

**CHRISTCHURCH WEST MELTON WATER MANAGEMENT ZONE COMMITTEE
27 SEPTEMBER 2012**

**A meeting of the Christchurch West Melton Water Management Zone Committee was held in
Fendalton Service Centre Boardroom on Thursday 27 September 2012 at 6.09pm**

PRESENT: Ian Fox, Community Representative (Chairperson)
Councillor Sally Buck, Christchurch City Council
Deidre Francis, Community Representative (Deputy Chairperson)
Jon Harding, Community Representative
Councillor Debra Hasson, Selwyn District Council
Yvette Couch-Lewis, Rāpaki Rūnanga
Hugh Thorpe, Community Representative
Robert Wynn-Williams, Community Representative
Commissioner Rex Williams, Environment Canterbury

APOLOGIES: An apology for absence was received and accepted from Arapata Reuben.

1. CONFIRMATION OF MINUTES

It was **decided** that the minutes of 23 August 2012 be approved as a true and accurate record of the meeting.

2. DEPUTATIONS BY APPOINTMENT

Nil.

3. IDENTIFICATION OF URGENT ITEMS

Nil.

4. IDENTIFICATION OF ANY GENERAL PUBLIC CONTRIBUTIONS

Nil.

5. REGIONAL COMMITTEE UPDATE

The Committee received an update from Jon Harding on items of relevance to the zone arising from the latest meeting of the Regional Committee of the Canterbury Water Management Strategy.

Key issues raised included:

- In December, the Regional Committee will be discussing regionally significant features relevant to the Christchurch West Melton Zone.
- Ecosystem health and biodiversity and about how this can be implemented further as a regional area of work.

6. "YOUTH HUI" FEEDBACK ON THE WORKING DRAFT ZONE IMPLEMENTATION PROGRAMME

The Committee received feedback on the working draft Zone Implementation Programme (ZIP) from participants on a "Youth Hui", who raised the following key points for the Committees consideration for inclusion in the ZIP:

- management of water to be done in an integrated way recognising the importance of integration of people and the environment

25. 10 .2012

27 SEPTEMBER 2012

6 Cont'd

- the use of water in a more efficient way
- protecting the quality of water
- improve understanding of water management through education
- better protection of native fish, while still providing opportunities for fishing for salmon and trout.

The Committee asked the representatives for ideas on how the Committee could maximise the potential for comments from young people on the draft ZIP when it is published for consultations. It was suggested that the draft ZIP be sent to student associations, school leaders and environment/sustainability interest groups within schools and universities.

The Committee thanked the representatives for their contributions and comments on the draft ZIP (attached). It was agreed that the Committee receive the early feedback from the Youth Hui as part of the ongoing development of the draft ZIP.

7. GROUND WATER QUALITY

The Committee received a presentation from Carl Hanson, Team Leader, Groundwater Quality (Environment Canterbury) on groundwater quality (refer **attached**).

8. DRAFT ZONE IMPLEMENTATION PROGRAMME FOR CONSIDERATION

The Committee received an updated working draft (attached) of the Zone Implementation Programme for the Committees consideration. It was noted that this was a working draft that would require further work prior to the Committees endorsement for the draft ZIP to be published for consultation.

9. WORK PROGRAMME TO ZONE IMPLEMENTATION PROGRAMME (ZIP)

The Committee received an updated work programme (refer **attached**) and discussed the proposed timetable.

The Committee agreed to cancel its scheduled public meeting on 28 November 2012, to allow for a five week consultation period following the proposed publication of the Draft ZIP at the Committees public meeting on 25 October 2012.

The Committee were updated on a meeting of a working party set up to consider the Waimakariri River as a whole, with representatives from the three neighbouring Zone Committees.

The meeting concluded at 9.22pm

CONFIRMED THIS 25TH DAY OF OCTOBER 2012

**IAN FOX
CHAIRPERSON**

24 September 2012

Ian Fox, Chair of Christchurch West Melton Zone Committee

Care of:

Environment Canterbury
58 Kilmore Stret
PO Box 345
Christchurch 8013

Dear Ian

“Youth Hui feedback on the working draft Zone Implementation Programme (ZIP)”

We believe that it is important for younger people to have a say on how water will be managed to provide for *our* future. Our shared position is that the water management approach in the zone needs to balance the inter-related needs of people and a healthy environment.

On 24/25 August, nine people aged between 14 and 24 attended a two-day hui facilitated by Environment Canterbury to consider the management of water in the Christchurch West Melton Zone of the Canterbury Water Management Strategy. We (the participants) undertook a full-day field trip to visit significant sites for water management in the zone before discussing and agreeing our shared values and outcomes. We also reviewed the working draft ZIP to identify whether our values and outcomes are reflected in the document and to suggest ideas for further development of the ZIP.

Our shared values and outcomes (in bold) and comments on the working draft ZIP are as follows:

- **“We manage water in an integrated way that recognises the inter-connected consequences of our decisions on the inter-relationships between people and the environment”**

In general, we feel that this value/outcome is covered in the “key principles” of the working draft ZIP, but we think that the final ZIP will need to identify more specific actions to make this happen and implement the CWMS. For example:

- Kaitiakitanga (guardianship) should be consider in all decision making
- Management of riparian zones provides habitats for plants and animals, vegetation helps to minimise the impact of people on the water (e.g. pollution runoff), but also provides opportunities for people to enjoy the waterways
- The work of local community groups contributes to an overall plan of work for a catchment

- **“We use water more efficiently”**

In general, we feel that this value/outcome is covered for domestic users of water but that more consideration of industrial users is needed. We believe that domestic users of water should be encouraged to use less water and that one tool the Zone Committee could consider and investigate further would be charging people who use more than their “fair share” of water, in combination with rewarding people who use smaller amounts of water. In addition, we think that more practical examples of using water more efficiently should be included, for example:

- Use of rainwater harvesting systems
- Installation of grey-water recycling systems
- Use of more efficient irrigation systems for farming
- Encourage community gardens

- **“The quality of our water is protected so that it is safe for people to drink and it supports healthy ecosystems”**

We think that this value/outcome is included in the working draft ZIP and agree with protection of groundwater quality and the better management of storm water and waste water to protect surface water quality. We believe it is important to consider levels of specific pollutants (e.g. nitrates, phosphorus, heavy metals) in the way that manage water quality. In addition, we suggest that the draft ZIP could also consider the clean-up of areas that have been contaminated by historical industrial activities.

- **“People have a better understanding about water management and take more action themselves to reduce their impact”**

We feel that the ZIP needs to have a stronger focus on helping people to understand water management challenges in the zone i.e. where water comes from, where it goes to, what you can do to help. For example:

- Free community courses where people can find out what they can do to use water more sustainably
 - Local communities are involved in the design of riparian zones in their areas
 - Education activities involve all schools in the zone (not just Enviro-schools)
 - ‘Did you know panels?’ are installed at the springheads of rivers and other locations along the catchment to the sea
 - Information panels are installed at pumping stations to explain how we reticulate water and where it comes from
- **“Better protection and management of native fish populations and their habitats (whilst also providing opportunities for fishing salmon and trout)”**

We believe that it is important to protect native biodiversity. We think that native fish need to be given more specific consideration in the draft ZIP, but that this should not exclude opportunities for people to enjoy fishing for salmon and trout. For example:

- Ensuring there are areas for native fish that are free of salmon and trout
- Managing fishing in some areas to protect overall populations - could the Avon be a reserve for whitebait/inanga?
- Including a clear definition of what is a “pest species”

We also believe that whilst there is limited farming within in the zone, helping urban communities to understand the value and benefits of well managed farming practices is important in shifting the focus of urban people on to what they can do to help improve urban waterways. We think that education and awareness raising on this topic is important to the implementation of the ZIP in the zone.

We would like to thank you for the opportunity to offer feedback on the working draft ZIP and to share our thoughts and priorities for water management in the zone. We hope that you will use our comments to inform the development of the ZIP in a way that balances the needs of people and a healthy environment, as we believe it is important that younger people have a say in the management of water.

Yours sincerely

Signed on behalf of the participants by:

Bridget White
Erin Strampel
Louise Murphy
James Adams
Jess Chalmers
Raquelle de Vine
Tom Swan

Groundwater Quality

Christchurch-West Melton Zone

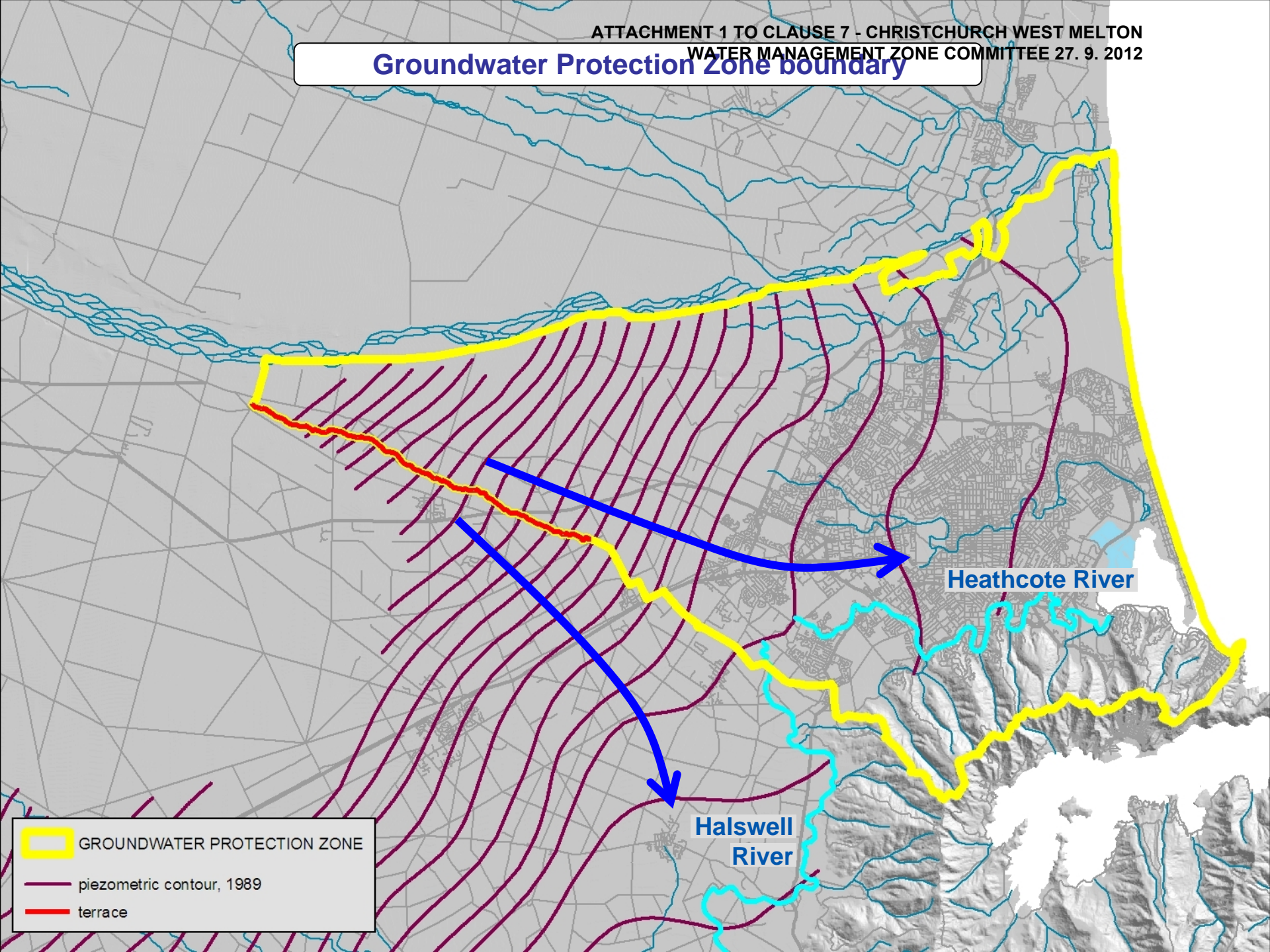
27 September 2012




Carl Hanson
Team Leader, Groundwater Quality
Environment Canterbury

Questions

- Groundwater Protection zone
 - boundaries
- Nitrate
 - comparison to drinking-water standards
- Other contaminants
 - bacteria, hydrocarbons, metals

Groundwater Protection Zone boundary

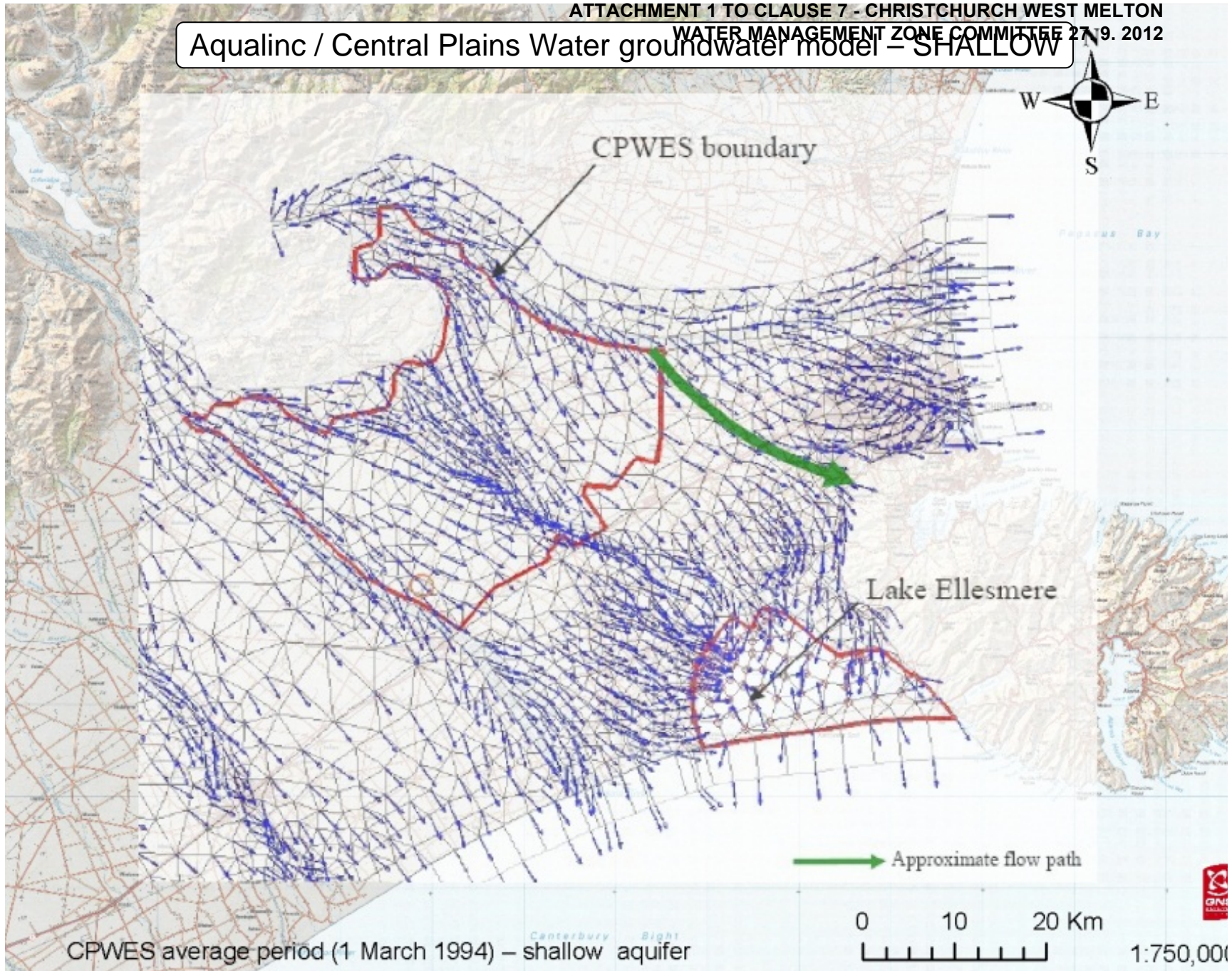


-  GROUNDWATER PROTECTION ZONE
-  piezometric contour, 1989
-  terrace

Heathcote River

Halswell River

Aqualinc / Central Plains Water groundwater model – SHALLOW



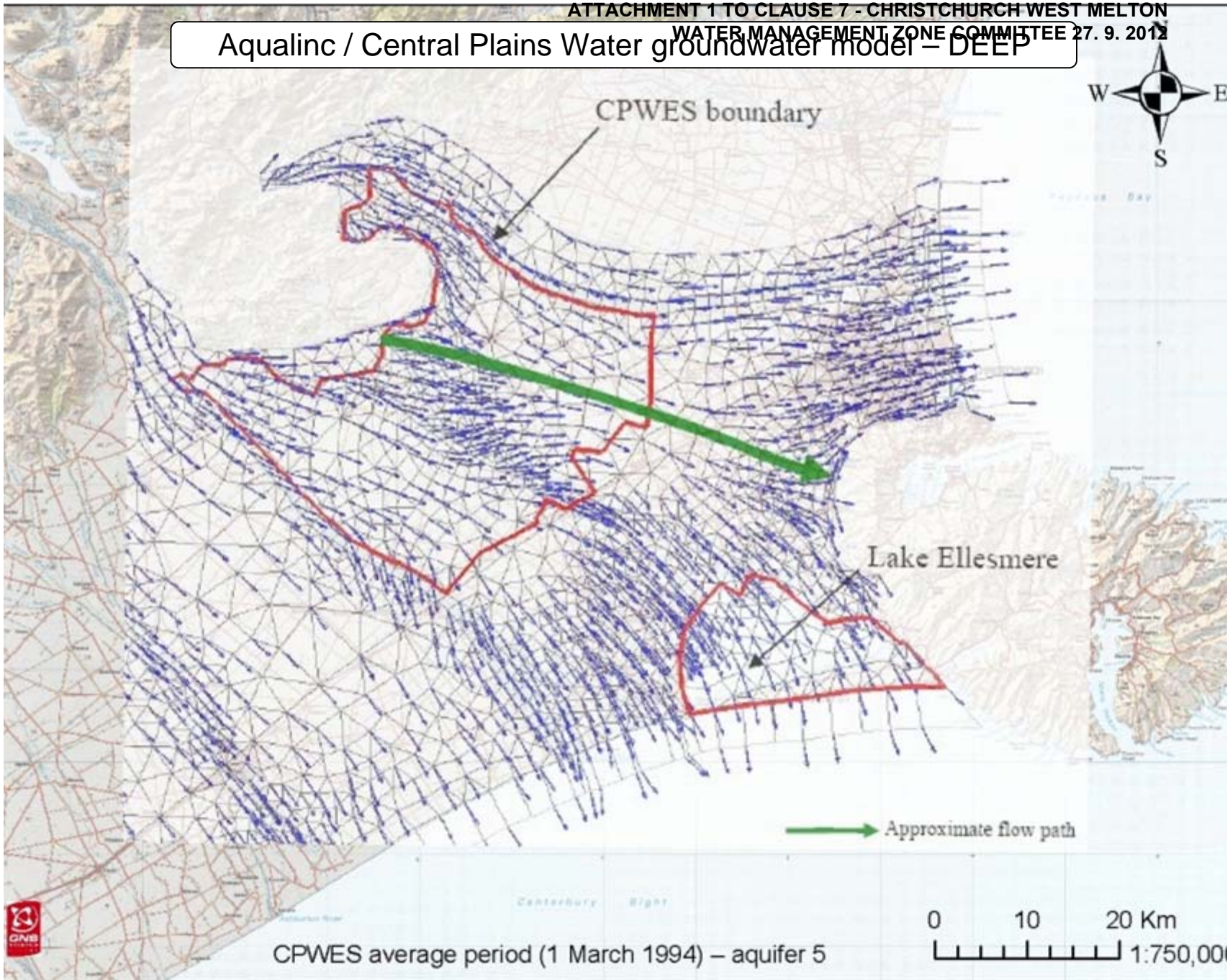
CPWES average period (1 March 1994) – shallow aquifer

→ Approximate flow path

0 10 20 Km
1:750,000



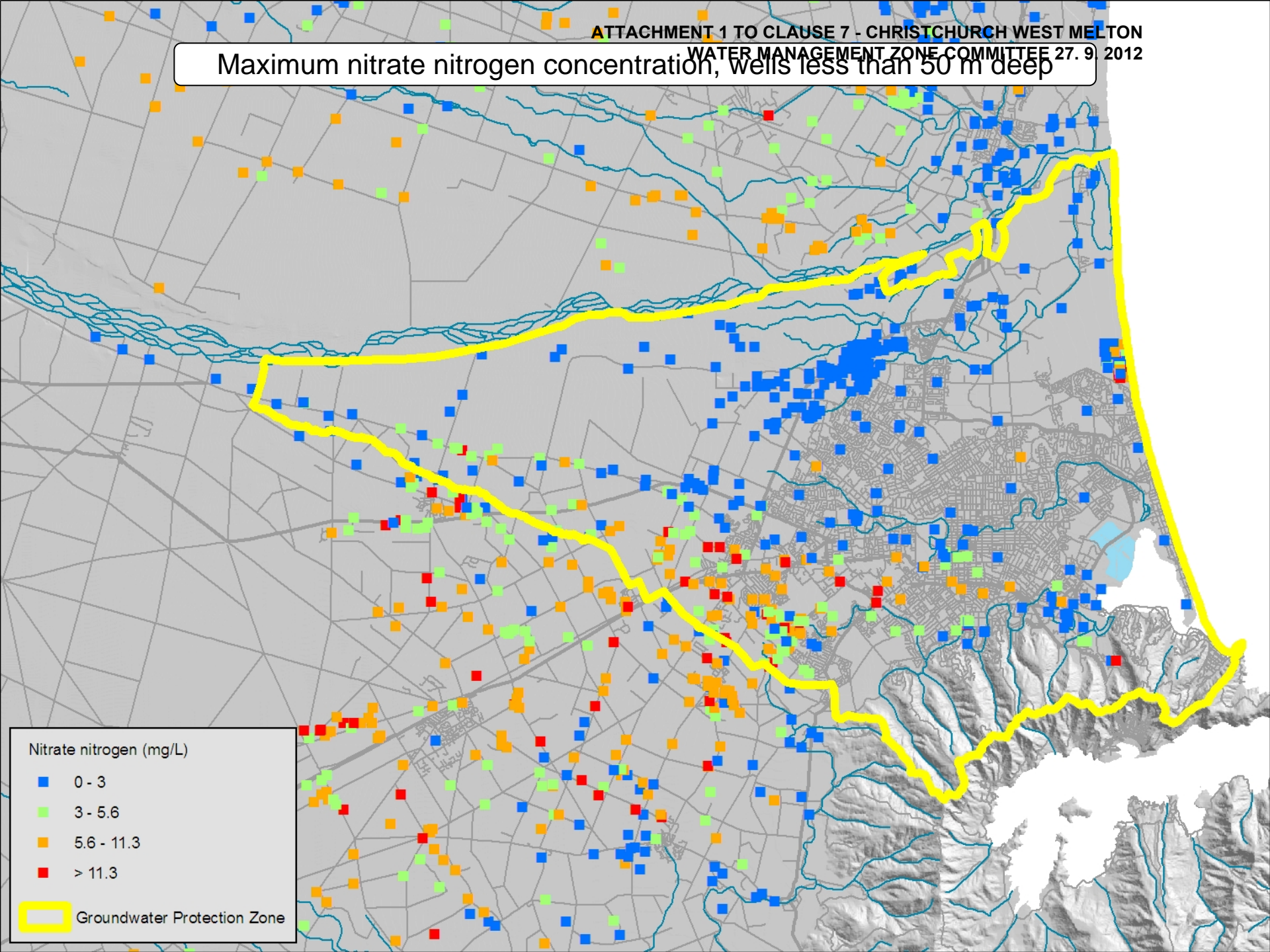
Aqualinc / Central Plains Water groundwater model – DEEP



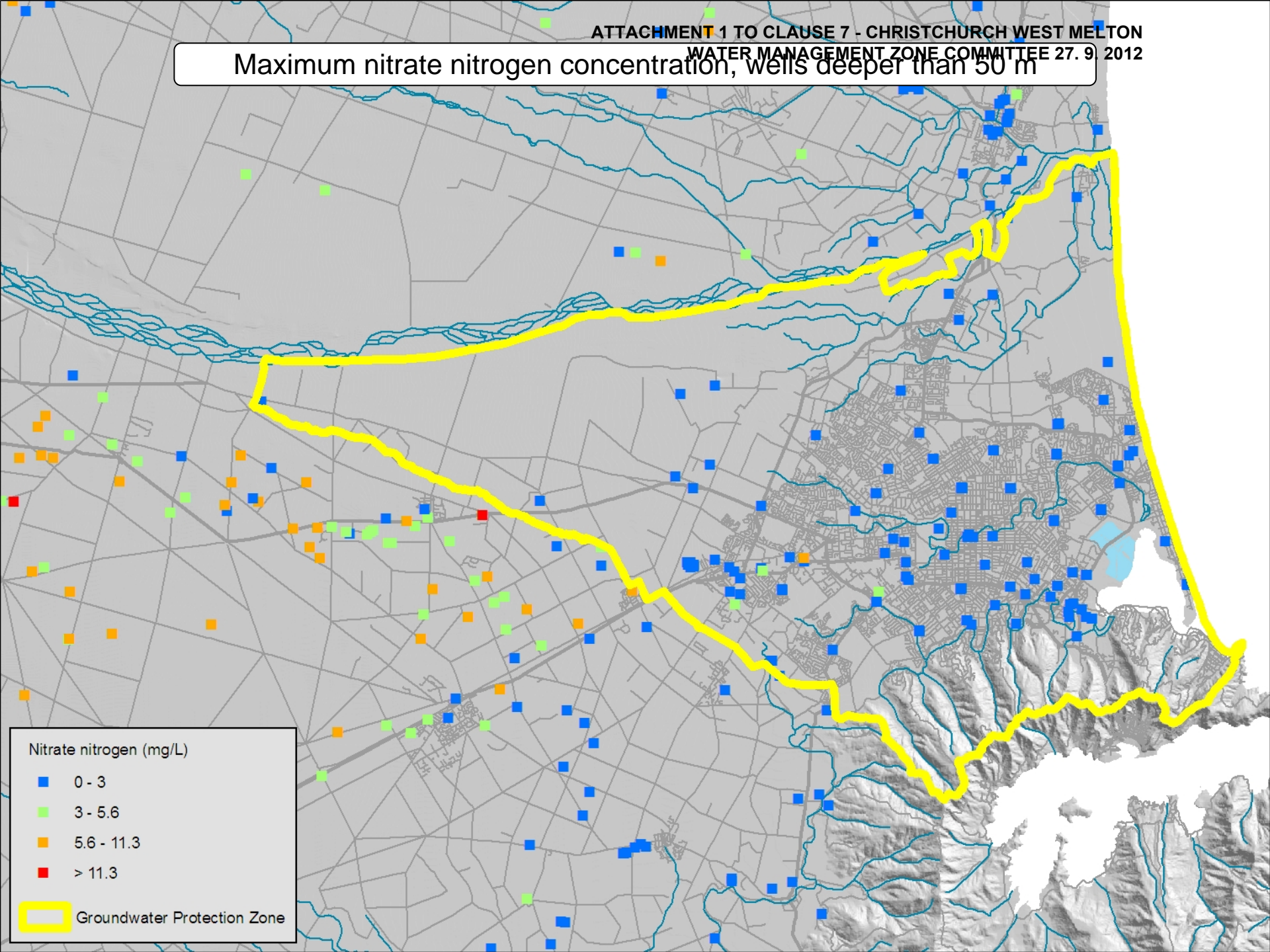
CPWES average period (1 March 1994) – aquifer 5

0 10 20 Km
1:750,000

Maximum nitrate nitrogen concentration, wells less than 50 m deep



Maximum nitrate nitrogen concentration, wells deeper than 50 m

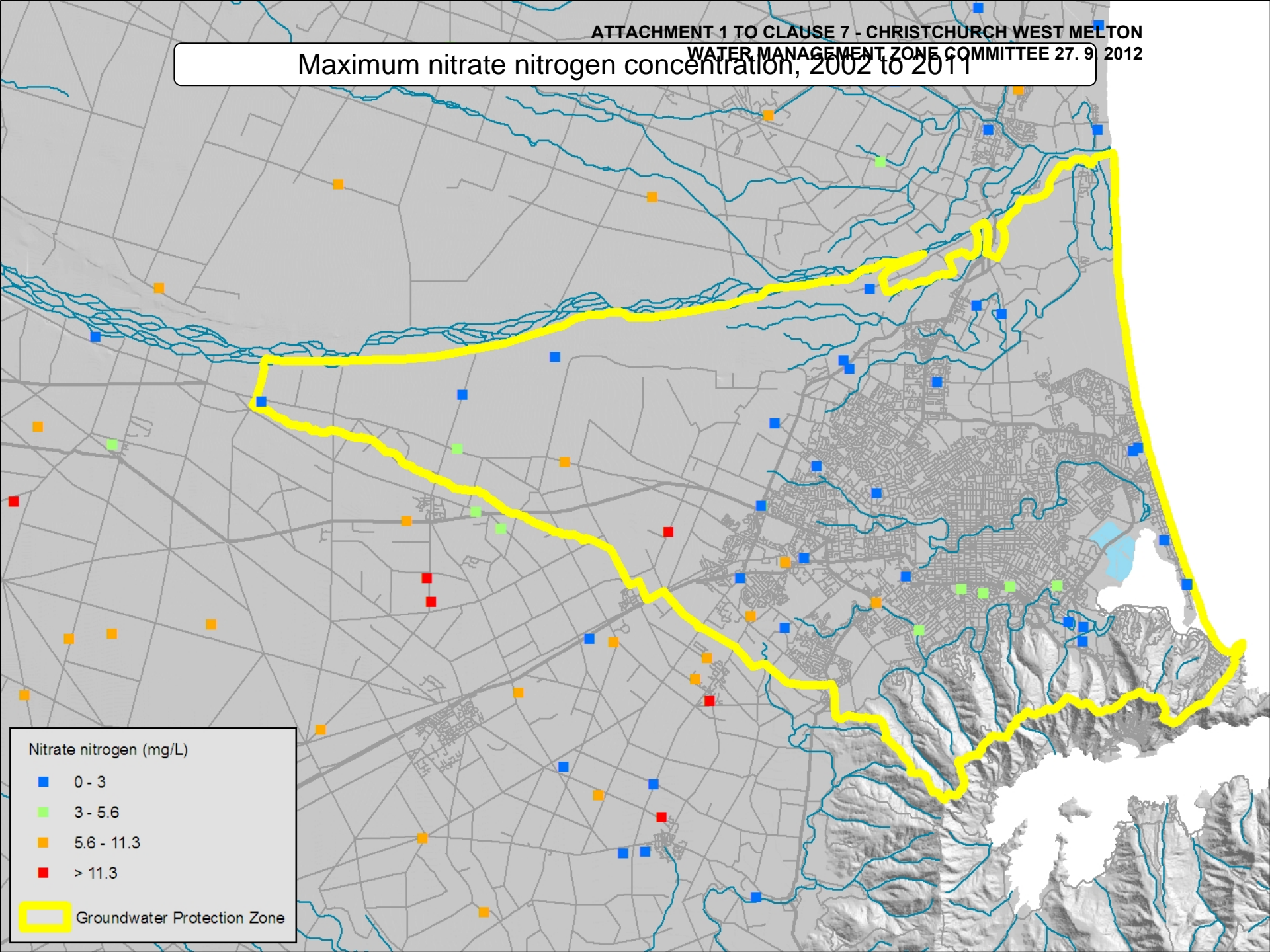


Nitrate nitrogen (mg/L)

- 0 - 3
- 3 - 5.6
- 5.6 - 11.3
- > 11.3

■ Groundwater Protection Zone

Maximum nitrate nitrogen concentration, 2002 to 2011

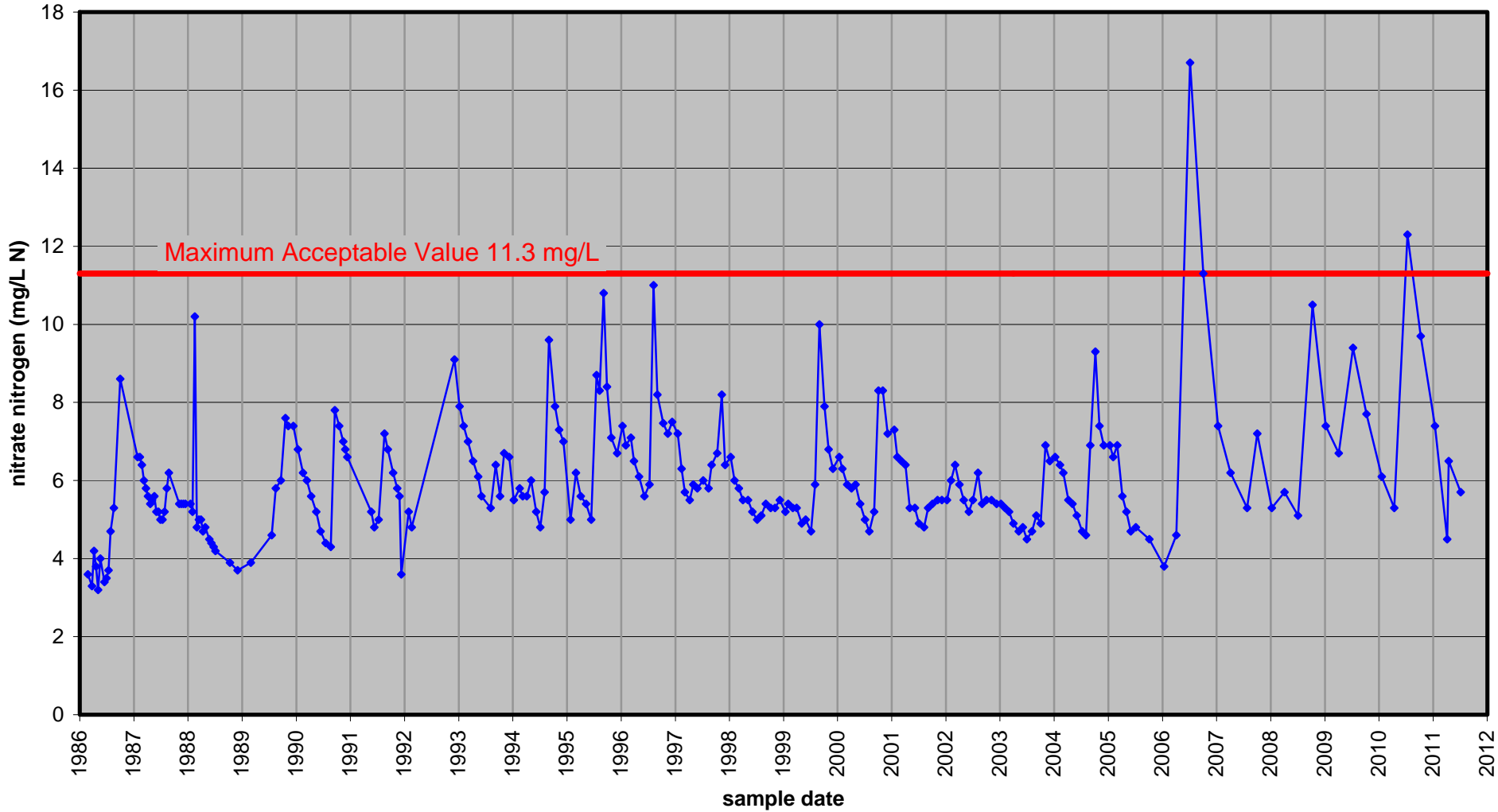


Nitrate nitrogen (mg/L)

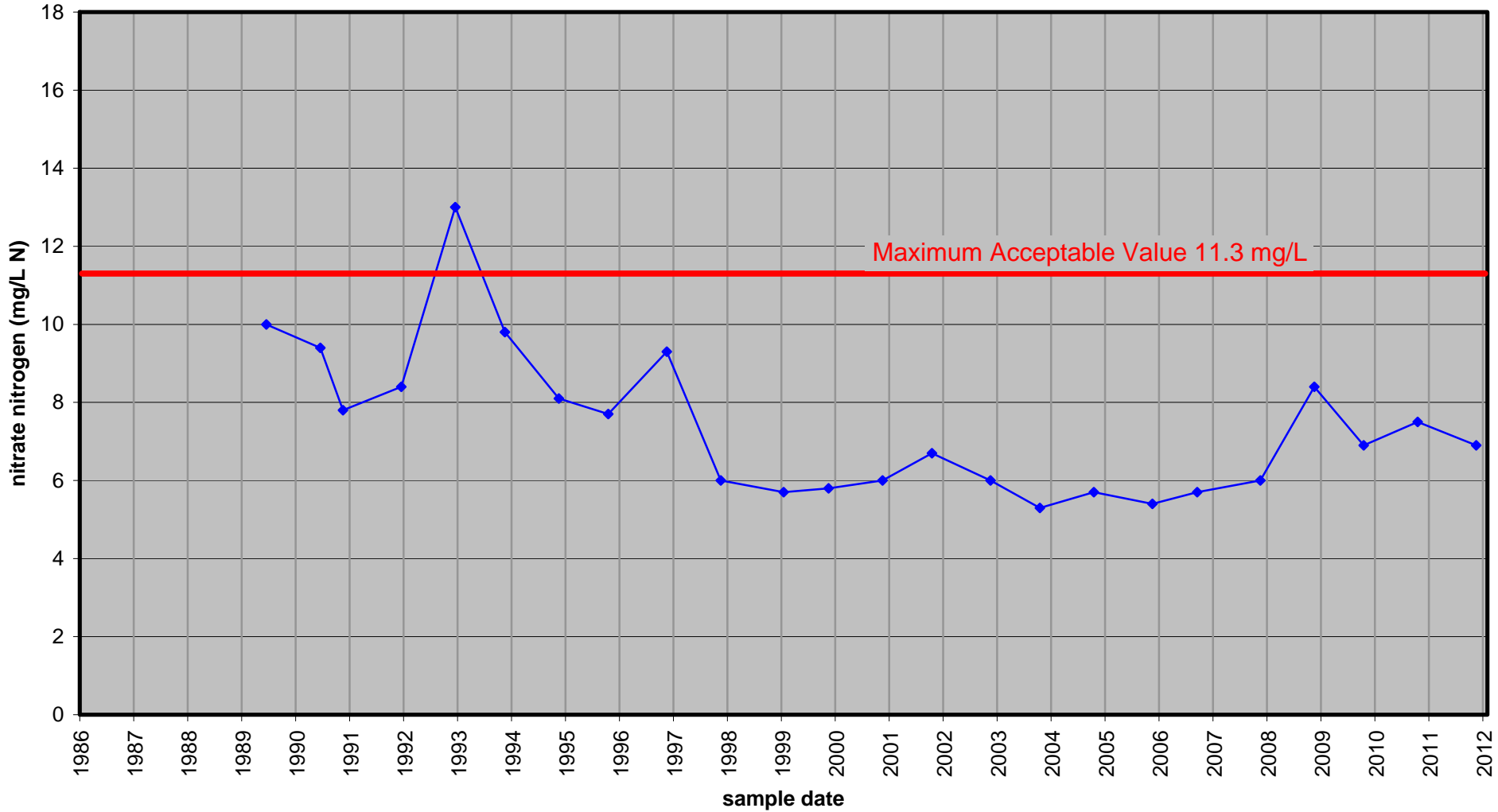
- 0 - 3
- 3 - 5.6
- 5.6 - 11.3
- > 11.3

■ Groundwater Protection Zone

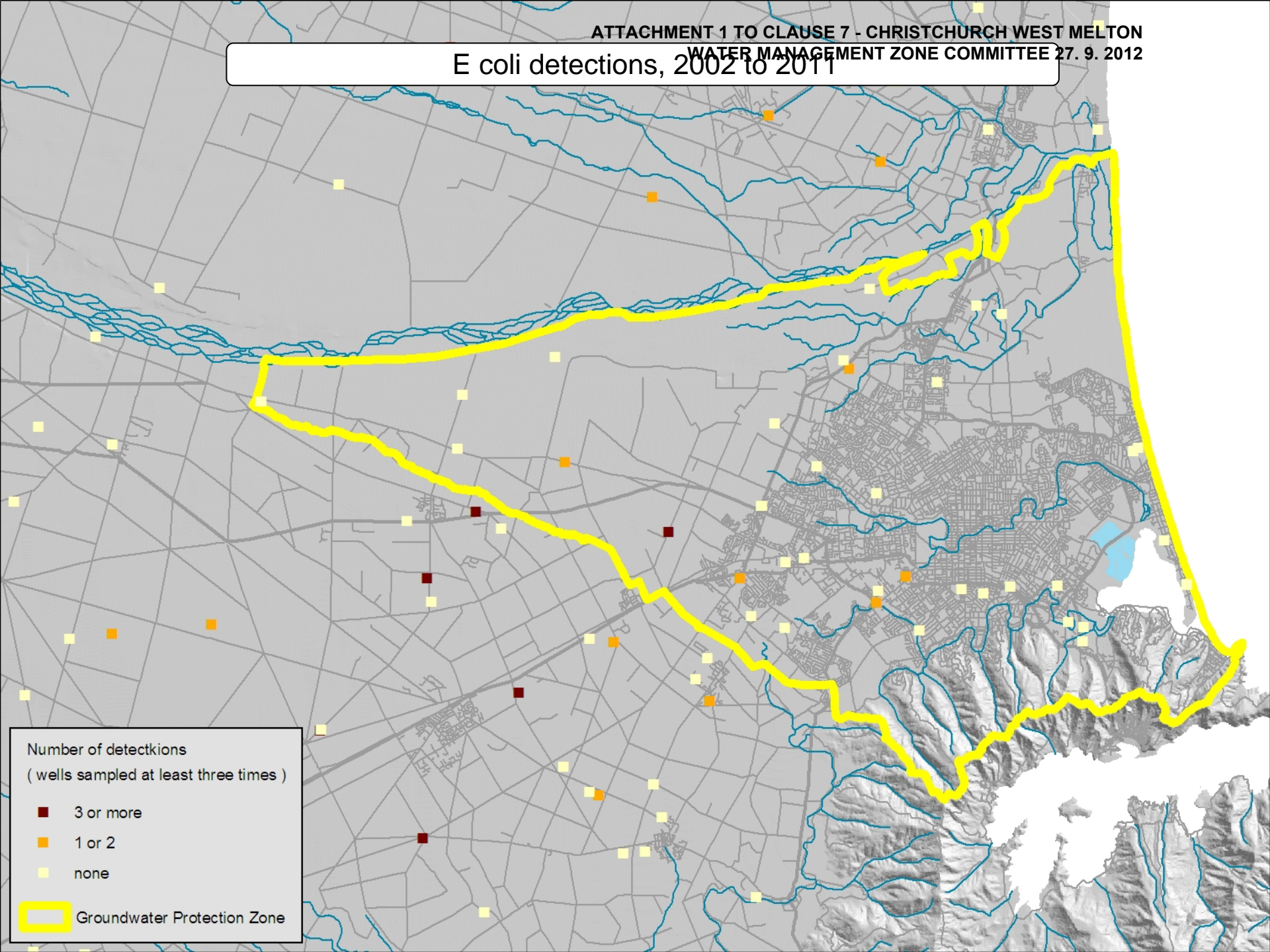
M35/1051, Yaldhurst, 32.6 m deep



M35/1883, Sockburn, 28.9 m deep



E coli detections, 2002 to 2011

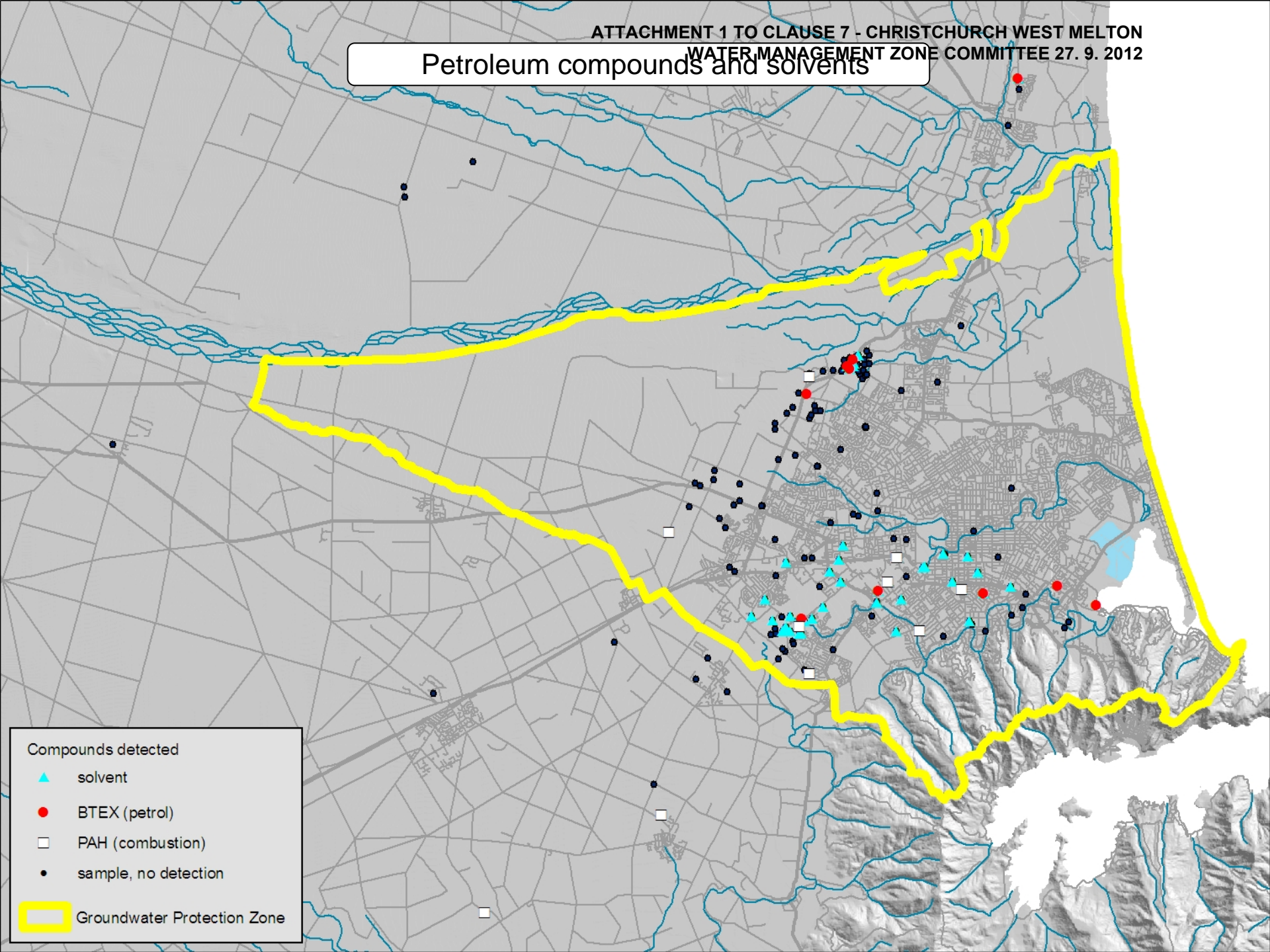


Number of detections
(wells sampled at least three times)

- 3 or more
- 1 or 2
- none

□ Groundwater Protection Zone

Petroleum compounds and solvents



Compounds detected

- ▲ solvent
- BTEX (petrol)
- PAH (combustion)
- sample, no detection

Groundwater Protection Zone

CHRISTCHURCH WEST MELTON

Draft Zone Implementation Programme (ZIP)?

This is a working draft ZIP for the zone committee to consider for further development and refinement. All content is currently subject to ongoing discussion by the committee and does not represent the agreed position of the committee until confirmed as the draft ZIP for consultation and engagement. The zone committee cannot commit any party named within the ZIP to any course of expenditure or policy. Named organisations and implementation timeframes are included for discussion purposes only.

September 2012

[Insert picture strip]

[Insert logos]

ZONE COMMITTEE MEMBERSHIP

Christchurch West Melton Zone Committee is a joint committee of Christchurch City Council, Selwyn District Council and Environment Canterbury Regional Council.

The members of the Zone Committee as of XXX public meeting are:

[Insert names]

Past members of the Zone Committee are:

[Insert names]

With support from:

[Insert names]

WHAKATAUKĪ

[Insert text]

[Insert translation]

WORKING DRAFT FOR COMMITTEE

CHAIRMAN'S COMMENT

[Insert text]

EXECUTIVE SUMMARY

[Insert text]

WORKING DRAFT FOR COMMITTEE

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WORKING DRAFT FOR COMMITTEE

1. INTRODUCTION

1.1 SCOPE OF THE ZONE IMPLEMENTATION PROGRAMME

[Insert text]

1.2 GEOGRAPHICAL SCOPE

[Insert overview]

[Insert maps]

1.3 BOUNDARIES WITH OTHER WATER MANAGEMENT ZONES

[Insert text]

1.4 ZONE COMMITTEE PROCESS

[Insert text]

1.5 DEVELOPING THE ZONE IMPLEMENTATION PROGRAMME

[Insert text]

WORKING DRAFT FOR COMMITTEE

2. CHRISTCHURCH WEST MELTON ZONE OVERVIEW

2.1 STATE OF WATER RESOURCES

2.1.1 WAIMAKARIRI RIVER CATCHMENT

2.1.2 GROUNDWATER CATCHMENT

2.1.3 ŌTUKAIKINO RIVER CATCHMENT

2.1.4 STYX RIVER CATCHMENT

2.1.5 AVON / ŌTĀKARO RIVER CATCHMENT

2.1.6 HEATHCOTE / ŌPAWAHO RIVER CATCHMENT

2.1.7 AVON-HEATHCOTE ESTUARY / IHUTAI

2.1.8 HALSWELL RIVER CATCHMENT

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2.2 CONTEXT

2.2.1 MANA WHENUA

2.2.2 NATIONAL POLICY STATEMENT ON FRESHWATER

2.2.3 EARTHQUAKE RECOVERY STRATEGY

2.2.4 REGIONAL AND DISTRICT PLANNING

2.2.5 NON-STATUTORY PLANS AND STRATEGIES

WORKING DRAFT FOR COMMITTEE

3. KEY PRINCIPLES?

3.1 OVERVIEW

[Insert text]

Links to CWMS Targets

Priority outcomes related to the Key Principles will contribute to the achievement of the following CWMS Targets areas:

- Ecosystem Health and Biodiversity
- Natural Character of Braided Rivers
- Kaitiakitanga
- Drinking water standards
- Recreation and amenity
- Water use efficiency
- Irrigated land area
- Indicators of regional and national economies
- Environmental limits

3.2 BETTER INTEGRATION AND COLLABORATION

Ref.#	Key principles?
BIC1	Kaitiakitanga infuses all water management decisions in the zone
BIC2	The way we manage and use water enhances cultural, social, economic, and environmental well-being in the zone
BIC3	We have a joined up and collaborative approach to managing water issues in the zone: <ul style="list-style-type: none"> • From mountains (source) to the sea / “Ki uta ki tai” • Across and between rural and urban areas • Across and between Central Government, Regional Council, Territorial Authorities and with Mana Whenua • Where our zone receives water from, or transfers water to other zones • Involving local community groups in implementation

3.3 EARTHQUAKE RECOVERY HELPS TO IMPLEMENT THE CANTERBURY WATER MANAGEMENT STRATEGY

Ref.#	Key principles?
EQR1	“Earthquake Recovery” helps to implement the Canterbury Water Management Strategy in the zone by taking an integrated approach to water management, so that; <ul style="list-style-type: none"> • We take opportunities created by the earthquakes do things differently, and; • We target our efforts to tackle and address the water related impacts of earthquakes in implementing the CWMS.

3.4 LOCAL PEOPLE ARE INVOLVED IN IMPROVING WATER MANAGEMENT

Ref.#	Key principles?
LP1	Local people have a sense of ownership and pride in the way water is managed in the zone
LP2	Local people are well informed about the steps that they can take as individuals to help improve the way we manage water
LP3	Local community groups have opportunities to be involved in implementation of recommendations

3.5 IMPROVING THE EFFECTS OF FLOOD MANAGEMENT ON WATERWAYS

Ref.#	Key principles?
MF1	Flood management strategies, plans, and activities (including urban and rural drainage systems) are aligned with the Canterbury Water Managements Strategy where possible, without compromising the overall level of flood protection provided

WORKING DRAFT FOR COMMITTEE

4. PRIORITY ISSUE?

4.1 ENHANCING AND MANAGING WATERWAYS FOR RECREATION AND RELAXATION

[Insert text]

Links to CWMS Targets

Recommendations related to this priority issue will contribute to the achievement of the following CWMS Targets areas:

- Ecosystem Health and Biodiversity
- Natural Character of Braided Rivers
- Kaitiakitanga
- Recreation and amenity
- Indicators of regional and national economies

Priority Outcomes?

Priority Outcomes?	Recommendations?	Who?	Implement within?
RR1 More people enjoy spending time in, on, or beside the waterways for active and passive, recreation and relaxation	RR1.1 Establish and facilitate a collaborative process at a catchment level to involve local community groups that provide recreation and relaxation opportunities related to waterways in identifying priorities for multiple use waterway corridors	CCC, Community groups, ECan, SDC	3 yrs
	RR1.2 Complete collaborative processes for the Waimakariri River, Brooklands Lagoon, and the Avon-Heathcote Estuary/Ihutai, as waterways with multiple uses that are sometimes in conflict (e.g. jet boating, fishing, significant native biodiversity)	CCC, Community groups, ECan, Regional Committee	1.5 yrs
	RR1.3 Investigate opportunities to increase the number of safe and inviting areas for quiet contemplation	CCC, CERA, ECan, SDC	3 yrs
	RR1.4 Investigate opportunities to establish environmental, cultural, and heritage education parks along waterways	CCC, ECan, CERA, Mana Whenua, SDC	3 yrs
	RR1.5 Investigate opportunities to move flood banks further back from waterways in the residential red zone to provide more space for relaxation and recreation activities	CERA	3 yrs
	RR1.6 Investigate opportunities to establish a large multiple-use park along the Avon/Ōtākaro River in a corridor from the central business district to the estuary	CERA	3 yrs

**ATTACHMENT 1 TO CLAUSE 8 - CHRISTCHURCH WEST MELTON
WATER MANAGEMENT ZONE COMMITTEE 27. 9. 2012**

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	RR1.7 Investigate opportunities to develop international standard flat-water and white-water courses in the residential red zone, including the potential for these facilities to benefit native ecosystems and biodiversity, storm water management, flood water management, other recreation and relaxation activities	CERA	3 yrs
RR2 Waterway corridors are designed and managed as valued open spaces across the urban and rural landscape	RR2.1 For each of the major surface water catchment in the zone, develop and progress a co-ordinated programme of actions that are integrated in to a catchment plan, to improve recreation and relaxation opportunities in waterway corridors	CCC, CERA, ECan, SDC	3 yrs
	RR2.2 Develop and progress at a zone level, a co-ordinated programme of actions to link and integrate recreation and relaxation opportunities in different catchments, to form a planned network of inter-connected and accessible waterway corridors	CCC, CERA, ECan, SDC	5 yrs
	RR2.3 Review and strengthen set-back provisions in statutory planning frameworks and enforcement activities, to ensure that opportunities to reinstate or expand riparian strips to rehabilitate or reinstate waterway corridors are taken as part of earthquake recovery	CCC, CERA, ECan, SDC	6 months
	RR2.4 Where land is redeveloped or sub-divided, work with developers and landowners to further enhance and/or expand riparian strips to rehabilitate or reinstatement waterway corridors	CCC, CERA, ECan, SDC	Ongoing
RR3 Wāhi Taonga and Wāhi Tapu in the zone are recognised and valued	RR3.1 Work with Mana Whenua to develop and progress a co-ordinated programme of actions to raise awareness and understanding of, and engender a sense of shared pride for, Wāhi Taonga and Wāhi Tapu in the zone	CCC, CERA, ECan, Mana Whenua SDC	3 yrs
RR4 Earthquake Recovery helps to enhance and manage waterways for recreation and relaxation	RR4.1 Earthquake Recovery Programmes give effect to the following recommendations: RR1.3,1.4,1.5,1.6,1.7,2.1,2.2,2.3,2.4,3.1	CERA	1 yr
	RR4.2 Work with the Zone Committee to develop implementation plans and actions that give effect to ZIP outcomes and recommendations in Earthquake Recovery Programmes	CERA	1 yr

4.2 IMPROVING SURFACE WATER QUALITY AND SAFEGUARDING SURFACE WATER FLOWS

[Insert text]

Links to CWMS Targets

Recommendations related to this priority issue will contribute to the achievement of the following CWMS Targets areas:

- Ecosystem Health and Biodiversity
- Natural Character of Braided Rivers
- Kaitiakitanga
- Recreation and amenity
- Environmental limits

Priority Outcomes?

Priority Outcomes?	Recommendations?	Who?	Implement within?
SWQ1 Surface water quality and flows are improved in all waterways across the zone	SWQ1.1a Establish and facilitate a collaborative community process to inform the development of a plan for each major surface water catchment that identifies suitable water quality and flows for multiple uses	CCC, CERA, ECan, SDC	3 yrs
	SWQ1.1b Assess whether current statutory planning frameworks and enforcement activities give effect to: <ul style="list-style-type: none"> • Surface water quality and flows that are suitable for multiple uses, as identified by the collaborative community process (see SWQ1.1a) 	CCC, CERA, ECan, SDC	3-5yrs
	SWQ1.1c If required, update statutory planning frameworks and enforcement activities to implement the bullet points in SWQ1.1b	CCC, CERA, ECan, SDC	3-5yrs
	SWQ1.2 Develop and progress a co-ordinated programme of actions to improve surface water quality and flows in waterways, that are integrated in to a plan for each major surface water catchment	CCC, CERA, ECan, SDC	3-5 yrs
	SWQ1.3a Assess whether the Waimakariri River Regional Plan and the Proposed Land and Water Regional Plan to: <ul style="list-style-type: none"> • Protect, and where possible enhance, current levels of water quality and environmental flows in the Waimakariri River 	ECan	1 yr
	SWQ1.3b If required, update statutory planning frameworks and enforcement activities to implement the bullet points in SWQ1.3a	CERA, ECan	1 yr

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	SWQ1.4 Review and confirm that gravel extraction from the Waimakariri River is managed to minimise negative impacts on braided river character, flows, water quality	ECan	1 yr
	SWQ1.5 Review and confirm that current statutory planning frameworks and enforcement activities require good practice land-use activities in rural areas where water quality is currently degraded	ECan	1 yr
	SWQ1.6 Continue to provide a 'Pollution Hotline' service that responds to pollution incidents	ECan	Ongoing
	SWQ1.7 Review and confirm that the current management approach for stock water races will maintain flows into naturally occurring waterways	SDC	Ongoing
	SWQ1.8a Investigate opportunities to artificially rehabilitate flows in spring-fed waterways for the benefit of ecological and cultural values, including the assessment of costs/benefits of individual projects	CCC, CERA, ECan, Mana Whenua, SDC	3 yrs
	SWQ1.8b For each viable project assessed (see SWQ1.8a), develop and progress a co-ordinated programme of actions to implement the project	CCC, CERA, ECan, Mana Whenua, SDC	3-5 yrs
	SWQ1.9a Where historical infrastructure (e.g. abandoned wells, dumps) is rediscovered during earthquake recovery/rebuild, assess the impact on surface water quality as quickly as possible	CCC, CERA, ECan, SDC	Ongoing
	SWQ1.9b Update work programmes to include the prioritised upgrade of historical infrastructure that is assessed to be having a detrimental impact on surface water quality (see SWQ1.9a)	CCC, CERA, ECan, SDC	Ongoing
SWQ2 The way we manage storm water improves surface water quality	SWQ2.1a Assess whether current statutory planning frameworks and enforcement activities require that : <ul style="list-style-type: none">• Storm water infrastructure is upgraded or retrofitted where building density is changed• All new developments and subdivisions is treated at/or near to source and not discharged directly in to waterways	CCC, CERA, ECan, SDC	6 months
	SWQ2.1b If required, update statutory planning frameworks and enforcement activities to implement the bullet points in SWQ2.1a	CCC, CERA ECan, SDC	6 months

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	<p>SWQ2.2 On an annual basis, identify and take new opportunities to speed up improvements to existing storm water infrastructure, so that the direct discharge of storm water in to waterways is minimised (and eliminated where possible) as quickly as possible</p>	CCC, CERA, ECan, SDC	Ongoing
	<p>SWQ2.3 Investigate and apply performance standards for the permeability of new and resurfaced car-parks/footpaths/drives to reduce rates of storm water run-off</p>	CCC, CERA, SDC	6 months
	<p>SWQ2.4 Investigate and apply ways to ensure that the design of new or redeveloped buildings incorporates the best practice treatment of storm water at/or near source and does not increase levels of contaminants (e.g. copper cladding) leaving the site</p>	CCC, CERA, SDC	6 months
	<p>SWQ2.5 Review and strengthen set-back provisions in statutory planning frameworks and enforcement activities, to ensure that opportunities to reinstate or expand riparian strips to provide an enhanced capacity to buffer the impact of diffuse pollution from surrounding land on waterways, are taken as part of earthquake recovery</p>	CCC, CERA, ECan, SDC	6 months
	<p>SWQ2.6 Where land is redeveloped or sub-divided, work with developers and landowners to further enhance and/or expand riparian strips to provide an enhanced capacity to buffer the impact of diffuse pollution from surrounding land on waterways</p>	CCC, CERA, ECan, SDC	Ongoing
	<p>SWQ2.7 Confirm that storm water infrastructure (new and retrofitted) in the new central city will be designed and installed to international best practice standards, with a view to Christchurch becoming an international exemplar of excellent urban storm water management</p>	CERA	6 months
	<p>SWQ2.8 Review and update road sweeping operations to help minimise the input of contaminants from roads in to waterways</p>	CCC, SDC	2 yrs
<p>SWQ3 The way we manage waste water improves surface water quality</p>	<p>SWQ3.1 Review and confirm that the design and operation of existing and new public waste water infrastructure ensures that there is no direct discharge to waterways in non-emergency situations</p>	CCC, CERA, SDC	6 months
	<p>SWQ3.2 On an annual basis, identify and take new opportunities to speed up improvements to existing public waste water infrastructure so that all practical steps to phasing out discharge to waterways are implemented as soon as possible</p>	CCC, SDC	Ongoing
	<p>SWQ3.3 Review and update public waste water infrastructure strategies, plans, and work programmes, so that the operational resilience of systems in emergency situations are improved and direct discharge to waterways is avoided</p>	CCC, CERA, SDC	3 yrs

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	SWQ3.4 Review and update the standards for private waste water treatment systems in the Groundwater Protection Zone to safeguard against contamination of groundwater resources in emergency situation	CERA, ECan	3 yrs
SWQ4 Local communities are more empowered to help improve water quality in their local waterways	SWQ4.1 Develop and progress an enhanced programme of co-ordinated initiatives to facilitate and support both new and existing community groups to make a direct contribution to improving waterways (including project funding)	CCC, Community Groups ECan, SDC	1 yr
	SWQ4.2 Develop and progress an enhanced programme of co-ordinated initiatives to increase the involvement of students at local schools and education institutions in improving waterways	CCC, ECan, <i>Education providers</i> SDC	1 yr
	SWQ4.3 Develop and progress an enhanced programme of co-ordinated initiatives to engender a greater understanding of how local communities can make a collective contribution to improving water quality by making small individual changes	CCC, ECan, SDC	1 yr
	SWQ4.4 Working with community groups that use waterways, identify and implement a co-ordinated programme of actions to make it easy for people to find out the latest information about their local waterways	CCC, CDHB, ECan, SDC	1 yr
SWQ5 Industry actively helps to improve water quality in their local waterways	SWQ5.1 Support, encourage, and facilitate the phasing out of direct industrial discharges to waterways	CCC, ECan, SDC	Ongoing
	SWQ5.2 Confirm that statutory planning frameworks and enforcement activities prohibit new industrial discharges direct to waterways	ECan	1 yr
	SWQ5.3 Develop and progress an enhanced programme of co-ordinated initiatives to encourage industry to go beyond the minimum required for compliance, prioritising areas with poor water quality	CCC, ECan, SDC	1 yr
SWQ6 Earthquake Recovery helps to improve surface water quality and safeguard surface water flows	SWQ6.1 Earthquake Recovery Programmes give effect to the following recommendations: SWQ.1a/b/c,1.2,1.3,1.8a/b,1.9a/b,2.1a/b,2.2,2.3,2.4,2.5,2.6,2.7, 3.1,3.3,3.4	CERA	1 yr
	SWQ6.2 Work with the Zone Committee to develop implementation plans and actions that give effect to ZIP outcomes and recommendations in Earthquake Recovery Programmes	CERA	1 yr

4.3 ENSURING HEALTHY ECOSYSTEMS AND BIODIVERSITY

[Insert text]

Links to CWMS Targets

Recommendations related to this priority issue will contribute to the achievement of the following CWMS Targets areas:

- Ecosystem Health and Biodiversity
- Natural Character of Braided Rivers
- Kaitiakitanga

Priority Outcomes?

Priority Outcomes?	Recommendations?	Who?	Implement within?
EB1 The ecological health of waterways is improved (including both aquatic and riparian corridor values)	EB1.1a Assess whether current statutory planning frameworks and enforcement activities require that: <ul style="list-style-type: none"> • Human activities which negatively impact on the ecological health of waterways are appropriately managed • All naturally occurring wetlands are protected • New barriers to the movement of native in-stream and stream associated fauna are avoided or mitigated • Braided river bird habitats on the Waimakariri River are safeguarded from human activities 	CCC, DoC, ECan, SDC	1 yr
	EB1.1b If required, update statutory planning frameworks and enforcement activities to implement the bullet points in EB1.1a	CCC, DoC, CERA ECan, SDC	1 yr
	EB1.2 Develop and progress a co-ordinated programme of actions to improve the ecological health of waterways, that are integrated in to a plan for each major surface water catchment	CCC, DoC, CERA ECan, Mana Whenua, SDC	3 yrs
	EB1.3 Develop and progress a co-ordinated programme to identify all naturally occurring wetlands	CCC, DoC, ECan, SDC	3yrs

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	EB1.4 Develop and implement a management plan to rehabilitate two significant wetlands by 2015	CCC, DoC, ECan, Mana Whenua, SDC, ZC	3 yrs
	EB1.5 Review and strengthen set-back provisions in statutory planning frameworks and enforcement activities, to ensure that opportunities to reinstate or expand riparian strips are taken as part of earthquake recovery	CCC, CERA, ECan, SDC	6 months
	EB1.6 Where land is redeveloped or sub-divided, work with developers and landowners to further enhance and/or expand riparian strips to benefit native biodiversity and valued introduced species	CCC, CERA, ECan, SDC	Ongoing
	EB1.7 Continue to identify and take opportunities to rehabilitate the ecological health of waterways by removing earthquake silt	CERA	Ongoing
	EB1.8 Continue to identify and take opportunities to minimise the direct impacts of flood management operations (e.g. weed clearance, dredging) on native biodiversity and valued introduced species	CCC, ECan, SDC	Ongoing
	EB1.9 Continue to identify and take opportunities to increase the diversity of in-stream habitats when river systems are modified for flood protection	CCC, SDC, ECan	Ongoing
	EB1.10 Develop and co-ordinate an enhanced programme of initiatives to engender a greater understanding of native biodiversity and valued introduced species, including set-back provisions	CCC, ECan, SDC	1 yr
EB2 A good source of mahinga kai can be readily accessed	EB2.1 Working with interested land owners, identify where good sources of mahinga kai could be readily rehabilitated and accessed	CCC, DoC, ECan, Mana Whenua, SDC	1 yr
	EB2.2 Identify and progress opportunities to facilitate the implementation of management plans to rehabilitate mahinga kai (e.g. contribute staff time/project funding)	CCC, DoC, ECan, SDC	3 yrs

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EB3 The diversity and abundance of indigenous species is increased	EB3.1 Target Immediate Steps Biodiversity Funding to increasing the diversity and abundance of native biodiversity in the following priority areas and ecosystems: <ul style="list-style-type: none"> • Springheads of spring fed waterways • Wetlands • Waimakariri River mouth • Brooklands Lagoon • Avon-Heathcote Estuary /Ihutai¹ • Other projects that score highly on cultural and ecological assessment • As a first preference, support projects that are led by or involve community groups 	ECan, ZC	3 yrs
	EB3.2a For waterways that have been heavily affected by earthquakes, identify and assess the impact of barriers that restrict the movement of native in-stream and stream associated fauna	CCC, DoC, ECan, Mana Whenua, SDC	1 yr
	EB3.2b Prioritise and progress a programme of work to remove barriers identified in EB3.2a	CCC, DoC, ECan, Mana Whenua, SDC	1 yr
	EB3.3a Identify and assess the impact of barriers that restrict the movement of native in-stream and stream associated fauna on all waterways	CCC, DoC, ECan, Mana Whenua, SDC	3-5 yrs
	EB3.3b Prioritise and progress a programme of work to remove barriers identified in EB3.3a	CCC, CERA DoC, ECan, SDC	3-5 yrs
	EB3.4 Continue to develop the draft Canterbury Regional River Gravel Management Strategy so that it provides protection for the diversity and abundance of indigenous species	ECan	Ongoing
EB4 The negative impacts of pest species ² are managed	EB4.1 Develop and progress a pest management plan for the residential red zone to safeguard ecological health of waterways	CERA	6 months

¹ This includes species that move between salt and freshwater environments and the up-stream habitat areas that are important in their lifecycle

² A pest species is defined as

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to protect native biodiversity and valued introduced species	EB4.2 Develop and implement a co-ordinated control programme that targets pest species that have a negative impact on native biodiversity and valued introduced species	CCC, DoC, ECan, Mana Whenua, SDC	3-5 yrs
EB5 The ecological health of dryland ecosystems is improved	EB5.1a Assess whether current statutory planning frameworks and enforcement activities protect remnant dryland ecosystems from changes of land use and/or new irrigation	CCC, DoC, ECan, SDC	1 yr
	EB5.1b If required, update statutory planning frameworks and enforcement activities to ensure remnant dryland ecosystems are protected from changes of land use and/or new irrigation	CCC, DoC, CERA, ECan, SDC	1 yr
	EB5.2 Develop and progress a co-ordinated programme of actions as part of an integrated management approach to: <ul style="list-style-type: none"> • Identify all remnant dryland ecosystems • Improve the ecological health of drylands and; • Increase the total area of dryland ecosystem 	CCC, DoC, ECan, Mana Whenua, SDC	5 yrs
	EB5.3 Work with landowners to support, facilitate, and encourage the development, funding, and implementation of management plans to improve dryland ecosystems	CCC, DoC, ECan, SDC	Ongoing
EB6 The significant ecological and cultural biodiversity values associated with the Avon-Heathcote Estuary/Ihutai are protected and where possible enhanced	EB6.1 Review the effectiveness and suitability of the current statutory and non-statutory regime to protect the significant biodiversity values associated with the Avon-Heathcote Estuary/Ihutai	CCC, Community Groups DoC, ECan, Mana Whenua	3 yrs
	EB6.2 Agree and implement a package of protection measures that will ensure the significant biodiversity values of the Avon-Heathcote Estuary/Ihutai are protected	CCC ECan DoC Mana Whenua	3 - 5 yrs
EB7 Earthquake Recovery helps to ensuring health ecosystems and biodiversity	EB7.1 Earthquake Recovery Programmes give effect to the following recommendations: EBb,1.2,1.5, 1.6, 1.7, 3.3b, 4.1, 5.1b	CERA	1 yr
	EB7.2 Work with the Zone Committee to develop implementation plans and actions that give effect to ZIP outcomes and recommendations in Earthquake Recovery Programmes	CERA	1 yr

4.4 SAFEGUARDING GROUNDWATER QUALITY AND FLOWS FOR MULTIPLE USES

[Insert text]

Links to CWMS Targets

Recommendations related to this priority issue will contribute to the achievement of the following CWMS Targets areas:

- Ecosystem Health and Biodiversity
- Kaitiakitanga
- Drinking water standards
- Water use efficiency
- Irrigated land area
- Indicators of regional and national economies
- Environmental limits

Priority Outcomes?

Priority Outcomes?	Recommendations?	Who?	Implement within?
GW1 The quality of our groundwater resources are safeguarded and enhanced where necessary for multiple uses	GW1.1a Assess whether current statutory planning frameworks and enforcement activities require: <ul style="list-style-type: none"> • Land-use activities over un-confined aquifers to be managed on a precautionary basis to protect groundwater quality • Maintain special provisions in relation to the Groundwater Protection Zone • New development and/or intensification/change of land use in the Groundwater Protection Zone only if it can be undertaken without reducing groundwater quality • Private bore casings to be installed to appropriate standards 	CCC, ECan, SDC	1 yr
	GW1.1b If required, update statutory planning frameworks and enforcement activities to implement the bullet points in GW1.1a	CCC, CERA, ECan SDC	1 yr
	GW1.2 Continue to implement a co-ordinated groundwater quality monitoring programme to keep nitrate levels and other contaminants under surveillance	CCC, CDHB, ECan, SDC	Ongoing

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GW2 Aquifers that supply drinking water continue to provide an un-treated potable water source (of at least a BA rating in the NZ Drinking Water Standards)	GW2.1a Establish and facilitate an independent expert panel to review and advise on: <ul style="list-style-type: none"> the spatial extent of the groundwater catchments of aquifers that currently provide an untreated potable water source (best assessment using currently available information and degree of confidence) the degree of risk posed by current and future land use activities over un-confirmed aquifers in the agreed groundwater catchment 	CCC, CDHB, ECan, SDC	6 months
	GW2.1b If required, update statutory planning frameworks and enforcement activities in line with the advice of the independent expert on bullet points in GW2.1a	CERA, ECan	6 months
	GW2.2 Develop and progress a programme of actions to improve the security of drinking water supply to the community water supply from wells in the north west of Christchurch (e.g. deeper wells)	CCC	2 yrs
GW3 Groundwater resources in the aquifers are actively managed and allocated for multiple uses	GW3.1 Update future demand projections for the community water supply, to ensure alignment with the following: <ul style="list-style-type: none"> Earthquake Recovery Strategy Greater Christchurch Urban Development Plan Christchurch West Melton Zone Implementation Programme 	CCC, CERA, ECan	2 yrs
	GW3.2 Develop future demand projections for all other takes from groundwater, to ensure alignment with the following: <ul style="list-style-type: none"> Earthquake Recovery Strategy Greater Christchurch Urban Development Plan Christchurch West Melton Zone Implementation Programme 	CERA, ECan	2 yrs
	GW3.3a Assess the extent to which the management of groundwater resources can give effect to the following outcomes in combination (not in order of priority): <ul style="list-style-type: none"> Maintain and enhance flows from springs in to spring-fed waterways to sustain ecosystem health and cultural values, and; Where possible reinstate flows from historical springs in to spring-fed waterways, and; Safeguard recharge and water quality of the deeper aquifers so that resource is not unsustainably abstracted or degraded in quality and; Meet projected future demand for community water supply and; Meet projected demand of all other takes and; Remain resilient in reasonably foreseeable climate variation scenarios 	ECan	3 yrs
	GW3.3b Based on the assessment in GW3.3a, work with the Zone Committee to identify a preferred approach to managing and allocating groundwater resources	ECan	3 yrs

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	<p>GW3.3c Update the Land and Water Regional Plan to give effect to the preferred approach identified in GW3.3b</p>	CERA, ECan	3 yrs
	<p>GW3.4 Confirm that the relationship between the Waimakariri River and aquifer recharge is adequately understood, recognised and provided for in our allocation of groundwater resources</p>	ECan	3 yrs
<p>GW4 There is a precautionary approach to maintaining groundwater levels, flows, and quality in the vicinity of springheads of spring fed waterways</p>	<p>GB4.1 Identify “sensitive” areas around the springheads of spring fed waterways where activities could alter or vary groundwater quality, levels, and flows</p>	ECan	6 months
	<p>GB4.2 Identify and make changes to statutory planning frameworks and enforcement activities that will safeguard groundwater quality, levels, and flows in sensitive areas (identified in GB4.1) with particular consideration of:</p> <ul style="list-style-type: none"> • The design and construction of foundations for new and redeveloped buildings • Design and installation of new and replacement buried infrastructure (e.g. pipes, cables) 	CCC, CERA, ECan, SDC	6 months
	<p>GB4.3 Investigate opportunities to retire groundwater takes in the vicinity of springheads of spring fed waterways where they are assessed to have a negative impact on levels and/or flows</p>	ECan, CONSENT HOLDERS	5 yrs
<p>GW5 Earthquake Recovery helps to safeguard groundwater quality and flows for multiple uses</p>	<p>GW5.1 Earthquake Recovery Programmes give effect to the following recommendations: GW1.1b, 2.1b, 3.1, 3.2, 3.3c, 4.1, 4.2</p>	CERA	1 yr
	<p>GW5.2 Work with the Zone Committee to develop implementation plans and actions that give effect to ZIP outcomes and recommendations in Earthquake Recovery Programmes</p>	CERA	1 yr

4.5 MAKING EFFICIENT USE OF WATER AND MANAGING DEMAND

Draft text highlight in yellow below for discussion:

In the Christchurch West Melton Zone, we are very fortunate to have large aquifers (essentially natural reservoirs under the ground) containing vast amounts of good quality water for people to use. Whilst the total volume of groundwater is large, the rate at which water is replaced (or recharged) in to the aquifers is dependent on 2 key factors; how much rain falls on the plains to the west of the city and; how much water flows out of the Waimakariri River in to the ground.

The Zone Committee is concerned that if we take water from the aquifers at a rate which is faster than they are recharged, we will be taking water out of our underground reservoirs in an unsustainable way. Over time, there will be less water available in the aquifers for us to use. In addition, possible variations in climate may affect the amount and timing of rainfall on the plains or flows in the Waimakariri River. In turn this may affect the availability of water in the aquifers.

The amount of water taken by people from the aquifers in the zone has increased over time. The aquifers that provide water for domestic, commercial, and industrial use also feed water into spring-fed waterways (e.g. Avon/Ōtākaro River) that are valued by local communities. Taking water out of the system for people to drink, water gardens, flush toilets, clean cars, irrigate crops, and manufacture products, means that there is already less water available for the environment.

The Zone Committee believes that it is important to plan today, for how we will use water in the future. This means managing the available water resources now, so that they can continue to be used for multiple purposes and benefits. This means that everybody who uses water in the zone, whether in urban or rural areas, or for industrial, commercial, or domestic uses, needs to use water more wisely. This includes reducing the amount of water taken from the tap (e.g. re-using grey water, collecting and using rainwater), using water more efficiently in the irrigation of parks, farms, and gardens, or in industrial processes, and reducing leakage from pipes.

The Zone Committee believes that the “equitable use” of water is an important principle if urban residents are to be encouraged to use water more wisely i.e. what is a fair and equitable amount of water for a user to take? The Zone Committee thinks that an effective mechanism for managing the domestic water demand would be to allocated domestic users an “equitable amount” of water. Domestic users who take less than an equitable amount should then be rewarded for using less water, whilst domestic users that take more than an equitable amount of water should contribute more to the costs of water supply.

The Zone Committee accepts that not everybody in the zone will agree about the best way to encourage domestic users to use water more efficiently. The Zone Committee recognises that for residents of Christchurch, using water efficiently has historically been an emotive topic around charging for domestic water use and, for some people, a perception that agricultural irrigators and dairying had a “free for all.” In developing the ZIP the Zone Committee notes and highlights the following points:

- The CWMS sets targets for the efficient use of water for irrigation, stock water, industrial use, electricity generation, and community water use [e.g. By 2020, 10% reduction in community water use (litres per day per person) compared to 2010]

- The vast bulk of agricultural irrigation and dairying in Canterbury is outside of the Christchurch West Melton Zone and thus beyond the remit of the Zone Committee
- The majority of Canterbury’s domestic water users are within the Christchurch West Melton Zone
- The Zone Committee’s recommendations are inclusive of commercial, industrial, and domestic uses of water, in both rural and urban areas of the zone

Ultimately, the Zone Committee believes that if we are to realise the vision of CWMS by 2040, we need to work out the best way for people in Christchurch West Melton Zone to use water more efficiently and manage demand. It is essential that we continue to have access to water for community water supplies, industrial, commercial, and environmental uses. Agreeing a clear way forwards on how to manage our water resources is the first urgent step to take.

Links to CWMS Targets

Recommendations related to this priority issue will contribute to the achievement of the following CWMS Targets areas:

- Water use efficiency
- Irrigated land area
- Indicators of regional and national economies

Priority Outcomes?

Priority Outcomes?	Recommendations?	Who?	Implement within?
EU1 Efficient domestic use of water is encouraged, incentivised, and improved	EU1.1a Review work programmes to reduce leakage from community water supplies, taking into account: <ul style="list-style-type: none"> • The effects of earthquake damage on leakage • Improving the resilience of water supply infrastructure to earthquakes 	CCC, CERA, SDC	1 yr
	EU1.1b If required, update and progress work programmes to reduce leakage from community water supplies, having taken into account the bullet points in EU1.1a	CCC, CERA, SDC	1 yr
	EU1.2 Develop and run a process to establish and allocate an equitable level of water use for different domestic users of the reticulated system and private supplies	CCC, SDC, ECan	2 yrs
	EU1.3 Enhance and progress a co-ordinated programme of initiatives to promote and encourage the public to reduce domestic water use	CCC, ECan, SDC	2 yrs

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	<p>EU1.4 Develop a water supply management approach for the community water supply where domestic users that take less than an equitable level are rewarded whilst domestic users that take more than an equitable level contribute more to the costs of water supply</p>	CCC	3 yrs
	<p>EU1.5 Implement a water supply management approach (see EU1.4) in line with plans to manage overall demand from the community water supply within the groundwater allocation</p>	CCC	5 yrs
	<p>EU1.6 Investigate and apply ways to encourage and ensure that users of private domestic supplies use an equitable level of water</p>	ECan	5 yrs
<p>EU2 Efficient commercial and industrial use of water is encouraged, incentivised, and improved, to reduce consumption</p>	<p>EU2.1 Every 3 years, require commercial and industrial users of water supplied via the community water supply system, to demonstrate how they have implemented water efficiency plans</p>	CCC	Ongoing
	<p>EU2.2 Continue to operate a water supply management approach for the reticulated system where non-domestic users of water are charged according to usage</p>	CCC	Ongoing
	<p>EU2.3a Assess whether current statutory planning frameworks and enforcement activities ensure that commercial and domestic water takes have implemented water efficiency plans</p>	ECan	2 yrs
	<p>EU2.3b If required, update statutory planning frameworks and enforcement activities to ensure that commercial and domestic water takes have implemented water efficiency plans</p>	ECan	2 yrs
<p>EU3 Irrigation use in both rural and urban areas is optimised (targeted and efficient use of water by agricultural users, parks, sports fields, golf courses)</p>	<p>EU3.1a Assess whether current statutory planning frameworks and enforcement activities require managers of irrigation systems to implement “smart³” water efficiency plans</p>	ECan	2 yrs
	<p>EU3.1b If required, update statutory planning frameworks and enforcement activities to ensure that managers of irrigation systems have implemented “smart” water efficiency plans</p>	ECan	2 yrs
	<p>EU3.2 Every 3 years, identify and action improvements to publically managed irrigation systems (e.g. sprinklers in parks) to demonstrate best practice water use efficiency</p>	CCC, ECan, SDC	Ongoing
<p>EU4 Earthquake Recovery helps to make efficient use of water and manage</p>	<p>EU4.1 Earthquake Recovery Programmes give effect to the following recommendations: EU1.1a,b</p>	CERA	1 yr

³ “Smart use” = how much used, when applied, what application mechanism

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demand	EU4.2 Work with the Zone Committee to develop implementation plans and actions that give effect to ZIP outcomes and recommendations in Earthquake Recovery Programmes	CERA	1 yr
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Alternative version: differences highlighted in yellow for discussion

Priority Outcomes?	Recommendations?	Who?	Implement within?
EU1 Efficient domestic use of water is encouraged, incentivised, and improved	EU1.1a Review work programmes to reduce leakage from community water supplies, taking into account the effects of earthquake damage and more resilient standards for water supply infrastructure	CCC, CERA, SDC	1 yr
	EU1.1b If required, update and progress work programmes to reduce leakage from community water supplies, having taken into account the effects of earthquake damage and more resilient standards for water supply infrastructure	CCC, CERA, SDC	1 yr
	EU1.2 Establish and facilitate an independent forum to recommend the best mechanisms to encourage efficient domestic use of water taken from community water supplies	CCC	2 yrs
	EU1.3 Enhance and progress a co-ordinated programme of initiatives to promote and encourage the public to reduce domestic water use	CCC, ECan, SDC	2 yrs
	EU1.4 Develop and progress a programme of action to give effect to the recommendations of the independent forum on domestic water use of water taken from community water supplies	CCC	3-5 yrs
	EU1.5 Implement a water supply management approach (see EU1.4) in line with plans to manage overall demand from the community water supply within the groundwater allocation	CCC	5 yrs
	EU1.6 Investigate and apply ways to encourage and ensure that users of private domestic supplies use an equitable level of water	ECan	5 yrs

WORKING DRAFT FOR COMMITTEE

5. APPENDIX

5.1 SUMMARY INFORMATION ON THE CANTERBURY WATER MANAGEMENT STRATEGY

[Insert text]

WORKING DRAFT FOR COMMITTEE

6. GLOSSARY AND ACRONYMS

[Insert text]

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