considered as part of the policy response required to meet the Framework Convention on Climate Change. Whilst both of these applications are considerably different to the water permit system investigated in this paper, many of the lessons in terms of community perceptions and barriers to implementation may be applicable.

## **Case Study 2: Transferable Water Permit Consultation Project in the Tasman District**

### **1.0 Introduction**

Tasman District has large areas of land used for intensive horticultural and agricultural production on the coastal strip between Richmond and Motueka. The other main land uses are lifestyle blocks, forestry and pastoral farming. Most of the land in horticultural production is irrigated. Water is a scarce resource in this coastal strip over the summer months.

This project focussed on the Waimea Plains, which is an alluvial plain near Richmond. There are a number of different uses of water in the Waimea plains consumptive use is the largest, but other important uses are environmental, recreational and for aesthetic values.

Water for consumptive demand is predominantly used for long term purposes. Urban use is approximately 24% of the total water allocated, approximately 2/3's of which is used for residential uses in the Tasman district and Nelson City Council) with the remainder being used for industrial purposes. 76% of the water is allocated to rural users, which is used to irrigate approximately 4,400 hectares out of the available productive land of approximately 7,500 ha.

Water available for irrigation has been fully allocated in all management zones on the Waimea Plains since 1992, with some areas fully allocated since 1979. During a 1 in 10 year drought, rationing cuts of around 35% are expected.

There are no easy, reasonably economic, water sources that can be used to augment existing supplies for the whole area. Dams are being considered for one part of the plains around the Wai-iti Valley. Users and Tasman District Council (TDC) continue to look at ways to conserve water, with many growers putting considerable resources into monitoring soil moisture using neutron probes and tensiometers.

Transferable Water Permits (TWPs) are seen as one option to improve water efficiency. TDC has been investigating TWPs for some time. Submissions were sought on the general concept in 1993 to gauge interest in the district. Considerable time and effort since then has been put into researching overseas experience and developing an outline for a TWP system that would be applicable for the Waimea Plains.

The aims of the project reported on here were:

1. To understand and document a community's views on the concept of Transferable Water Permits (an economic instrument) as an option for water management, identify the key issues of community concern and make recommendations to address these concerns.
2. To help facilitate the process for the Tasman community.

The project involved preparation of material to present to interested parties at a number of meetings. Most of the information presented to meetings is contained in the discussion paper prepared by the TDC in March 1997 (Issues, Options and Practicality of Transferable Water Permits in the Waimea Catchment). A summary of this paper appears in Appendix 3. Additional work was completed in two areas - Urban/Industrial use and possible value of

Transferable Water Permits. This information is summarised in Appendices 1 and 2.

There were two public meetings

- Richmond on 28 April 1997 attended by approximately 30 people
- Brightwater on 14 May 1997 attended by approximately 70 people.

After the public meetings, There were four smaller meetings, mainly with irrigators

- Waimea Fruitgrowers - 3 people
- Lower Confined Aquifer users - approx 10 people
- Motueka Fruitgrowers/Water users group - approx 12 people
- Commerce Nelson/Federated Farmers - approx 10 people.

The meetings were useful to explain the concept of Tradeable Water Permits (TWP) as people either had not read the report, or did not fully understand the concept after reading the report.

This report summarises the main issues raised during the above meetings, from the consultants' point of view (it is not a review of public submissions). It makes recommendations on how these issues could be handled and then suggests areas for work in the future if TWP proceeds.

There was a range of issues raised at these meetings. Generally the tone of the discussions was negative as those people who could see the potential for successful operation of TWPs tended to keep quiet. They did not have sufficient confidence in their understanding of all the issues to publicly oppose neighbours and other people in the community. In our opinion, based on further discussions with individuals at the meetings, there is more support for TWPs than statements at the meetings would suggest.

## **2.0 Issues and Recommendations**

There were a number of issues raised at all meetings and some that were specific to some users or relating to technical points. The issues are discussed below in order of most significance to those at the meetings, based on the intensity and frequency that issues were raised.

### **2.1 General Issues**

#### **2.1.1 Transfers from Rural to Urban/Industrial**

Irrigators believed that water allocations would be bought up by towns and/or big industrial users. These users are seen to have deeper pockets than rural users. Once water went to urban/industrial users, it would not come back to rural. Therefore parts of the Waimea Plains would no longer be irrigated, and rural production would decline.

#### ***Comment:***

This issue was addressed by showing that the future needs of urban users are likely to be a small part of the total resource use (see Appendix 1). We do not think that transfers from rural to urban will be a large issue as the projected future needs of urban are a small part of the available water resource. Augmentation from treated sewage water would cover projected needs on its own. However, while some of the concern is based on irrigators protecting their own interests, there is a genuine concern from many people that the future is too difficult to predict. There may be large users of water coming onto the scene in the future which would require large amounts of water.

#### ***Recommendation:***

There are three possible options: do nothing, allow no transfers from rural to urban or put a specified limit on the amount that could be transferred. We recommend that a limit be put on the amount of water that can be transferred from Rural to Urban. This limit should be reviewed in three to five years to see if it is having the desired effect.

#### **2.1.2 Temporary Compared to Permanent Transfers**

A number of people were unhappy with permanent transfers either by sale or long term lease. They preferred transfers to be limited to temporary transfers.

#### ***Comment:***

There appear to be three factors leading to this issue. Firstly, users are concerned about the transfer from rural to urban. If sales are permanent, rural users believe that they will never get that water back. The best method of solving this concern is to put restrictions on the amount of water that can be transferred to urban.

Secondly, some users do not like the concept of selling water permanently. This is mainly a perception problem as water is already transferred permanently under the present system

when land is sold. Education is the key to resolving this point.

Finally, some users appear to be trying to limit the effectiveness of a TWP system in the event it is implemented. Having a TWP system with only short-term leases allowed would be worse than the existing system. Short-term leases would only allow part of the gains of a TWP system but without a use or lose principle there would be less incentive to make efficient water use than under the present system.

Some users may suggest having only short-term leases during the trial period. However, we feel that this would be a bad feature as it could lead to a false sense of security. Users may get through the trial period and think they understand the system. There will be parts of the TWP system that have not been tested until after the end of the trial period.

We feel it would be better to start the TWP system as it is intended to operate in the long term. It would be better to start with the option of permanent transfers, with the restrictions on trade concerning rural to urban, monopoly purchase and sustainability issues. Users would get used to thinking of all aspects of transfers rather than just concentrate on short-term transfers.

Short-term transfers will also not lead to the full benefits of a TWP system.

***Recommendation:***

Start the trial period with all aspects of a full mm system including permanent transfers and restrictions on transfers, rather than a partial system limiting transfers to short term.

### **2.1.3 Monopoly**

Users were concerned that it would be possible under a TWP system for big corporates to buy up water and force up the price, beyond what small users feel able to pay.

***Comment:***

It is not in the community's best interests to allow monopoly control of water permits. We doubt that a monopoly would occur, but if it remains a concern, other options should be investigated.

We have some concerns about how useful the Commerce Act will be to prevent a monopoly forming. It may require considerable time and expense to get the Commerce Commission to rule against a monopoly. It may be better to have restrictions in the TWP that make it easier to prevent a monopoly forming. The fishing industry does have restrictions on monopoly control. However, there are also problems with restrictions as entities use associated parties and front companies to hide the real owner.

***Recommendations:***

1. Investigate the practical role that the Commerce Act could play.
2. Depending on how effective the Commerce Act is felt to be, consider putting checks in

the mm system to prevent monopolies or oligopolies forming.

#### **2.1.4 Efficiency Gains Under TWP System**

There was very little disagreement that TWPs would lead to gains in economic efficiency with water moving from low to high value uses.

The situation was not so clear relating to physical efficiency gains. Many people were concerned that with a WP system, users would trade to maximise their asset value. They believe that the net effect would be increased water use, which would trigger rationing points earlier.

On the other extreme, there were some concerns that some users would buy up extra water permits to suit their own risk preference. This would lead to water not being used, assuming there is no restriction on maximum water allocation to an individual.

##### ***Comment:***

It is very difficult so say which view is the more correct with the limited knowledge available in NZ. It is likely that one effect will tend to cancel out the other - some users will try to pump more while others will have reserves that are infrequently used.

##### ***Recommendations:***

1. Research other TWP Systems in NZ and overseas to see if introducing mm does lead to more pressure on the resource and therefore the triggering of rationing more often.
2. Review the operation of TWP at some future date to see what efficiency gains have been made and how they were achieved.

## **2.2 Specific Issues (Raised by Some Groups But Not by Others)**

### **2.2.1 Windfall Gains**

There was general consensus that no individual user should be able to make a windfall gain by selling permits that they do not need. People felt that individuals should not be able to profit at the expense of the community in the Tasman District

##### ***Comment:***

Although economic theory might suggest that transfers relating to windfall gains would be efficient- on an equity basis, people would consider this unfair and vote against a scheme being introduced. In fact, all permits in zones recommended for TWP have been reviewed at least once.

##### ***Recommendation:***

Review all existing permits in new management zones considered for TWP in the future, to ensure that individuals do not profit at the expense of the community.

### **2.2.2 Loss of Community Control**

Some people were uncomfortable with TWPs being allocated by private transactions. They felt that TDC should continue to allocate water permits

#### ***Comment:***

The community has limited control of water permits under the current system. Water is transferred permanently under the present system when land is sold. The community would still have control over how much water is allocated to environmental uses, the maximum that can be extracted in total from a management zone, and siting of uptake points under both systems.

The two aspects that would change under a TWP system are: how much water an individual water user can have permits for; and whether water is used within the management zone or not. The first point is one key difference between the existing and proposed systems. Interfering with The right of individuals to choose the amount of water they need would seriously undermine the efficiency of a TWP system. The second point is best handled by having specific rules on rural to urban uses as discussed above.

#### ***Recommendation:***

Education is the key. The community needs to know where the boundaries are between individual and community control.

### **2.2.3 Lessor vs lessee**

Some existing water permits relating to leased land are held by the lessee not the land owner. Who owns the water fight? Under a TWP system, there needs to be some method for a holder of a TWP to prevent the permit being sold without the lessor's permission.

#### ***Comment:***

This issue was not raised by Waimea users but is an important issue for users in the Motueka/Riwaka areas. The situation is quite clear about ownership - the person whose name is on the permit is the owner.

Preventing a lessee from selling a water permit is best addressed through lease agreements restricting subleases without the lessor's permission rather than including restrictions in the water management plan.

#### ***Recommendation:***

Ensure that there is a system for registering charges against a water permit and preventing transfers until existing restrictions are cleared.

## 2.2.4 Rates

There needs to be a process that allows notification of sales and purchases of TWP to Valuation NZ so that the rateable value is adjusted for both parties. If a TWP is sold, the value of one property should fall and the other rise. The rates to each property should adjust accordingly

### *Comment:*

Water should be valued separately from other improvements. If a TWP is leased, for short or long term, the owner will want to pass on the cost of rates to the lessee. This will not be possible unless water is valued separately. There may also be some cases where TWPs are separate from the land. For example, a trust or other legal entity may own water rights and nothing else. Water would need to be valued separately for rates to be charged fairly.

### *Recommendations:*

1. Water should be valued as a separate improvement for Government and private valuations. This should be discussed with Valuation NZ and the Institute of Valuers.
2. There needs to be a system for tracking water values separately from land titles for rating purposes as water may be separate from land in some circumstances.

## 2.2.5 Conflict with Land Subdivision Rules

Presently there are restrictions on the minimum sub-dividable land area. The purpose of these restrictions is to maintain the productive capacity of land. Some people saw a conflict between the restrictions on land and TWPs. TWPs would allow water to be traded away which would leave some land dry which would affect the productive capacity of land. The allied concern was that once water was transferred away from a piece of land it would not return, so the land would be dry forever.

### *Comment:*

There is a difference between the two resources - land and water. Land is immovable and, once it is used for housing, it is practically impossible to reverse that and use the land for productive agricultural purposes. Water flows. Transferring water away from one piece of land does not mean that land stays dry forever. Water can be brought to the dry piece of land through augmentation or purchasing water permits from elsewhere

Taking land out of productive use for residential purposes is effectively irreversible. Taking water from land is not irreversible. Land can be quickly changed from dry; to irrigated.

### *Recommendations:*

1. Review the TWP rules in conjunction with land subdivision rules to ensure that the only difference between the rules relates to the difference between the resources.
2. Restrict the definition of land to physical characteristics of land itself- eg soil type, slope etc. Exclude the presence of water from the definition of land or productive value of land.

### **2.2.6 Side Effects If TWP Trialed Then Stopped**

If TWP was trialed for a while then stopped, there could be some transactions that could not be reversed.

***Comment:***

If water is sold to another piece of land, then the value of land should change for both parties regardless of which water permit allocation system is applied. Reverting to the existing system, while leaving the transfer in place, would not be a problem in this case.

A potential problem area, if mm rules are removed after a trial, is that ownership may have changed during the trial there may have been some separation of water permits during the trial process - eg permits put into a trust or other legal entity. This situation could cause problems for the owner under a use or lose regime. Transfers are allowed under the RMA under the present system. Therefore these permits could be transferred so they are attached to land again. The users would need time to implement these transfers before the permits were reviewed under use or lose.

***Recommendation:***

Be aware of the possible outcomes when drafting up the TWP system. If the trial is stopped, there needs to be a period during which users can adjust back to the old system where necessary.

### **2.2.6 Separating Water From Land Value**

Currently land value is heavily influenced by non-productive factors such as the demand for lifestyle blocks. The comment was made that it would be very difficult to separate the value of water from sales to lifestyle uses, which would reduce the effectiveness of a TWP system

***Comment:***

We do not agree with this comment. We feel that if there is a market for TWPs, water will be priced separately. There is little doubt that water has a value.

***Recommendation:***

In a future review, examine whether trading has established a price for water.

### **2.2.7 Consultation Process Rushed**

There was some comment that the present consultation process was rushed. More time would have allowed people to get to grips with the issues.

***Comment:***

We agree that more time would have allowed people to understand the issues better. However, we are aware that there must be some time frame to reach a preliminary conclusion

***Recommendation:***

Get people's involvement during the drafting process rather than wait for formal submissions to a TWP system once it has been drafted up. This would keep the issues in front of users over a longer period and give them a better chance to make an informed decision. Having input from users during the drafting stages should also contribute to a more workable mm system.

### **2.2.8 TDC Role in TWP System**

The general feeling was that the TDC should not be involved in the price negotiation process as it has a conflict of interest with the permits that it holds for urban/industrial use. The TDC should confine itself to matters related to the sustainable use of the resource.

There was some concern that the TWP process was a step towards levying rates on water use. The concern seemed to be triggered by the need to meter water use.

***Comment:***

A third party involved in the transfer process has to be seen to be fair and impartial with no conflict of interest. In the case of TWPs, the TDC could be seen to have a conflict of interest, so ideally it should not be involved in price setting or commercial aspects of transfers.

Regarding levying charges based on water use, it is our understanding that no council can raise levies in this manner due to restrictions in the RMA.

***Recommendations:***

1. Arrange for other organisations to handle the sale and commercial process.
2. The TDC should offer to act as a backup to the whole process of establishing a TWP system. If private enterprise or another organisation seems better qualified to carry out a task, the TDC could leave it to them.

### **2.2.9 Speculation**

There were a range of opinions expressed under this issue, with some users seeing speculation as very bad and others as very good.

***Comment:***

There is speculation now in land and other assets. We do not think it is the role of TDC to

stop speculation. The key issues are: stop monopolies being formed (which has been discussed separately); and ensure that speculators encourage rather than prevent efficient use of the water resource.

***Recommendations:***

1. Let individuals make their own decisions.
2. Include in a review in 3 to 5 years time, whether TWPs have led to more efficient water use

### **2.2.10 Weak Sellers**

Rural users were concerned that they might be forced to sell water if they came under financial pressure.

***Comment:***

Banks would generally be concerned in such cases that TWPs were not sold as that would reduce their security and the viability of the business. It is more likely that banks would discourage rather than force sales of water permits.

***Recommendation***

Leave this issue to the private sector

## **3.0 Where To From Here?**

The operation and effects of a TWP system are complex. Most people have not had enough time to understand and think through all the effects. The success of a TWP system would be helped with a continuing consultation process between now and the draft being released for formal submissions.

Some items that should be addressed are

1. restrictions on transfer from rural to urban and the implications
2. extra pumping effort and effect on rationing
3. overseas experience with introduction of TWPs
4. systems for negotiating and executing transfers

There are a number of legal and procedural issues that need to be considered.

1. who will collect price information if the TDC is not involved?
2. how will charges against a permit be registered?
3. how will restrictions on transfer be implemented?
4. procedures for valuing and notifying changes to rateable base.

### ***Recommendations:***

We recommend that TDC meet with users and interested parties during the drafting process to discuss the system. Many people have the perception that TWP will lead to urban taking over rural resources and users will lose control. Whether these perceptions are right or wrong, ignoring them would be a backward step. The whole process will be much smoother if these issues are discussed with users and strategies developed to meet users concerns.

We believe users and interested parties should be contacted soon after Council decides to pursue this topic further and get feedback on the general types of controls and features that would be acceptable and work in practice. Further consultation would take place at agreed points during the drafting process.

Agreement may not be reached between all parties but, at the end of the drafting process, there should be fewer issues that remain to be solved than if no consultation took place during the drafting process.

Review the operation of the mm system 3 to 5 years after it starts to see if it is working as intended. There may need to be ongoing reviews to check that the limits on transfers from rural to urban and monopoly triggers are appropriate. Users' views may change over time.

## **APPENDIX 1 Projected Urban/Industrial Demand For Water**

This Appendix presents information on the amount of water currently available for irrigation and other uses on the Waimea plains, and projected needs for the next 50 years. We included Nelson City Council because of the perception that it would buy up large amounts of water from irrigators.

Irrigators currently have 76% of water allocations on the Plains, sufficient to irrigate 4400 out of about 7500 ha in the Waimea Basin. For comparison, current peak usage by Richmond City is equivalent to about 144 ha at 35mm/day.

Even assuming that all additional needs of urban and industrial uses were met by acquiring permits from irrigators (ie assuming no augmentation of water supplies for the plains), in the year 2050 irrigators would still have 67% of all available water. If irrigators can increase their water use efficiency by 5% every 25 years (ie 0.2% per year), then the same amount of land could be irrigated in 2050 as is now (see Figure 1).

Alternatively, if an augmentation scheme such as treatment of Bells Island sewage for irrigation use were to proceed, agriculture and horticulture could well have the same amount of water available in 2050 as they do now, and efficiency gains would allow even more land on the Plains to be irrigated (see Figure 2).

Other factors are also likely to constrain growth of urban/industrial demand and work in favour of water remaining in rural use. Commercial and industrial users in Tasman District are currently charged only \$0.17/m<sup>3</sup> for water, compared to actual costs of delivery of \$0.54/m<sup>3</sup>. (Note that the RMA allows charging for costs of delivery only, so irrigators cannot be charged for water that they pump themselves.) The current rate will be reviewed in 2 years, and is expected to move to full cost of delivery over time. Experience from Nelson City (where full cost is charged) shows that industrial users implement significant conservation practices as the cost of water increases. In Nelson City itself, the Council is considering treatment options to improve the city's relatively poor water quality. Costs are in the range of \$18 million. When these costs are passed on to commercial and industrial users, more water savings would be expected.

## **APPENDIX 2 - Indicators of Potential Price and Value of Transferable Water Permits**

Some additional information to that included in the discussion document was presented at the meetings on potential price and value of water permits. The intention was to give people an indication of the likely value that could be attached to water if a TWP system was operational in the Waimea Plains.

Table 1 shows some historical information from South Australia where TWP have been used for some time. There is a big range in water use depending on the climate. The cost of water per unit could also vary between locations depending on alternative uses for water. Riverland and The Barossa valley for example are rural areas producing processing crops. The North Adelaide Plains tend to have more intensive crops and are closer to a city.

**Table 1 - South Australia - water use and cost for permanent water transfers**

Location	Crop	m <sup>3</sup> /ha/yr	\$/m <sup>3</sup>
Riverland	GrapeVines	10,000	A\$0.5-0.6
Barossa Valley	Grape Vines	1,000	A\$0.5-0.6
	Vegetables	5,000	A\$0.5-0.6
Coonawarra	Grape Vines	1,500	A\$0.5-0.6
	Pasture	4,500	A\$0.5-0.6
North Adelaide Plains	Fresh Vegetables	5,000	A\$1.2-2.0
Waimea	All	2,700	NZ\$0.6-3.0 7

Temporary transfers (ie annual leases) are to 10% of permanent prices. Prices were lower in early years of transferability eg \$0.25 to \$0.40/cu m in early 1990's compared to \$0.50 to \$0.60/cu m currently.

Table 2 shows a big range in water value per hectare which is a result of the amount of water needed and the returns from different crop types. Riverland for example, is dependent on irrigation for cropping. If water was not applied, then only pasture would survive. Therefore water cost is a significant component of irrigated land. In the Barossa Valley, less water is needed to get good crops so water share of irrigated land value is much less.

Estimated values for the Waimea Plains are included for comparison. These values are indicative only as the real values will not be known until water is traded in the area. The values are based on some valuation comparisons of land with and without water, supplemented by some brief calculations of the value of water.

Water is likely to be a significant component of irrigated land value. The actual value will vary from time to time and place to place depending on supply and demand.

**Table 2: South Australia - price and value for permanent water transfers**

<u>Location</u>	Crop	\$/ha	<u>% irrigated land value</u>
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Riverland	Grape Vines	A\$5,500	80%
Barossa Valley	Grape Vines	A\$550	4%
	Vegetables	A\$2,750	20%
Coonawarra	Grape Vines	A\$825	3%
	Pasture	A\$2,500	10%
North Adelaide Plains	Fresh Vegetables	A\$8,000	n/a

**Table 3: International Comparison**

	\$/cu m	\$/ha	<u>% irrigated land value</u>
Aust	0.55-2.25	550-6,700	80%
USA	1.20-60	n/a	n/a
Waimea	0.6-3.0 ??	1,600-8,000??	5-33%??

Exchange rates used: NZ\$1=A\$0.89=US\$0.69

**Note on water units used in above tables**

The Australian data was given in terms of cost per volume of water. This was multiplied to come up with the total cost per hectare per year.

On the Waimea Plains, the probable unit of measuring value is likely to be volume per day or week. Irrigators are the major users. The key issue to them is not how much water they put on in a year but how much they can put on over a week. Many of the soils have low soil moisture storage capabilities. Having surplus water at the end of the season is no use as plants may have died in the interim.

The cost per hectare will not change - estimated range between \$1,600 and \$8,000 on the Waimea Plains. The cost per cubic metre would be between \$0.6 to \$3. On the same basis, the cost per cubic metre per week would be between \$4.60 and \$23, assuming water use was equivalent to 35mm/ha/wk.

## APPENDIX 3 - Summary of the Tasman District Council's Discussion Paper

"Issues, Options and Practicality of Transferable Water Permits in the Waimea Catchment"

March 1997

### SUMMARY

#### What is a Transferable Water Permit?

A Transferable Water Permit is a resource consent to take water (ie. a water allocation) which can be transferred from one place within the water resource (eg. an aquifer) to another point in the same water resource. This is also called a site-to-site transfer. If money has changed hands, the permit has been traded. Equally, the permit may be transferred without a financial transaction occurring.

#### Purpose of this Discussion Paper

This Discussion Paper evaluates the issues associated with implementing Transferable Water Permits (TWPs) for the water resources of the Waimea catchment. Tasman District Council seeks the views of all interested parties on whether to allow for transferable water permits in the Waimea catchment in the water chapter of its Resource Management Plan. This chapter will update and formalise the provisions of the 1991 Waimea Catchment Water Management Plan.

#### Current Water Allocations in the Waimea Catchment

WATER MANAGEMENT ZONE	NO OF PERMITS	PERMIT EXPIRY DATE	ALLOCN LIMIT l/sec	CURRENT ALLOCNS l/sec	RATIONING TRIGGER
Wai-iti	87	31-05-2001	200	382	Wai-iti river low flow
Upper Catchments	2	31-5-2002	230	230	Waimea river low flow
Reservoir	37	31-5-2002	826	826	Waimea river low flow
Wai-iti	20	31-5-2002	178	178	Waimea river low flow
Golden Hills	26	31-5-2002	113	113	-
Delta	124	31-5-96	1000	1000	-

Upper Confined Aquifer	27	31-5-2002	144	144	Waimea river low flow
Lower Confined Aquifer	23	31-5-2001	203	203	Rail Reserve well level

The table shows that the summer water resource is fully allocated. The lower Confined Aquifer was the first zone to reach its allocation limit (1979) and the Delta Zone the last (1992). No additional summer allocations are available.

### Features of Transferability

Making water permits transferable is seen as one way to increase the flexibility - within environmental constraints - to transfer water permits to higher valued uses, thereby improving the efficiency of use of the resource. Transfers could be 'permanent' (ie. for the duration of the permit), or short-term such as a leased water allocation. Terms for the transfer are a matter for the parties negotiating the transfer, except that the Council's role is to ensure that water usage remains sustainable and that third parties are not affected adversely.

### Expected Benefits

1. greater security of supply for existing users who want to 'top up' their allocations through purchase.
2. opportunity for those without permits to purchase allocations, rather than wait for Council to review and reallocate unused allocations
3. creates a more marketable asset able to be traded separately to the land, if the holder so wishes
4. more of the water allocated under permits should end up being used for productive purposes for more of the time, hence improved production and possibly employment
5. improved physical efficiency of water use because of the incentive provided by the ability to trade part of a permit
6. improved economic efficiency through water permits being transferred to higher valued uses
7. ascribes a value to water which will assist economic evaluation of water augmentation schemes and water use efficiency measures
8. reduced conflict among users and between users and Council over availability of water for allocation
9. increased flexibility for water users, for example being able to lease short-term allocations

when water demand is highest

10. reduced need for Council to develop complex restrictions and criteria to improve water use efficiency through regulatory means

## **Issues and Options in the Waimea Catchment**

The Discussion Paper identifies eight issues affecting implementation of transferability of water permits in the Waimea catchment, together with recommended options.

*Choice of Water Allocation System:* The water allocation system in Tasman District essentially treats all water permits as equal. Under 'Equal Sharing', there is no priority given to certain uses of water and all allocations are subject to the same restrictions during drought.

The preferred option is to retain the current Equal Sharing regime but to discuss with water users the option of moving to a system involving A and B class permits, with B permits rationed earlier than A permits, but both classes being transferable.

*Transition to TWP:* The main transitional issue is whether changes are necessary to existing water permits in water management zones where a TWP system is to be implemented. Both 'grandparenting' and reallocation on the basis of past usage have merits. Because permits have been reviewed at least once, and because transition to TWP would require less Council intervention, 'grandparenting' is currently the preferred option.

*Ensuring Sustainable Water Management with TWP:* The main issue is the possibility that Council may wish to modify allocation limits from time to time, and so require new restrictions on the exercised of transferred water permits. The preferred option is a continuation of the present approach which allows Council to change allocations and rationing after consultation with interested parties, either through a plan change and consequent reviews of permit conditions, or through straight reviews of permits where their conditions allow such a review.

*Maintaining Permit Value:* Security of their water permit is an important issue for users as they often have considerable capital investment in equipment and their business may depend on having water available to use. There are two aspects of security:

1. security of supply of specific quantities of water.
2. security of tenure to a water permit.

The main issue with the term of the permit is that as the expiry date approaches, the water permit is worth less and less. A presumption for renewal stated in the Resource Management Plan would reduce this uncertainty.

*Devising an Efficient System for Negotiating and Executing Transfers:* If transfers are expensive, uncertain or involve complex administrative procedures, they will not occur. The main issue is that information on what water allocations are available for transfer needs to be freely available. In the set-up stages of TWP, it is probably logical that Council be the facilitator, as it will be best placed to explain the system. If there is a demand for permit transfers, the real estate industry could then become involved.

***Monopoly or Speculative Transfers:*** The likelihood of monopoly behaviour in a market for water permits seems small because, like land, the quantities available for transfer at any time are likely to be small, and the marginal benefits are unlikely to be significant for a monopoly holder. The Commerce Act would provide a backstop if monopoly control of the resource ever became an issue.

***Controlling Environmental Effects and Effects on Other Users:*** Transferring pumpage from one place in an aquifer or river to another may affect water availability for others, for example by triggering rationing sooner, reducing their well yield or depleting river flows excessively. These 'third party' effects include

1. Concentration of pumpage in one part of the aquifer or river
2. Decline in farm production if irrigation allocations transfer to industry or urban use
3. Ensuring adequate water is available at the new pumping location
4. Effects of transfers between rivers and groundwater
5. Cumulative effects of transfers triggering rationing earlier or reducing water availability
6. Movement of irrigation permits to better soil types.

Where Council can anticipate and codify rules to limit the third party effects of transfers, these should be included in the Resource Management Plan as conditions for transfers as permitted activities. Subject to compliance with those rules, Council's involvement would be limited to recording transfers when they were about to occur. Where uncertainty remains about some types of transfer these could remain discretionary, ie. occur only subject to Council approval.

***Maori Concerns about TWP:*** Concerns have been expressed by Maori that trading permits to use resources may limit their rights under the Treaty of Waitangi in relation to the ownership and management of water resources. No changes to the ownership of water would result from a transferable water permit regime.

Another issue raised by Motueka iwi is the potential transfer of irrigation permits by lessees away from Maori leased land, thus leaving the land without water and of lower capital value to the landowner. As the issue has not been raised in the Waimea catchment, it may be that there is no concern. Agreements between lessees and lessors have presumably covered who holds the water permit, and this can be expected to continue.

### **Water Management Zones suitable for Transferable Water Permits**

The Discussion Paper discusses ways in which water management issues could be addressed under a transferable permits system in each of the water management zones of the Waimea catchment. The paper recommends that water permits be made transferable in the following zones:

1. lower Confined Aquifer
2. Upper Confined Aquifer
3. Combined Reservoir and Waimea West zones (except Golden Hills Zone until water metering is implemented)

Transferability of water permits in the Delta Zone is recommended only when the zone is confirmed (following completion of the current review) as fully allocated and metering of

permits is implemented.

For the Wai-iti Zone, transferability is recommended only when the current over-allocation has been addressed either through reducing current water permit allocations and/or implementing an adequate water augmentation scheme.

### **Where to From here?**

The Council has earlier committed itself to a trial of transferable water permits, subject to consultation with users and interested parties. The Discussion Paper prepared with financial assistance from the Sustainable Management Fund, Ministry for the Environment, is intended to stimulate discussion of the concept. Whether a trial is successful or not will be determined by the number of transfers which occur over a period of several years.

**Submissions are sought from all interested people until 3 June 1997. Public meetings will be scheduled to discuss the issues during the submission period. After submissions close, Council will review its understanding of the issues and options, make policy decisions and prepare draft policy and rules for TWP in the Water chapter of the Tasman Resource Management Plan. These will be publicly circulated as draft provisions before notification by May 1998.**

Discussion paper prepared by Andrew Fenemor (TDC) and Mike Kearney (NZ Horticultural Economic Service)

## **Addendum**

### **Further Developments Since Project's Completion**

The Oroua Catchment Plan has been operational for a complete season (1996/97) since the case study was written, during which time the Oroua River maintained a flow above the threshold at all times. Furthermore, the Manawatu-Wanganui Regional Council indicates that based on information available up to 7 October 1997, the river flow is not expected to drop below the threshold at which restrictions are imposed during the coming irrigation season.

This has allowed time for both users and the Regional Council to consider implications of the new regime, but without actually experiencing a restrictive period. In the Regional Council's case this has resulted in some additional expense to ensure that the river flow measurements can be defended with some certainty when restrictions may be imposed differentially between holders of A and B permits. However, these costs may have been incurred anyway, even without a TWP regime, since restrictions based on thresholds are still required from time to time, and therefore accurate and defensible measurements of river flow are necessary. Likewise, for a large user who grows high-value irrigation dependent vegetable crops, the regime may have given more certainty and thus encouraged the construction of storage facilities in the knowledge that water can be transferred from other users during times of excess water availability. It is thought by Regional Council staff that other smaller users may still be fearful of "losing" their permits to larger, and perceived wealthier, users.

The Tasman District Council is currently drafting its Water Management Plan. Information from the TWP consultation project will be taken into consideration in the Plan. There may be an opportunity to incorporate some elements of transferable permits into the Plan, if a level of support for these elements could be identified within the community.