

Community Environment Fund Round 6 Work Programme

E-planning for Water Allocation and Use

Regional Council	Marlborough District Council
Postal address	PO Box 443, Blenheim
Physical address	Seymour Square, Blenheim
Phone number	03 520 7400
Principal contact name and title	Pere Hawes, Manager Environmental Policy
Email address	pere.hawes@marlborough.govt.nz
Phone number	021 277 2544
Postal address (if different from above)	

Funding summary

	Amount (\$)	Percentage (%)
Total cost of project	\$300,000	100%
Funding approved (including % of total)	\$150,000	50%
Council cash contribution (including % of total)	\$150,000	50%

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1. Introduction

This Work Programme gives an overview of the entire life of the project, including purpose, objectives, benefits and costs.

2. Project Summary

Background

Water is Marlborough's most significant natural resource. The District retains productive rural and processing sectors and the productivity of these sectors relies on adequate supplies of freshwater. With the exception of the Wairau River, all water resources in Marlborough are at, or nearing, a state of full allocation relative to existing Plan limits. The current review of the Marlborough RPS and resource management plans has identified that the inability to allocate water beyond these limits (in accordance with the NPSFW 2014) will create a significant constraint to the future growth of the rural and processing sectors and therefore the District's economic growth.

Purpose

With the assistance of MPI funding (Community Irrigation Fund), the Council has been reviewing existing planning provisions and developing its second generation water allocation and use framework. This work has focused unsurprisingly on the need to use allocated water resources more efficiently and in smarter ways in order to free up allocated water to existing or new users. To this end, the Council proposes to utilise digital and spatial tools to enable electronic management of water allocation and use in Marlborough in real time – "E-planning".

E-planning is proposed to be applied to the Council's consenting, compliance and state of the environment monitoring functions under the reviewed water allocation and use framework. In particular, current and historic water permit information would be accessible in digital format; online consenting and consent processing would be enabled; electronic tools to assist consent applicants would be provided (such as automatic calculation of water demand for any property); water use data would be received and stored via telemetry enabling accurate accounting; real time water use data, for both individual users and for each water management unit, would be made available; the status of rivers and aquifers relative to minimum flows and aquifer levels would be provided; automatic warnings could be provided to water users and/or compliance staff when use approaches or exceeds limits; and transfers would be registered electronically and in real time.

The E-planning tool would be available via the Council website (or possibly a stand-alone website) and would be provided by utilising ESRI's ArcGIS Online software. Providing a spatial means to deliver Council functions will make those functions more accessible to water users and the wider community. It provides the opportunity for the user to search for consent information, water use data (and other compliance information), and resource status information on either a property basis or on an aggregated basis for the water management unit.

A tool will be provided (Irricalc) to enable water users to easily identify water demand for their property based on soil type, climate and crop, with an inbuilt level of reliability (1 in 10 years). This will result in individual allocations better reflecting reasonable use requirements (in comparison to existing allocations utilising current Plan guidelines), and modelling has shown that this will reduce the paper allocation of Marlborough's water resources relative to Plan limits. Irricalc also offers up opportunities for consenting online by automatically populating water permit applications.

The provision of water use information in real time will enable water users to easily identify unutilised water relative to consent entitlements. An enhanced transfer tool will be provided to enable water users to approach other water users to request short term or long term transfers. The transfer process will be managed via the E-planning tool by registering transfers between users in real time, providing a responsive means to move water between users in each water resource.

Note that the E-planning function described above compliments the Council's E-plans (which provide access to the content of the Council's resource management plans by spatial means) that were launched in July 2014 and reflect the Council's commitment to transforming the delivery of its functions via digital means.

Expected Benefits

Benefit	Description
Economic	<p>E-planning provides resource and resource use information, and management tools, to enable more efficient use to be made of allocated water. Efficient use of water frees up water that would otherwise be allocated on paper but which is not utilised. This can then be transferred instantly, on either a short term or long term basis, by using the E-planning tool to register the transfer in real time.</p> <p>In this way, the E-planning tool provides opportunities to make water available to existing or new users despite a state of full allocation. This will have significant economic benefits for the Marlborough economy, as a state of full allocation would have otherwise constrained any economic growth reliant on water.</p> <p>Reduced bureaucracy in terms of both consenting (via online consenting) and the transfer of water permits will result in cost savings for water users.</p>
Environmental	<p>Provision of real time information on river or aquifer status provides water users with information to adjust their behaviour in response to impending restrictions on the ability to take water. This, combined with the potential to provide alerts to water permit holders, increases the likelihood of compliance with minimum flows/levels (or other restrictions) set through regional rules to protect the water resource.</p> <p>Accurate accounting of water use in real time or over other intervals allows better analysis of resource resilience to occur. For example, records of water use from several Marlborough aquifers have allowed an accurate relationship between water use and aquifer status to be established, which ultimately allowed appropriate allocation limits and aquifer minimums to be set. In summary, water use information is essential for planning purposes. It also allows assessment of the efficiency and effectiveness of existing allocation regimes in the context of Section 35 of the RMA. In addition, regular reporting requirements of the Ministry for the Environment regarding water taken and used will be more efficiently accessible and have greater accuracy.</p>

Benefit	Description
Social	<p>Water has become a scarce resource in Marlborough as the cumulative allocation of water from each water resource approaches Plan limits. This has created competition amongst users to secure remaining water and caused tension and conflict between water users in several communities. E-planning assists to manage this tension by providing real time water use data, potentially freeing up water for existing and new users through enhanced transfer plan provisions. E-planning also provides greater transparency for the community by providing water use data for each water permit in real time.</p> <p>The cost of consenting could reduce given that tools will be provided to assist water permit applicants to complete electronic forms (including the ability to populate application forms automatically). The consenting process will also become more transparent in the event of online consenting. An applicant will be able to track progress with their application as it progresses through the processing steps.</p> <p>Compliance costs will also be reduced by facilitating the provision of water use information digitally in real time (or close to it) and through the provision of alerts in terms of resource status.</p> <p>Real time water use data provided in a digital and spatial format provides water users with information that they can utilise, either individually or collectively, to improve the management of their day-to-day operations. For example, water use information can assist in on-farm irrigation scheduling. Groups of users could also utilise real time use information, when combined with the river/aquifer status information, to better manage water resources as restriction levels are approached, delaying the imposition of those restrictions.</p>
Other	<p>The way in which people interact amongst each other and with organisations (including government) is increasingly via digital means. E-planning for water allocation and use recognises and responds to this fast emerging trend. The provision of the E-planning tool allows the Council to transform the way in which it manages water resources and deliver better services to water users and the wider community. It also encourages more active involvement of water users in the day-to-day management of Marlborough's critical water resources. In this way, E-planning for water allocation and use is consistent with Government's ICT Strategy and Action Plan.</p> <p>E-planning for water allocation and use is likely to act as a pilot for the delivery of other management functions via digital formats. For example, E-planning could be applied to other water management functions (such as accounting for cumulative contaminant discharges, setting and enforcing cumulative contaminant limits and enabling trade in discharge entitlements) or other natural resources (such as air and coastal space).</p> <p>Provision of water allocation and use data/information via a digital platform will empower water users and other water management innovations are likely in time. Any other management tools developed by water users can be hosted on the E-planning tool.</p>

3. Evaluation of Project Objectives

Objective	Key Performance Indicators (KPIs)	Source of Measure	Baseline Information
Water access entitlements accessible and accurate in real time.	All existing and future water permits are available in digital format and can be searched by spatial means (in addition to direct entry). A means of recording the water access entitlement inherent in each water permit is developed.	Progress with the development of the E-planning tool reported to the Information Systems Steering Group. On completion, statistics on the use of search function to access water permits and/or water access entitlements.	Water permits are currently available in digital format but are not able to be searched for spatially. The water access entitlements are contained in the body of the original proposal and not easily accessed.
All consented water use is accessible in real time.	Water use, as recorded by pulse emitting meters and transmitted by telemetry, is portrayed against individual entitlements.	Progress with the development of the E-planning tool reported to the Information Systems Steering Group. On completion, statistics on the use of search function to access water use records.	Water use records can be provided to water permit holders upon request but must be manually compiled. Those records not currently accessed by other water permit holders or potential users. Variable rate and method of return of water meter readings.
Status of rivers and aquifers relative to Plan limits conveyed to water users in real time. Potentially the provision of alerts to water users regarding impending restrictions.	Current river flow and aquifer level information is accessible to water users and the wider community.	Progress with the development of the E-planning tool reported to the Information Systems Steering Group. On completion, statistics on the use of the website to access river flow and aquifer level information.	River flow and aquifer level information currently provided for some water resources via Council website. The current interface can be improved and coverage expanded to other water resources as more flow and level data becomes available. Automatic alerts would also enhance current manual system.

Objective	Key Performance Indicators (KPIs)	Source of Measure	Baseline Information
Transfer of water access entitlements enabled.	The number of water permit transfers increases for fully allocated water resources.	Progress with the development of the E-planning tool reported to the Information Systems Steering Group. On completion, number of transfers recorded on the E-planning tool.	Site to site transfer of water permits currently require resource consent.
Online consenting (potentially)	The ability to lodge and track a water permit application via the Council website. The existence of support tools to enable automatic population of water permit applications.	Progress with the development of the E-planning tool reported to the Information Systems Steering Group. On completion, number of consent applications lodged on line. Statistics on use of the website to track progress with individual water permit applications.	Not currently available.
More efficient use made of allocated water	Proportion of paper allocation utilised increases over time.	Water use records relative to water access entitlements.	Can be determined but involves manual process and relies on variable rates of return for water meter readings.
Seamless and integrated means to access the data/information derived from other objectives above.	Completion of a single E-planning tool that provides a user friendly experience to access water allocation and use data /information.	Progress with the development of the E-planning tool reported to the Information Systems Steering Group.	No one-stop for water allocation and use data information.

4. Details of Project Manager

Project Manager Details	
Name	Pere Hawes
Email address	pere.hawes@marlborough.govt.nz
Phone number	03 520 7400
Postal address	PO Box 443, Blenheim 7240
Responsibilities	Manager Environmental Policy
Skills and experience	Pere has 18 years experience in water management, primarily in the development of water management policy, while working at the Marlborough District Council, the Environment Agency in the UK and the Otago Regional Council.
Estimated number of hours to be spent on the project (per week)	5 hours per week, in a project management capacity.

5. Governance Structure and Project Team

<p>Governance owner/group</p>	<p><u>Information Systems Steering Group</u>: All Council information systems/technology projects are overseen by this Steering Group, which consists of key members of the Council's Executive Management Team. In accordance with Council policy, the Steering Group will oversee the development of this project as a strategic project for the Council. The Steering Group meets on a six weekly basis with the Manager Information Systems reporting on progress with the development of strategic information systems projects.</p> <p>It is proposed that any significant issues highlighted by either of the Technical Steering Group or the Water Allocation and Use Group be reported to the Information Systems Steering Group for consideration and direction.</p>
<p>Project steering group</p>	<p><u>Water Allocation and Use Group</u>: This Group, consisting predominantly of water users, has assisted the Council with the development of the reviewed water allocation and use framework. It is important that this framework is able to be implemented practically which, in turn, will rely on a user friendly interface. The Group meets on a monthly basis and it is intended that they will continue to meet on a regular basis for the life of the E-planning project, primarily to ensure that the user interface of E-planning is practical and achieves its ends and to assist the Council with effective roll-out to other water users.</p>
<p>Project team</p>	<p><u>Technical Steering Group</u>: The Steering Group will be chaired by the Manager Information Systems and will consist of the Manager Environmental Policy and at least one staff member from each of the Council functions to which E-planning will be applied (consents, compliance, science and monitoring). The group will meet on a regular basis to complete the scoping of the project, oversee mechanical development and testing, and then deliver roll-out for the organisation. The focus will be on functionality (when tested against project objectives) and on identifying and resolving any technical issues with delivery of the project. Andrew Curtis of Irrigation NZ may also attend technical steering group meetings.</p> <p>Any development functions contracted out to third parties will see a member of the contractor also represented on the Technical Steering Group.</p>

6. Projected In-Kind Contributions

	Description	Total Estimated In-kind Contribution <i>excluding GST</i>
Staff time	Involvement of a staff member from each of the Environmental Policy Group, Resource Consents Group, Environmental Science and Monitoring Group and the Environmental Protection Group to assist with the development of individual components of the E-planning tool. Staff involvement of approximately (collectively) 20 hours per week at approximately \$145 per hour. The number of hours estimated to be required will be clearer once Project Design and Project Formats completed (see table 7).	Approximately \$2900 per week for the life of the project.
Total in-kind contribution		\$272,600

7. Milestones for the Life of the Project

Milestone Name	Activities	Completion Date	Estimated Total Cost*	Community Environment Fund Estimated Contribution
1. Project design	<ul style="list-style-type: none"> • Complete scoping of E-planning tool. • Confirm individual components of the tool. • Confirm data sources. • Undertake further risk analysis for each of the components and the links between them. • Assess whether external expertise required and secure required expertise. 	December 2014	20,000	20,000
2. Project format	<ul style="list-style-type: none"> • Scope appearance of the user interface (utilising Arc GIS Online) • Test format with Water Allocation and Use Group. • Confirm user access arrangements and permissions. • Confirm nature of "Irricalc" tool. 	March 2015	20,000	20,000
3. Build mechanics	<ul style="list-style-type: none"> • Complete compilation and quality control for each data source (Quarters 3 and 4). • Establish critical links between various data sets (Quarter 4). • Determine need for data warehousing (Quarters 4 and 5). • Build register for water permit transfers (Quarters 4, 5 and 6). • Establish electronic reconciliation of water access entitlements and transfer of those entitlements (Quarters 5 and 6). 	March 2016	200,000	100,000

Milestone Name	Activities	Completion Date	Estimated Total Cost*	Community Environment Fund Estimated Contribution
4. Testing	<ul style="list-style-type: none"> • Testing of draft E-planning website for both accuracy and usability. • Adjust E-planning website in response to feedback or issues of data/information accuracy. 	June 2016	20,000	10,000
5. Roll-out	<ul style="list-style-type: none"> • Develop roll-out strategy in consultation with the Water Allocation and Use Group. • Release of E-planning tool • Ongoing implementation support of E-planning tool 	August 2016	40,000	

*The timing of incurring the estimated costs set out in the table do not necessarily coincide with the payment schedule set out in the Deed. The Council seeks to achieve Milestone 1 by the first quarter; Milestone 2 and commencement of Milestone 3 by the second quarter; Milestone 3 is the largest component of work and will be completed progressively across Quarters 3, 4, 5 and 6. Progress with this milestone will be set out in each of the quarterly reports, Milestone 4 will be completed by quarter 7; and Milestone 5 by the end of quarter 8.

8. Project Risks

Potential Risk	Consequences	Probability of Risk Occurring	Severity of Impact on Project	Strategy to Mitigate Risk
Lack of awareness of allocation status and therefore water user resistance to the need for more intensive management of water allocation and use.	There may be a resistance/reluctance amongst water users to support the E-planning tool when it is released for use.	Low to Medium. There is already significant use of existing (but fragmented) digital tools such as water use reporting via telemetry and river status. River status is the most utilised part of the Council's website.	Light. The impact is not on the development of the project itself but on its utilisation following release via the Council's website.	Pre-notification consultation with water users is scheduled to occur from October 2014 to December 2014.
Technological, in terms of being able to deliver one or more of the milestones due to a limitation with the development of hardware or software	Difficulties delivering one or more of the components of E-planning.	low	moderate	The software being utilised is ESRI's ArcGIS Online. This has already been utilised for the delivery of Council's Smart Maps project. Real time river flow, aquifer level and water use data is being received and managed by the Council via Hilltop. Any software issues are anticipated to have been identified before now.
Difficulties in developing software to account for water use and transfers in real time against individual water permits.	Project would not achieve its objective	medium	high	Utilising/securing appropriate technical expertise to develop suitable programming and/or data warehousing. Regular reporting to Information Systems Steering Group and the Ministry.

Potential Risk	Consequences	Probability of Risk Occurring	Severity of Impact on Project	Strategy to Mitigate Risk
Time and cost estimates optimistic	Unable to complete E-planning project or unable to complete it by completion date.	medium	high	Regular reporting to Information Systems Steering Group and the Ministry.

9. Project Reporting

Target Audience	Type of Reporting	Purpose	Timing
Ministry for the Environment	Quarterly Report	To keep MfE informed about project implementation and status	Quarterly (using Ministry for the Environment reporting template)
	Annual Report	Details of work completed during the year	Annual (using Ministry for the Environment reporting template)
	Final Project Report	Provide information confirming that all the project requirements have been met, and any lessons learned	Within 3 months of the project completion date (using Ministry for the Environment reporting template)
General public	Media releases/website updates	Public relations	As required
Council's Information Systems Steering Group	Governance oversight via six weekly reporting by the project managers	Council's Information Systems Steering Group	Six weekly
Regional Planning & Development Committee	Committee Reporting	To keep Councillors informed about project implementation and status	Six weekly
Water Allocation Working Group	Staff Reporting	To keep Water Allocation Working Group informed about project implementation and status	As required and as progress allows
Industry Groups (Irrigation NZ, Federated Farmers and NZ Winegrowers)	Provision of information	To keep industry groups informed about project, project implementation and project status	As required and as progress allows. At the very least, the quarterly reports will be provided to relevant industry groups.
Regional Policy Managers Special Interest Group	Provision of information	To keep industry groups informed about project, project implementation and project status	As required and as progress allows

10. Key Relationships

Name of Organisation / Individual	Details of Involvement	Contact Person	Position	Email and Phone Number
Water Allocation Working Group	This Group, consisting predominantly of water users, has assisted the Council will the development of the reviewed water allocation and use framework. It is proposed that the Group has an ongoing role for the life of this project to test the practicality of the product during the development phase and thereafter to assist the Council to roll out the product to all water users.	John Patterson	Participant	johnpatterson@vodafone.co.nz 021 734 517
Isovist	Technical software development and GIS skills will be required over the life of the project. Isovist have already assisted the Council to successfully build its E-Plan.	Grant Carroll	Consultant	grantcarroll@isovist.co.nz 027 546 7283
Aqualinc Research	Aqualinc Research has been retained by the Council to assist with the development of the reviewed water allocation and use framework from a technical perspective. As E-planning will form a critical means to enable the delivery of this framework, it is anticipated that Aqualinc Research will have an ongoing role in the development of E-planning. Given the involvement of Aqualinc Research in water management in other regions, this involvement also ensures that the project utilises, or is informed by, other relevant initiatives underway elsewhere.	John Bright	Managing Director	j.bright@aqualinc.co.nz 03 964 6521 021 987 788

Name of Organisation / Individual	Details of Involvement	Contact Person	Position	Email and Phone Number
Industry Groups (Irrigation NZ, Federated Farmers and NZ Winegrowers)	It is important to keep groups that represent water user interests outside of Marlborough informed of the project. This will assist to enable the project product, and/or the knowledge gained through the project process, to be transferred to other regions. After consulting the three parties, it has been agreed that the quarterly report to the Ministry will be also be provided to Irrigation NZ (via Andrew Curtis), Federated Farmers (via Lionel Hume) and Marlborough Winegrowers (via Marcus Pickens).			
Regional Policy Managers SIG	It is important to keep other regional councils and unitary authorities informed of the project. This will assist to enable the project product, and/or the knowledge gained through the project process, to be transferred to those other regions.			

11. Communication Plan

Target Audience	Objectives	Tools and Methods
Water permit holders	Develop awareness and encourage behaviour change.	<p>During the development of E-planning the key message to water users is that water resources are at or fast approaching a state of full allocation and that there therefore needs to be more efficient use of water resources to enable existing and new users to access water resources. This message will be communicated in conjunction with First Schedule consultation on the reviewed water allocation and use framework prior to notification of the regional plan provisions. Note that this consultation is scheduled to commence in October 2014. It will involve communication of the E-planning tool that the Council is developing to enable real time management of water allocation and use, and user involvement in that management via digital means.</p> <p>The Water Allocation and Use Group will assist the Council with this task as they function as an interface between the Council and water users.</p>
General public	Awareness	As for water users, there is a need to inform the wider community of the allocation status of Marlborough's water resources and the implications of that status. This will also be achieved via First Schedule consultation on the reviewed water allocation and use framework.

12. Budget Table

Spreadsheet with the budget table will be provided as a separate document.