APPENDIX 2

Proposed Plan Change 5A
(Lindis: Integrated Water Management)

CONSULTATION DRAFT
Section 32 Evaluation Report

Regional Plan: Water for Otago

This Section 32 Report should be read in conjunction with the Consultation Draft of Proposed Plan Change 5A (Lindis: Integrated Water Management) to the Regional Plan: Water for Otago.

Otago Regional Council

April 2014

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Abbreviations

Clutha	Clutha River/Mata-Au
Council	Otago Regional Council
l/s	Litres per second
MAR	Mean annual recharge
MALF	Mean annual low flow
Mm^3/yr	Million cubic metres per year
NPSFM	National Policy Statement Freshwater Management 2011
RMA	Resource Management Act 1991
Proposed plan change / plan change	Proposed Plan Change 5A (Lindis: Integrated water management)
Water Plan	Regional Plan: Water for Otago

Note: use of section/Section:

section	A reference to another section in this report. A reference to a section of the Water Plan.
Section	A Section of the RMA.

1. Introduction

Proposed Plan Change 5A (Lindis: Integrated Water Management) builds on existing provisions of the operative Regional Plan: Water for Otago (Water Plan) for managing surface water and groundwater by:

- Setting a management regime (allocation limits and minimum flow) for surface water and connected groundwater in the Lindis catchment;
- Setting maximum allocation volumes for specified aquifers within the Bendigo-Tarras Basin (Ardour Valley, Bendigo, Lindis Alluvial Ribbon and Lower Tarras Aquifers);
- Mapping the minimum flow catchment boundaries and monitoring site associated with the Lindis River in the B-series of the Water Plan Maps; and
- Mapping the boundaries of the Lower Tarras, Bendigo and Ardgour Valley Aquifers Zones and amending the boundaries of the Lindis Alluvial Ribbon Aquifer in the C-series of the Water Plan Maps.

This report assesses the appropriateness of Proposed Plan Change 5A, as required by Section 32 of the RMA, and should be read in conjunction with the proposed plan change.

2. Background

2.1. The NPS Freshwater Management 2011

The National Policy Statement on Freshwater Management 2011 (NPSFM) requires Council to reduce and prevent further over-allocation and safeguard the life-supporting capacity of fresh water bodies, by establishing environmental flows and/or levels for all water bodies in the region and making sure the freshwater objectives within the Water Plan give effect to the NPSFM objectives. The NPSFM also calls for Council to provide plan provisions that maximise the efficient allocation and efficient use of water.

The Water Plan Objectives give effect to the NPSFM by recognising the need to protect the natural and human use values, which include cultural values, amenity and natural character of rivers, while enabling the sustainable and efficient use of this resource to the benefit of Otago's industries and communities. The Water Plan achieves this by:

- setting minimum flows and allocation limits for surface water bodies;
- establishing maximum allocation volumes and aquifer restriction levels for groundwater resources; and
- promoting the efficient use and sharing of the water resource.

2.2. Water management and allocation under the Water Plan

Surface water
Schedule 2A of the Water Plan identifies minimum flows and primary allocation limits for specified catchments in Otago.

The primary allocation limit is the amount of water that can be taken from a catchment under primary allocation consents. The primary allocation limit is set to enable socio-economic and cultural wellbeing, while ensuring reliable access to the resource.

Minimum flows protect the aquatic ecosystems and natural character of surface water bodies at times when there is insufficient water to support both in-stream values and out-of-stream uses. When the surface flow drops below the minimum flow, water takes under primary allocation consents have to cease.

The minimum flows and primary allocation limits for catchments listed in Schedule 2A are determined through a community consultation process. Catchments that are not listed in Schedule 2A have no minimum flow. However, the taking of surface water in these catchments is limited through a "default" primary allocation limit, which is either 50% of the mean annual low flow (MALF) or the sum of consented maximum instantaneous takes within primary allocation (whichever is the greatest). Residual flows are applied to protect aquatic ecosystems and natural character values in smaller tributaries.

In catchments where the sum of consented maximum instantaneous takes exceeds 50% of MALF or the primary allocation limit included in Schedule 2A, no more water can be allocated as primary allocation. A "sinking lid"also applies to these catchments, whereby the primary allocation is reduced to match the Schedule 2A limit or 50% of MALF, by avoiding the reallocation of inefficiently used primary allocation or allocation from expired, lapsed or surrendered consents.

When there is no more primary allocation available further water can be taken as supplementary allocation. Supplementary allocation is typically taken in winter and spring when river flows are much higher. Supplementary allocation takes are subject to a higher minimum flow and therefore cease much sooner and more often than primary allocation takes.

Groundwater

The maximum allocation volume for specified aquifers is set in Schedule 4A of the Water Plan. The maximum allocation volume limits the volume of water that can be taken annually from an aquifer by consents. The maximum allocation volume is set to maintain long term groundwater levels and avoid aquifer compaction. When no volume is set in Schedule 4A, the maximum allocation volume is determined as 50% of the mean annual recharge (MAR) of the aquifer.

In addition, for some aquifers, restriction levels have been set in Schedule 4B of the Water Plan. These control the taking of groundwater during extended periods of low recharge.

2.3. Current management regime for the water resources in the Lindis

Currently, Schedule 2A does not include a primary allocation limit or minimum flow for the Lindis River. However, the catchment is considered over allocated as the sum of consented maximum instantaneous takes is estimated to be 4,141 l/s, which exceeds 50% of MALF (800 l/s).

Groundwater takes from the Lindis Alluvial Ribbon Aquifer, which is listed in Schedule 2C of the RPW, are to be considered as primary allocation from the Lindis River.

No maximum allocation volumes in Schedule 4A have been set for the Lower Tarras, Bendigo or Ardour Valley Aquifers. Therefore, the maximum allocation volume for each of these aquifers is currently determined as 50% of MAR. The current allocation from the Lower Tarras, Bendigo and Ardour Valley Aquifers is less than 50% of their MAR values.

3. Description of the Lindis catchment

3.1. Geography and hydrology

The Lindis catchment's main water body, the Lindis River, is a tributary of the Clutha River/Mata-Au (Clutha). Flows in the Lindis River are generally high during spring due to rainfall and snow-melt in the upper catchment, but are greatly reduced during summer.

The Lindis and Clutha rivers are interconnected with the groundwater resources in the Bendigo-Tarras Basin. The Clutha is the dominant recharge source in the Lower Tarras and Bendigo Aquifers. However, much of the water in the Lindis Alluvial Ribbon Aquifer is sourced from the Lindis River and groundwater takes from this aquifer and the Ardgour Valley Aquifer affect flows in this river. As the groundwater levels in the Lindis area decline over the irrigation season, the river between Ardgour Road and the Clutha confluence becomes disconnected from the underlying aquifer causing the river to lose water to the aquifer at a constant rate of 440 l/s.

The combination of low natural flows and high water take levels affects river flows in the lower catchment and causes stretches of the Lindis River to dry up during summer. Groundwater takes from the Lindis Alluvial Ribbon and Ardour Valley Aquifers can also cause stream depletion in the Lindis River downstream from the State Highway 8 (SH8) Bridge. In dry seasons the river can be dry for more than 10 km upstream from the Clutha River confluence.

Research suggests that without water taking the river would typically flow the entire way to the Clutha River.

3.2. Overview of values and uses

In the period 2009-2011, the ORC ran a series of community workshops during which the following values and uses were identified as being important to the local and wider community:

- ***availability of water for taking***

  Water takes from the Lindis River and the Bendigo-Tarras Basin serve a variety of uses, including irrigation, domestic and stock water supply, and frost fighting.

  The area of land that is being irrigated with water sourced from the Lindis was estimated to be around 2,000 ha in 2011. While flood and border dyke irrigation are still widespread, many irrigators are converting to more efficient spray irrigation.

  The total volume of primary allocation from the Lindis River is estimated to be 4,141 l/s. However, anecdotic evidence and telemetric data suggests that only 2,300 l/s is actually being taken. This amount is further reduced during dry seasons, when water demand exceeds supply. As a result, water availability is often reduced to 70 to 75%, or even less when water is taken under a deemed permit with low priority.

  The total volume of groundwater allocated from the Bendigo-Tarras Basin is currently estimated to be 13.9 Mm^3/yr.

- ***trout spawning, juvenile trout rearing and retention, habitat for native fish***

  Schedule 1A of the Water Plan lists the Lindis as a significant river for trout spawning and juvenile habitat. The middle and upper sections of the river support a small adult

brown trout fishery, despite flow levels naturally falling below those required for optimum adult trout habitat.

Schedule 1A identifies the Lindis as a river that supports a significant eel population. Isolated populations of Clutha flathead galaxiid can be found in the tributaries. These populations will not be affected by a minimum flow on the main stem of the river. Other native fish species found in the Lindis are common bully and upland bully.

- ***water-based recreation, including fishing and swimming***

  The area provides a wide variety of recreational opportunities, such as angling, eeling and swimming. The Lindis Pass is also a popular tourist route.

- ***cultural values, aesthetics, natural character and amenity***

  Many historic mining sites and heritage buildings can be found in the Lindis Valley. The valley was also part of a major inland route for Maori. Schedule 1D of the Water Plan recognises the relationship Kai Tahu have with the river, its waahi toaka values, healing and health giving powers and its role in providing cultural materials.

4. Section 32 evaluation

Section 32 of the RMA requires the consideration of alternatives and an assessment of the benefits and costs of adopting any objective, policy, rule, or method in the Water Plan. The following sections discuss the costs and benefits of the options considered and provide a detailed analysis of the preferred option.

4.1. Overview of options

The following options were considered in developing the proposed plan change:

- Option 1: Status Quo
- Option 2: Flows past SH8 bridge
- Option 3: Flow continuity to Clutha confluence

OPTION 1: STATUS QUO

Option 1 describes the current situation. It does not provide for a minimum flow and manages the surface water and groundwater resources of the Lindis catchment and Bendigo-Tarras Basin by relying on the "default" allocation limits and "default" maximum allocation volumes provided for by the Water Plan. Allocation from the Lindis River will be reduced over time as consents are renewed.

Lindis catchment	
Primary allocation	
Minimum flow at Ardgour Rd monitoring site	**Primary allocation limit (Default)**
No minimum flow	50% MALF (800 l/s) or the sum of consented maximum instantaneous takes, where it is greater

Supplementary allocation	
Minimum flow at Ardgour Rd monitoring site	**Size supplementary allocation blocks**
2,800 l/s - Determined by Policy 6.4.9 (the sum of the assessed actual take + supplementary allocation)	500 l/s - Determined by Method 15.8.1A.1

Aquifers in the Bendigo-Tarras Basin	Max. Allocation Volume
Ardgour Valley	0.1896 Mm^3/yr - Determined by Policy 6.4.10A (50% MAR)
Bendigo	29 Mm^3/yr - Determined by Policy 6.4.10A (50% MAR)
Lower Tarras	18.8 Mm^3/yr - Determined by Policy 6.4.10A (50% MAR)

OPTION 2: FLOWS PAST STATE HIGHWAY 8 BRIDGE

Option 2 protects aquatic ecosystems, natural character, cultural and recreational values at and upstream from the SH8 Bridge, and allows for fish passage over the summer months. This option allows the local community to provide for their social and economic wellbeing, but requires investment in efficient irrigation methods and water storage. Access to water for storage is enabled at moderate flows. Scope exists for economic growth in the lower Lindis and on the Clutha River terraces.

Lindis catchment	
Primary allocation (Schedule 2A)	
Minimum flow at Ardgour Rd monitoring site	**Primary allocation limit**
750 l/s (October to November) 450 l/s (December to April) 750 l/s (May) 1,600 l/s (June to September)	1,000 l/s
Supplementary allocation (Schedule 2B)	
Minimum flow at Ardgour Rd monitoring site	**Size supplementary allocation blocks**
2,200 l/s (May to November) 1,600 l/s (December to April)	500 l/s (1st supplementary allocation block)
2,700 l/s (May to November) 2,200 l/s (December to April)	500 l/s (2nd supplementary allocation block)

Aquifers in the Bendigo-Tarras Basin	Max. Allocation Volume (Schedule 4A)
Ardgour Valley	0.1896 Mm^3/yr *(identical to Option 1)*
Bendigo	29 Mm^3/yr *(identical to Option 1)*
Lower Tarras	18.8 Mm^3/yr *(identical to Option 1)*

OPTION 3: FLOW CONTINUITY TO THE CLUTHA CONLUENCE

Option 3 protects aquatic ecosystems, natural character values, cultural and recreational values over the entire river length. This option allows the local community to provide for their long term wellbeing provided significant investments are made in the use of efficient irrigation methods and water storage. In addition to this, supply of irrigation water from alternative sources (Clutha River, Bendigo-Tarras Basin) is needed to mitigate the impacts of a reduction in water availability. Access to water for storage is enabled at moderate flows. Scope exists for economic growth in the lower Lindis and on the Clutha River terraces.

Lindis catchment	
Primary allocation (Schedule 2A)	
Minimum flow at Ardgour Rd monitoring site	**Primary allocation limit**
750 l/s (October to May) 1,600 l/s (June to September)	800 l/s
Supplementary allocation (Schedule 2B)	
Minimum flow at Ardgour Rd monitoring site	**Size supplementary allocation blocks**
2,200 l/s (May to November) 1,600 l/s (December to April)	500 l/s (1st supplementary allocation block)
2,700 l/s (May to November) 2,200 l/s (December to April)	500 l/s (2nd supplementary allocation block)

Aquifers in the Bendigo-Tarras Basin	**Max. Allocation Volume (Schedule 4A)**
Ardgour Valley	0.1896 Mm^3/yr *(identical to Options 1 & 2)*
Bendigo	29 Mm^3/yr *(identical to Options 1 & 2)*
Lower Tarras	18.8 Mm^3/yr *(identical to Options 1 & 2)*

4.2. Analysis of options

4.2.1 Assessment of management options against identified values

The dewatering of the lower Lindis River through a combination of low flows and surface and groundwater taking has an adverse impact on instream values, natural character/amenity values, recreational values and cultural values. Table 1 summarises the regime outcomes of the three options described above against these values.

Table 1: Assessment of considered management options against identified values

VALUE	Option 1 Status Quo	Option 2 Flows past SH8 Bridge	Option 3 Flow continuity to Clutha confluence
Natural character **Amenity**	• Dry river bed can total up to 14 km	• Flows under SH8 Bridge at all times • Flows at Clutha confluence	• Flows at Clutha confluence at all times

VALUE	Option 1 Status Quo	Option 2 Flows past SH8 Bridge	Option 3 Flow continuity to Clutha confluence
		may cease	
Aquatic ecosystems	• Reduced habitat for aquatic species • Dry river bed prevents fish passage • Fish often stranded and die (unable to move upstream or retreat to the Clutha)	• Recruitment to upper Clutha fishery improved • Fish can retreat when the lower river dries • Fish habitat between SH8 Bridge and Ardgour Rd Bridge improved • No suitable trout habitat below SH8 Bridge	• Recruitment to upper Clutha fishery improved • Fish habitat over the entire river improved • Fish passage at all times over the entire river length
Recreation	• Loss of recreational values in Lower Lindis	• Improved recreational opportunities around and upstream of SH8 Bridge	• Improved recreational opportunities along the entire river length
Cultural	• Cultural values threatened in the Lower Lindis River	• Improvement to the cultural health of the river between the SH8 Bridge and Ardgour Rd Bridge	• River supports cultural values / practices and thriving populations of native fish
Economic	• Allows for current levels of water abstraction from the Lindis River and use of inefficient irrigation practices to continue • More groundwater allocation available from the Ardgour Valley, Lower Tarras and Bendigo Aquifers	• Initial drop in water availability requires capital investment to offset the adverse impacts of a minimum flow regime • Availability of alternative water sources allows for productivity gains • More groundwater allocation available from the Ardgour Valley, Lower Tarras and Bendigo Aquifers	• Irrigators experience significant reduction in water availability • Investment in efficient irrigation systems AND in the supply of water from alternative sources required to maintain current production levels • More groundwater allocation available from the Ardgour Valley, Lower Tarras and Bendigo Aquifers

Option 1 allows for current water abstraction and irrigation practices to continue, but has a damaging effect on the lower Lindis River's health and natural character and the diverse cultural, ecological, and recreational values that were traditionally supported by this resource.

Option 2 results in substantial improvements to the natural character, ecosystem, recreational and cultural values associated with the Lindis River at and upstream from the SH8 Bridge, while allowing water users to remain economically viable if they would choose to pursue more efficient irrigation practices.

Option 3 provides for significant improvements to the natural character, ecosystem, recreational and cultural values over the entire river length. However, in order for productive land uses to remain economically viable under Option 3 significant investments in the use of efficient irrigation systems and alternative water sources are required. This option would be the preferred option with a water supply scheme in the lower catchment, substituting water currently sourced from the Lindis with water from an alternative source.

4.2.2 Giving effect to the NPSFM and Water Plan objectives

The Objectives of the Water Plan and NPSFM underpin the need to sustainably manage the water resources in the Lindis area and promote efficient use of the area's water resources. Table 2 shows the extent to which each of the three options considered give effect to the objectives of the NPSFM and the Water Plan.

Table 2: Assessment of considered management options against NPSFM and Water Plan objectives

NPSFM and Water Plan Objectives	Option 1 Status Quo	Option 2 Flows past SH8 Bridge	Option 3 Flow continuity to Clutha confluence
Safeguarding life-supporting capacity, ecosystem processes and indigenous species (NPSFM B1, Water Plan 5.3.1 and 6.3.1)	-	+	++
Avoid / phase out over-allocation (NPSFM B2, Water Plan 5.3.1, 6.3.2A, 6.3.3)	-	+	+
Improve / maximise efficient use of water (NPSFM B3, Water Plan 6.3.2)	-	+	+
- **Does not give effect to ....** + **Gives full effect to...**			

All options effectively reduce over allocation by avoiding the reallocation of inefficiently used primary allocation or allocation from expired, lapsed or surrendered consents.

Option 1 fails to adequately protect the river's instream values, as it does not provide for a minimum flow.

Options 2 and 3 have regard to local environmental conditions, incentivise efficient resource use and are more likely to result in better long term outcomes for the diverse ecological, cultural, and recreational values associated with interconnected water resources.

4.2.3 Clarity and certainty for Plan users

Currently, the Water Plan does not explicitly state the relevant allocation limits for the Lindis River or the relevant maximum allocation volumes for the aquifers in the Bendigo-Tarras Basin. The boundaries of the Lindis Alluvial Ribbon Aquifer in the operative Water Plan Maps do not include the Lower Lindis Fan Zone, nor do the Water Plan maps show the boundaries of the Lindis catchment and the Lower Tarras, Bendigo and Ardgour Valley Aquifers.

Furthermore, using the default primary allocation limit and maximum allocation volume may fail to provide long-term certainty, because the methods for calculating MALF or MAR may be challenged or different data sets could be applied.

Options 2 and 3 provide the most clarity and certainty for plan users by stating the allocation limits and minimum flows for the Lindis River and the maximum allocation volumes for the relevant aquifers in the Bendigo-Tarras Basin and by mapping the boundaries of the various groundwater and surface water bodies in the Water Plan Maps.

4.3. Preferred Option

Option 2: Flows past State Highway 8 Bridge is recommended for the following reasons:

- Option 2 is an appropriate and effective way of better achieving the objectives of the Water Plan and those outlined in the NPSFM.
- The aim of the regime proposed under Option 2 is to protect aquatic ecosystems in the Lindis River, maintain the river's natural character at prominent and accessible viewpoints, and ensure tangible improvements to the river's cultural and recreational values, while ensuring ongoing community prosperity.
- The implementation of the proposed regime will mean that in the initial stages the local farming community will experience short term negative impacts, creating a need to change practices, infrastructure or water source.
- Improved efficiency of resource use and substitution of irrigation water traditionally supplied from the Lindis River with irrigation water from alternative sources will gradually improve supply, growth in production and subsequent increase in returns. This creates scope for positive spin-off effects for the wider regional economy.

5. Detailed analysis of the recommended option

Table 3 outlines in greater detail the expected regime outcomes of *Option 2: Flow Continuity below State Highway 8 Bridge* in light of the values and uses that were identified as being important to the local and wider community.

Table 3: Detailed assessment of expected regime outcomes for option 2

VALUE	OPTION 2: FLOW PAST SH8 BRIDGE
NATURAL CHARACTER	BENEFITS/OPPORTUNITES ➢ Guaranteed flows in the river of approximately 200 l/s under SH8 Bridge. ➢ Reduction in the length of the dry river bed from up to 14 km to less than 500 m immediately upstream from the Clutha confluence. ➢ The combination of a Schedule 2A primary allocation limit and the sinking lid (see section 2.2 of this report) results in greater flow variability and reduces the incidence and duration of low flows. COSTS/RISKS ➢ Flow continuity up to the Clutha confluence not guaranteed.

VALUE	OPTION 2: FLOW PAST SH8 BRIDGE
AQUATIC ECOSYSTEMS/ INSTREAM VALUES	BENEFITS/OPPORTUNITES ➢ The river's role in recruitment to the Upper Clutha fishery is looked after by protecting brown/ rainbow trout spawning and juvenile rearing habitat; ➢ Habitat for native and exotic fish and other aquatic ecosystems between the SH8 Bridge and Ardgour Rd Bridge improved. ➢ Provides for trout passage in the lower Lindis River. ➢ Reduces the risk of fish strandings in the lower Lindis River. Fish can retreat when the flows in the lower river reaches start to drop and the river bed starts drying. ➢ Maintains water levels in the "refuge pools" in the lower 500 m above Clutha confluence and maintains flow connection between these pools. ➢ Allows for groundwater inflows in the "refuge pools". This will assist with maintaining water levels and lowering the temperature in these pools. COSTS/RISKS ➢ Delays of trout returning to the Clutha can occur. ➢ May not provide for suitable conditions for trout below the SH8 Bridge (water temperature is likely to be too high for fish to survive during summer).
WATER QUALITY	BENEFITS/OPPORTUNITES ➢ Encourages the use of more efficient irrigation methods, which are less likely to result in irrigation run-off. ➢ Increased flow levels in the river and restored connectivity between various stretches of river are likely to have a positive impact on water quality.
RECREATION & TOURISM	BENEFITS/OPPORTUNITES ➢ Creates better opportunities for water-based recreational activities (e.g. fishing, paddling or swimming) and the further development of the Lindis as a tourist destination or stop-off point for tourists.
ECONOMIC	BENEFITS/OPPORTUNITES ➢ The proposed primary allocation limit does not impact on existing consent holders. The Water Plan policies allow for consideration of historic water use and/or the extent of the area that has been irrigated under the existing consent during consent renewal processes. ➢ The proposed primary allocation limit is considered sufficient to irrigate the area that is currently being irrigated with water from the Lindis River (2,000 ha) at nearly 100% surety of supply during an "average year", provided all irrigation water is applied at an efficient rate (0.5 l/s/ha). ➢ The sinking lid policy results in a gradual increase in the level of surety of supply for existing primary allocation consent holders. ➢ Access to water for storage enabled at moderate flows. ➢ Provides for further water to be allocated from alternative sources

VALUE	OPTION 2: FLOW PAST SH8 BRIDGE
	including the Bendigo Aquifer (1,280 l/s - allowing for the irrigation of a further 2,500 ha), the Clutha River, the Lower Tarras Aquifer and Ardgour Valley Aquifer ➢ Increased reliability of supply through the use of alternative sources and water storage provides scope for productivity gains and increased farm output ➢ Off- and on-farm capital investments in water storage/supply infrastructure increase capital value of the land ➢ Availability of water from the Clutha and Bendigo-Tarras Basin allows for expansion of irrigated land, contributing to growth of the regional GDP ➢ Likely spin-off effects include job creation in primary sector and investment in ancillary industries. COSTS/RISKS ➢ No scope for the granting of new resource consents for primary allocation from the Lindis River and the Lindis Alluvial Ribbon Aquifer. ➢ Initial drop of approximately 20% in the reliability of supply of run-of the river water. ➢ Capital investment costs to offset the risks or impacts of a minimum flow regime (e.g. provision of water storage, infrastructure to supply water from alternative sources, shift to more efficient irrigation practices).
CULTURAL	BENEFITS/OPPORTUNITES ➢ Likely improvement to the cultural health, Mauri (life force) and Mahika Kai values (e.g. eel/tuna) associated with the Lindis River, particularly in the stretch of river situated between the SH8 Bridge and Ardgour Road Bridge. COSTS/RISKS ➢ Inability to guarantee flow continuity up to the Clutha confluence at all times may fail to provide for specific cultural values (e.g. fish movement, re-establishment and abundance of Mahika Kai species throughout the entire catchment, linkage between upper Lindis and the Clutha).

6. Transition times and implementation of the Lindis minimum flow

Following the formal plan change processes, when Proposed Plan Change 5A becomes operative, the maximum allocation volumes and allocation limits determined through this plan change will come into effect. However, under Policy 6.4.5 of the Water Plan, the minimum flow will not apply until after a collective review of consents in the Lindis catchment is undertaken. This will occur before 2021 if there is agreement by the holders of deemed permits to adhere to minimum flows, or on the expiry of the deemed permits on 2 October 2021.

Policy 6.4.5 effectively allows for a transition period, enabling local consent holders and other stakeholders to investigate the feasibility of measures that mitigate the effect of a minimum flow on water availability or could result in even greater benefits for the ecosystem, recreational or cultural values supported by the Lindis River. These may include:

- The formation of a catchment-wide water management group
- The use of more efficient irrigation practices
- The supply of irrigation water from alternative sources, either through privately owned or community based irrigation schemes

7. **Consultation** *(to be updated after the consultation period)*

A water management regime that is developed in consultation with the local community is more likely to be accepted by water users. Consequently, in developing Proposed Plan Change 5A, ORC has undertaken rigorous consultation with affected consent holders and landowners, statutory bodies and agencies and the wider community.

Between February 2009 and March 2011 ORC hosted three community workshops to discuss the policy framework for managing surface water and groundwater in Otago, shared scientific information about the Lindis River and the aquifers in the Bendigo-Tarras Basin and listened to people's views on what they consider to be important values and uses supported by the area's water resources. A fourth public workshop was held in November 2011 to discuss possible regime options for the integrated management of the connected surface and groundwater resources in the Lindis.

Following this fourth workshop, the consultation process was put on hold pending the decision around the construction of the Tarras water supply scheme that would supply water for irrigation sourced from the Clutha to an area that was traditionally irrigated with water from the Lindis River.

As the Tarras water supply proposal has not proceeded ORC organised a fifth community workshop in April 2014. During this fifth workshop, attended by about 50 people, ORC staff presented a recommended option for managing the Lindis River and the aquifers in the Bendigo-Tarras Basin.

ORC has also undertaken a consultation process with tangata whenua around the management of these water resources. As part of this process, ORC staff and Iwi representatives undertook a joint site visit to the Lindis in December 2013 to further their understanding about the management issues surrounding the Lindis River and identify the cultural values associated with this resource.

8. Conclusion

The purpose of the RMA is to promote the sustainable management of natural and physical resources. It is considered that Proposed Plan Change 5A (Lindis: Ingrated Water Management) enables the ORC to better manage the water resources of the Lindis catchment and the Bendigo-Tarras Basin, now and for the future.

This report identifies that the preferred option is to undertake *Option 2: Flow Continuity Below State Highway 8 Bridge.* Overall, the community as a whole should be able to, given time, transition successfully into this new regime while maintaining their wellbeing, and protecting the values that are important to them.

This option meets the requirements of Section 32 of the Resource Management Act 1991, being an efficient means to achieve the improved, more focused management of takes in this particular catchment area with the greatest benefit and least cost, and insignificant risk.

9. Reference material

- **ORC Reports to committee or Council:**
  2005/455 – Managing Minimum Flows.

  2010/1776 – Bendigo-Tarras Allocation Study

  2014/764 – Consultation Draft Proposed Plan Change 5A (Lindis: Integrated Water Management)

  2002/577 – Priority Rivers for Minimum Flow Investigations.

- **ORC Technical Report:**
  "Management Flow for Aquatic Ecosystems in the Lindis River" ORC, July 2008

  "Bendigo and Tarras Allocation Study" ORC, December 2010

- **Other Material:**

  "Regional Plan Water for Otago" ORC, 2004

  "Lindis Catchment and Bendigo Tarras Basin Information Sheet" ORC, April 2012

  "Lindis Minimum Flow Workshop #4 Presentation" ORC, 2011 (Available online www.orc.govt.nz)

  "Lindis Minimum Flow Workshop #5 Presentation" ORC, 2011 (Available online www.orc.govt.nz)

  "National Policy Statement on Freshwater Management" Ministry for the Environment, 2011

  "Resource Management Act" Ministry for the Environment, 1991